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## UMSL Bulletin 2020-2021

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# 2020-2021 University Bulletin

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This Bulletin includes a description of undergraduate and graduate policies and programs at the University of Missouri-St. Louis for 2020-2021. All statements in this publication concerning regulations, fees, curricula, or other matters are subject to change without notice. They are not to be regarded as offers to contract.

The University of Missouri – St. Louis is accredited by the Higher Learning Commission. This accreditation applies to all baccalaureate, masters, and doctoral levels. UMSL earned full Reaffirmation of Accreditation following the November 2018 comprehensive site visit and according to the final HLC report, "... provided a convincing argument with sufficient data to demonstrate it adheres to federal compliance guidelines and that it meets all HLC core components, and therefore all criteria for accreditation."

The policies of the University of Missouri-St. Louis comply with the provisions under those laws that forbid discrimination on the basis of race, color, sex, national origin, religion, age, handicap, or veteran status in any program or activity of the University (CRR 600.010-600.020).

Bulletins for the past ten years are posted in the archives section of this site. Older versions are available in campus advising offices and Academic Affairs. Program requirements are also available to students through Degree Audit Reports (DARS), which are available online or from an academic adviser, who will assist in the interpretation of the audit.

The University of Missouri-St. Louis is one of four campuses that constitute the University of Missouri. Established in Columbia in 1839 on the ideals of Thomas Jefferson, the University of Missouri became a land-grant institution upon passage of the Morrill Act by Congress in 1862.

When the University of Missouri System was organized in 1963, the St. Louis campus was the only one that started as an entirely new university. The University of Missouri-St. Louis began as a consequence of the national movement to create public universities in metropolitan centers. UMSL was designed to educate the area's professionals through research, coursework, and hands-on experiences in the region's businesses, schools, hospitals, agencies, and arts organizations.

According to the campus's history, *The Emerging University: The University of Missouri-St. Louis, 1963-1983*, faculty were hired from prestigious universities with a vision of creating a university where graduates would be able to confront urban issues through research, critical thinking, and creativity. More than traditional workforce development, these leaders' vision for UMSL was to educate students for lifelong learning, which would produce good citizens and effective leaders in the region's organizations. That legacy continues because those early leaders created a culture of faculty excellence that persists today.

Since the doors of the old Administration Building opened on a golf course more than 50 years ago, UMSL has grown to encompass 470 acres in St. Louis County and has a mix of modern and historic academic buildings. The campus is now St. Louis's largest university in the number of students and is the third largest in the state.

The campus takes pride in the success of its students, faculty, and staff and highlights of these successes are posted regularly on the UMSL home page. Detailed information about the university is also available on the

About UMSL site and the Student Consumer Information site. Student achievement data can be found on the College Portrait.

The University of Missouri St. Louis is the metropolitan, land-grant, research institution serving the most diverse and economically important region in Missouri.

## Mission

We transform lives.

## Vision

The University of Missouri St. Louis will be a beacon of hope, a force for good, and a leader in the pursuit of excellence in education, impactful research and community service. We boldly assert that education is for everyone who is willing and able to seek it out. We honor the duties inherent in our land-grant beginnings by positioning ourselves as partners in the search for knowledge, progress and positive change for ourselves, our communities, our world.

## Faculty Senate and University Assembly

The Faculty Senate has primary responsibility for making educational policy decisions to create a rigorous, innovative, student-oriented environment for learning, research, and community service. The Senate and University Assembly together and through their committees advise the chancellor and other senior administrators on matters related to students, faculty and staff.

The Faculty Senate includes a faculty member from each department and approximately 10 at-large faculty members, as well as three administrators who are non-voting members. The University Assembly consists of the elected members of the Senate, five administrators, student representatives, and staff members. Non-voting members consist of vice chancellors and vice provosts not already included, deans of all colleges, the dean of libraries, and the president of the Student Government Association. The Faculty Senate meets monthly between September and May and the Assembly meets in alternate months during the year. Information about the Faculty Senate and University Assembly are available on the Senate's web site.

## Staff Association

The University of Missouri—St. Louis Staff Association is a body formed to consider, to recommend, and to take such other actions as are properly related to the common concerns and best interest of those personnel at the University of Missouri-St. Louis. The Staff Association fosters a spirit of unity and cooperation among all employees of the University of Missouri-St. Louis, to consider methods and means by which employment conditions may be improved and the operating efficiency of the University of Missouri-St. Louis increased; to receive and consider matters concerning working conditions of membership; to make such recommendations that it deems appropriate, and to provide a means of communicating problems of mutual concern between the Staff Association and the University of Missouri-St. Louis administration. Representatives of the Staff Association serve as voting members of University Assembly committees.

## Student Government Association

The Student Government Association (SGA) of the University of Missouri St. Louis, housed in 366 Millennium Student Center, 314-516-5105, is the student governance body at UMSL. SGA is comprised of elected student representatives and a general assembly which includes representatives

from all recognized student organizations. The purpose of the SGA is to represent student concerns at every level of governance within the university. This is done by ensuring adequate and capable student representation within the University Assembly, the policymaking and governance body of the university.

## 2020-2021 Calendar

### Fall Semester 2020

#### 16 Week Session

Date	Weekday	Event
August 24	Monday	Classes Begin 8:00 a.m.
August 30	Thursday	Last day a student may enroll (enter a course for credit).
August 30	Thursday	Last day Registrar's Office will automatically move students from the wait list to open sections
September 7	Monday	Labor Day Holiday
September 8	Tuesday	Classes Resume, 8:00 a.m.
September 21	Monday	Last day to drop a course or withdraw from school without receiving a grade.
September 21	Monday	Last day any student may place a course on Satisfactory/Unsatisfactory basis
October 19	Monday	Mid Semester
October 19	Monday	Last day to drop a course or withdraw from school without instructor approval. EX grade will be assigned.
November 16	Monday	Last day a student may drop a course. Instructor's approval is required. A grade of EX or EX-F will be assigned.
November 16	Monday	Last day a student may withdraw from school. Instructors' and Dean's approvals are required. Grades of EX or EX-F will be assigned for each course.
November 21	Saturday	Fall Break (Thanksgiving holiday) Begins 5:00 p.m.
November 30	Monday	Classes Resume, 8:00 a.m.
December 12	Saturday	Classes End, 5:00 p.m.
December 14	Monday	Final Examinations Begin
December 19	Saturday	Fall Semester Closes, end of day
December 19	Saturday	Fall Commencement

### Fall Semester 2020

#### 8 Week-1 Session

Date	Weekday	Event
August 24	Monday	Classes Begin 8:00 a.m.
August 27	Thursday	Last day a student may enroll
August 27	Thursday	Last day Registrar's Office will automatically move students from the wait list to open sections
September 7	Monday	Labor Day Holiday
September 8	Tuesday	Classes Resume, 8:00 am
September 8	Tuesday	Last day to drop a course or withdraw from school without receiving a grade

September 8	Tuesday	Last day any student may place a course on Satisfactory/Unsatisfactory basis
September 21	Monday	Last day to drop a course or withdraw from the Eight week 1 session without Instructor approval. EX grade will be assigned.
October 5	Monday	Last day a student may drop a course. Instructor's approval is required. A grade of EX or EX-F will be assigned.
October 5	Monday	Last day a student may withdraw from the session. Instructors' and Dean's approvals are required. Grades of EX or EX-F will be assigned for each course.
October 17	Saturday	Fall Semester 8 Week 1 closes, end of day

### Final Exams are held during the last class meeting of the Session

### Fall Semester 2020

#### 8 Week-2 Session

Date	Weekday	Event
October 19	Monday	Classes begin 8:00 a.m.
October 22	Thursday	Last day a student may enroll
October 22	Thursday	Last day Registrar's Office will automatically move students from the wait list into open sections
November 2	Monday	Last day to drop a course or withdraw from school without receiving a grade
November 2	Monday	Last day to place an Eight week 2 course on Satisfactory/Unsatisfactory basis.
November 16	Monday	Last day to drop a course or withdraw from the Eight week 2 session without Instructor approval. EX grade will be assigned.
November 21	Saturday	Fall Break (Thanksgiving holiday) begins 5:00 p.m.
November 30	Monday	Classes Resume, 8:00 a.m.
December 7	Monday	Last day to drop an Eight week 2 course. Instructor approval is required. A grade of EX or EX-F will be assigned.
December 7	Monday	Last day to withdraw from the Eight week 2 session. Instructors' and Dean's approval are required. Grades of EX or EX-F will be assigned for each Eight week 2 course.
December 19	Saturday	Fall Semester 8 Week 2 Closes, end of day.

### Final Exams are held during the last class meeting of the Session

### Winter Intersession - 2021

Date	Weekday	Event
January 4	Monday	Classes Begin, 8:00 a.m.
January 4	Monday	Beginning the first day of the term there will be a \$250.00 late registration fee assessed for students who have not previously registered for the Winter Intersession Spring 2021 term.
January 4	Monday	Last day to add a Winter Intersession course



January 6	Wednesday	Last day to drop a Winter Intersession course without receiving a grade
January 6	Wednesday	Last day to place a Winter Intersession course on Satisfactory/Unsatisfactory basis
January 9	Saturday	Last day to drop a course from the Winter Intersession without instructor approval. EX grade will be assigned.
January 13	Wednesday	Last day to drop a Winter Intersession course. Instructor's approval is required. Grade of EX or EX-F will be assigned.
January 16	Saturday	Classes End, 5:00 p.m.

## Spring Semester - 2021

Date	Weekday	Event
January 18	Monday	Martin Luther King Holiday
January 19	Tuesday	Classes Begin, 8:00 a.m.
January 25	Monday	Last day any student may enroll (enter a course for credit)
January 25	Monday	Last day Registrar's Office will automatically move students from the wait list to open sections
February 15	Monday	Last day to drop a course or withdraw from school without receiving a grade
February 15	Monday	Last day any student may place a course on Satisfactory/Unsatisfactory basis
March 15	Monday	Mid Semester
March 15	Monday	Last day to drop a course or withdraw from school without instructor approval. EX grade will be assigned.
March 27	Saturday	Spring Recess Begins, 5:00 p.m.
April 5	Monday	Classes Resume, 8:00 a.m.
April 19	Monday	Last day student may drop a course. Instructor's approval is required. A grade of EX or EX-F will be assigned.
April 19	Monday	Last day a student may withdraw from school. Instructors' and Deans' approvals are required. Grades of EX or EX-F will be assigned for each course.
May 08	Saturday	Classes End, 5:00 p.m.
May 10	Monday	Final Examinations Begin
May 15	Saturday	Spring Semester Closes, end of day
May 15	Saturday	Spring Commencement
May 16	Sunday	Spring Commencement

## Spring Semester 2021

### 8 Week-1 Session

Date	Weekday	Event
January 18	Monday	Martin Luther King Holiday
January 19	Tuesday	Classes Begin, 8:00 a.m.
January 22	Friday	Last day any student may enroll (enter a course for credit)
January 22	Friday	Last day Registrar's office will automatically move students from the wait list into open sections.

February 1	Monday	Last day to drop an Eight Week 1 course without receiving a grade
February 1	Monday	Last day any student may place an Eight Week 1 course on Satisfactory/Unsatisfactory basis
February 15	Monday	Last day to drop a course or withdraw from the Eight Week 1 without instructor approval. EX grade will be assigned.
March 1	Monday	Last day student may drop an Eight Week 1 course. Instructor's approval is required. A grade of EX or EX-F will be assigned.
March 1	Monday	Last day a student may withdraw from the Eight Week 1 session. Instructors' and Deans' approvals are required. Grades of EX or EX-F will be assigned for each course.
March 13	Saturday	Spring Semester 8 Week 1 Closes, end of day

## Final Exams are held during the last class meeting of the Session

### Spring Semester 2021

#### 8 Week-2 Session

Date	Weekday	Event
March 15	Monday	Classes Begin, 8:00 a.m.
March 18	Thursday	Last day any student may enroll (enter a course for credit).
March 18	Thursday	Last day Registrar's office will automatically move students from the wait list into open sections.
March 27	Saturday	Spring Recess Begins, 5:00 p.m.
April 5	Monday	Classes Resume, 8:00 a.m.
April 5	Monday	Last day to drop an Eight Week 2 course without receiving a grade
April 5	Monday	Last day any student may place a course on Satisfactory/Unsatisfactory basis
April 19	Monday	Last day to drop a course or withdraw from an Eight Week 2 course without instructor approval. EX grade will be assigned.
May 3	Monday	Last day a student may withdraw from an Eight Week 2 course. Instructors' and Dean's approvals are required. Grades of EX or EX-F will be assigned for each course.
May 3	Monday	Last day a student may withdraw from the Eight Week 2 session. Instructors' and Dean's approvals are required. Grades of EX or EX-F will be assigned for each course.
May 15	Saturday	Spring Semester 8 Week 2 Closes, end of day

## Final Exams are held during the last class meeting of the Session

### Summer Sessions - 2021

Date	Weekday	Event
January 4, 2021	Monday	Registration begins for all students and all sessions

### Summer Session I (4 Weeks)

Date	Weekday	Event
May 17	Monday	Classes Begin, 8:00 a.m.
May 19	Wednesday	Last day any student may enroll (enter a course for credit) for Session I
May 19	Wednesday	Last day Registrar's Office will move students automatically from the wait list to open sections
May 25	Tuesday	Last day to drop a Session I course without receiving a grade.
May 25	Tuesday	Last day a student may place a Session I course on Satisfactory/Unsatisfactory basis
May 31	Monday	Memorial Day Holiday
June 1	Tuesday	Classes Resume, 8:00 a.m.
June 1	Tuesday	Last day to drop a Session I course without instructor approval. EX grade will be issued.
June 7	Monday	Last day a student may drop or withdraw from a Session I course. Instructor's approval is required. EX or EX-F grade will be issued.
June 12	Saturday	Session Closes, end of day

### Summer Session II (4 Weeks)

Date	Weekday	Event
June 14	Monday	Classes begin 8:00 a.m.
June 16	Wednesday	Last day any student may enroll (enter a course for credit) for Session II
June 16	Wednesday	Last day Registrar's Office will move students automatically from the wait list to open sections
June 21	Monday	Last day to drop a Session II course without receiving a grade
June 21	Monday	Last day a student may place a Session II course on Satisfactory/Unsatisfactory basis
June 28	Monday	Last day to drop a Session II course without instructor approval. EX grade will be issued.
July 5	Monday	Independence Day Holiday
July 6	Tuesday	Classes Resume
July 6	Tuesday	Last day a student may drop or withdraw from a Session II course. Instructor's approval is required. A grade of EX or EX-F will be issued.
July 10	Saturday	Session Closes, end of day

### Summer Session III (4 Weeks)

Date	Weekday	Event
July 12	Monday	Classes Begin, 8:00 a.m.
July 14	Wednesday	Last day any student may enroll (enter a course for credit) for Session III
July 14	Wednesday	Last day Registrar's Office will move students automatically from the wait list to open sections
July 19	Monday	Last day to drop a Session III course without receiving a grade
July 19	Monday	Last day a student may place a Session III course on Satisfactory/Unsatisfactory basis
July 26	Monday	Last day a student may drop or withdraw from a Session III course without instructor approval. EX grade will be issued.
August 2	Monday	Last day to drop or withdraw from a Session III course. Instructor's approval is required. EX or EX-F grade will be issued.
August 7	Saturday	Session III Closes, end of day

## Final examinations are held during the last class meeting of Summer Sessions I, II, and III.

### Summer Session IV (8 Weeks)

Date	Weekday	Event
May 17	Monday	Classes Begin, 8:00 a.m.
May 20	Thursday	Last day any student may enroll (enter a course for credit) for Session IV
May 20	Thursday	Last day Registrar's Office will move students automatically from the wait list to open sections
May 31	Monday	Memorial Day Holiday
June 1	Tuesday	Classes Resume, 8:00 a.m.
June 1	Tuesday	Last day to drop a Session IV course without receiving a grade
June 1	Tuesday	Last day a student may place a Session IV course on Satisfactory/Unsatisfactory basis
June 14	Monday	Last day a student may drop or withdraw from a Session IV course without instructor approval. EX grade will be issued.
June 28	Monday	Last day to drop or withdraw from a Session IV course. Instructor's approval is required. EX or EX-F grade will be issued.
July 5	Monday	Independence Day Holiday
July 6	Tuesday	Classes Resume, 8:00 a.m.
July 7	Wednesday	Final Examinations Begin
July 10	Saturday	Session IV Closes, end of day

### Summer Session V (8 Weeks)

Date	Weekday	Event
June 14	Monday	Classes Begin, 8:00 a.m.
June 17	Thursday	Last day any student may enroll (enter a course for credit) for Session V
June 17	Thursday	Last day Registrar's Office will move students automatically from the wait list to open sections



June 28	Monday	Last day to drop a Session V course without receiving a grade
June 28	Monday	Last day a student may place a Session V course on Satisfactory/Unsatisfactory basis
July 5	Monday	Independence Day Holiday
July 6	Tuesday	Classes Resume, 8:00 a.m.
July 12	Monday	Last day to drop a Session V course without instructor approval. EX grade will be issued.
July 26	Monday	Last day a student may drop or withdraw from a Session V course. Instructor's approval is required. EX or EX-F will be issued.
August 4	Wednesday	Final Examinations Begin
August 7	Saturday	Session V Closes, end of day

### Summer Session VI (12 Weeks)

Date	Weekday	Event
May 17	Monday	Classes Begin, 8:00 a.m.
May 21	Friday	Last day any student may enroll (enter a course for credit) for Session VI
May 21	Friday	Last day Registrar's Office will move students automatically from the wait list to open sections
May 31	Monday	Memorial Day Holiday
June 1	Tuesday	Classes Resume, 8:00 a.m.
June 7	Monday	Last day to drop a Session VI course without receiving a grade
June 7	Monday	Last day a student may place a Session VI course on Satisfactory/Unsatisfactory basis
June 28	Monday	Last day to drop a Session VI course without instructor approval. EX grade will be issued.
July 5	Monday	Independence Day Holiday
July 6	Tuesday	Classes Resume, 8:00 a.m.
July 19	Monday	Last day a student may drop or withdraw from a Session VI course. Instructor's approval is required. EX or EX-F will be issued.
August 4	Wednesday	Final Examinations Begin
August 7	Saturday	Session Closes, end of day

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# Undergraduate Study

## Undergraduate Study

This section describes academic policies and requirements for students enrolled as an undergraduate and University requirements for undergraduate academic programs.

## Campus Testing Centers

The Testing Center is administratively housed in the Center for Teaching and Learning. The Testing Center manages exams for students and faculty that are paper-based, online, and those requiring a variety of accommodations. Appointments are required for all exams. Institutional exams (e.g., Major Field Test, Math Placement, ACT Residual) are administered through the Testing Center, as well as various standardized exams. The Testing Center main office is located in JC Penney Room 93, with additional computer-based stations in JC Penney Room 94.

## Assessment

The University of Missouri has been directed by the Board of Curators to assess the outcomes of your university education. To this end, two types of assessment are required: A test of general educational development given to a sample of incoming freshmen and graduating seniors who represent the university; and a test or project, specified by the major department, given to graduating seniors.

For its continuous quality improvements, the University also conducts periodic surveys of student engagement. As alumni, graduates are encouraged to participate in assessment by completing questionnaires sent to them by the University or major department/college.

## Credit Hours

All candidates for baccalaureate degrees must complete a minimum of 120 semester hours. At least 45 of these hours must be courses numbered 2000 or above (or comparable courses transferred). Students must maintain a minimum 2.0 grade point average overall, as well as in their area of specialization. Students seeking two degrees must meet all degree and residency requirements of each degree.

## Academic Residence

Students must be in residence for at least 24 of the last 30 hours of graded credit (exclusive of courses graded on a satisfactory/unsatisfactory basis), except under unusual circumstances, to be decided by the dean.

## General Education

Students must successfully complete the General Education requirements of the University, the school or college in which they are enrolled, and the specific requirements of their area of specialization. For more information about the University's requirements go to the General Education Program (p. 51) section of the bulletin.

## Math and English Proficiency Requirement

Students who have not satisfied the Math and English proficiency requirement by the end of their first semester at UMSL will receive an advising hold and must meet with an Academic Advisor to register in these gateway courses in order for the hold to be removed.

## Junior-Level Writing

A Junior-Level writing course with a grade of C- or above is required for all undergraduate degrees. The following courses will meet the requirement:

ENGL 3090	Turning the Kaleidoscope: How We Look at Texts	3
ENGL 3100	Junior-Level Writing	3
ENGL 3110	Junior-Level Writing for International Students	3
ENGL 3120	Business Writing	3
ENGL 3130	Technical Writing	3
ENGL 3160	Writing in the Sciences	3
HONORS 3100	Honors Advanced Composition: Writing The City	3
HONORS 3120	Honors Business Writing	3

## Cultural Diversity Requirement

To expand cultural awareness, students in some academic units may be required to complete a course that emphasizes Asian, African, Middle Eastern, Latin American, Pacific aboriginal, Native American, or a comparable culture. Courses that satisfy this requirement involve substantial material independent of the cultures' interactions with European cultures. If a course focuses on one facet of a culture, it must treat the topic within the context of the culture as a whole. This requirement may be met by one of the following courses:

ANTHRO 1011	Introduction to Cultural Anthropology (MOTR ANTH 201)	3
ANTHRO 1019	Introduction to Archaeology	3
ANTHRO 1021	The Body in Culture	3
ANTHRO 1025	World Cultures	3
ANTHRO 1033	World Archaeology	3
ANTHRO 1041	Sex and Gender Across Cultures	3
ANTHRO 1091	Introductory Topics in Anthropology	3
ANTHRO 2100	Languages and World View	3
ANTHRO 2101	Girl Cultures	3
ANTHRO 2104	Medicine in Culture and History	3
ANTHRO 2111	Cultures of East Asia	3
ANTHRO 2120	Native Peoples of North America	3
ANTHRO 2124	Introduction to Contemporary African Cultures	3
ANTHRO 2132	Archaeology of North America	3
ANTHRO 2134	Archaeology of The Inca, Aztec, and Maya	3
ANTHRO 2191	Special Topics in Non-Western Culture	3
ANTHRO 2420	Maiko, Maids, and Masako: Women in Japanese Cultural History	3
ANTHRO 2425	Food and Drink in Japan: A Cultural History	3
ANTHRO 2430	Ghosts, Goblins, and Godzillas	3
ANTHRO 3218	Visual and Material Culture of Japan	3
ANTHRO 3235	Women in Subsaharan Africa: A Contemporary Perspective	3
ANTHRO 4000	Ethnographic Field Research Methods	3



ART HS 1120	Global Art and Visual Culture (MOTR ARTS 101)	3	MVS 2200	Examining Cultural Experiences of Veterans	3
ART HS 1140	Indigenous Arts of the Americas	3	NURSE 1000	Cultural Diversity in Healthcare	3
ART HS 1150	Introduction to the Art and Visual Cultures of Africa	3	PHIL 1120	Asian Philosophy	3
ART HS 1160	Introduction to the Art and Visual Cultures of Asia	3	PHIL 1125	Islamic Philosophy	3
EDUC 4000	International Education Field Experience	2-4	POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	3
ENGL 3530	Contemporary World Literature	3	POL SCI 2530	Political Systems of South America	3
FGN LANG 1200	Languages and Identities	3	POL SCI 2540	Political Systems of Mexico, Central America and the Caribbean	3
FGN LANG 2100	Languages and World View	3	POL SCI 2580	African Politics	3
GEOG 2001	Cultural Geography	3	POL SCI 2850	Gender, Power and International Politics	3
HIST 1041	East Asian Civilization	3	POL SCI 3500	The Politics of the Middle East: International and National Dynamics	3
HIST 1043	Topics in East Asian History and Culture	3	POL SCI 3800	Media, Film, and International Politics	3
HIST 1062	Modern Africa: From Colonies to Nations	3	POL SCI 4520	Mega-Cities and Diasporas: Understanding Global Migration	3
HIST 2002	Introduction to Latinx Studies	3	THEATR 1850	Introduction to Non-Western Theatre	3
HIST 2030	U.S. Immigration: 1790 to the 21st Century	3			
HIST 2066	Women and Gender in African History	3			
HIST 2067	African History through Fiction and Film	3			
HIST 2068	Aiding Africa	3			
HIST 2120	Global Girl Cultures	3			
HIST 3032	Modern China: From the Decline of the Qing Empire to the Global Age	3			
HIST 3065	From Ivory to Oil: Mining and Extraction in African History	3			
HIST 3214	Writing Systems of the World	3			
HONORS 1310	Non-Western Traditions Series Humanities	3			
HONORS 1330	Non-Western Traditions Series-Social Sciences	3			
HONORS 2310	Cultural Diversity in the Humanities	3			
HONORS 2330	Cultural Diversity in the Social Sciences	3			
INTDSC 1011	Introduction to Disability Studies	3			
INTDSC 1012	History of Disability	3			
JAPAN 1011	Anime Nation: Popular Culture in Japan	3			
JAPAN 2191	Special Topics in Japanese Culture	3			
JAPAN 3210	Japanese Culture and Society	3			
JAPAN 3211	Topics in Japanese Culture	3			
M H L T 1150	Drumming Cultures of the World (MOTR MUSC 102)	3			
M H L T 1160	Musical Journey through Latin America	3			
M H L T 1170	Musical Journey through the Far East	3			
M H L T 1180	Musical Journey Through Africa	3			
M H L T 1190	Musical Journey of the Native North American	3			

## Civics Exam Requirement

Per Senate Bill 807 (2018):

Any student entering a public institution of higher education for the first time after July 2019 who is pursuing an associate's or bachelor's degree from such institution shall successfully pass an examination on the provisions and principles of American civics with a score of seventy percent or greater as a condition of graduation from such institution. The examination shall be known as the "Missouri Higher Education Civics Achievement Examination (MHECAE).

## Graduation

To better assist students and confirm graduation eligibility, it is required that students notify their academic unit of their intended graduation date by officially applying to graduate through the self-service student center in MyView. Step by step instructions can be found here:

<http://www.ums1.edu/registration/students/graduation.html>

This will allow the advisors to begin the degree check process and approve the student for graduation.

- The application for graduation process initiates the degree-check process.
- It is recommended that students complete the application for graduation one year in advance to ensure all requirements will be met. (Note: certain colleges may **require** the one year prior completion date – check with your advisor to be sure). The application for graduation process should be completed based on college specific deadlines.
- In order to graduate in any given semester, students must apply prior to the deadline for that semester:
  - Fall term: October 1
  - Spring term: March 1
  - Summer term June 1
- The process to apply will be cut off at that time and if the student has not yet completed the steps to apply for graduation, the diploma will then be awarded the following semester. (In extreme circumstances,

a student may appeal their case to the dean's office if the deadlines have passed).

## Changes to anticipated graduation date

- Students who need to alter their graduation plans must notify their academic unit and re-submit the application for graduation process through self-service on MyView.
- The semester and other information listed when re-submitting the new application for graduation process will be used to replace the information previously submitted.
- All deadlines for the new semester of graduation apply to applicants who are altering their semester of graduation.

## Final Grades

To assure graduating at the end of a specific semester, all work for that semester and any delayed grades from previous semesters must be completed with the grades sent to the Office of the Registrar no later than the official date for submission of final semester grades.

## Graduation, commencement, diplomas and honors

- **Graduation** refers to the process of completing a degree and takes place three times per year at UMSL: at the end of each Spring, Summer, and Fall semester.
- **Commencement** refers to the ceremony celebrating graduation and occurs twice per year at the end of the Fall and Spring semesters. (Students graduating in summer may participate in either the following Fall ceremony or the prior Spring ceremony). Commencement is optional and participating in commencement does not mean that a student has graduated
- **Diplomas** are a ceremonial document indicating the degree a student earned. The transcript is the official academic record.

## Declaring a Major

A student's first major, or undeclared major status, is determined by his or her application for admission.

While applying, students are typically not certain about the requirements for a major at UMSL. Students are encouraged to explore majors through professors, advisors, the Career Center, and co-curricular activities during their first semester at UMSL.

Students who have not declared a major at 60 credit hours (junior status) will receive an advising hold and must declare a major with an academic unit before this hold is removed. Transfer students arriving at UMSL with 60 or more credit hours will receive an advising hold preventing them from registering for their second semester until they have declared a major. They can declare a major by following the procedures for a change of major outlined below.

## Exploratory Pathways for Undeclared Major Status

Students who apply with Undeclared Major Status are required to choose an Exploratory Pathway. Exploratory Pathways are designed for students to explore different majors while maintaining a plan for graduation.

The following Exploratory Pathways are offered:

### Business and Geopolitics

The Business and Geopolitics Pathway focuses on markets, trade, and political issues. Students will be exposed to majors that examine domestic and international economic developments, the role that corporations and politics play in global issues, as well as the impact of non-profit agencies to help bring assistance to those in need.

### Creativity and Design

The Creativity and Design Pathway focuses on artistic and innovative perspectives. Students in this pathway tend to be self-starters who plan to create their own path towards a meaningful career in any number of occupations.

### Education and Social Change

The Education and Social Change Pathway focuses on improving society at the grassroots-level. Students will be exposed to majors that prepare educators (both in and out of classroom settings), uncover social issues and assist those in need.

### The Human Experience

The Human Experience Pathway focuses on components of human society and culture. Students will be exposed to majors that examine historical events and their impact on contemporary issues, study similarities and differences of people from other countries, and/or write creative stories or essays. Students in this pathway can expect to explore how to process and document aspects of being a person in the world today.

### The Interconnected World

The Interconnected World Pathway focuses on global issues and concepts. Students will be exposed to majors that examine interconnections between countries and cultures that have developed due to international travel, trade, technological innovations.

### Mathematics and Scientific Research

The Mathematics and Scientific Research Pathway exposes students to majors that examine natural sciences and prepare them for research in a variety of scientific fields. Students interested in health sciences may also consider this Pathway.

### Technology and Innovation

The Technology and Innovation Pathway focuses on technology and the role it plays in society. Students will be exposed to majors that are directly associated with technology in a variety of capacities including research, application, and business. Those interested in these majors should also be prepared for an emphasis in mathematics.

### Change of Major

To change academic majors, students should consult the advising office of the new major to determine their eligibility and which courses they have already completed apply toward the new major. Students must then follow the major change procedures as outlined by the registrar.

### Course Schedules

The Schedule of Courses contains the specific courses offered each semester with their meeting times and locations. This schedule is available online.

Course schedules are generally published by mid-March for the fall semester, mid-October for the spring semester, and mid-December for the summer semester.

The university reserves the right to cancel without notice any course listed in the Bulletin or the Schedule of Courses for any semester or to withdraw any course that does not have adequate enrollment.

## Registration

Newly admitted/re-admitted students are eligible to register after the close of the pre-registration period for Fall and Spring semesters. All students enrolling in Summer semesters register during the same registration period. Enrollment dates, Semester Calendars, and courses offerings can be found online at the Registration website.

## Registering for Classes: Currently Enrolled Students

Currently enrolled students are given the opportunity to preregister, by appointment, before new or returning students during Fall and Spring semesters. Pre-registration appointment times are sent to students' university email and can also be found by logging into MyView.

## Registering for Classes: Former Students

Former UMSL students who have not been enrolled for a year must submit a reenrollment application.

## Priority Registration

Student athletes and military-connected students are eligible for priority registration and may enroll on the first day that registration begins. Military-connected students include veterans, those currently serving in the military, Reserves, or National Guard, and other students that are using a VA or DoD program to fund their education. Student athletes are members of any NCAA intercollegiate sport team at UMSL.

## Registration Cancellation

Students who have enrolled but do not wish to attend the university may cancel their registration any time before the first day of the semester. Students must complete a withdrawal survey online. Cancellations may be processed at the Office of the Registrar.

Students may withdraw from school beginning the first day of classes. The refund schedule for withdrawals after class work begins can be found on the Cashier's Office website. Students who are withdrawing must complete a withdrawal survey. Withdrawals may be processed at the Office of the Registrar.

## Prerequisites for a Course

Students are expected to review all courses when registering for them to assure that they meet all prerequisites. When the prerequisites include courses, a minimum grade of C- is required to meet the prerequisite. Only the department offering the course with the prerequisite can make an exception to this requirement. A course with an 'academic standing' prerequisite--for example, 'senior standing'-- requires that students have the class standing stated, in the example, only seniors can take that class.

## Prior Learning Assessment

UMSL offers superior students options to enhance or accelerate their academic programs through credit by assessment. Students may earn college credit by demonstrating sufficient knowledge of proficiency in

a certain area. The Registrar's Office provides detailed information regarding the specific assessments accepted and scores required. Students may earn up to 30 semester hours of credit through the following options:

### Advanced Placement

Advanced Placement (AP) examinations may count for UMSL degree credit if the exams and scores are acceptable. (Note: UMSL awards credit for specific scores on certain Advanced Placement exams that are administered by the College Board, not simply for enrollment in advanced placement courses at the high school level. In order to receive AP credit, students must have official AP score reports sent to UMSL directly from the College Board. Credit cannot be determined from high school or previous college transcripts.)

### International Baccalaureate

International Baccalaureate (IB) examinations are tests taken as the culmination of a special high school study program. Several of the Higher Level exams count for credit if the score earned is a 5 or higher.

### College Level Examination Program

College Level Examination Program (CLEP) exams are acceptable for credit in certain areas of study. UMSL accepts only the CLEP Subject Exams. Not all subjects are accepted. Credit is not given for any CLEP General examination. No CLEP Subject Exam may be taken in the final 30 hours of coursework leading to a degree.

### Credit by Departmental Assessment

Credit by Departmental Assessment may be earned if a student has previous knowledge or proficiency in an area of study and arranges to complete a departmentally administered formal assessment. If a department chooses to offer credit by assessment, the department must provide an assessment that measures the same level of proficiency as is required to earn credit for enrollment in the course. Frequently this is the final exam for the course. Before taking a departmental assessment, students must register in the Registration and Records office and obtain a Credit by Departmental Assessment form.

### Fees

Consult the Cashier's website for fee information when attempting credit by departmental assessment.

### Eligibility

Eligibility for credit by departmental assessment requires:

1. Enrollment at UMSL in the semester in which the assessment is administered
2. No enrollment in the course that is the subject of the assessment during the last three terms.
3. Achievement of a grade of C or above on the assessment in order to receive credit.

### Course Load

A normal fulltime semester course load is 15 semester credit hours. Minimum fulltime enrollment is 12 hours each semester, fall, spring, and summer. Students who have demonstrated the ability to carry more than 18 hours may do so with the approval of their dean.

## Adding Courses

Students may add courses during the first week of a sixteen-week semester. Students with specific academic holds may be required to obtain approval from their advisor to change their schedule. Students may not add courses without instructor approval after the first week of class of a sixteen-week semester, the first four days of class of an eight-week session, or the first three days of class of a four-week session. Students are responsible for any content or assignments missed if they add a course after it has already met.

## Dropping Courses

Courses may be dropped in MyView, without faculty approval and without receiving a grade, through the fourth week of classes of a sixteen-week semester, the second week of classes of an eight-week session and the first week of classes of a four-week session. Students with specific academic holds may be required to obtain approval from their advisor to change their schedule. Semester and session calendars posted on the registrar's website include specific deadline dates for dropping courses. Students who officially drop any of their classes may have fees reassessed and/or refunded based on the current fee reassessment schedule posted on the cashier's website. Courses dropped during this period will not appear on transcripts.

From the 5<sup>th</sup> week to the end of the 8<sup>th</sup> week of a sixteen-week semester, students may continue to drop courses in MyView without instructor approval. A grade of "EX" (excused) will be issued on the transcript. Refer to the calendar posted on the registrar's website for summer or winter session withdrawal deadlines. From the 9<sup>th</sup> week to the end of the 12<sup>th</sup> week dropping courses will require instructor approval. Students receiving approval to drop during this period will be issued either an EX, or "EX-F" (excused but failing) if the student was failing at the time of dropping. The EX and EX-F grades will be posted to transcripts, but neither one will be used in calculating the GPA. Students who wish to withdraw after the end of the 12<sup>th</sup> week must provide documentation of exigent circumstance and receive both the instructor's permission and approval of the dean.

Dropping or withdrawing from a course may adversely impact scholarships, financial aid, and progress toward graduation. Students are strongly urged to discuss these possibilities with the financial aid office and their academic advisors before dropping or withdrawing.

Students registered in a course in which they fail to meet a minimal level of participation as deemed by the instructor will be issued a grade of "FN" (Failure, Non-participation). The FN grade indicates that the student is not regularly attending class or is making little or no attempts on assignments or activities and may be violating the terms of financial assistance. This grade is equivalent to an F for GPA calculations.

## Section Changing

Section changing is normally completed during the first week of a regular semester, the first four days of an eight-week session and the first three days of a four-week session. Approvals may not be necessary during this time. However, after the first week of a regular semester, the first four days of an eight-week session, and the first three days of a four-week session, a section change form must be obtained from the department or dean's office. The signature of both instructors is required. The form is to be submitted to the Registration Office, 269 Millennium Student Center.

## Withdrawing from the University after Classes Begin

Students are required to complete the necessary procedures to officially withdraw from the University including completing the withdrawal survey and the drop process for all classes in which they are enrolled. Students may withdraw without receiving grades, through the fourth week of classes of a sixteen-week semester, the second week of classes of an eight-week session and the first week of classes of a four-week session. Students who officially drop any of their classes may have fees reassessed and/or refunded based on the current fee reassessment schedule posted on the cashier's website. Courses of students that withdraw during this period will not appear on transcripts.

From the 5<sup>th</sup> week to the end of the 8<sup>th</sup> week of a sixteen-week semester, students that withdraw from the university will be issued a grade of "EX" (excused) for each of their courses on the transcript. From the 9<sup>th</sup> week to the end of the 12<sup>th</sup> week withdrawal will require instructor approval for each course. Students receiving approval to withdraw during this period will be issued either an EX, or "EX-F" (excused but failing) if the student was failing at the time of dropping. The EX and EX-F grades will be posted to transcripts, but neither one will be used in calculating the GPA. Students who wish to withdraw after the end of the 12<sup>th</sup> week must provide documentation of exigent circumstance and receive both the instructor's permission and approval of the dean.

Withdrawing from a course may adversely impact scholarships, financial aid, and progress toward graduation. Students are strongly urged to discuss these possibilities with the financial aid office and their academic advisors before withdrawing.

No partial credit is granted to students who withdraw from school during any semester or otherwise fail to complete the work required for full course credit. Students who stop attending classes without officially withdrawing from the university are issued an F or an FN grade. Both F and FN grades are counted in computing grade point averages. Fall, spring, and summer session calendars list specific withdrawal dates.

## Repeating Courses.

Students may not repeat for grade point average or credit hour purposes courses in which grades of A, A--, B+, B, B--, C+, or C have been earned. Subsequent grades in such a course that is repeated will not be included in the GPA calculations. The course hours will be counted only once in calculating hours toward a degree.

## Grade Modification

When the grade received in an initial attempt in an undergraduate course taken at UMSL, or any University of Missouri System institution, is a C-, D+, D, D--, F, or FN, the grade may be replaced in the calculation of the GPA by the grade received in a second or subsequent attempt of the same course at UMSL. All grades received in second and subsequent attempts will be included in GPA calculations. All attempts of a given course will appear on the official transcript with the grade(s) earned. The transcript will have an explanation that states that the GPA is calculated using all grades earned in a course except the initial attempt when a course has been repeated and grade modified.

Note: Grade modification is not automatic. After completing the second or subsequent attempt of the course to be modified, students must process the necessary paperwork with an academic adviser in the academic unit in which the student is currently enrolled.



The University of Missouri-St Louis will also honor undergraduate grade modifications completed on other University of Missouri campuses and officially transferred in. This will be effective for any transcripts received on or after July 1, 2020.

## Academic Probation and Suspension

Students whose campus cumulative grade point average falls below 2.0 will be placed on University Academic Probation. Notification of probationary status will be sent to students each fall and spring term from the Office of Academic Affairs. Students placed on academic probation are restricted to a maximum of 12 credits for the following semester and required to meet with an academic advisor. Students placed on academic probation may also be required to participate in programs designed to help them return to good academic standing. Students whose campus cumulative GPA falls under 2.0 after serving two semesters on probation (not necessarily consecutive) will be suspended from the university. Students should consult with their respective dean's office for additional information.

Students who earn a grade point average of 0.0 in their first semester at UMSL will be suspended.

Students who are suspended from the university are not eligible to enroll in courses or receive financial aid at UMSL for at least one full academic calendar year. Students suspended from one school or college within the university shall not be admitted to any other school or college until they are eligible for readmission to the university. In order for suspended students to be considered for readmission to the university they must successfully complete at least one semester at an accredited post-secondary institution.

## Attendance

Students are expected to attend class regularly, and, in accordance with the UMSL Bylaws, faculty may establish penalties for excessive absences. Students absent for more than three successive classes may be reported to the dean. Students should tell their dean's office of an extended absence. An absence known in advance should be reported to the instructors of courses that will be missed. Makeup of examinations or work missed is allowed at the instructor's discretion. Students excused from class for valid reasons by their deans shall be permitted, if possible, to make up work missed; the dean must have notified the instructor in writing.

## Auditor

Students may enroll as auditors in any course with the prior consent of the instructor and dean of the college in which the auditors desire to be registered. They may be dropped from the course when, in the judgment of the instructor and dean, their record justifies such action. Auditors are charged full fees and receive no academic credit.

## Course Numbering

Each course bears a distinguishing number that identifies it within the department or academic unit and indicates, broadly, the expected level of students taking the course. To understand the course level, refer to the following guidelines:

### Course Numbers

Explanation

1-999

Courses that do not count toward the minimum requirements for any degree.

### Lower Division:

1000-1999

Courses open to undergraduate students, primarily focused toward freshmen; courses count toward the minimum for given degrees.

2000-2999

Courses open to undergraduate students, primarily focused toward sophomores; courses count toward the minimum for given degrees

### Upper Division:

3000-3999

Courses open to undergraduate students, primarily focused toward junior; courses count toward the minimum for given degrees.

4000-4999

Courses open to undergraduate and graduate students, primarily focused toward seniors; courses count toward the minimum for given undergraduate degrees; depending on the specific program, courses may count for a given graduate degree.

### Graduate:

5000-5999

Graduate courses; also open to post-baccalaureate educator certification candidates and undergraduate seniors with permission from the Dean of the Graduate School. Courses count toward the minimum for given graduate degrees.

6000-6999

Graduate courses open to master's degree and doctoral students. Courses count toward the minimum for given graduate degrees.

7000-7999

Graduate courses open to doctoral students and master's degree students with special permission. Courses count toward the minimum for specific graduate degrees.

### Optometry:

8000-8999

Courses open to optometry degree seeking students.

### Credit Hours

The university credit unit is the semester hour, which represents a subject pursued one period weekly for one semester of approximately 16 weeks or for a total of approximately 16 periods for one term. Generally, a course valued at three semester hours meets for three periods weekly for one semester, a twocredit course two periods a week for a semester, and so on. Normally, the lecture or recitation period is 50 minutes long and the laboratory period one hour and 50 minutes.

The number of credit hours is listed as units in the online Schedule of Courses. If the credit is variable (to be determined in consultation with the instructor) it is shown by minimum and maximum units, such as Research

1 – 3 units. In the Bulletin, credit hours are included in parentheses after each course title e.g., Research (2-8).

## Examinations

Examinations may be given only at regular class meeting times or as designated by the Senate Committee on Curriculum and Instruction.

### Final Examinations.

The period designated for final examinations is an important component of the academic term. It provides faculty with a final opportunity to evaluate student learning and attainment of course objectives. Faculty members are encouraged to meet with students during the final examination period.

A faculty member who gives an in-class final examination may give this examination only on the day and at the time designated in the official final examination schedule. A majority vote of the students to the contrary does not change this policy.

A student may submit a written request for a change in the scheduled time of the final examination for a limited number of documented hardship reasons. These reasons include, but are not limited to, being scheduled to take more than two examinations on the same day, illness, military obligations, and religious practices. Except for emergencies, this request should be presented directly to the instructor at least two weeks before classes conclude. If the request is denied, the student may request additional consideration from the chairperson/area coordinator/program director and, if denied, to the dean of the college sponsoring the course.

### Repeating Courses.

Students may not repeat for grade point average or credit hour purposes courses in which grades of A, A--, B+, B, B--, C+, or C have been earned. Subsequent grades in such a course that is repeated will not be included in the GPA calculations. The course hours will be counted only once in calculating hours toward a degree.

## Grading System

The grading system available to all faculty at UMSL consists of:

Letter Grade	Ranking
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0
FN	0
EX	Excused
EX-F	Excused but failing
DL	Delayed
FN	Failure/Non Participation

Faculty have full discretion in using full-letter grades, plus/minus grades, or any combination of full-letter and plus/minus grades. The student's grade point average is computed by dividing the total quality points (number of credit hours for a course, multiplied by the grade value received) by the number of hours taken (excluding grade modified hours). Students at UMSL may have three separate Grade Point Averages. The first is the Campus GPA, which is computed by dividing the quality points earned from the grades of each course taken through UMSL by the total course hours attempted at UMSL. Students who have attended any of the other three universities within the University of Missouri System will also have a System GPA, which is computed by dividing the quality points earned from every course taken from a campus within the UM System. In addition, transfer students from outside the UM System will also have a transfer GPA, which is computed from all courses the student has taken outside the UMSL campus or the UM System. It is calculated by dividing the quality points of all courses by the hours attempted.

Unless a specific request is made through the Registrar's Office, the University of Missouri System does not distribute grade reports to students via postal mail. Final course grades can be obtained electronically by any of the following methods:

To access grades through the My Gateway system, students must know Single Sign On (SSO) ID and password, available through MyGateway.

Students may also view their grades on MyView, by following this path: Self Service > Student Center > Grade Tab under Academic History; select semester.

Students may request a printed copy of the grade report at no charge. Once requested, the grade report will be mailed to the official address of record. Requests may be made by mail, a University e-mail account, fax, or in person; contact information is available at the Registration website.

### Delayed Grade

A student whose work is incomplete at the end of any semester and who has, in the instructor's judgment, sufficient reasons for failing to complete the work, may, with the approval of the instructor, be assigned a delayed grade. If an instructor does not report a grade to the registrar within one semester the grade automatically becomes F. The dean may, in unusual circumstances, extend this time limitation (summer session is not counted as a semester).

### Failure/Non participation

When students do not complete any graded assignments but do not officially withdraw from the course or the university, instructors may assign an FN. The F for Non-Participation cannot be changed to a grade and will be treated in GPA calculations as an F.

### Satisfactory/Unsatisfactory Option

Undergraduate students may take up to 18 credit hours on a satisfactory/unsatisfactory (S/U) grading basis. This includes courses taken as electives or those that satisfy general education requirements. Most courses required for a specific degree may not be taken on a satisfactory/unsatisfactory basis. Academic departments may designate other courses within their jurisdiction that may not be taken under the option.

A satisfactory grade "S" is recorded when an instructor assigns the grade of A, A-, B+, B, B-, C+, C or C-, and has no numerical value in computing students' cumulative grade point average; however, it does satisfy credit-hour-for graduation requirements. An unsatisfactory grade "U" is recorded when an instructor assigns the grades of D+, D, D-, or F.

A course assigned a “U” grade will not satisfy credit hours for graduation. Grades will be recorded on transcripts as S or U

Students register for courses in the normal manner and may exercise the satisfactory/unsatisfactory option before the end of the first four weeks of a regular semester (or the first two weeks of a summer session). Requests for this option are made through the appropriate dean's office. Instructors are not informed of students taking courses on a satisfactory/unsatisfactory basis until submitting course grades.

## Audit

Audit has no numerical value in computing students' cumulative grade point average, nor does it satisfy any credit-hour graduation requirements.

## Grade Modification

When the grade received in an initial attempt in an undergraduate course taken at UMSL, or any University of Missouri System institution, is a C-, D+, D, D--, F, or FN, the grade may be replaced in the calculation of the GPA by the grade received in a second or subsequent attempt of the same course at UMSL. All grades received in second and subsequent attempts will be included in GPA calculations. All attempts of a given course will appear on the official transcript with the grade(s) earned. The transcript will have an explanation that states that the GPA is calculated using all grades earned in a course except the initial attempt when a course has been repeated and grade modified.

Note: Grade modification is not automatic. After completing the second or subsequent attempt of the course to be modified, students must process the necessary paperwork with an academic adviser in the academic unit in which the student is currently enrolled.

The University of Missouri-St Louis will also honor undergraduate grade modifications completed on other University of Missouri campuses and officially transferred in. This will be effective for any transcripts received on or after July 1, 2020.

## Academic Renewal

Academic Renewal allows all courses, credits, and grades during specific term(s) to be excluded from the GPA calculation. The courses will remain on the permanent academic record but the record will be annotated so that it is readily evident that no credits earned during those excluded terms, even if satisfactory, will apply towards units for graduation. Students seeking their first degree who return to UMSL after an absence of at least 12 months may apply for Academic Renewal for semesters completed prior to their absence after re-admission and successful completion of 12 credit hours at a 2.0 GPA or better. Recipients of Academic Renewals are not eligible for Latin Honors or academic awards. Applications for Academic Renewal must be completed with an academic advisor and will require evidence of likelihood of future academic success to receive dean's approval. A student may be granted Academic Renewal only once in their academic career at UMSL.

The implementation of this policy will follow the general procedures listed below. Students must apply for the renewal and demonstrate academic success in twelve credit hours before the renewal is granted.

### Non-enrolled students:

1. Students not enrolled will have to discuss Academic Renewal with an academic advisor and may apply for Academic Renewal in the dean's office of the college of students' major or College of Arts & Science for those undeclared.

2. Students should follow normal procedures for re-admission. Students denied re-admission, but eligible for academic renewal, should discuss their case with an enrollment advisor.
3. Students may be accepted for re-admission on probationary status.
4. After earning 12 credit hours in their major or in required classes with at least a 2.0 GPA, students complete the Academic Renewal process by requesting approval of the dean or designee.

### Enrolled students:

1. Continuing students may initiate the Academic Renewal process by conferring with their advisor about the impact of the process on their graduation plans.
2. Implications of Academic Renewal on financial aid should also be discussed with Financial Aid office staff.
3. Should continuing students wish to pursue the Academic Renewal process, they may apply in the dean's office of the college of students' major or College of Arts & Science for those undeclared.

## Dean's List

At the end of each semester the College of Arts and Sciences, College of Business Administration, College of Education, College of Fine Arts and Communication, and College of Nursing send letters of commendation to undergraduates completing at least nine hours of graded courses with grade point averages of 3.2 or above for the semester. In addition, each college and school, on an annual basis, sends letters of commendation to parttime undergraduate students who have earned a 3.2 grade point average or above in at least nine but not more than 17 graded hours during the fall and spring semesters combined.

## Degree with Distinction in Research, Scholarship or Creativity in the Arts

Guidelines:

A degree with distinction in research, scholarship or creativity in the arts is an honor that recognizes a student for outstanding accomplishments in research and/or other creative endeavors. Students majoring in any undergraduate degree program that have obtained a minimum of 75 credits, have begun research, scholarship or creative endeavors of exceptional quality, have a minimum GPA of 3.5, and have a faculty mentor may apply for candidacy during their final year before graduation. Candidates must produce a novel body of work that includes publication-quality research data from which to generate a senior thesis or a body of artistic accomplishments that can be displayed and/or presented (exhibitions, recitals, software demonstrations, etc.) as part of an exhibition or performance. Candidates may use research or accomplishments obtained through Independent Research or Study courses, fellowships, internships, and voluntary work toward the degree with distinction. Candidates must present and successfully defend their body of original work, project, or senior thesis to a faculty review committee.

The faculty review committee will consist of the faculty mentor and at least two faculty members who work within a relevant field of study and are qualified to examine the candidate's body of work. Mentors will identify at least two faculty members who are an appropriate fit and are willing to serve on the committee. These recommendations should be included on the application for candidacy. Interested students must submit an application for candidacy to their departmental chairperson or program director at least one semester before graduation, and the candidates must successfully defend or present their work no later than six weeks before

the end of the semester in which they graduate. The specific criteria for achieving this distinction will be provided by each department or program.

Students awarded the Distinction designation will have such an acknowledgment placed on their transcript and their degree and will be so recognized at graduation.

Sequence for completion:

1. Find an UMSL faculty mentor willing to guide or accommodate you through your specific creative works. For some disciplines, potential mentors may require students to enroll in independent research or independent studies courses.
2. Begin or continue your research or creative works.
3. Apply for candidacy once you have earned 75 credit hours.
4. Fulfill the requirements for your discipline's senior thesis (if required by your discipline).
5. Maintain a GPA of 3.5 or higher.
6. Defend your thesis or body of work and submit the Preliminary Approval for the Degree with Distinction form to your College Dean no later than 6 weeks prior to commencement.
7. Graduate with a Degree With Distinction.

## Latin Honors

To graduate with Latin honors, students must have attended UMSL for at least 56 graded hours and must meet the following qualifications based on the college in which a student's major is housed: a GPA in the top 3% for summa cum laude; a GPA in the next top 5% for magna cum laude; a GPA in the next top 12% for cum laude. Ranking of GPAs is based on a five-year rolling average of all GPAs for the College in which the student's major is housed. Qualifying GPAs are determined each academic year based on a five-year rolling average of all GPAs for graduates of the college in which the student's major is housed. Specific Latin honors GPA cutoffs for each college are posted under 'General Information' or 'Undergraduate Study' in the Bulletin listing for that college. If a student has the necessary GPA at UMSL to qualify for Latin honors but has fewer than 56 graded hours at UMSL, all credit hours and the associated grades earned within the UM System will be included when the total credit hours earned in the UM System are at least 80 graded hours. In determining one's eligibility for Latin honors, all UM System graded hours will be considered, including the original grade in each grade-modified course. No Latin honor higher than that which is consistent with the UMSL grade point average will be awarded. All honors must be recommended by the student's major department. Students who have been found to have committed an act or acts of academic dishonesty as verified by Academic Affairs are not eligible for a Latin Honor.

Each College may add additional qualifications on the awarding of Latin Honors such as community service, capstone course completion (including approved relevant thesis), original research or scholarship, etc. Each College will submit their plans for the qualifications for Latin Honors to the appropriate shared governance body for approval before their plan becomes active.

## Office of National Scholarship Information

The mission of the Office of National Scholarship Information (ONSI) at the University of Missouri-St Louis is to provide campus wide access to merit-based scholarship information and opportunities. The most well-known of these merit-based scholarships include the Rhodes, British Marshall, Goldwater, Udall, Truman, and Fulbright, although numerous other prestigious, and often unique, opportunities exist for outstanding

students. For further information, contact the Honors College at (314) 516-5243.

## Admission

Admission policies and procedures vary according to each applicant's educational goals and prior educational experiences. This section contains information for First-Time Freshmen, Transfer Students, Returning UMSL Students, Visiting Students, Non-Degree Students, and UMSL Express for senior citizens. The Office of Admissions website contains links to applications for all categories of applicants.

## Admission for First-Time Freshmen

The University of Missouri System has a uniform policy for admission of freshman students to its four campuses. The procedure for regular admission from high school is based on high school class rank, performance on a standardized college aptitude test, and required high school units.

## Application Procedures

Students applying as first-time freshmen (i.e., students applying directly from high school) need to submit the following:

1. A completed Undergraduate Application
  - Application information available from the Office of Admissions website, by phone 314-516-5451, email [admissions@umsl.edu](mailto:admissions@umsl.edu), or in person (351 Millennium Student Center). Students may also apply using the Common Application. Search for 'University of Missouri-St Louis'.
2. Application Fee of \$35.00 (\$40.00 for international students) may be paid by:
  - A check or money order made payable to UMSL
  - A credit card during the online application procedure
  - Cash, check, or credit card by appearing in person at the Office of Admissions in 351 Millennium Student Center.
3. High School Transcript and Class Rank.
  - A transcript must be sent directly from your high school to the UMSL Office of Admissions. The transcript should indicate class rank (for schools that rank), all coursework, and, when available, date of graduation. College aptitude test scores are required and may be submitted via this transcript or directly from the testing agency
  - Students from Non-Ranking High Schools: Students applying for Undergraduate Admission who attend high schools that do not rank will be evaluated on a combination of high school grade point average in the required core courses and standardized test scores.
4. College Aptitude Test
  - Freshman admission requires that a test score be submitted from one of the following:
    - American College Testing Program (ACT): The ACT is administered at many locations across the country. Information is available from <http://www.actstudent.org/>, or your high school counselor. The ACT School Code for UMSL is 2383.
    - Scholastic Aptitude Test (SAT): The SAT is administered at many locations across the country. Testing information is available on the Collegeboard website. The SAT School Code for UMSL is **6889**.



## When to Apply

Qualified applicants are admitted and notified by letter of their admission in the order that completed applications are received. Applications for the upcoming Fall semester are processed beginning September 1 on the basis of six or more high school semesters.

## Admission Requirements

Any high school graduate may be admitted with evidence indicating he or she meets the following requirements:

At least 17 units of credit (One unit=one year in class) as follows:

- English: Four units. Two units emphasizing composition or writing skills. One of the remaining two units may be in speech or debate
- Mathematics: Four units (Algebra 1 and higher)
- Science: Three units not including general science, one of the three units must be a laboratory course
- Social Studies: Three units
- Fine Arts: One unit
- Foreign Language: Two units of a single foreign language
- Math and foreign language units may be accepted from middle/junior high school.

In addition to the 17-unit requirement, each applicant will be evaluated on high school rank and test score (ACT or SAT). Applicants with an ACT composite score of 24 or higher, SAT Total (CR+M) of 1090 or higher, or redesigned SAT of 1160 or higher, will be admitted without regard to class rank.

If the ACT Composite score is between 17 to 23, SAT Total (Critical Reading and Math scores) is between 820 to 1080, or the redesigned SAT Total is between 900 to 1150, the applicant must meet the following high school class rank requirement or core GPA to qualify for admission.

ACT	Combined SAT Reading & Math (Pre-March 2016)	Redesigned SAT (Post-March 2016)	High School Class Percentile Rank	Core GPA
23	1050-1080	1130-1150	48	2.8
22	1020-1040	1100-1120	54	2.90
21	980-1010	1060-1090	62	3.05
20	940-970	1020-1050	69	3.20
19	900-930	980-1010	78	3.35
18	860-890	940-970	86	3.50
17	820-850	900-930	94	3.65

## Automatic Admission

Applicants who:

1. Rank in the top 10% of the graduating class of a Missouri high school; and
2. Complete the college preparatory curriculum, which includes at least 17 units of credit (four units each of English and math, three units of social studies, two units of a single foreign language, and one unit of fine art); and
3. Submit an ACT/SAT score.

WILL be eligible for automatic admission to any campus of the University of Missouri. \*Students with an ACT composite score under 18, a SAT total

(CR+M) less than 860, or a redesigned SAT below 940, may be required to participate in the Learning Enrichment for Academic Performance (LEAP) program.

## Admission Appeals

Applicants who do not meet the minimum admissions criteria may still be admitted, depending on evidence of likely success and campus enrollment objectives.

Additional factors considered for admission may include:

- Completion of a rigorous college preparatory curriculum
- Evidence of hardship or unusual circumstances that hindered academic performance
- Significant work experience and/or family responsibilities
- Improvement over time in high school academic record.

Students who fall short of the admission criteria have the option to submit a letter of appeal to address one or more of the factors above. The appeal letter should be addressed to the Admissions Appeals Committee, and additional letters of support are encouraged from teachers, counselors, or principals.

For additional information regarding admission requirements, contact the Office of Admissions at 314-516-5451 or by e-mail at [admissions@umsl.edu](mailto:admissions@umsl.edu).

## Acceptance

Upon graduation, applicants must submit a final high school transcript indicating their class rank (if available) and graduation date (sent directly from the high school). First-time freshmen are required to take the ALEKS placement assessment in mathematics.

## Advanced Standing for Entering Freshmen

UMSL grants credit hours to entering freshmen who, through their performance on College Board Advanced Placement Tests and faculty-administered tests, demonstrate proficiency in certain college-level courses such as biology, chemistry, English, foreign languages, history, mathematics, political science, and physics. For further information and applications, contact College Board Placement AP Services by phone (888) 225-5427 or email [apexams@info.collegeboard.org](mailto:apexams@info.collegeboard.org). The score-reporting institution code number for the University of Missouri-St. Louis is 6889. College Board will send the scores directly to the Director of Admissions.

## Dual Credit

Accredited programs such as the Advanced Credit Program at the University of Missouri-St. Louis enable qualified high school juniors and seniors the opportunity to earn college credits while completing high school. Further information about the Advanced Credit Program may be obtained online or by calling 314-516-7005.

## Dual High School/University Enrollment

Superior high school students may be admitted in a special student category to take one or more university courses on campus during their junior or senior years of high school or during the summers. Students must submit a dual enrollment application and a recommendation from the counselor or principal. Students are admitted on the evidence of academic excellence. Admission is limited and governed by available space, and students must meet the prerequisites for the course or courses selected.

After reviewing the Dual Enrollment website, students or counselors may contact the College of Arts and Sciences at 314-516-5501 for more information.

## College Level Examination Program

Applicants may earn advanced credit through the College Level Examination Program (CLEP). CLEP offers subject examinations for credit in specific areas. These examinations can be taken any time, provided the student has not taken a college credit course in the test area. Consultation with an UMSL advisor is highly recommended before taking an exam. CLEP tests are given in the Campus Testing Center by appointment only. Contact the Campus Testing Center at 314-516-6396, in person in 93 JCP, or through their website.

## Credit for Military Service

Credit may be allowed for service training programs conducted by the various Armed Forces branches. The American Council of Education's recommendations in *A Guide to the Evaluation of Educational Experiences in the Armed Services* generally serve as a basis for granting such credit. To count toward a degree, the credit granted must be appropriate to the student's curriculum.

For more information, please visit <http://www.umsl.edu/veterans/admissions-checklist/Military-Academic-Credit.html>.

## Probationary Admission

It may be possible for applicants who do not meet the regular admission standards to be admitted on a trial basis. Applicants who do not meet minimum admission requirements can submit a letter of appeal to request probationary admission. The Admission Appeals Committee reviews each letter of appeal and makes decisions on a case-by-case basis.

## High School Equivalency Applicants

Individuals may seek admission on the basis of passing the High School Equivalency (HiSET) test, formerly the General Education Development (GED) test, with a minimum HiSET score of 75 and a minimum of 15 in each of the five subsets; Language Arts-Reading, Language Arts-Writing, Mathematics, Science, and Social Studies or a GED score of 170 or higher if taken after January 1, 2014 (minimum 2500 for tests taken between January 1, 2002 and January 1, 2014; minimum score of 250 required for tests taken prior to January 1, 2002).

In addition, the following must be submitted:

- A completed Undergraduate Application
- A \$35 non-refundable Application Fee (\$40 for international students)
- ACT composite score of at least 24 or SAT Composite of at least 1090
- A high school transcript if ACT/SAT scores are included on the transcript.

## Home-Schooled Students

UMSL welcomes home-schooled students. To be admitted for undergraduate admission, home-schooled applicants must present the following:

- A completed Undergraduate Application (available online)
- A \$35 non-refundable Application Fee (\$40 for international students)
- ACT Composite score of 17-23 or SAT Composite of 820-1090 or redesigned SAT of 900-1150

- A copy of course of study or transcript reflecting all coursework and grades earned, as well as a statement and date of graduation or completion.

If the home-schooled applicant has not completed all units required for graduation (completion), a test-score report of the High School Equivalency (HiSET) test, formerly the General Education Development (GED) test, with a minimum HiSET score of 75 and a minimum of 15 in each of the five subsets; Language Arts-Reading, Language Arts-Writing, Mathematics, Science, and Social Studies or a GED score of 2500 (for tests taken after January 1, 2002; minimum score of 250 required for tests taken prior to January 1, 2002).

## Transfer Students

A student is considered for admission as a transfer student, if they completed college credits after graduation from high school or the equivalent. UMSL awards credit in transfer for undergraduate courses completed at colleges and universities accredited by regional accrediting associations recognized by the United States Department of Education (USDE).

A transferring student who has completed fewer than 24 transferable credit hours must apply under the procedures for admission as a first-time college student with the additional requirement that they submit official transcripts from all college-level courses attempted at previous institutions that document at least a 2.3 cumulative GPA.

Students transferring from other colleges and universities with at least 24 transferable credit hours must submit the following information:

- A completed online Undergraduate Application
- A \$35 non-refundable Application Fee (\$40 for international students)
- Official transcripts from all colleges/universities attended.

All credentials submitted for admission become the property of the University.

## Suspended and Dismissed Transfer Students

It is the practice of the Office of Admissions at the University of Missouri-St. Louis to uphold any suspension or dismissal decision offered to a student from another institution. Students suspended will be required to sit out for one year from the date of suspension before enrolling in UMSL. In addition, students must still meet the minimum admission requirements of a 2.3 GPA. A student may need to attend another institution in order to increase his/her GPA. Students who have been dismissed from another institution may not enroll at the University.

Students who have been dismissed from a specific college or school within another institution will need to show proof that they are eligible to enroll and/or are back in good standing at the previous institution in order to enroll with UMSL.

Additionally, students who are suspended/dismissed from another UM institution shall not be admissible until after one year from the date of the suspension/dismissal. Even though a student is removed from suspension, the student must still meet the minimum admission requirements of a 2.3 GPA.

## Missouri State Transfer Agreement

Although transfer students should be aware that requirements for degrees vary from institution to institution, some transferred credits may not apply to UMSL programs, UMSL has attempted to minimize the loss of credits by

adhering to the Missouri Coordinating Board of Higher Education (CBHE) Articulation Agreement. The agreement outlines statewide undergraduate general education requirements that satisfy the general requirements for students transferring into UMSL and students transferring out of UMSL to other public universities in the state.

UMSL requires mathematics and writing proficiency beyond the general requirements in the CBHE Statement. Please refer to the General Education requirements for details.

## Transfer Credit

The articulation agreement among public institutions within the state of Missouri governs transfer of credit to UMSL from colleges and universities within the state of Missouri. These guidelines also apply to students transferring to UMSL from schools located outside Missouri. Advanced standing in the form of credit hours may be allowed for work satisfactorily completed in another public or private college or university of recognized standing located in the state of Missouri, as long as the work satisfies the requirements of the student's major.

The transcript at each institution includes all courses attempted. Grades of D or better earned in college-level work at an accredited or approved institution of higher education should receive full credit when transferred to UMSL. The University, however, will treat all grades on courses attempted on the same basis as that of a UMSL student. For example, if a program requires a UMSL student to repeat a specified course having earned a D grade, a transfer student will also be required to repeat the same course if it carries a D grade.

To maximize transfer credits from community colleges, UMSL has transfer guides and articulation agreements with area colleges. Should community college students have any question about the transferability of courses not in the articulation agreement, they should contact the appropriate Admission professional, preferably prior to taking a course.

## Advanced Standing

Advanced standing includes credit by examination, examination that may or may not appear on a transfer student's transcripts, including College Board Advanced Placement (AP), the College-Level Examination Program (CLEP), International Baccalaureate (IB), and Defense Activity for Non-Traditional Education Support (DANTES). It also includes credit by portfolio review (Bachelor of Fine Arts only). These lower-division credits may not apply at the senior level. For examination credit, students should submit appropriate verification documents to the Office of Admissions before their first semester at UMSL. Students interested in the portfolio review should contact the Art Department. Early attention to these matters is essential to avoid unnecessary course work or repeats that can lead to loss of credit. If examinations are completed at a later date, verification documents should be submitted as soon as they are available.

Shortly after all official transcripts and other verifications are on file, students' previous academic records are evaluated to determine which courses are applicable, and students receive a written report of the results. Degree checks determining whether courses meet a specific degree requirement and whether courses are accepted as a part of the student's academic major are made in the office of the appropriate dean or advisor. Should there be any question concerning applicability of any courses, students should discuss this with that advisor.

## Associate Degree Transfers from Community Colleges

A student admitted to the university and holding an associate degree (2.0 GPA or higher) applicable toward the baccalaureate degree will be accepted in junior standing. Students fulfilling the general education requirements outlined by the Missouri Coordinating Board of Higher Education and certified by the sending institution will have met the lower division general education requirements at UMSL. Students with AA degrees from Missouri institutions that include a CBHE approved general education core may transfer more than 64 credit hours for lower division courses. Any additional lower division course credits above 64 credit hours must be applicable to the baccalaureate degree or must be a prerequisite for an upper division course in the major. However, this does not exempt the student from meeting specialized lower-division degree requirements of specific departments. Courses completed in the associate degree program are evaluated for application to specific degree requirements by the same criteria used for transfer students from other colleges and universities.

## Transfers within the University of Missouri System

Students must be in good standing at another campus of the University of Missouri to be eligible for admission. Students not in good standing will not be admissible until after one year from the date of the suspension/dismissal. Students must meet the minimum admission requirements of a 2.3 GPA.

Any course that leads to an undergraduate degree or fulfills a general education requirement on any campus of the University of Missouri shall be accepted in transfer toward the same degree on any campus of the university offering that degree or toward the general education requirements.

When courses transferred from the UM system have no direct equivalent at UMSL, they will be transferred as elective credits at the same level as they are numbered and count toward the 120-credit hour minimum required for graduation as long as a passing grade was received and as long as they are numbered above 1000 (or above 100 for institutions using a three-digit system). All other credit hour and residency requirements still apply. Courses transferred without a direct equivalent course at UMSL will not count toward a major, minor, or certificate unless approved by the respective department or program.

Grades, including D and F grades, and honor points earned in courses from the University of Missouri system will also transfer and will be included in the cumulative grade point averages. Unresolved problems related to transferability of credit may be appealed to the office of the appropriate dean.

Students within the last 30 hours of graduation may take a limited number of courses at another campus in the UM system, provided the last 15 hours are taken at UMSL and the work is approved by their respective dean and department.

## Metropolitan Rate

All undergraduate domestic students who live in the state of Illinois will pay the equivalent to the in-state rate. Undergraduate applications from students who live in Illinois are reviewed for eligibility automatically. No additional application is required.

Graduate applicants who are residents of the state of Illinois will pay the equivalent to the in-state rate. No additional application is required.

For more information visit <http://www.umsl.edu/admissions/costs/metro.html>.

## Midwest Student Exchange

The Midwest Student Exchange Program is an initiative designed by the Midwestern Higher Education Commission to increase interstate educational opportunities for students in its member states. The program enables residents of Illinois, Indiana, Kansas, Minnesota, Missouri, Ohio, Nebraska, North Dakota, and Wisconsin to enroll in the institutions and specified programs located outside their home state at reduced tuition levels. Contact Admissions for more information.

## Admission of International Students

Prospective international students living outside the United States and students currently in the United States on a visa should contact International Admissions for information about applying to the university. Applicants will be expected to supply official original secondary and college/university transcripts from all schools attended as well as other official original documents. International students must also pay a \$40 application fee. International students whose native language is not English are required to submit scores from an internationally accepted standardized English proficiency examination before a decision is made on admission. For more information and a list of accepted exams, please visit the International Admissions website.

Since 1998, all students in F-1 and J-1 status have been required to purchase an insurance policy with coverage for illness and accidents, billed to the student's UMSL account. For details contact:

### Office of International Student and Scholar Services

362 Social Sciences Building  
One University Boulevard  
St. Louis, MO 63121-4400  
Phone: 314-516-5229  
Email: [intadmission@umsl.edu](mailto:intadmission@umsl.edu)  
[global.umsl.edu/admissions](http://global.umsl.edu/admissions)

\* Students holding F, J and M visas are not eligible for Missouri in-state tuition. As of July 30, 2017 new rules as the changes may allow students on other visa types to be considered a Missouri resident for fee purposes. Please visit the Office of the Registrar website for more information.

## Returning UMSL Students

Students wishing to return to the University will be required to complete a returning student application and provide official transcripts from other colleges and universities attended since last enrolled as a UMSL student. Students returning must have a minimum 2.0 cumulative GPA. Students who have below a 2.0 GPA from UMSL will be required to work with the Office of Student Retention Services.

The returning student application is available on-line, in person at 351 Millennium Student Center, or by calling the Office of Admissions at 314-516-5451.

## Admission for Students Not Seeking an UMSL Degree

### Visiting Students

A visiting student is one who has completed at least one semester at another institution and plans to return to that college or university after attending UMSL. To qualify as a visiting student, applicants must be an actively enrolled student at another college or university. Visiting student applications are available on-line. No application fee required. Transcripts are not required for visiting students. At the end of the session, students must request that their grades be reported by transcript to their respective schools. Financial aid is not available for visiting students.

### Non-Degree-Seeking Students

A non-degree-seeking student is someone interested in taking classes but not wanting a degree from UMSL. Often these are students who have degrees but want to take additional undergraduate classes for personal or professional development. To become a non-degree-seeking student, applicants complete the application for admission and mark 'non-degree-seeking.' No application fee is required.

Students wishing to become degree-seeking must meet the minimum transfer student requirements of 24 transferable, college-credit hours at a 2.3 GPA. Students may not switch from non-degree to degree-seeking after the first four weeks of the semester.

The non-degree application is available on-line, in person at 351 Millennium Student Center, or by calling 314-516-5451. [Financial aid is not available for non-degree seeking students.](#)

### UMSL Express

UMSL Express provides Missouri's senior citizens (65 and older) easy access to undergraduate courses without limit on an audit (not for credit) space-available basis. Graduate courses are not available through this program. Students are subject to: non-refundable \$25 registration fee, a parking fee, and course-related fees. Former UMSL Express students who reapply for the program must again pay the registration fee. UMSL Express applicants may obtain a registration form on-line, in person at 269 Millennium Student Center, or by calling 314-516-5451. Students should complete and return the form with proof of age to the Office of the Registrar on the day before classes are scheduled to begin.

# 4 Year Plan of Study

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By graduating in four years, students can reduce tuition costs and accelerate entry into the job market or advanced education compared to students who take longer to graduate.

To assist students in creating their own personal four-year academic plan, templates are provided for all BA, BFA, BM, BS, BSN, and BSW programs on the tabs above.

Through careful planning with an academic advisor, students can complement their undergraduate degree with minors or certificates and experiences such as study abroad, internships, and service learning.

## Sample Four Year Plans

### Actuarial Science

- Bachelor of Science (p. 311)

### Anthropology

- Bachelor of Arts (p. 319)

### Biochemistry & Biotechnology

- Bachelor of Science (p. 324)

### Biology

- Bachelor of Arts (p. 329)
- Bachelor of Science (p. 329)

### Chemistry

- Bachelor of Arts (p. 368)
- Bachelor of Science
  - Biochemistry Concentration (p. 370)
  - Chemistry Concentration (p. 370)

### Communication

- Bachelor of Arts (p. 380)
  - Applied Visual Communication Emphasis (p. 380)
  - Interpersonal Communication Emphasis (p. 382)
  - Mass Communication Emphasis (p. 383)
  - Strategic Communication Emphasis (p. 384)

### Computer Science

- Bachelor of Science (p. 389)

### Computing Technology

- Bachelor of Science (p. 392)

### Criminology and Criminal Justice

- Bachelor of Science (p. 401)

### Cybersecurity, Computer Science Emphasis

- Bachelor of Science (p. 406)

### Economics

- Bachelor of Arts (p. 420)
- Bachelor of Science (p. 421)

### English

- Bachelor of Arts (p. 457)

### History

- Bachelor of Arts (p. 469)

### International Relations

- Bachelor of Arts (p. 482)

### Mathematics

- Bachelor of Arts (p. 496)
- Bachelor of Science (p. 497)

### Media Studies

- Bachelor of Science (p. )

### Modern Languages

- Bachelor of Arts
  - French Emphasis (p. 512)
  - Japanese Emphasis (p. 516)
  - Spanish Emphasis (p. 518)
  - Dual Language Professional Emphasis (p. 510)

### Music

- Bachelor of Arts (p. 520)
- Bachelor of Music
  - Jazz Studies (p. 524)
  - Music Education, Vocal (p. 529)
  - Music Education, Instrumental (p. 529)
  - Performance, Instrumental (p. 534)
  - Performance, Keyboard (p. 534)
  - Performance, Voice (p. 534)
  - Composition (p. 525)
  - Theory (p. 532)
  - Elective Studies in Business (p. 522)

### Philosophy

- Bachelor of Arts (p. 566)

### Physics and Astronomy

- Bachelor of Arts (p. 571)
- Bachelor of Science
  - Astrophysics Emphasis (p. 573)
  - Biophysics Emphasis (p. 573)
  - Engineering Physics Emphasis (p. 575)
  - General Physics Emphasis (p. 578)

### Political Science

- Bachelor of Arts (p. 581)



#### Psychology

- Bachelor of Arts (p. 586)
- Bachelor of Science (p. 588)

#### Public Policy and Administration

- Bachelor of Science (p. 593)
  - Public Administration Emphasis (p. 595)
  - Public Policy Emphasis (p. 595)

#### Sociology

- Bachelor of Arts (p. 586)
- Bachelor of Science (p. 631)

#### Studio Art

- Bachelor of Fine Arts
  - Graphic Design Emphasis (p. 640)
  - Art Education Emphasis (p. 640)
  - Studio Practice Emphasis (p. 642)

## Sample Four Year Plans

BS Accounting (p. 308)

BS Business Administration

- General (p. 342)
- Entrepreneurship Emphasis (p. 342)
- Finance Emphasis (p. 344)
- International Business Emphasis (p. 346)
- Management Emphasis (p. 348)
- Marketing Emphasis (p. 349)
- Supply Chain Management Emphasis (p. 351)

BS Cybersecurity, Information Systems Emphasis (p. 408)

BS Information Systems and Technology (p. 475)

## Sample Four Year Plans

BS Electrical Engineering (p. 437)

BS Civil Engineering (p. 377)

BS Mechanical Engineering (p. 505)

## Sample Degree Completion Plans

BSN Traditional Full-Time (Four Year Plan) (p. 540)

BSN Accelerated (p. 541)

BSN Traditional Part-Time (p. 540)

RN to BSN (p. 542)

## Sample Four Year Plan

Bachelor of Social Work (p. 625)

# Learning Outcomes

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Learning outcomes are statements that describe the knowledge, skills, and attitudes that graduates will achieve after successfully completing a learning experience or program.

UMSL's fundamental purpose is to educate and graduate diverse students as they seek different and better lives. Our academic programs emphasize student growth through research, internship opportunities, and one-on-one attention. Our award-winning faculty propels many of our academic programs to be ranked among the best in the nation.

This web page links you to the expected student learning outcomes for each academic program at UMSL. To see the expected learning outcomes for any academic program, select the college and then the department and program and the institutional outcomes are below.

## UMSL Institutional Outcomes

### Critical Thinking

#### Engagement, Inclusion, Innovation, Success, Trust

UMSL Graduates will integrate multiple perspectives when using reason, evidence, and context to formulate questions, increase knowledge and reason effectively and ethically.

### Creative Thinking

#### Engagement, Inclusion, Innovation, Success

UMSL graduates will create new and worthwhile ideas, work creatively with others, and demonstrate originality and inventiveness in creative work and research.

### Communication

#### Engagement, Inclusion, Innovation, Success

Graduates will be able to communicate effectively and engage with others constructively across contexts in oral, written, visual and electronic formats.

### Diversity

#### Access, Engagement, Inclusion, Innovation, Success

UMSL Graduates will understand and have the ability to view individual and social behavior/society from a variety of perspectives, recognize and respect difference, and conceptualize and critically articulate the complexities of difference and experience.

### Information Literacy

#### Engagement, Inclusion, Innovation, Success

UMSL Graduates will be able to access, critically examine, and responsibly use written, oral, visual, and numerical information to be informed citizens in the interconnected global community.

## Integrative Thinking

### Engagement, Inclusion, Innovation, Success, Trust

UMSL Graduates will promote community engagement or civic action to benefit the public good and integrate relevant experience, breadth of study, and focused disciplinary expertise to strengthen personal and professional growth.

## Quantitative Analysis

### Engagement, Inclusion, Innovation, Success

UMSL Graduates will demonstrate critical thinking and quantitative reasoning skills and the use of symbolic systems to understand aspects of the properties and relationships of relevant quantifiable concepts of academic disciplines and everyday life.

## Learning Outcomes, College of Arts & Sciences

### Actuarial Science

- Bachelor of Science (p. 311)

### Actuarial Studies

- Undergraduate Certificate (p. 313)

### Anthropology

- Bachelor of Science (p. 318)

### Biochemistry & Biotechnology

- Bachelor of Science (p. 323)

### Biology

- Bachelor of Arts (p. 328)
- Bachelor of Science (p. 333)
- Biology Minor (p. 334)
- Environmental Studies Minor (p. 462)
- Conservation Certificate (p. 393)

### Chemistry

- Bachelor of Arts (p. 368)
- Bachelor of Science (p. 370)
- Chemistry Minor (p. )
- Master of Science (p. 372)
- Doctor of Philosophy (p. 374)

### Communication

- Bachelor of Arts (p. 380)
  - (p. 380)Applied Visual Communication Emphasis (p. 381)
  - Interpersonal Communication Emphasis (p. 382)
  - Mass Communication Emphasis (p. 384)
  - Strategic Communication Emphasis (p. 385)
- Heath Communication Certificate (p. 467)
- Media Production Certificate (p. 507)
- Public Relations Certificate (p. 604)

### Computer Science

- Bachelor of Science (p. 389)
- Computer Science Minor (p. 390)
- Cybersecurity Certificate (p. 412)
- Data Science Certificate (p. 413)
- Internet and Web Certificate (p. 484)
- Mobile Apps and Ubiquitous Computing Certificate (p. 508)

#### Computing Technology

- Bachelor of Science (p. 392)

#### Criminology and Criminal Justice

- Bachelor of Science (p. 400)
- Master of Arts (p. 402)
- Doctor of Philosophy (p. 403)
- Criminology and Criminal Justice Minor (p. 403)

#### Cybersecurity

- Bachelor of Science
  - Computer Science Emphasis (p. 406)
- Cybersecurity Certificate (p. 412)

#### Economics

- Bachelor of Arts (p. 419)
- Bachelor of Science (p. 420)
- Master of Arts (p. 422)
  - Business Economics Emphasis (p. 423)
- Economics Minor (p. 423)
- Applied Econometrics and Data Analysis Certificate (p. 320)

#### English

- Bachelor of Arts (p. 457)
- English Minor (p. 459)
- Creative Writing Certificate (p. 399)
- Professional Writing Certificate (p. 584)

#### History

- Bachelor of Arts (p. 468)
- Master of Arts (p. 471)
  - Museums Heritage and Public History Emphasis (p. 472)
- Latina/Latino Studies Minor (p. 485)

#### Interdisciplinary Programs

- Bachelor of Interdisciplinary Studies (p. 480)
- Entrepreneurship Certificate (p. 461)
- Child Advocacy Studies Minor (p. 375)
- Child Advocacy Studies Certificate (p. 376)
- Labor Studies Certificate (p. 485)

#### International Relations

- Bachelor of Arts (p. 482)

#### Mathematics

- Bachelor of Arts (p. 496)
- Bachelor of Science (p. 498)
  - Data Science Option (p. 503)
  - Fiscal Mathematics Option (p. 503)
- Mathematics Minor (p. 505)
- Statistics Minor (p. 638)

#### Modern Languages

- Bachelor of Arts
  - French Emphasis (p. 512)
  - Japanese Emphasis (p. 515)
  - Spanish Emphasis (p. 517)
- French Minor (p. )
- German Minor (p. )
- Japanese Minor (p. 484)
- Spanish Minor (p. 634)

#### Music

- Bachelor of Arts (p. 520)
- Bachelor of Music
  - Elective Studies in Business Emphasis (p. 522)
  - Jazz Studies Emphasis (p. 523)
  - Music Composition Emphasis (p. 525)
  - Music Education Emphasis (p. 527)
  - Music Theory Emphasis (p. 530)
  - Performance Emphasis (p. 532)

#### Organizational Leadership

- Bachelor of Arts (p. 565)

#### Philosophy

- Bachelor of Arts (p. 566)
- Master of Arts (p. 567)
- Minor in Philosophy (p. 567)
- Minor in Law and Philosophy (p. 486)

#### Physics and Astronomy

- Bachelor of Arts (p. 571)
- Bachelor of Science
  - General Physics Option (p. 577)
  - Astrophysics Option (p. 572)
  - Engineering Physics Option (p. 576)
  - Biophysics Option (p. 574)
- Physics Minor (p. 578)

#### Political Science

- Bachelor of Arts (p. 581)
- Political Science Minor (p. 583)
- American Politics Minor (p. 317)
- International and Comparative Politics Minor (p. 481)
- Nonprofit Administration Minor (p. 538)
- Public Administration Minor (p. 592)
- Public Law Minor (p. 592)



- Public Policy Minor (p. 603)
- Urban Politics Minor (p. 649)
- Women and Politics Minor (p. 464)

Public Policy and Administration

- Bachelor of Science (p. 593)

Psychology

- Bachelor of Arts (p. 586)
- Bachelor of Science (p. 588)
- Psychology Minor (p. 590)
- Trauma Studies Certificate (p. )
- Workplace and Organizational Science Certificate (p. 651)
- Neuroscience Certificate (p. 537)

Sociology

- Bachelor of Arts (p. 627)
- Bachelor of Science (p. 630)
- Sociology Minor (p. 633)

Studio Art

- Bachelor of Fine Arts
  - Art Education Emphasis (p. 640)
  - Graphic Design Emphasis (p. 640)
  - Studio Practice Emphasis (p. 642)

**Learning Outcomes, College of Business**

Accounting

- BS Accounting (p. 308)
- Master of Accounting (p. 310)
- Post Baccalaureate Certificate (p. 310)
- Accounting Minor (p. 310)

Business Administration

- BS Business Administration
  - General (p. 341)
  - Finance Emphasis (p. 344)
  - International Business Emphasis (p. 346)
  - Supply Chain Management Emphasis (p. 350)
  - Management Emphasis (p. 347)
  - Marketing Emphasis (p. 349)
- Master of Business Administration
  - General (p. 353)
  - Accounting Emphasis (p. 353)
  - Information Systems Emphasis (p. 357)
  - International Business Emphasis (p. 359)
  - Logistics and Supply Chain Management Emphasis (p. 364)
  - Management Emphasis (p. 360)
  - Marketing Emphasis (p. 361)
  - Operations Management Emphasis (p. 354)
- Doctor of Business Administration (p. 414)

- Business Administration Graduate Certificate (p. 352)
- Business Intelligence Graduate Certificate (p. 364)

Cybersecurity

- BS Cybersecurity
  - Information Systems Emphasis (p. 408)
- MS Cybersecurity
  - Information Systems Emphasis (p. 411)
- Cybersecurity Minor (p. 410)
- Cybersecurity Undergraduate Certificate (p. 412)
- Cybersecurity Graduate Certificate (p. 409)

Entrepreneurship

- Entrepreneurship Undergraduate Certificate (p. 461)

Finance

- Finance Minor (p. 463)

(p. 411) Information Systems

- BS Information Systems and Technology (p. 477)
- MS Information Systems and Technology (p. 479)

Management

- Human Resources Management Graduate Certificate
- International Business Minor (p. 481)
- Management Minor (p. 489)

Marketing

- Digital Marketing Communications Minor (p. 414)
- Marketing Minor (p. 490)
- Digital and Social Media Marketing Graduate Certificate (p. 414)

Supply Chain and Analytics

- Supply Chain Management Minor (p. 644)
- Transportation Studies Minor (p. 648)
- Logistics and Supply Chain Management Graduate Certificate (p. 489)

**Learning Outcomes, College of Education**

Adult and Higher Education

- Master of Education
  - Higher Education (p. 314)

Counseling

- Master of Education
  - Clinical and Mental Health Counseling (p. 395)
  - Elementary School Counseling (p. 395)
  - Secondary School Counseling (p. 398)

Education

- Doctor of Education
  - Educational Practice (p. 416)
- Doctor of Philosophy

- Counseling (p. 426)
- Educational Leadership and Policy Studies (p. 427)
- Educational Psychology (p. 428)
- Teaching and Learning Processes (p. 428)

#### Education Administration

- Master of Education
  - School Administration (p. 431)
- Educational Specialist (p. 423)

#### Educational Studies

- Bachelor of Educational Studies
  - Early Childhood (p. 432)
  - Exercise Science and Wellness (p. 433)
  - Park and Museum Programs (p. 434)
  - Social Entrepreneurship (p. 434)
  - Youth and Adult Development (p. 436)

#### Elementary Education

- Bachelor of Science in Education
  - Middle School Education (p. 439)
  - Special Education and Teaching English to Speakers of Other Languages (TESOL) (p. 442)
  - Special Education (p. 442)
  - Teaching English to Speakers of Other Languages (TESOL) (p. 444)
- Master of Education (p. 449)
  - Early Childhood Education (p. 454)
  - Reading emphasis (p. 454)
- Elementary and Special Education Graduate Certificate (p. 438)
- Elementary School Teaching Graduate Certificate (p. 456)

#### School Psychology

- Educational Specialist (p. 605)

#### Secondary Education

- Bachelor of Science in Education
  - English (p. 606)
  - Mathematics (p. 607)
  - Modern Language - French (p. 608)
  - Modern Language - Spanish (p. 610)
  - Science - Biology (p. 611)
  - Science - Chemistry (p. 613)
  - Science - Physics (p. 614)
  - Social Studies (p. 616)
- Master of Education (p. 617)
  - Curriculum and Instruction (p. 621)
  - Reading (p. 621)
  - Teaching English to Speakers of Other Languages (p. 622)
- Secondary School Teaching Graduate Certificate

#### Special Education

- Master of Education
  - Cross Categorical Disabilities (p. 635)

#### Sport Management

- Bachelor of Science (p. 638)
- Teaching English to Speakers of Other Languages Graduate Certificate (p. 646)
- Teaching of Writing Graduate Certificate (p. 646)

### **Learning Outcomes, College of Nursing**

Bachelor of Science in Nursing (p. 540)

### **Learning Outcomes, School of Social Work**

Bachelor of Social Work (p. 625)

### **Learning Outcomes, Pierre Laclède Honors College**

- Two-Year Certificate (p. 473)
- Four-Year Certificate (p. 474)

# Graduate Study

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The Graduate Faculty sets Graduate School policies in the Bulletin. Students should be aware that their programs might have rules and policies that are above these minimum university-wide requirements.

## Course Schedules

The Schedule of Courses contains the specific courses offered each semester with their meeting times and locations. This schedule is available online

Course schedules are generally published in mid-March for the fall semester, mid-October for the spring semester, and mid-January for the summer semester.

The university reserves the right to cancel without notice any course listed in the Bulletin or the Schedule of Courses for any semester or to withdraw any course that that does not have adequate enrollment.

## Registration

Newly admitted/re-admitted students are eligible to register after the close of the pre-registration period. Enrollment dates, Semester Calendars, and courses offerings can be found online at the Registration website.

## Registering for Classes: Currently Enrolled Students

Currently enrolled students are given the opportunity to preregister, by appointment, before new or returning students. Pre-registration appointment times are sent to students' university email and can also be found by logging into MyView.

## Registering for Classes: Former Students

Former UMSL students who have not been enrolled for a year must submit a reenrollment application.

## Registration Cancellation

Students who have enrolled but do not wish to attend the university may cancel their registration any time before the first day of the semester. Students must complete a withdrawal survey online. Cancellations may be processed at the Office of the Registrar.

Students may withdraw from school beginning the first day of classes. The refund schedule for withdrawals after class work begins can be found on the Cashier's Office website. Students who are withdrawing must complete a withdrawal survey. Withdrawals may be processed at the Office of the Registrar.

## Prerequisites for a Course

Students are expected to review all courses when registering for them to assure that they meet all prerequisites. When the prerequisites include courses, a minimum grade of B- is required to meet the prerequisite. Only the department offering the course with the prerequisite can make an exception to this requirement. A course with an 'academic standing' prerequisite--for example, 'senior standing'-- requires that students have the class standing stated, in the example, only seniors can take that class.

## Section Changing

Section changing is normally completed during the first week of a regular semester, the first four days of an eight-week session and the first three days of a four-week session. Approvals may not be necessary during this time. However, after the first week of a regular semester, the first four days of an eight-week session, and the first three days of a four-week session, a section change form must be obtained from the department or dean's office. The signature of both instructors is required. The form is to be submitted to the Registration Office, 269 Millennium Student Center

## Attendance

Students are expected to attend class regularly, and, in accordance with the UMSL Bylaws, faculty may establish penalties for excessive absences. Students absent for more than three successive classes may be reported to the dean. Students should tell their dean's office of an extended absence. An absence known in advance should be reported to the instructors of courses that will be missed. Makeup of examinations or work missed is allowed at the instructor's discretion. Students excused from class for valid reasons by their deans shall be permitted, if possible, to make up work missed; the dean must have notified the instructor in writing.

## Auditor

Students may enroll as auditors in any course with the prior consent of the instructor and dean of the college in which the auditors desire to be registered. They may be dropped from the course when, in the judgment of the instructor and dean, their record justifies such action. Auditors are charged full fees and receive no academic credit.

## Admissions

The University of Missouri-St. Louis admits qualified individuals to study for graduate degrees and certificates. Students with a bachelor's degree or the equivalent from an accredited college or university may apply for admission to the Graduate School. Applicants may be denied admission if:

1. they do not meet admission standards,
2. there are no available openings, or
3. applications are incomplete at the time of the decision.

Application procedures are described on the Graduate School's Web site.

To receive graduate credit at the University of Missouri-St. Louis, students must have been admitted to the Graduate School as a Degree-seeking, Graduate Certificate, or Non-Degree seeking (or Lifelong Learner) student before registering for classes.

## Degree-Seeking or Graduate Certificate Students

Applicants for a degree or graduate certificate program at the University of Missouri-St. Louis submit an application, official transcript documenting the baccalaureate degree and all other prior coursework, scores from examinations required by the program, and other evidence of academic and professional preparation required by the program. Such evidence may include standardized test results, letters of recommendation, transcripts of all academic work attempted, and writing samples.

When there are openings for new students, applicants are normally admitted given official evidence of:

1. a baccalaureate or advanced degree from an accredited institution of higher education,
2. an undergraduate grade point average (GPA) and major field GPA of at least 2.75,
3. an acceptable score on each requisite examination, and
4. satisfactory additional materials required by the particular program.

The dean of the Graduate School makes the final decision on applications, based on recommendations from the program.

## Non-Degree-Seeking Student

Applicants may seek status as Non-Degree-seeking graduate students if they are visiting students, they do not intend to pursue a degree, or they want to participate in graduate workshops or institutes. Applicants must provide an official transcript showing completion of a baccalaureate or higher degree, with a GPA of at least 2.5.

The dean of the Graduate School admits Non-Degree-seeking students only upon recommendation of the program.

A Non-Degree student must maintain a GPA of at least 3.00.

Course work completed by Non-Degree students is not regarded as work toward a degree program. Therefore, Non-Degree students are not eligible for federal financial aid. Should a Non-Degree student apply for Degree-Seeking status and be admitted to the program the maximum hours of Non-Degree status work that can be applied to a degree program is nine semester hours. A Non-Degree student wishing to take more than nine hours may be allowed to do so contingent upon departmental recommendation. No credits taken as Non-Degree status may count as part of the residence requirement for a degree.

Non-Degree Education Certification students are exempt from the nine-hour limitation on non-degree courses because they take courses for State Department of Education certification. However, all other conditions regarding admission and registration that apply to Non-Degree students apply to Education Certification students.

Students wishing to change from Non-Degree to Degree-seeking must submit a new graduate application for review and approval by the program and the dean of the Graduate School.

## Graduate Study for Lifelong Learning

Lifelong learners often want to take graduate courses without enrolling in a specific program. They may want to prepare for admission to a graduate degree program at UMSL or elsewhere, explore a new discipline, take courses, workshops, or institutes for career advancement, or simply undertake personal enrichment experiences. Status as a Non-Degree Graduate Lifelong Learner, or graduate post-baccalaureate, allows students such flexibility. A Non-Degree Graduate Lifelong Learner has access not only to some graduate and undergraduate classes but also UMSL's libraries, laboratories, recreational facilities, etc.

Since graduate programs may limit the availability of their courses to students without full admission to their program, prospective Non-Degree Graduate Lifelong Learner should check the Bulletin for course prerequisites. The graduate program director in which they wish to take courses can give prospective students more information. Programs and directors are listed online.

The Non-Degree Graduate Lifelong Learner program is administered by the Graduate School, which normally seeks approval from the unit before admitting students.

If a Non-Degree Graduate Lifelong Learner is later accepted to a graduate program, up to 12 hours of credit taken as a non-degree graduate student may be applied to a graduate degree or certificate program upon approval of faculty in that program. Again, communication with the program director is critical.

Applicants who submit a transcript documenting a baccalaureate degree or its equivalent from a U.S. university or a university in which instruction is in the English language may be admitted to UMSL as Non-Degree Graduate Lifelong Learner.

International students residing in the United States who do not satisfy the above requirement and are seeking admission as a Non-Degree Graduate Lifelong Learner must provide the transcript and the same evidence of proficiency in English as required for international graduate admissions.

Non-Degree Graduate Lifelong Learners pay graduate educational tuition and fees regardless of whether they take graduate or undergraduate courses.

Non-degree graduate students are not eligible to receive veteran's benefits or to hold campus-sponsored assistantships. Federal financial aid may be available to some non-degree students for preparatory coursework such as teacher certification; information is available in the financial aid office.

Like all graduate students, Non-Degree Graduate Lifelong Learner must maintain a 3.0 GPA. If the cumulative GPA is less than 3.0, the student will be given one automatic probationary semester. If, after one semester of probation, the student's cumulative GPA does not reach 3.0, the student may be granted a second probationary semester only upon approval of the Dean of the Graduate School. (Summer sessions are not counted as probationary semesters.) If the student fails to achieve a cumulative GPA of 3.0 following the second probationary semester, the student will be made ineligible to enroll as a non-degree or degree-seeking graduate student.

If at any time a student's term or cumulative GPA falls below 2.0, the Non-Degree Graduate Lifelong Learner will be ineligible to enroll as a non-degree or degree-seeking graduate student.

## Inter-University Graduate Exchange Students

Inter-University Graduate Exchange students are Washington University and St. Louis University students who enroll on their home campus for UMSL courses not offered on their own campus.

Degree-seeking graduate students at UMSL may also participate in these programs if their advisors and the Graduate School approve their requests. Certain restrictions apply.

## Unclassified Students

Students who are not qualified for admission to the Graduate School may be considered for undergraduate admission to UMSL as Unclassified Students by applying as an undergraduate non-degree student. Unclassified Students are considered Post-baccalaureate undergraduates, are not admitted to the Graduate School, may not take graduate-level courses, and do not receive graduate credit. Credits earned by an Unclassified Student may not later be considered as graduate credits should the student subsequently be admitted to the Graduate School.

## Enrollment in Off-Campus and Continuing Education Courses

Students who have been admitted to the Graduate School may enroll in off-campus graduate courses without further application.

Students with a baccalaureate degree who have not been admitted to the Graduate School must be approved for admission as a Non-Degree graduate student to take Continuing Education courses for graduate credit.

## Admission of International Students

International students must meet all requirements for admission to the Graduate School. In addition, international students whose native language is not English and who have spent less than two of the last three years in an English-speaking country are required to submit scores from an internationally accepted standardized examination before a decision is made on admission. International Admissions information is available from the Office of International Student and Scholar Services. Phone 314-516-5229; Fax 314-516-5636; e-mail: [iss@umsl.edu](mailto:iss@umsl.edu).

Teaching assistantships will be awarded only to students with demonstrated oral English proficiency. Normally international teaching assistants may not teach during their first semester on campus.

When it is not possible for a student to take the required examination for reasons beyond personal convenience, the program to which the student has applied may develop alternate ways for that particular student to demonstrate English language competence prior to admission. The admitting department and Graduate School must approve such alternative metrics.

Some programs may require applicants from other countries shall to provide a course by course report from a professional evaluation organizations in the United States. All students shall provide a statement of their financial situation and of the anticipated form of support for the period of graduate study.

All students in F-1 and J-1 status are required to purchase an insurance policy with coverage for illness and accidents, billed to the student's UMSL account. For details contact:

International Admissions  
362 Social Sciences Building  
One University Boulevard  
St. Louis, MO 63121-4400  
Phone: 1+314-516-5229  
Email: [intadmission@umsl.edu](mailto:intadmission@umsl.edu)  
<http://global.umsl.edu/admissions>

Students holding F, J and M visas are not eligible for Missouri in-state tuition. As of July 30, 2017 new rules as the changes may allow students on other visa types to be considered a Missouri resident for fee purposes. Please visit the Office of the Registrar website for more information.

## Enrollment

Students who have been admitted to the Graduate School may enroll in classes in any term within one calendar year after admission. New students are strongly urged to seek advising before registering. If an advisor is not assigned, then the graduate director in the program should be the student's first contact in the department. A current list of graduate program directors is found on the Programs page of the Graduate School website.

To remain in good standing, most students must enroll for at least one term each calendar year. Students not meeting this enrollment requirement will become inactive and be required to reapply. Information on re-enrollment requirements is on the Graduate School Website. If students reapply and are readmitted, then they will be subject to all regulations in effect at the time of readmission.

Doctoral study is an exception to the normal enrollment requirement. After they achieve candidacy, doctoral students must enroll each fall and spring semester until the degree is completed.

International students on student visas must enroll fulltime for each fall and spring semester.

## Final Semester Graduate Exam Fee

Graduate students pursuing a research-based thesis or dissertation must enroll in the semester in which they graduate, typically in research credit.

If they have completed required course work, thesis, or dissertation credits, then they must enroll in the Graduate Exam. Non-thesis Master's students are not required to be enrolled in coursework or in the Graduate Exam in the semester in which they graduate if they have previously completed all required course work.

## Fulltime Study

The minimal fulltime course load is nine credit hours for a regular semester and/or the eight-week summer session.

## Graduate Equivalent Hours

In calculating credit hours for full-time enrollment, students may seek approval for the following semester hour equivalents:

1. Three equivalency hours for holding a 0.5 FTE Graduate Teaching Assistantship or Graduate Research Assistantship; up to two equivalency hours for appointments between 0.25 and 0.49 FTE.
2. Three equivalency hours in the semester the student is preparing for comprehensive examinations. This semester hour equivalency is allowed for a maximum of two semesters.
3. Up to eight equivalency hours for thesis master's students in their final term if (a) all required coursework is either completed or in progress and (b) they are enrolled in at least one hour of thesis research. Should the student fail to graduate, they may receive equivalency credits for one additional term with the approval of their thesis advisor, the Graduate Program Director, and the Dean. No master's student may receive thesis equivalency credits for more than two terms, including summer.
4. Eight equivalency hours after achieving candidacy. This semester-hour equivalency is allowed until the eight-year time limit has expired.
5. Participation in approved required out-of-class experiences in specific programs. Please see Procedures for a current list.

## Overloads

During the regular semester, students may not enroll in more than 12 hours. Normally no more than three credit hours may be taken in any four-week period.

Heavier than normal loads may be permitted by the graduate dean, upon recommendation by the program director, for a) students whose cumulative UMSL GPA is substantially above the program average; and b) students in good academic standing for whom an overload of one



course will permit them to graduate during the term in which the overload is taken. Students are normally not allowed to take an overload in their first semester in Graduate School.

## Degree Program Plans

It is expected that graduate students will consult regularly with their advisors to plan a course of study that ensures timely completion of the requirements.

At least one-half of the credits for master's, educational specialist, and doctoral degree plans must be from 5000-level courses and above.

Within the major department, students normally may not take a 3000-level course for graduate credit. However, outside the department, a 3000-level course may be taken for graduate credit with the approval of students' advisors. Advisors must seek approval from the instructor, who may assign additional work commensurate with graduate status.

Courses numbered from 0 to 2999 may not be taken for graduate credit. No course applied to an undergraduate degree may be allowed in that student's graduate degree.

## Credit for Courses Taken Prior to Enrolling in a Graduate Program at UMSL

Transfer credit shall be granted only for approved graduate courses for which a grade of at least B-, or equivalent, was achieved from an accredited institution.

Degree credit may be allowed for up to three credit hours for institutes, workshops, clinics, and Continuing Education courses only if offered by an appropriately accredited institution of higher education. Only such courses that award a letter grade may be applied to a graduate degree.

Students may transfer up to 18 hours of work on a Graduate Certificate Program Plan to a Master's or Doctoral Program Plan, if the program offering the degree approves the transfer.

## Credit for Courses Taken at Other Universities After Enrolling in a Graduate Program at UMSL

Graduate students admitted to UMSL must petition in advance to take courses at another institution and apply the credit toward a graduate degree at UMSL.

With prior approval, regularly admitted graduate students are permitted to take a course not offered by UMSL at Washington University, St. Louis University, or Southern Illinois University-Edwardsville.

## Time Limitation

The maximum time allowed for completion of a master's or educational specialist degree is six years after the first course enrollment. Graduate work completed outside these time periods may not be included in the degree program except under extraordinary circumstances and then only after recommendation from the graduate program for approval by the dean of the Graduate School. An exception to the time limitation may be approved in advance with an authorized leave of absence.

## Leave of Absence

Graduate students who are forced to interrupt their studies for a period of one or more years should request a leave of absence from the university. In consultation with their advisors, students shall define the

program modifications that the leave of absence requires. Requests must indicate the reason for leaving and the expected date of return to the university. Approval of the dean of the Graduate School is required.

The leave of absence is designed to suspend the requirement for continuous enrollment. It does not affect the maximum time limitation set for a degree program unless a specific exception is approved.

## Undergraduate Enrollment in 5000-Level Courses

Under special circumstances undergraduate students in good standing at UMSL may enroll in 5000-level courses for undergraduate credit. Approvals from the advisor, department chairperson, academic dean, and dean of the Graduate School are required. In rare cases, students subsequently admitted to the Graduate School may petition for graduate credit for 5000-level courses that they took as undergraduates, as long as those courses were not applied to their undergraduate degrees.

## Dual Enrollment for Senior Undergraduates

With the approval of the divisional and graduate deans, seniors who have a 3.0 cumulative g.p.a. and are within 15 hours of completing graduation requirements for the first bachelor's degree may dually enroll as an undergraduate and a non-degree graduate student and earn up to six semester hours of graduate credit. For students in education, the 15 hours to complete graduation requirements do not include the hours required to complete undergraduate student teaching.

Courses taken while dually enrolled may not be counted for both undergraduate and graduate degree requirements. Consult with divisional deans for additional requirements. 2+3 students are not eligible for dual enrollment.

Dual enrollment forms must be completed and approved by the Graduate School prior to registering for the graduate level courses. Dually enrolled students are required to register for the graduate level courses using the graduate career in MyView.

## Class Attendance

Only students who have previously paid fees may attend a class. Instructors are not authorized to allow students to attend classes if fees have not been paid. Students may not register and pay fees after the prescribed dates.

## Preregistration

Enrolled students may preregister for the next term during regular preregistration periods. Registration is not complete until all university fees are paid.

## Petitioning Into or Out of a Course

Students must receive the approval of their adviser and the course instructor to enroll in or withdraw from a course after registration.

## Entering a Course in Progress

Students wishing to enter a course in progress must have the approval of the instructor and their adviser. Only under exceptional circumstances may students enter courses after the first week of the semester.

## Dropping a Course

Courses may be dropped in MyView, without faculty approval and without receiving a grade, through the fourth week of classes of a sixteen-week

semester, the second week of classes of an eight-week session and the first week of classes of a four-week session. Students with specific academic holds may be required to obtain approval from their advisor to change their schedule. Semester and session calendars posted on the registrar's website include specific deadline dates for dropping courses. Students who officially drop any of their classes may have fees reassessed and/or refunded based on the current fee reassessment schedule posted on the cashier's website. Courses dropped during this period will not appear on transcripts.

From the 5<sup>th</sup> week to the end of the 8<sup>th</sup> week of a sixteen-week semester, students may continue to drop courses in MyView without instructor approval. A grade of "EX" (excused) will be issued on the transcript. Refer to the calendar posted on the registrar's website for summer or winter session withdrawal deadlines. From the 9<sup>th</sup> week to the end of the 12<sup>th</sup> week dropping courses will require instructor approval. Students receiving approval to drop during this period will be issued either an EX, or "EX-F" (excused but failing) if the student was failing at the time of dropping. The EX and EX-F grades will be posted to transcripts, but neither one will be used in calculating the GPA. Students who wish to withdraw after the end of the 12<sup>th</sup> week must provide documentation of exigent circumstance and receive both the instructor's permission and approval of the dean.

Dropping or withdrawing from a course may adversely impact scholarships, financial aid, and progress toward graduation. Students are strongly urged to discuss these possibilities with the financial aid office and their academic advisors before dropping or withdrawing.

Students registered in a course in which they fail to meet a minimal level of participation as deemed by the instructor will be issued a grade of "FN" (Failure, Non-participation). The FN grade indicates that the student is not regularly attending class or is making little or no attempts on assignments or activities and may be violating the terms of financial assistance. This grade is equivalent to an F for GPA calculations.

## Transcripts

The registrar will furnish transcripts of credits to a student upon written request. Transcripts are furnished to students' parents or guardians or other parties or institutions only if students have filed written consent with the registrar. There is a charge per transcript. UMSL students or alumni transferring to another University of Missouri campus may ask the UMSL Director of Admissions to furnish a transcript to the appropriate Office of Graduate Admissions.

Requests for transcripts by organizations either financially supporting a student or with fee compensation programs are not honored unless the student has filed a consent form with the registrar, authorizing the release of such records.

Transcripts are not issued to or for students who have financial obligations to the university until those obligations are paid in full.

## Probation

Failure to make adequate progress jeopardizes students' potential to complete the degree as well as their financial aid. To provide students notice of inadequate progress at the end of each semester, graduate students with a cumulative GPA below 3.0 will be placed on probation. A program may also place a student on probation if faculty regard the student's progress as unsatisfactory. The Graduate School will inform students of their probation, with copies sent to the graduate director of the program, the Graduate Admissions Office, and the Financial Aid Office.

If at the end of the probationary semester the cumulative GPA is at least 3.0 and the student is making adequate progress toward the degree, then the probationary status is removed.

## Dismissal

Upon recommendation of the program director, the Graduate School may dismiss any graduate student who does not make adequate progress. A student who is on probation for more than two semesters during his/her program of study will be dismissed, unless the dean of the Graduate School approves an exception request for continuation from the program director. The Graduate School is responsible for notifying students, with copies sent to the graduate director of the program, the Graduate Admissions office, and the Financial Aid Office.

## Course Policies

### Course Numbering

Each course bears a distinguishing number that identifies it within the department or academic unit and indicates, broadly, the expected level of students taking the course. To understand the course level, refer to the following guidelines:

### Course Numbers

Explanation

1-999

Courses that do not count toward the minimum requirements for any degree.

### Lower Division:

1000-1999

Courses open to undergraduate students, primarily focused toward freshmen; courses count toward the minimum for given degrees.

2000-2999

Courses open to undergraduate students, primarily focused toward sophomores; courses count toward the minimum for given degrees

### Upper Division:

3000-3999

Courses open to undergraduate students, primarily focused toward junior; courses count toward the minimum for given degrees.

4000-4999

Courses open to undergraduate and graduate students, primarily focused toward seniors; courses count toward the minimum for given undergraduate degrees; depending on the specific program, courses may count for a given graduate degree.

### Graduate:

5000-5999

Graduate courses; also open to post-baccalaureate educator certification candidates and undergraduate seniors with permission from the Dean of the Graduate School. Courses count toward the minimum for given graduate degrees.

6000-6999

Graduate courses open to master's degree and doctoral students. Courses count toward the minimum for given graduate degrees.

7000-7999

Graduate courses open to doctoral students and master's degree students with special permission. Courses count toward the minimum for specific graduate degrees.

### Optometry:

8000-8999

Courses open to optometry degree seeking students.

## Credit Hours

The university credit unit is the semester hour, which represents a subject pursued one period weekly for one semester of approximately 16 weeks or for a total of approximately 16 periods for one term. Generally, a course valued at three semester hours meets for three periods weekly for one semester, a twocredit course two periods a week for a semester, and so on. Normally, the lecture or recitation period is 50 minutes long and the laboratory period one hour and 50 minutes.

The number of credit hours is listed as units in the online Schedule of Courses. If the credit is variable (to be determined in consultation with the instructor) it is shown by minimum and maximum units, such as Research 1 – 3 units. In the Bulletin, credit hours are included in parentheses after each course title e.g., Research (2-8).

## Examinations

Examinations may be given only at regular class meeting times or as designated by the Senate Committee on Curriculum and Instruction.

### Final Examinations.

The period designated for final examinations is an important component of the academic term. It provides faculty with a final opportunity to evaluate student learning and attainment of course objectives. Faculty members are encouraged to meet with students during the final examination period.

A faculty member who gives an in-class final examination may give this examination only on the day and at the time designated in the official final examination schedule. A majority vote of the students to the contrary does not change this policy.

A student may submit a written request for a change in the scheduled time of the final examination for a limited number of documented hardship reasons. These reasons include, but are not limited to, being scheduled to take more than two examinations on the same day, illness, military obligations, and religious practices. Except for emergencies, this request should be presented directly to the instructor at least two weeks before classes conclude. If the request is denied, the student may request additional consideration from the chairperson/area coordinator/program director and, if denied, to the dean of the college sponsoring the course.

### Repeating Courses.

Students may not repeat for grade point average or credit hour purposes courses in which grades of A, A--, B+, B, B--, C+, or C have been earned. Subsequent grades in such a course that is repeated will not be

included in the GPA calculations. The course hours will be counted only once in calculating hours toward a degree.

## Academic Policies

### Grades

Faculty teaching graduate courses have complete discretion in assigning grades.

Point assignments for grades are as follows;

- A = 4.0
- A- = 3.7
- B+ = 3.3
- B = 3.0
- B- = 2.7
- C+ = 2.3
- C = 2.0
- C- = 1.7
- F = 0
- FN = 0
- EX = Excused
- F-EX = Excused but failing
- DL = Delayed
- S/U = A or B equivalent

The satisfactory/unsatisfactory (S/U) option is not normally available in courses for graduate credit. S/U grades may be given only for internship, practica, project, and research courses as requested by a school or college, with prior approval from the Graduate Council. Courses on the S/U grading system will carry no points toward calculation of the grade point average. A Satisfactory grade is defined as a grade of at least B-.

Students who stop attending classes without officially dropping courses receive grades of F or FN, depending on the amount of work completed.

Students may enter courses as auditors but may not change from audit to credit or credit to audit after the first week of class. Auditors are charged full fees and receive no academic credit.

### Delayed Grades

Delayed grades may be given when a student's work is of passing quality but is incomplete because of circumstances beyond the student's control. Delayed grades must be removed within two regular semesters (excluding summer) after the time recorded or they automatically become F grades. In such cases, course instructors may subsequently change F grades to other grades when all work has been completed. A student may not graduate with any delayed grades on their transcript except in research courses required for a subsequent degree.

### Failure/Non participation

When students do not complete any graded assignments but do not officially withdraw from the course or the university, instructors may assign an FN. The F for Non-Participation cannot be changed to a grade and will be treated in GPA calculations as an F.

## Graduate Grade Appeals

In case of disputes regarding grades, graduate students shall follow the university Grade Appeal Process by first contacting the Department Chair. The policy is available on the Academic Affairs' Website.

## Grade Point Average (GPA)

UMSL calculates three types of GPA. At the end of each semester, the Term GPA is calculated on the courses attempted that semester. The Cumulative GPA on the transcript comprises all courses taken at UMSL for graduate credit, including courses that may not be a part of the degree program or certificate. The degree program or certificate GPA includes only the grades of those used to meet degree/certificate requirements for that program. The cumulative and degree or certificate program GPA must be at least 3.0 for a student to receive a graduate degree or certificate.

Any course work transferred from other universities, including other UM campuses, will not be included in any GPA calculation.

## Course Replacement

A student who fails to earn a cumulative GPA of 3.0 may request a recalculation of the cumulative GPA by substituting additional appropriate course work for courses in which a 3.0 was not earned. A maximum of two courses may be replaced during the entire graduate career at the University of Missouri-St. Louis, and all courses and grades remain on the student's record. The dean may approve the substitution if recommended by the graduate director of the student's program.

Once a student has completed a master's degree or certificate of advanced study, a final average for that degree or certificate is computed and cannot be modified. For that reason, courses for any graduate degree or certificate awarded may not be repeated, and no final GPA is affected by any subsequent coursework completed at UMSL.

Repeating courses may affect financial aid; applicants for Course Replacement are advised to contact the Financial Aid Office prior to applying for the replacement.

Course Replacement is not available for admission considerations or during a probationary or restricted admission period.

## Master's Degree Requirements

### Admission

Faculty in each master's degree program determine any eligibility standards beyond the minimum for admission to the Graduate School.

### Enrollment

All master's degree students shall be enrolled for credit for access to university resources, including advisement, data gathering, or examinations.

Full-time status for all graduate students is defined as at least nine credit hours of course work. Individual programs may require higher enrollments.

### Credit Requirements

A minimum of 30 semester hours of graduate credit is required for all master's degree programs. Specific programs may require a greater number of hours.

## Residence Requirement

The final two-thirds of the courses in a master's degree program must be completed at UMSL.

## Time Limitation

All courses included in a master's degree program, whether taken at UMSL or at another institution, shall have been completed within six years after enrollment in the first course.

## Credit From a Certificate Program

Students who have completed course credits in certificate programs may transfer those credits into a master's degree program with the program's consent, as long as the credits fall within the time limitation set for master's degrees. If the master's degree is in a different program from that awarding the certificate, then no more than one-third of the credits from the certificate program may apply to the master's degree. Multi-disciplinary programs may seek programmatic exceptions to this limit when the program undergoes the approval process.

## 2+3 Programs

Students who are granted Formal Admission to a recognized 2+3 program at UMSL are admitted to the Graduate School prior to the completion of their UMSL undergraduate program. These students must complete all the normal requirements for their Master's degree. All the coursework used to satisfy the requirements for the Master's degree must be taken while in graduate status.

Provisional 2+3 students who are still undergraduates can petition to take up to 6 hrs of 4000/5000/6000 level courses for graduate credit, and these credits may be used to satisfy Master's degree requirements. The petition must be filed at the beginning of the term. Students may not petition retroactively to use courses already completed as an undergraduate to meet the requirements of the Master's degree.

The number of graduate credit hours that may be applied to the undergraduate degree of a 2+3 student shall be determined by the undergraduate department.

The bachelors and master's degrees must be awarded simultaneously at the end of the 2+3 program. Graduate students who formally withdraw from the 2+3 program may apply for their Bachelor's degree. However, the advantage of dual credit is forfeited. No course applied to the Bachelor's degree may be included in any future graduate degree program.

## Dual Master's Degrees

With approval of the program and the Graduate School, students who have completed one master's degree may transfer appropriate credits to a second master's degree program. The number of transferable credits may not exceed one-third of the credit hours required by the second program. Subsequent transfers of the same courses to a third degree are not permitted.

With approval of the programs involved and the Graduate School, students may simultaneously pursue two master's degrees under the following conditions:

1. No more than one-third of the credit hours required by either program may be applied to both programs;



2. Students must obtain approval of both programs before completing 12 hours in either program.

Multi-disciplinary programs may seek programmatic exceptions to the one-third limit when the program undergoes the approval process by addressing specific allowable transfers between those two degree programs.

## Master's Degree for Doctoral Students

Doctoral students may receive a master's degree in their program for work they have completed toward to a doctoral degree. The program establishes the requirements for such a master's degree. However, the requirements should, in principle, be similar to those for master's degrees offered by the program.

Doctoral and educational specialist students may also receive a master's degree for work they have completed toward to a doctoral or Ed.S. degree in another program provided:

1. they apply no more than two-thirds of the master's degree courses to their doctoral degree program;
2. they have been admitted to the master's degree program; and
3. they have obtained the approval of the advisors from both programs and from the Graduate School.

Credit from the master's degree must constitute less than half the total credits required for the doctorate.

Multi-disciplinary programs may seek programmatic exceptions to these limits when the program undergoes the approval process.

## The Master's Degree Program

Master's degree students must meet with an advisor within the first semester of the program to design a program plan that meets program requirements and the students' interests.

To receive the master's degree, students who have met all degree requirements shall apply for graduation by filing an M-4 Graduation Application, which will include the student's Degree Program, no later than the graduation deadline in the semester in which they plan to graduate.

## Comprehensive Examination, Scholarly Paper, or Exit Project

Each unit requiring a comprehensive examination for the master's degree informs the Graduate School of (a) the number of times the unit will allow its students to take a comprehensive examination, and (b) the period of time that the unit will allow between the first and final attempt to pass the examination.

Units recommend Graduate Faculty members to serve on committees for capstone projects. The Graduate Dean shall review and may appoint the committee.

Graduate Program Directors recommend at least two Graduate Faculty members to serve on committees for capstone projects and examinations. The Graduate Dean shall review and appoint the committee.

Programs that offer alternatives or requirements for capstone projects or examinations are expected to post procedures that have been approved by the department. Graduate program directors shall inform the Graduate School when the department initiates or changes their procedures.

The chairperson of the capstone committee is responsible for verifying that the final project or examination is acceptable to the committee and the Graduate Dean by submitting current Graduate School forms for documenting those approvals. It is the responsibility of the committee chair to grade the project/examination.

### Master's Thesis

The Master's Thesis Committee shall consist of at least three members of the Graduate Faculty who can contribute their expertise to the thesis study. The committee chair and at least one other member shall be faculty in the department offering the degree. The Graduate Dean shall review and approve the committee membership and any changes in membership.

The thesis must be written on a subject approved by the candidate's thesis committee and must be the candidate's own work. The reuse of text from previous papers authored or co-authored by the student shall be evaluated by the committee prior to the thesis defense. In the thesis, the student must clearly and explicitly identify all reused text and the original source(s) of that text. If the source documents involve co-authors other than the student and the faculty advisor, the thesis must include a description of the individual contributions of each co-author of the original study. A copy of the source documents must be provided to thesis committee members and the Graduate School. Departments may choose to adopt a uniform policy on the acceptability of reused text for a specific degree program.

Regardless of the extent of any reuse of text, the thesis must maintain a uniform and consistent formatting style throughout. In matters of style and documentation, the custom of the discipline shall be followed. The student must document permission to reuse any copyrighted material.

The final defense of the thesis is normally open to the public unless the thesis chair requests that the dean of the Graduate School permit a closed meeting on the basis of an embargoed study. Deliberations among committee members may be closed at the discretion of the chair. After deliberating on the defense of the thesis, the Master's Thesis Committee shall vote on whether the defense was successful. The defense shall be deemed unsuccessful if there are two negative votes, even if outnumbered by positive votes. An abstention will be considered a negative vote. A student failing the defense shall have the opportunity for one additional presentation before the same committee. The Master's Thesis Committee shall determine the timing and format of the subsequent defense. The Master's Thesis Committee makes the final decision on the defense, whether pass or fail, and reports the results to the Graduate Program Director, who informs the Graduate School no later than two days after the defense.

Master's degree students shall disseminate the thesis according to current Graduate School procedures. The final copy of the thesis must be typed according to current Graduate School requirements. To be accepted by the Graduate School, the copy must be legible, neat, and paginated correctly. An abstract is required. Students must submit to the dean of the Graduate School one copy of the thesis by the posted university deadline, normally six weeks before the end of the term in which graduation is sought. The chairperson of the thesis committee is responsible for verifying that the final draft of the thesis is acceptable to the thesis committee and the Graduate Dean by following current Graduate School procedures for documenting those approvals. The chair of the thesis committee shall determine the grade for the thesis.



## Educational Specialist Degree Requirements

### Admission

Each educational specialist degree program shall determine any eligibility standards beyond the minimum for admission to Graduate School.

### Enrollment

All educational specialist degree students shall be enrolled for credit for access to university resources, including advisement, data gathering, or examinations.

Full-time status for all graduate students is defined as at least nine credit hours of course work. Individual units may require higher enrollments.

### Credit Requirements

A minimum of 60 semester hours of graduate credit is required for all educational specialist degree programs. Individual programs may require a greater number of hours.

### Residence Requirement

Normally, at least one half of the courses in an educational specialist degree program must be completed at UMSL.

### Time Limitation

All courses included in an educational specialist degree program, whether taken at UMSL or at another institution, shall have been completed within six years after enrollment in the first course.

When educational specialist students have earned a master's degree at any institution, appropriate credits may be applied toward meeting the requirement for the specialist degree, subject to program approval. Such credits shall constitute less than half of the total credits required for the educational specialist degree. Credit for courses taken for a master's degree is exempt from the six-year time limitation.

### Filing the Degree Program Plan

An educational specialist degree student enrolled shall file an approved program plan with the Graduate School. The S-4 must be filed by the posted deadline of the final semester in the program. Students may petition the dean of the Graduate School to change the degree program after it has been filed.

### Comprehensive Examination, Scholarly Paper, or Exit Project

Each program requiring a comprehensive examination for the specialist degree informs the Graduate School of:

1. the number of times the program will allow its students to take a comprehensive examination, and
2. the period of time that the program will allow between the first and final attempt to pass the examination.

Programs recommend Graduate Faculty members to serve on committees for capstone projects. The graduate dean shall review and may appoint the committee.

### Thesis

Programs recommend Graduate Faculty members to serve on committees for capstone projects. The graduate dean shall review and may appoint the committee.

Educational Specialist degree students who write a thesis must submit to the dean of the Graduate School one copy of the thesis by the posted university deadline, normally six weeks before the end of the term in which graduation is sought. The chairperson of the thesis committee is responsible for verifying that the final draft of the thesis is acceptable to the graduate dean and the thesis committee. Students shall disseminate the thesis according to current Graduate School procedure.

## Doctoral Degree Requirements

### Admission

Each doctoral degree program may determine eligibility standards beyond the minimum for admission to the Graduate School.

### Credit Requirements

A minimum of 60 semester hours of graduate credit is required in every doctoral degree program. Programs may require a greater number of hours for their programs, and individual students may be required to take additional hours.

### Enrollment

Full-time status is defined as nine credit hours per semester. Programs may require higher enrollments than this. After students achieve candidacy and complete the residence requirement, they must remain enrolled during fall and spring semesters until they complete the degree. Failure to register in any regular semester will result in termination from the Graduate School. If students so terminated decide to reapply and if they are readmitted, then they will be subject to all regulations in effect at the time of readmission, and will be required to enroll for at least one credit hour for each semester since their last enrollment.

When doctoral students are enrolled for research credit, the credit amount may vary, but the student must register for all work required, and the credit total may exceed the minimum requirements.

### Classification of Doctoral Students

There are two stages in doctoral degree work:

- A pre-candidate is a student who has requirements to fulfill in addition to the dissertation, including course work, and/or comprehensive examinations.
- A candidate is a student who has met all degree requirements except the completion of the dissertation.

### Time Limitation

The maximum amount of time allowed for completion of a doctoral degree is eight years after the first course enrollment.

The maximum of 12 hours of graduate credit completed as a post-master's degree student prior to admission to a doctoral program may apply toward a doctoral degree. Inclusion of such course work is subject to program approval and must have been completed within eight years of the time the doctoral degree is awarded. Exceptions to this regulation must be justified

on academically defensible grounds and approved by the graduate dean prior to filing the program plan.

When doctoral students have earned a master's degree at any institution, appropriate credits may be applied toward meeting the requirement for the doctoral degree, subject to program approval. Such credits shall constitute less than half of the total credits required for the doctorate. For example, for a doctoral degree requiring 90 hours of work beyond the bachelor's degree, no more than 44 credits from a master's degree may apply to the doctoral degree. Credit for courses taken for a master's degree is exempt from the doctoral program's eight-year time limitation.

## Residence Requirement

The majority of credits used to satisfy requirements for a doctoral degree must be completed at UMSL. The residence requirement may be satisfied with dissertation credit hours, graduate institutes, and credit courses taken through Continuing Education, as well as regular courses.

Students who enter the Ed.D. or Ph.D. in Education degree programs with an Education Specialist (Ed.S.) degree from an accredited university, or with an Advanced Certificate approved by the Missouri Department of Elementary and Secondary Education, may satisfy the residence requirement by completing one-third of the required credits at UMSL.

Residency normally requires that doctoral students successfully complete a minimum of 15 hours over two consecutive terms, which may include summer. The dean of the Graduate School may grant exceptions upon recommendation by the program.

## Comprehensive Examinations

Each program will determine the number of times a comprehensive examination may be taken by a student. The department or college must file with the Graduate School a statement specifying:

1. the number of times the program will allow its students to take a comprehensive examination, and
2. the maximum and/or minimum period of time the program will allow between the first and final attempt to pass the comprehensive examination.

The Comprehensive Examination Committee consists of no fewer than three members of the UMSL graduate faculty appointed by the graduate dean upon recommendation of the program.

An oral examination may not substitute for the standard written portion.

## Advisors

Upon entering the program, each doctoral student will have an assigned program advisor who is a member of the Graduate Faculty [D2]. As early as possible in a doctoral student's program, but no later than when the student achieves candidacy, the program will recommend, in consultation with the student, a doctoral dissertation advisor.

## Application for Candidacy

Doctoral students may apply for candidacy [D3] after passing all required comprehensive and language examinations, written or oral, and successfully completing all course work. The program director approves the application and forwards it to the dean of the Graduate School for final approval.

## Doctoral Dissertation Committee

The Doctoral Dissertation Committee shall consist of at least four members of the Graduate Faculty who can contribute their expertise to the dissertation study. The committee chair and at least one other member of the committee must be faculty in the Department offering the degree. A recognized scholar from outside the university may serve as a member upon the recommendation of the unit and approval of the Graduate Dean, but the external scholar may not chair the committee. The Graduate Dean shall approve the committee membership and changes in the committee membership [D4].

## Doctoral Dissertation

All doctoral degrees require a dissertation as a final component of the program. The dissertation must be written on a subject approved by the candidate's doctoral dissertation committee, must embody the results of original and significant research and must be the candidate's own work.

## Text Reuse

The reuse of text will be evaluated by the members of the faculty committee that approves the document. Each committee member, as part of the decision to approve or disapprove the document, will decide whether the reuse presented in the document is acceptable. Departments may choose to adopt a uniform policy on the acceptability of reused text for a specific degree program. In the document, the student must clearly and explicitly identify all reused text and the original source(s) of that text. A copy of the source documents must be provided to the committee members and the Graduate School. Reuse is strictly limited to text from papers authored or co-authored by the student. The student must document permission to reuse any copyrighted material. If the source documents involve co-authors other than the student and the faculty advisor, the document must include a description of the individual contributions of each coauthor of the original study. Regardless of the extent of any reuse of text, the dissertation must maintain a uniform and consistent formatting style throughout.

## Dissertation Proposal

Before a student may conduct substantial research for the dissertation the committee must approve a proposal after a formal defense. The student submits the approved proposal for review and approval by the dean of the Graduate School [D5].

An approved dissertation proposal in no way implies a contract between the university and the student. Depending on the outcome of the research, the dissertation may require substantially more work than anticipated when the proposal was approved. The termination of a line of research and the adoption of a substantially new dissertation project requires the preparation, formal defense, and acceptance by the Graduate School of a new dissertation proposal.

## Preliminary Approval

One copy of the dissertation, certified as complete and provisionally acceptable to the committee, shall be submitted to the graduate dean at least six weeks prior to commencement - [D6] and [D9]. The Dean of the Graduate School may seek advice and make suggestions to the committee about content and style before approving the dissertation.

## Defense of Dissertation

Normally the approved Doctoral Dissertation Committee serves as the Oral Defense of Dissertation Committee. The graduate dean may appoint one additional qualified voting member to the Defense of Dissertation

Committee from the Graduate Faculty within the University of Missouri System.

After deliberating on the oral defense of the dissertation, the Defense of Dissertation Committee votes on whether the defense was successful. The defense shall be deemed unsuccessful if there are two negative votes, even if outnumbered by positive votes. An abstention will be considered a negative vote. A student failing an oral defense shall have the opportunity for one additional defense before the same committee. The Defense of Dissertation Committee shall determine the timing and format of the subsequent defense.

Final examinations are open to the public. The decision of the Defense of Dissertation Committee is final. The report of the final examination is due to the Graduate School no later than two days after the examination.

## Dissertation Abstracts

Two different abstracts are required. The publishing company requires an abstract of a maximum of 350 words that is published with the announcement of the dissertation defense. The abstract forming the second page of the dissertation should be no more than 600 words.

## Dissertation Format

Original copies of the dissertation must be typed on good quality paper, and they must be legible and neat in order to be accepted by the Graduate School. Only high quality copies are acceptable with the following margins throughout: left margin, 1 1/2 inches; top, bottom, and right margins, 1 inch

In matter of style and documentation, the custom of the discipline shall be followed.

## Official Copies of Dissertation

The chairperson of the dissertation committee is responsible for verifying that all the changes suggested by the graduate dean and the dissertation committee have been incorporated in the final draft of the dissertation or have been discussed further with the graduate dean or the committee.

Students disseminate the dissertation according to current Graduate School procedures.

## Professional Doctorates

At the University of Missouri-St. Louis, professional doctoral degrees are rigorous and practice oriented. Professional doctorate students' academic work focuses on scholarly responses to societal needs within professional contexts. Faculty advisors in professional doctorate programs may be scholar-practitioners who are approved as Professional/Special Appointment Graduate Faculty as well as regular UMSL Graduate Faculty.

Both types of graduate faculty may assume all graduate faculty roles throughout the professional doctoral program.

## Admission to the Professional Doctorate

Each professional doctoral degree program may determine eligibility standards beyond the minimum for admission to the Graduate School with the exception that professional doctoral programs may admit exceptional undergraduate students before their baccalaureate is awarded.

## Professional Doctorate Credit Requirements

Each professional doctoral degree program may determine the minimum hours of graduate credit required for the degree program based on professional and/or accreditation/licensing standards.

## Professional Doctorate Enrollment

Full-time status is defined as nine credit hours per semester. Units may require higher enrollments than this.

After students achieve candidacy and complete the residence requirement, they must remain enrolled during fall and spring semesters until the degree is completed. Failure to register in any regular semester will normally result in termination from the Graduate School. If students so terminated decide to reapply, and if they are readmitted, they will be subject to all regulations in effect at the time of readmission and will be required to enroll for at least one credit hour in each semester since their last enrollment.

When professional doctoral students are enrolled for capstone credit, the credit amount may vary, but the student must register for all work required, and the credit total may exceed the minimum requirements.

## Classification of Doctoral Students

There are two stages in a student's doctoral degree work:

- (1) A pre-candidate is a student who has requirements to fulfill in addition to the capstone project, including course work, clinical experiences, and/or threshold examinations.
- (2) A candidate is a student who has met all degree requirements except the completion of the capstone project and any clinical or fieldwork required as a part of the capstone project.

## Professional Doctorate Time Limitation

The maximum amount of time allowed to complete a doctoral degree is eight years after enrollment in the first course. Professional doctoral students who enter with any previous graduate degree or certificate may apply appropriate credits toward the professional doctoral degree, subject to program approval. Credit for courses taken for an advanced degree or post-master's graduate certificate is exempt from the eight-year time limit.

## Professional Doctorate Residency Requirement

Residency normally requires that doctoral students successfully complete a minimum of 15 hours at UMSL over three consecutive terms, which may include summer. The Dean of the Graduate School may grant exceptions upon recommendation by the program.

Students who enter the EdD degree program with an Education Specialist (Ed.S.) degree from an accredited university, or with an Advanced Certificate approved by the Missouri Department of Elementary and Secondary Education, may satisfy the residence requirement by completing one-third of the required credits at UMSL.

Students who enter the DNP degree programs with an MSN degree from an accredited university may satisfy the residence requirement by completing 33 graduate credits in Nursing as part of the DNP degree. Residency normally requires that doctoral students successfully complete a minimum of 15 hours over three consecutive terms, which may include summer. The Dean of the Graduate School may grant exceptions upon recommendation by the program.

## Professional Doctorate Threshold Examinations

Each program will determine the type of comprehensive, qualifying, or other threshold examination that is appropriate for the discipline.

Units also specify the number of times a student may take a threshold examination and the maximum and/or minimum period of time allowed between the first and final attempt to pass the examination. The program must file information about the requirements with the Graduate School. An oral examination may not substitute for the standard written portion.

The Examination Committee will consist of no fewer than three members of the Graduate Faculty, including Professional/Special Appointment Graduate Faculty appointed by the Graduate Dean upon recommendation by the unit.

## Advisors for the Professional Doctorate

Upon entering the program, each doctoral student shall have an assigned advisor who is a member of the Graduate Faculty, including Professional/Special Appointment Graduate Faculty. As early as possible in a doctoral student's program, but no later than when the student achieves candidacy, the unit shall recommend, in consultation with the student, an advisor for the capstone project.

## Application for Candidacy

Doctoral students may apply for candidacy after passing all threshold requirements and successfully completing all course work.

## Committee for the Capstone Project

The Committee for the Capstone Project shall consist of at least three members of the Graduate Faculty, including Professional/Special Appointment Graduate Faculty, who can contribute their expertise to the study. A recognized practitioner from outside the university may serve as one of those members upon the recommendation of the unit and approval of the Graduate Dean, but the external member may not chair the committee. The Graduate Dean shall approve the committee membership and changes in committee membership upon recommendation from the program. Duties of Members. All members of the Committee for the Capstone Project are involved intimately and participate actively in the activities of the doctoral student at all the stages of the student's career at UMSL, except, perhaps, the threshold examination. This committee normally also serves as the Oral Defense Committee.

## Capstone Project

At the University of Missouri-St. Louis, all professional doctoral degrees require a capstone project. The project must address a subject approved by the candidate's committee; have a significant grounding in clinical, translational, or engaged scholarship; and be the candidate's own work.

Programs may permit collaborative capstone projects, but students must be able to document their original contributions to collaborative projects.

Programs must submit to the Graduate School and make available for students information about the capstone project (e.g., scholarly paper, dissertation-in-practice, etc.) and all requirements expected for the project to be judged successful.

**Text Reuse:** The reuse of text will be evaluated by the members of the faculty committee that approves the document. Each committee member, as part of the decision to approve or disapprove the document, will decide whether the reuse presented in the document is acceptable. Departments may choose to adopt a uniform policy on the acceptability of reused text for a specific degree program. In the document, the student must clearly and explicitly identify all reused text and the original source(s) of that text. A copy of the source documents must be provided to the committee members and the Graduate School. Reuse is strictly limited to text from papers authored or co-authored by the student. The student must document permission to reuse any copyrighted material. If the

source documents involve co-authors other than the student and the faculty advisor, the document must include a description of the individual contributions of each coauthor of the original study. Regardless of the extent of any reuse of text, the dissertation must maintain a uniform and consistent formatting style throughout.

## Professional Doctorate Capstone Project Proposal

Before students may begin substantial work on the capstone project, the committee must have approved a proposal after a formal defense. To schedule the defense, students must have approval from appropriate compliance committees (e.g., Human Subjects, etc.). Students submit the approved proposal to the Graduate School for review and approval by the Dean of the Graduate School.

An approved proposal does not imply a contract between the university and the student. For example, the project may require substantially more work than anticipated when the proposal was approved. The termination of a line of inquiry and the adoption of a substantially new capstone project requires the preparation, formal defense, and acceptance by the Graduate School of a new proposal.

## Preliminary Approval of the Capstone Project

One copy of the final capstone project, certified as complete and provisionally acceptable to the committee, shall be submitted to the Graduate Dean at least six weeks prior to commencement. The Dean of the Graduate School may seek advice and make suggestions to the committee about content and style before approving the project.

## Oral Defense of the Capstone Project

After deliberating on the oral defense of the project, the Committee for the Capstone Project votes on whether the defense was successful. The defense shall be deemed unsuccessful if there are two negative votes, even if outnumbered by positive votes. An abstention will be considered a negative vote. A student failing an oral defense shall have the opportunity for one additional defense before the same committee. The committee shall determine the timing and format of a subsequent defense.

Capstone examinations are open to the public, although committee deliberations normally take place privately. The decision of the Committee for the Capstone Project is final. The report of the final examination is due to the Graduate School no later than two days after the examination.

## Capstone Project Abstracts

Capstone Projects are normally disseminated as PhD dissertations and require two different abstracts. The abstract forming the second page of the Capstone Project report should be no more than 600 words.

UMSL's partner for publishing scholarly projects (currently Proquest) requires an abstract of a maximum of 350 words, which is included with the campus announcement of the defense of the Capstone Project.

Upon recommendation by the program, the Graduate Dean may approve exceptions to this method of dissemination.

## Format of the Capstone Project

In matters of style and documentation, the custom of the discipline shall be followed. The final copy of the Capstone Project must be legible and appropriate for publication when submitted to the Graduate School. Only high quality electronic submissions are acceptable with the following margins throughout: left margin, 1 1/2 inches; top, bottom, and right

margins, 1 inch. Upon recommendation by the unit, the Graduate Dean may approve exceptions to this method of dissemination.

## **Official Copies of the Capstone Project**

The chair of the Committee for the Capstone Project is responsible for verifying that all the changes suggested by the committee and the Graduate Dean have either been incorporated in the final draft of the project or have been discussed further with the Graduate Dean or the committee.

Students shall disseminate the Capstone Project according to current Graduate School procedures for theses and dissertations unless an exception is approved.

## **Graduate Certificate Program Requirements**

### **Admission**

Each graduate certificate program may determine eligibility standards beyond the minimum for admission to and enrollment in the Graduate School.

### **Credit Requirements**

The requirements, including the minimum number of credit hours, for certificates vary among graduate certificate programs. Please visit the web site or contact the program director for more information for the certificate program of interest. All graduate credit earned at UMSL for a graduate certificate that also fulfills the requirements for a MS or doctorate degree may be applied to that degree upon approval of the program director. At least two-thirds of the credit hours for the certificate must be completed in residence at UMSL.

### **Filing the Program Plan**

A graduate student enrolled in a certificate program is required to file a certificate program plan with the Graduate School before completing the first two-thirds of the number of hours required in the program. Changes made in a certificate program plan after it has been filed must be submitted to the Graduate School.



# General Education Requirements

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At the University of Missouri-St. Louis, General Education affords both freshmen and transfer students the opportunity to develop and apply intellectual tools and to acquire a breadth of knowledge necessary to succeed in a rapidly changing, technology-driven, and diverse world. The UMSL Core and Explore curriculum challenges students to investigate various disciplines as potential majors and prepares them for success in major fields of study. It provides foundational knowledge in the basic competencies of Valuing, Managing Information, Communicating, and Higher-Order Thinking.

## UMSL CORE & EXPLORE

- Native students (those with less than 11 hours of college credit from another institution, excluding any dual enrollment credit earned in HS)
- Students who plan to complete their degree at UMSL
- Transfer students in professional degree programs:
  - BS, Actuarial Science
  - BS, Accounting
  - BS, Education
  - BS, Nursing
  - BS, Engineering
  - BSW, Social Work
- General transfer students may opt in to this program

## MISSOURI CORE 42

The core transfer curriculum, known as CORE 42, is a state-wide framework for general education that was implemented in the 2018-2019 academic year by all public two- and four-year institutions of higher education in the State of Missouri. CORE 42 provides a common framework that allows transfer students to fulfill general education requirements at any participating institution by completing courses with MOTR designations. Except for transfer students pursuing professional degrees, those who complete all CORE 42 requirements will have satisfied the general education requirements of UMSL. Students who partially completed CORE 42 at another institution may finish the remaining requirements to satisfy the general education requirements of UMSL.

- Transfer students (those with 11+ hours of college credit from another institution, excluding any dual enrollment credit earned in HS)
  - Students who plan to transfer and complete their studies at an institution other than UMSL
  - Students with transcribed MOTR courses not seeking a professional degree
  - Native students may not opt in to this program

## UMSL Core and Explore

### General Education Program

Students must successfully complete the requirements of the University, the school or college in which they are enrolled, and the specific

requirements of their area of specialization. Described below are the General Education requirements for all degrees. Students may consult the University Bulletin or their degree audit (DARS) report for recommended general education courses in their major.

At the University of Missouri-St. Louis, General Education affords both freshmen and transfer students the opportunity to develop and apply intellectual tools and to acquire a breadth of knowledge necessary in our challenging, technological, and diverse world. This curriculum also challenges students to investigate various disciplines as potential majors, and it prepares them for success in major fields of study. The program complies fully with the Missouri Coordinating Board of Higher Education Guidelines on Transfer and Articulation (June 2000).

### Application of Policy to Freshmen

All students in Missouri public universities must complete the requirements of a General Education Plan totaling 42 credit hours in order to earn a baccalaureate degree.

### Application of Policy to Transfer Students

Transfer policies describe which courses may apply to UMSL's General Education requirements. In general, students who transfer to UMSL with an Associate of Arts (AA) degree from an accredited Missouri institution and other approved institutions are considered to have completed all General Education requirements.

Students transferring with fewer than 42 hours or from a non-participating institution and not participating in the Missouri Transfer CORE 42 program will have their transcripts evaluated on a course-by-course basis. All students must earn a C- or higher in their First Year Writing and Math Proficiency coursework to be eligible to graduate from UMSL. Additionally, UMSL has a Junior-Level Writing requirement beyond the General Education requirement and the school or college in which they are enrolled may also have a Cultural Diversity requirement.

Transfer courses that meet the requirements of the Core courses or courses that are designated as General Education courses in the Humanities and Fine Arts, the Social Sciences, and the Math and Life/ Natural Sciences areas at peer institutions and institutions with whom UMSL has an articulation agreement are considered transferable to UMSL's General Education requirements.

Credit associated with developmental/remedial coursework are not considered transferable to UMSL's General Education requirements.

### Application of Policy to Students Who Started Prior to Fall 2015

Students who earned 24 or more semester hours of credit\* at any accredited post-secondary institutions(s) before the start of the fall 2015 semester may meet the General Education requirements stipulated in the UMSL 2014-2015 Bulletin or elect to complete the current General Education Plan described below. Students who earned 24 or more semester hours of credit\* at any accredited post-secondary institutions(s) before the start of the fall 2002 semester may also meet the General Education requirements stipulated in the UMSL 2001-2002 Bulletin.

\*Only credit that is transferable to UMSL is applicable

## General Education Requirements

General Education at UMSL is comprised of 1000-2000 level courses that provide foundational knowledge in a broad range of subjects critical to the future success of our students. It is divided into two categories: General Education Core courses, which are applicable in all disciplines, and General Education Explore courses, which emphasize breadth of study. The following definitions clarify what is required for a course to be considered for listing as either a core or explore option in the General Education curriculum.

### Core Areas:

First Year Writing

Math Proficiency

Communication Proficiency

Information Literacy

American History or Government

### Explore Areas:

Humanities and Fine Arts

Social Sciences

Math and Life/Natural Sciences

## Core Area Descriptions

**First Year Writing (3 hours):** Students will develop college-level rhetorical knowledge and critical thinking, reading, and writing skills, including process skills and knowledge of conventions.

First-Year Writing courses are defined as those which develop students' ability to:

- analyze contexts and audiences and then act on that analysis in comprehending and creating texts
- analyze, synthesize, interpret, and evaluate ideas, information, situations, and texts
- use multiple strategies, or composing processes, to conceptualize, develop, and finalize projects
- involve multiple assessments of writing in multiple formats
- understand, analyze, and negotiate conventions (usage, spelling, citation as well as organizational frameworks, content, document design, and style) for purpose, audience, and genre, understanding that genres evolve in response to changes in material conditions and composing technologies and attending carefully to emergent conventions

The First Year Writing requirement must be satisfied before the student completes 24 hours of course work. Students should be able to write with thoughtfulness, clarity, coherence, and persuasiveness (CBHE General Education, June 2000). Proficiency can be met through earning a C- or higher in one of the following courses:

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
ENGL 1110	First-Year Writing for International Students	3
HIST 1111	Reacting to the Past	4

FGN LANG 1111	Reacting to the Past: Language, Immigration, and Social Change	4
HONORS 1100	Honors Freshman Composition	3

**Mathematics (3 hours):** Students will gain critical thinking and quantitative reasoning skills, and the use of symbolic systems to understand the properties and relationships of relevant quantifiable concepts.

Pathways mathematics courses are defined as those which:

- Involve sets and logic which is essential to critical thinking and process learning
- Treat aspects of financial mathematics as it is both exemplary of mathematical thinking and immediately relevant to students
- Discuss concepts of probability and statistics which involves important interpretive critical reasoning skills
- Consider geometric concepts which involve abstract reasoning and spatial skills
- Proficiency in the basic mathematical skills

Proficiency in the basic mathematical skills area must be satisfied before the student completes 24 hours of course work. Proficiency can be obtained by completing, with a grade of C- or higher, a college degree credit mathematics course, or by earning a score of at least 51% on the ALEKS Exam **in a proctored environment**. Students who fulfill their math proficiency requirement in this manner must take an additional General Education course in order to have a total of 42 credit hours of General Education courses.

Mathematics courses that the University offers that satisfy mathematics proficiency are courses at the 1000 level or above. Proficiency can be met through earning a C- or better in one of the following (or higher level) courses:

MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
MATH 1021	Choice and Chance	3
MATH 1025	Geometry in the Real World	3
MATH 1026	The Music of Math	3
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1045	PreCalculus (MOTR MATH 150)	5

Math courses at the 1000 level below MATH 1030 are designed as terminal mathematics courses for students who do not plan to take calculus.

MATH 1030 or MATH 1045 is required for all students who want to go on to calculus. (Note: MATH 1035 is also required for students that take MATH 1030 and want to take MATH 1800.)

ALEKS math placement scores used to satisfy prerequisites are valid for approximately 11 months. For exact dates, go to <http://www.umsl.edu/~campustesting/mathplacement.html>. Also, ALEKS math placement scores that are used to satisfy prerequisites for courses below MATH 1800 do not need to be obtained in a proctored environment.

Information about the ALEKS math placement test is available on the University's homepage at <http://www.umsl.edu/~campustesting/mathplacement.html>.

**Communication (3 hours):** Students will become proficient in verbal communication, enhance their ability to analyze and use communication effectively, and engage with others constructively across contexts.

Communication courses are defined as those which:

- are based in the English language and assume conversational fluency
- emphasize verbal communication over other forms
- involve analytical and practical skill-building in oral communication
- require multiple assessments or evaluations of oral communication skills

The Communication Proficiency requirement may be met through one of the following courses:

COMM 1030	Interpersonal Communication I (MOTR COMM 120)	3
COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	3
COMM 1042	Reacting to the Past: Communication	3
COMM 2230	Small Group Communication (MOTR COMM 125)	3
COMM 2240	Persuasive Communication	3
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
HONORS 2001	Topics in Communication Proficiency	3
HONORS 2010	Inquiries in The Humanities (Public Speaking or Storytelling: The Oral Tradition only)	3
NURSE 1050	Communication for the Healthcare Professional	3
NURSE 2105	Communication in the Nursing Profession	3
THEATR 2241	Argumentation and Debate	3

Additional courses that may meet this requirement:

1. A Course designated as a Verbal Communication course in transfer
2. Future courses, or specific sections of future topics courses, as approved by the General Education Committee

**Information Literacy (3 hours):** Students will become literate in accessing and analyzing information to further learning inside and outside the classroom and to become fully aware participants in the inter-connected global community.

Information Literacy courses are defined as those which:

- focus on the analysis and evaluation of information for objective accuracy, valid use, or appropriate construction
- use contemporary technologies to research, retrieve, synthesize, construct, or present information as needed for academic disciplines
- provide foundational skills that can be applied to any major or discipline
- require multiple assessments and evaluations of information sources for objectivity, accuracy, validity, etc.

The Information Literacy requirement may be met through one of the following courses:

ATM SCI 1002	Earth Climate Studies	3
CMP SCI 1012	Learning to Program Using Virtual Worlds	3
CMP SCI 1250	Introduction to Computing	3
CHEM 2223	Quantitative Analysis in Chemistry	3
CRIMIN 2210	Research Methods in Criminology and Criminal Justice	3
CRIMIN 2220	Statistical Analysis in Criminology and Criminal Justice	4
ED TECH 2230	Information Literacy	3
EDUC 2002	Social Entrepreneurship	3
ENGL 2110	Information Literacy	3
HONORS 1130	Western Traditions: Social and Behavioral Sciences (Science Vs Pseudo-science in Archaeology only)	3
HONORS 2002	Topics in Information Literacy	3
HONORS 2010	Inquiries in The Humanities (Media Literacy only)	3
HONORS 2030	Inquiries in the Social and Behavioral Sciences (Evaluating the Media: A Theoretical Approach only)	3
INFSYS 1800	Computers and Information Systems 1	3
INFSYS 2800	Information Systems Concepts and Applications	3
MATH 1105	Basic Probability and Statistics	3
MATH 1310	Elementary Statistical Methods	3
MATH 1320	Introduction to Probability and Statistics	3
MEDIA ST 1065	Internet Media	3
PHIL 2280	Minds, Brains, and Machines	3
PSYCH 2201	Psychological Statistics	4
PSYCH 2219	Research Methods in Psychological Science	3
SOC 2280	Technology and Society	3

<sup>1</sup> Proficiency may be earned through placement test. Students who fulfill their information literacy through a placement test must take an additional General Education course in order to have a total of 42 credit hours of General Education courses.

Additional courses that may meet this requirement:

1. A course designated as an Information Literacy course in Transfer
2. Future courses, or specific sections of future topics courses, as approved by the General Education Committee

**American History and Government (3 hours):** Students will understand important facets of American history and its governmental structures from colonization to present day.

American History and Government courses are defined as those which:

- explore significant events in the history of American civilization from colonization to present day
- delineate major social movements in American history (e.g., suffrage, prohibition, civil rights)
- emphasize the structures of American government such as criminal, economic, legal, political, social, and military policies
- require multiple assessments and evaluations to demonstrate knowledge of specific events or policies and their consequences potential implications

Students must satisfactorily complete a course or courses in American history or government taken at UMSL or at other colleges or universities in Missouri. Transfer students should check with the Dean's Office of their division to determine if they have fulfilled this requirement.

The American History and Government Requirement may be met through one of the following courses:

CRIMIN 1100	Introduction to Criminology and Criminal Justice	3
ECON 2800	History of American Economic Development	3
GS 2020	Women and Social Movements in U.S. History	3
HIST 1001	American Civilization to 1865 (MOTR HIST 101)	3
HIST 1002	American Civilization 1865 to Present (MOTR HIST 102)	3
HIST 1003	African American History	3
HIST 2004	The Civil War Era: Slavery, Emancipation, and the Greater Reconstruction	3
HIST 2005	Becoming Modern America: From the Gilded Age to the Great Depression	3
HIST 2020	Women and Social Movements in U.S. History	3
HIST 2800	History of American Economic Development	3
HONORS 1230	American Traditions: Social and Behavioral Sciences	3
HONORS 2003	Topics in American History and Government	3
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
POL SCI 2260	Law, Politics and Society	3
POL SCI 2280	Judicial Politics	3
POL SCI 2290	Gender and the Law	3
POL SCI 2300	State Politics	3
POL SCI 2320	African Americans and the Political System	3

## Explore Area Descriptions

Courses used to fulfill core area requirements may not be applied to the explore area requirements.

**Humanities and Fine Arts (9 hours):** Students will have a deeper knowledge of the human experience and creative expression through visual and performing arts.

Humanities and Fine Arts Explore courses are defined as those which:

- focus on helping students understand, analyze, and explore human thought/actions and creation.
- provide critical/foundational discipline-specific skills that contribute to personal growth and well-being
- encourage a sense of connection to our shared and diverse pasts and to our contemporaries
- promote living in and contributing to various communities

These criteria must be evident in syllabus, assignments, and/or grading rubrics if the department/discipline is not identified as a Fine Art or as Humanities/Humanistic Studies in the NCES Classification of Instructional Programs (CIP).

This requirement is satisfied by completing 9 hours of coursework at the 1000 or 2000 level selected from at least two of the following areas: Art, Art History, English, Foreign Languages (FGN LANG), History, Music (EN PER and M H L T), Philosophy, Theater; and Entrepreneurship, Interdisciplinary, Gender Studies and Honors courses with the Humanities or Fine Arts designation; and transfer courses designated as Humanities and Fine Arts general education courses at peer institutions and institutions with whom UMSL has an articulation agreement.

**Social Sciences (9 hours):** Students will understand and have the ability to view individual and social behavior/society from a variety of perspectives utilizing scientific methods.

Social Sciences Explore courses are defined as those which:

- the principle focus is on human society, including individual behavior and social relationships based on scientific principles
- reflect foundational, discipline specific knowledge that informs the human condition
- use multiple assessments of content knowledge within the social science framework

These criteria must be evident in syllabus, assignments, and/or grading rubrics if the department/discipline is not identified as a Social Science in the NCES Classification of Instructional Programs (CIP).

This requirement is satisfied by completing 9 hours of coursework at the 1000 or 2000 level selected from at least two of the following areas: Accounting, Anthropology, Business Administration, Communication, Criminology and Criminal Justice, Economics, Educational Psychology, Entrepreneurship, Finance, Geography, Media Studies, Political Science, Psychology, Social Work, Sociology, Sport Management; and Interdisciplinary, Gender Studies, and Honors courses with the Social Sciences designation; and transfer courses designated as Social Sciences general education courses at peer institutions and institutions with whom UMSL has an articulation agreement.

**Mathematics and Life/Natural Sciences (9 hours):** Students will expand mathematical abilities and have an understanding of the branches of science that deal with living things and the physical world.



Mathematics and Life/Natural Sciences Explore courses are defined as those which:

- emphasize mathematical concepts and/or use scientific methods to understand the physical world
- use multiple assessments of computational and/or content knowledge within the mathematical and life/natural sciences framework

These criteria must be evident in syllabus, assignments, and/or grading rubrics if the department/discipline is not identified as a Mathematics and Statistics, Biological and Biomedical Sciences, or Physical Sciences in the NCES Classification of Instructional Programs (CIP).

This requirement is satisfied by completing 9 hours of coursework at the 1000 or 2000 level selected from at least two of the following areas: Astronomy, Atmospheric Science, Biology, Chemistry, Computer Science, Geology, Information Systems and Technology, Mathematics, Physics; and Interdisciplinary and Honors courses with the Mathematics and Life/Natural Sciences designation; and transfer courses designated as Mathematics and Life/Natural Sciences general education courses at peer institutions and institutions with whom UMSL has an articulation agreement.

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Note: Gender Studies and Military and Veterans Studies courses that are cross-listed with disciplinary designations at the 1000 and 2000 levels may also be used to fulfill the explore area requirements.

## Learning Outcomes

### CORE

#### First Year Writing

After successfully completing the First-Year Writing requirement:

- After successfully completing the First-Year Writing requirement, students will be able to:
- analyze contexts and audiences and then act on that analysis in comprehending and creating texts
- analyze, synthesize, interpret, and evaluate ideas, information, situations, and texts
- use multiple strategies, or composing processes, to conceptualize, develop, and finalize projects
- analyze and negotiate conventions (usage, spelling, citation as well as organizational frameworks, content, document design, and style) for purpose, audience, and genre, understanding that genres evolve in response to changes in material conditions and composing technologies and attending carefully to emergent conventions

#### Mathematics Proficiency

After successfully completing the Mathematics requirement, students will be able to:

- identify the ways in which mathematics occurs broadly in various fields (e.g., art, architecture, botany and music)
- evaluate in an informed manner various aspects of financial matters (e.g., mortgages, loans and investments)
- organize, analyze and interpret data arising in multiple formats (e.g., graphs, charts, diagrams as they arise within various contexts)

- make judgments and draw appropriate conclusions checking for logical consistency, while recognizing the limits of this analysis

### Communication Proficiency

After successfully completing the Communication requirement students will be able to:

- analyze and evaluate their own and others' oral expression
- create and clearly deliver oral presentations to targeted audiences employing effective syntax, vocabulary, grammar, and mechanics
- tailor messaging to diverse audiences to achieve a given purpose
- communicate effectively in groups by listening, reflecting, and responding appropriately and in context

### Information Literacy

After successfully completing the Information Literacy requirement, students will be able to:

- effectively define the scope and purpose of a project
- use appropriate tools and contemporary technologies to access information through effective, well-designed search strategies
- identify relevant, reliable sources of information
- critically analyze and evaluate the accuracy, validity and potential bias of information
- organize, synthesize and communicate information from a variety of sources with clarity and depth

### American History and Government

After successfully completing the American History and Government requirement, students will be able to:

- describe how the underlying principles of the Constitutions of the United States and the state of Missouri shape American society
- identify the various structures of American government
- examine events and social movements and the ways they impact interpretation of American history

## EXPLORE

### Fine Arts and Humanities

Upon completion of the required credit hours in this category, students will be able to:

- explain the ways in which humanistic and/or creative expression throughout the ages reflect the culture and values of its time and place
- analyze the ways in which both change and continuity have affected human experience
- identify the relationships among ideas, text, and/or creative works and their cultural and historical contexts
- frame a comparative context to critically assess the ideas, forces, and values that have created the modern world

### Social Sciences

Upon completion of the required credit hours in this category, students will be able to:

- critically analyze how individuals are influenced by social institutions, structures, and processes and how these may contribute to diverse perspectives



- identify theory and qualitative or quantitative evidence to examine individual, social, and/or cultural phenomena
- identify and critique ethical positions or arguments based on research in the social and behavioral sciences

## Mathematics and Life/Natural Sciences

Upon completion of the required credit hours in this category, students will be able to:

- analyze and evaluate a scientific hypothesis or technical process
- use basic scientific language and processes and be able to distinguish between scientific and non-scientific explanations
- use mathematical concepts and/or symbolic representations together with scientific methods to understand the physical or natural world
- solve problems using mathematical, statistical, computational or symbolic methods

# Missouri Core 42

## CORE 42 Transfer Curriculum

The CORE 42 Transfer Curriculum is a block of at least 42 credit hours that will transfer as equivalent credit at all Missouri public colleges and universities.

Students who complete the CORE 42 curriculum will meet the general education requirements for most liberal arts and sciences degrees at all public higher education institutions in the state. General education requirements for some degrees – including education, engineering and nursing – differ due to professional licensing and other requirements.

To complete the curriculum, students must earn a minimum number of credit hours in five knowledge areas:

- Mathematical sciences – three credit hours
- Natural sciences – seven credit hours, including a course with a lab
- Humanities and fine arts – nine credit hours from at least two disciplines
- Social and behavioral sciences – nine credit hours from at least two disciplines, including a civics course
- Written and oral communications – nine credit hours (six in written communications and three in oral communications)

Credits earned beyond the minimum in each knowledge area count toward the 42-hour minimum.

## MOTR Course Equivalencies

Courses designated with a Missouri Transfer (MOTR) course number, guarantees the one-to-one transfer of these courses among all Missouri public institutions of higher education. UMSL courses can be found on the knowledge area tabs above.

For more information about CORE 42 and MOTR Course Equivalencies, visit <https://dhe.mo.gov/core42.php>.

## Mathematical Sciences

MOTR COURSE NUMBER	MOTR COURSE NAME	UMSL COURSE NUMBER	UMSL COURSE NAME
MOTR MATH 120	Mathematical Reasoning & Modeling	Math 1020	Contemporary Math
MOTR MATH 130	Pre-Calculus Algebra	Math 1030	College Algebra
MOTR MATH 150	Pre-Calculus	Math 1045	Pre-Calculus

## Natural Sciences

MOTR COURSE NUMBER	MOTR COURSE NAME	UMSL COURSE NUMBER	UMSL COURSE NAME
MOTR ASTR 100	Astronomy	ASTRON 1001A	Cosmic Evolution/Introduction Astronomy
MOTR BIOL 100	Essentials in Biology	BIOL 1012	General Biology
MOTR BIOL 100L	Essentials in Biology with Lab	BIOL 1012 and BIOL 1013	General Biology, General Biology Laboratory
MOTR BIOL 150L	Biology with Lab	BIOL 1831	Introductory Biology: From Molecules to Organisms
MOTR BIOL 150L	Biology with Lab	BIOL 1821	Introductory Biology: Organisms and the Environment
MOTR CHEM 100	Essentials in Chemistry	CHEM 1052	Chemistry for the Health Professions
MOTR CHEM 100	Essentials in Chemistry	CHEM 1081	Introductory Chemistry I-A
MOTR CHEM 150L	Chemistry I with Lab	CHEM 1091	Introductory Chemistry I-B
MOTR CHEM 150L	Chemistry I with Lab	CHEM 1111	Introductory Chemistry I
MOTR GEOL 100	Geology	GEOL 1001A	General Geology Lecture
MOTR GEOL 100L	Geology with Lab	GEOL 1001 and GEOL 1001L	General Geology, General Geology Lab
MOTR LIFS 150	Human Biology	BIOL 1102	Human Biology
MOTR PHYS 100	Essentials in Physics	PHYSICS 1001	How Things Work
MOTR PHYS 110	Essential in Physical Sciences	GEOL 1053	Oceanography
MOTR PHYS 150L	Physics I with Lab	PHYSICS 1011	Basic Physics I
MOTR PHYS 200L	Advanced Physics I with Lab	PHYSICS 2111	Physics: Mechanics and Heat

## Humanities and Fine Arts

MOTR COURSE NUMBER	MOTR COURSE NAME	UMSL COURSE NUMBER	UMSL COURSE NAME
MOTR ARTS 100	Art Appreciation	ART HS 1100	Introduction To Western Art
MOTR ARTS 101	Art History I	ART HS 1120	Global Art History
MOTR LANG 101	French I	FRENCH 1001	French Language & Culture I
MOTR LANG 102	French II	FRENCH 1002	French Language and Culture II
MOTR LANG 103	Spanish I	SPANISH 1001	Spanish Language and Culture I
MOTR LANG 104	Spanish II	SPANISH 1002	Spanish Language and Culture II
MOTR LITR 100	Introduction to Literature	ENGL 1120	Introduction to Literature
MOTR MUSC 100	Music Appreciation	M H L T 1001	Intro to Music
MOTR MUSC 100J	Music Appreciation-Jazz	M H L T 1070	Introduction to Jazz
MOTR MUSC 100RP	Music Appreciation-Rock/Pop	M H L T 1003	History of Rock Music
MOTR MUSC 102	World Music	M H L T 1150	Drumming Cultures of the World
MOTR MUSC 103	Music History I	M H L T 1010	History of Western Music I
MOTR MUSC 104	Music History II	MHLT 1020	History of Western Music II
MOTR PERF 102B	Music Performance-Band	EN PER 1420	University Concert Band
MOTR PERF 102B	Music Performance-Band	EN PER 1520	Symphonic Band
MOTR PERF 102C	Music Performance-Choir	EN 1400	University Chorus
MOTR PERF 102C	Music Performance-Choir	EN PER 1410	The University Singers
MOTR PERF 102O	Music Performance-Orchestra	EN PER 1500	University Orchestra
MOTR PERF 105D	Studio Art-Introduction to Drawing	ST ART 1140	Drawing I
MOTR PHIL 100	Introduction to Philosophy	PHIL 1150	Introduction to Philosophy
MOTR PHIL 101	Introduction to Logic	PHIL 1160	Critical Thinking
MOTR PHIL 102	Introduction to Ethics	PHIL 1130	Approaches to Ethics

MOTR THEA 100A	Theatre Appreciation	THEATR 1800	Introduction to Theatre
MOTR WCIV 101	Western Civilization I	HIST 1031	Topics in European Civilization: Emergence of Western Europe to 1715
MOTR WCIV 102	Western Civilization II	HIST 1032	Topics in European Civilization: 1715 to the Present

## Social and Behavioral Sciences

MOTR COURSE NUMBER	MOTR COURSE NAME	UMSL COURSE NUMBER	UMSL COURSE NAME
MOTR ANTH 201	Cultural Anthropology	ANTHRO 1011	Introduction to Cultural Anthropology
MOTR ECON 100	Introduction to Economics	ECON 1000	Economics in Everyday Life
MOTR ECON 101	Introduction to Macroeconomics	ECON 1002	Principles of Macroeconomics
MOTR ECON 102	Introduction to Microeconomics	ECON 1001	Principles of Microeconomics
MOTR GEOG 101	World Regional Geography	GEOG 1001	Introduction to Geography
MOTR GEOG 101	World Regional Geography	GEOG 1002	World Regions
MOTR HIST 101	American History I	HIST 1001	American Civilization to 1865
MOTR HIST 102	American History II	HIST 1002	American Civilization 1865-Present
MOTR POSC 101	American Government	POL SCI 1100	American Politics
MOTR POSC 201	International Relations	POL SCI 1800	World Politics
MOTR POSC 202	Introduction to Comparative Politics	POLSCI 1500	Introduction to Comparative Politics
MOTR PSYC 100	General Psychology	PSYCH 1003	General Psychology
MOTR PSYC 200	Life Span Human Development	PSYCH 1268	Human Growth and Development
MOTR SOCI 101	General Sociology	SOC 1010	Introduction to Sociology

## Oral and Written Communication

MOTR COURSE NUMBER	MOTR COURSE NAME	UMSL COURSE NUMBER	UMSL COURSE NAME
MOTR COMM 110	Fundamentals of Public Speaking	COMM 1040	Introduction to Public Speaking
MOTR COMM 120	Interpersonal Communication	COMM 1030	Interpersonal Communication I

MOTR COMM 125	Small Group Communication	COMM 2230	Small Group Communication
MOTR ENGL 110	Technical Writing	ENGL 2125	Technical Writing
MOTR ENGL 200	Composition II	ENGL 1100	First-Year Writing

# College of Arts and Sciences

## General Information

The College offers a wide range of accredited baccalaureate, master's and doctoral degrees and multi-disciplinary certificates. Details about each degree may be found in the programs section of this bulletin.

- Actuarial Science (B.S. (p. 311), Certificate (p. 313))
- Anthropology (B.A. (p. 318))
- Biochemistry & Biotechnology (B.S. (p. 322), M.S. (p. 325).)
- Biology (B.A. (p. 326), B.S. (p. 329), M.S. (p. 335)., Ph.D. with emphases in Cell and Molecular Biology (p. 337) and Evolution and Systematics (p. 339))
- Chemistry and Biochemistry (B.A. (p. 366)., B.S. (p. 368), M.S. (p. 371), Ph.D. (p. 373))
- Child Advocacy Studies (Certificate (p. 375))
- Communication (B.A. (p. 379), Certificates in Health Communication (p. 467) and Media Production (p. 507))
- Computer Science (B.S. (p. 388), M.S. (p. 390)., Ph.D. (p. 490), Certificates in Artificial Intelligence; Graduate (p. 321) and Undergraduate (p. 321), Computer Programming (p. 387), Computer Programming Education (p. 387), Internet & Web (p. 483) and Mobile Apps & Ubiquitous Computing; Graduate (p. 508) and Undergraduate (p. 508))
- Computing Technology (B.S. (p. 391).)
- Criminology and Criminal Justice (B.S. (p. 400), M.A. (p. 402)., Ph.D. (p. 403).)
- Cybersecurity (B.S. (p. 405), M.S. (p. 410), Certificate (p. 408))
- Economics (B.A. (p. 419), B.S., (p. 420) M.A. (p. 422))
- English (B.A. (p. 419), M.A., (p. 422) M.F.A. (p. 398), Certificate in Technical Writing (p. 646))
- Gender Studies (Graduate (p. 464) and Undergraduate Certificates (p. 465))
- History (B.A. (p. 467), M.A. (p. 470)., Graduate Certificates in Museums, Heritage & Public History (p. 518) and History Education (p. 470))
- Interdisciplinary Studies (B.I.S. (p. 480))
- International Relations (B.A. (p. 481))
- Liberal Studies (B.L.S. (p. 486))
- Mathematics (B.A. (p. 494)., B.S. (p. 497), M.A. (p. 503), Ph.D. (p. 491), Certificate in Data Science (p. 413))
- Modern Languages (B.A. with emphases in French (p. 511), Japanese (p. 514), Spanish (p. 516) and Dual Language Professional (p. 509))
- Music (B.A. (p. 519), B.M. (p. 532) with emphases in Elective Studies in Business (p. 521), Jazz Studies (p. 523), Music Composition (p. 525), Music Education (p. 527), Music Theory (p. 530), and Performance (p. 532))
- Organizational Leadership (B.A. (p. 564))
- Philosophy (B.A. (p. 565), M.A. (p. 567))
- Physics and Astronomy (B.A. (p. 570), B.S. (p. 576), M.S. (p. 579), Ph.D. (p. 579))
- Political Science (B.A. (p. 580), M.A. (p. 582), Ph.D. (p. 583))

- Public Policy and Administration (B.S.P.A. (p. 593), M.P.P.A. (p. 597))
- Psychology (B.A. (p. 585), B.S. (p. 587)., M.A. (p. 588), Ph.D. in Behavioral Neuroscience (p. 590) and Clinical Community Psychology (p. 591), C. (p. 537)ertificate in Neuroscience (p. 537))
- Sociology (B.A. (p. 627), B.S. (p. 630))
- Studio Art (B.F.A. in Graphic Design (p. 640), Studio Practice (p. 642) or Art Education (p. 639))

The College of Arts and Sciences consists of the following departments, each offering work in specific undergraduate degree programs: Anthropology and Archaeology, Art and Design, Biology, Chemistry and Biochemistry, Communication and Media, Computer Science, Criminology and Criminal Justice, Economics, English, History, Language and Cultural Studies, Mathematics and Statistics, Music, Philosophy, Physics and Astronomy, Political Science, Psychological Sciences, and Sociology.

Graduate study degree programs, administered through the Graduate School, are also offered in the following departments of the College of Arts and Sciences: Biochemistry and Biotechnology, Biology, Chemistry, Criminology and Criminal Justice, Computer Science, Economics, English, History, Mathematics and Statistics, Physics and Astronomy, Philosophy, Political Science, and Psychological Sciences.

## Requirements for Undergraduate Study

All majors in the College of Arts and Sciences, including Bachelor of Liberal Studies, must meet the following requirements:

- Requirements of their chosen baccalaureate degree (i.e., B.A., B.S., etc.) in accordance with the policies of the College of Arts and Sciences, explained below.
- Requirements of the department for their selected major or interdisciplinary program.
- Requirements for the University's general education (p. 51) & university requirements.
- Completion of INTDSC 1003 University Studies for all students admitted to UMSL with fewer than 24 academic credit hours.

Detailed information concerning all degree requirements can be found by visiting the Marcus Allen Advising Center.

## Academic Policies

### Grade Requirements

To graduate, all majors in the college must satisfy one of the following grade point options:

- Have a minimum UMSL campus grade point average of 2.0 and have met all other grade point restrictions for the degree or program.

### Cultural Diversity Requirement

To expand cultural awareness, students in some academic units may be required to complete a course that emphasizes Asian, African, Middle Eastern, Latin American, Pacific aboriginal, Native American, or a comparable culture. Courses that satisfy this requirement involve substantial material independent of the cultures' interactions with European cultures. If a course focuses on one facet of a culture, it must treat the topic within the context of the culture as a whole. A list of courses

which satisfy this requirement can be found in the Undergraduate Study Graduation Requirements (p. 19) section of this Bulletin.

## Residency Requirements

Transfer students must complete at least 30 of the last 36 hours of their degree program in residence at the University of Missouri-St. Louis.

Unless otherwise specified, a transfer student must complete 12 hours of graded work at UMSL at the 2000 level or above within the minimum number of hours required for each major.

Unless otherwise specified, a transfer student must complete at least six hours of graded work at UMSL at the 2000 level or above within the minimum number of hours required for each minor. Students should consult the minor department for specific residency and grade requirements.

## Specific Baccalaureate Degree Requirements

### Course Requirements

After fulfilling the general education and specific major degree requirements, students are to take the remaining hours required to complete the bachelor's degree from courses (which the appropriate department has evaluated as being of university-level quality) from one or more of the following areas or their university-quality equivalents at other institutions: Anthropology/Archaeology, Art (appreciation, history, studio), Astronomy, Biology, Chemistry, Communication, Criminology and Criminal Justice, Economics, English, Geology, History, Mathematics/Computer Science, Media Studies, Modern Languages (French, Japanese, Spanish), Music (appreciation, history, performance), Philosophy, Physics, Political Science, Psychology, Social Work, Sociology, Theatre, Business, Education, Engineering, or Interdisciplinary. Other areas or courses not listed require approval by the chair of the student's department.

### Bachelor of Arts (B.A.)

All B.A. degree candidates must successfully complete a curriculum which includes a departmental major or an approved interdisciplinary field. A major must include at least 30 credit hours but no more than 45 hours. The College offers the B.A. degree in anthropology, biology, chemistry, economics, English, history, mathematics, modern languages, philosophy, physics, political science, psychology, and sociology.

### Foreign Language Requirement

Candidates for the B.A. degree are required to complete 13 credit hours or the equivalent in proficiency in one foreign language. Foreign language guidelines are as follows:

1. Students entering with no high school language units must enroll in Language 1 or may enroll in the 2115 series (see section 4).
2. Students with the degree of proficiency equivalent to 13 hours of college-level work in French, German or Spanish may obtain exemption by passing the department's placement exam. The specific dates for the exam are posted on-line or may be obtained from Languages and Cultures at 314-516-6240.
3. Native speakers of language other than English may meet the foreign language requirement by presenting a transcript from a university or secondary school of their native country. The department will certify native speakers of those languages which are taught at the university.

Those who are proficient in other languages must submit certification of competence to the college.

4. Language 2115 A, B, C (Intensive) will satisfy the foreign language requirement. Aptitude testing is required prior to enrollment. For more information, call the Department of Languages and Cultures at 314-516-6240
5. Students may not repeat, for either credit or quality points, an elementary course if they have already completed a higher-level course for which the elementary course, or its equivalent, is a prerequisite.

## Applied Music and Studio Art

Students not majoring in music may count no more than eight hours in music ensemble performance (EN PER 1400, EN PER 1410, EN PER 1500, EN PER 1520, etc). Students in the college not majoring in studio art may count any number of studio art hours toward a degree in the college. This includes transfer credit.

## Bachelor of Science (B.S.)

The College offers the B.S. degree in mathematics, biochemistry and biotechnology, biology, chemistry, biochemistry, computer science, criminology and criminal justice, economics, physics (with emphasis in applied physics, astrophysics, engineering physics, or optical biophysics), and sociology. The requirements are generally the same as for the B.A. degree with the following exceptions:

1. More credit hours in the major discipline may be counted toward satisfying the 120 hours needed for graduation. See departmental degree requirements for information.
2. Not all departments require foreign language proficiency. See departmental degree requirements for information.

## Bachelor of Liberal Studies (BLS)

(See Interdisciplinary Programs (p. 131) for complete description)

## Bachelor of Interdisciplinary Studies (BIS)

(See Interdisciplinary Programs (p. 131) for complete description)

## Bachelor of Science in Public Policy and Administration (B.S.P.A.)

The B.S.P.A. degree program is administered through the Political Science Department and offers two emphasis areas. Public Administration emphasizes management in the public and nonprofit sectors. Public Policy allows focus on a particular policy area with attention to analytic training and research skills.

## Bachelor of Fine Arts (B.F.A.)

The College offers the B.F.A. degree in studio art. A foreign language is not required. Students choosing an emphasis in drawing, graphic design, painting, photography, printmaking or general fine arts must take at least 75 credit hours in studio art (including 30 hours in the foundation art program). Students seeking K-12 art teacher certification take a minimum of 50 credit hours in studio art (including 30 hours in the foundation art program) and must fulfill the General Education Requirements in both the College of Education and the College of Arts and Sciences.



## Bachelor of Music (B.M.)

The College offers the B.M. degree in music education, performance and with elective studies in business. The requirements are the same as for the B.A. degree with the addition of music education courses for music majors seeking state teacher certification. Although foreign language proficiency is not required, foreign language study is required for applied voice students.

## Minors

A number of minors is available at UMSL. Some are offered by individual departments, while others are interdisciplinary in nature and involve several departments. The requirements for the various minors are listed in either the departmental or interdisciplinary sections of this Bulletin.

## Special Programs

### Certificate Programs

Graduate and undergraduate certificate programs are offered in Child Advocacy Studies, Cybersecurity, Data Science, Entrepreneurship, Gender Studies, Health Communication, Internet and Web, Media Production, Mobile and Ubiquitous Computing, and Technical Writing.

### International Studies Certificate

In cooperation with International Studies and Programs and other Colleges, the College offers certificate programs in African, East Asian, European, International, and Latin American studies. The College also cooperates in offering the International Business Certificate.

### Departmental Honors

Majors in the following departments may pursue departmental honors: biology, chemistry, economics, English, history, modern languages, and political science. Majors in criminology and criminal justice may pursue placement on the chair's list.

### Cooperative Education and Internship Programs

Cooperative education and internship programs are available for students seeking career-related employment while enrolled in school. These programs afford Arts and Sciences students an opportunity to gain practical experience. Co-ops and internships are administered through Career Services, 278 Millennium Student Center.

### College of Arts and Sciences Extension

Credit courses are offered at off-campus locations through the College of Arts and Sciences. These courses are open to UMSL students and qualify for regular academic credit toward degrees in the college.

### Latin Honors Requirements

In accordance with the University's Latin Honors policy (p. 26), candidates graduating from the College of Arts and Sciences in the 2020-2021 Academic Year must meet the following GPA qualifications:

Summa Cum Laude	3.955
Magna Cum Laude	3.861
Cum Laude	3.652

## Anthropology and Archaeology

### General Information

Anthropologists take a broad approach to understanding the diversity of human biology, culture, and language in the past and present. We teach students how to see their culture and the cultures of others more clearly, and how to work with the underlying humanity that unifies us all.

Anthropologists draw and build up knowledge from the social, biological, and physical sciences as well as the humanities. They are typically trained in one of four subfields: archaeology, biological/physical anthropology, linguistic anthropology, and sociocultural anthropology. Anthropologists consider the past to see how human groups lived hundreds or thousands of years ago. They research what makes up our biological bodies, genetics, diet and health. They want to know what people think is important, try to understand how people interact in social relationships, and look at the many ways people dress, organize their settlements, get their food, and communicate in different cultures.

Anthropologists teach how cultures evolve and the role of individuals and groups in the invention and perpetuation of cultural beliefs, behaviors, symbols, and systems. They have accumulated in-depth knowledge of hundreds of cultures and use this knowledge to understand better our own cultural beliefs, actions, and institutions, as well as those of people from other cultures. As the science of cultures, anthropology brings a powerful perspective to the understanding of the emerging global order and offers solutions to current human problems. Cross-cultural and evolutionary insights and knowledge help us envision how we can incorporate vast human diversity into a unified world order of peace, prosperity, justice, and opportunity.

### Degrees and Areas of Concentration

#### BA in Anthropology

Bachelor of Arts in Anthropology focuses on applied, methodological, and theoretical skills. Faculty members are involved in regional and global research that encompasses studies in gender and sexuality, body culture and sports, food and diet, health care, human variation, culture diversity principles, the origins of democracy, war, mythology and more.

Students may join faculty in excavations of local archaeological sites or a Bronze Age Mycenaean palace in Greece. The program maintains an archaeology lab and library with one of the largest collections of artifacts from eastern Missouri. Students can study Forensic Anthropology and work with the program's collection of 19th century skeletal remains.

Opportunities exist for students to pursue diverse research experiences on a vast range of topics on human actions, beliefs and organization and intern with local organizations.

#### Minor in Anthropology

The minor in anthropology is designed to offer students a flexible introduction to the fundamentals of the discipline to complement their major field of study. A minor is advisable for anyone planning a career with intercultural or international dimensions, where knowledge of cultural systems, environments, values, and symbols is useful.

## Minor in Global Health and Social Medicine

This interdisciplinary minor is ideal for students seeking to make a difference in improving health and wellbeing, locally and globally. It is a path to better understand the cultural and social contexts in which they will practice medicine and make them more well-rounded health care providers.

### Student Experience

Students may work closely with faculty in designing their personal course of study and carrying out their own research projects in any of the above fields of study. Students have presented research results at professional meetings, in published papers, and at government and community agencies for use in planning and development. Students are encouraged to participate in the program's network of internships, providing an opportunity to practice newly acquired skills. As a capstone experience, all students, under faculty supervision, complete a significant independent research project, culminating in written and oral reports to the department students and faculty. The program encourages study abroad and has scholarship funds to assist. There is an active Association of Student Anthropologists that sponsors speakers and social activities.

Paid undergraduate positions are available on a competitive basis to anthropology majors as teaching assistants and faculty research assistants.

### Career Outlook

The world needs anthropologists. The B.A. in Anthropology equips the student for employment in almost any area in which a bachelor's degree is sufficient and a sensitivity to cultural values and diversity is important. Graduates have found employment as university professors and lawyers and in archaeology research programs, urban development, planning programs, health care delivery, human services, business, government service, teaching, computer systems design, and university administration. Anthropology is excellent preparation for graduate and professional training in administration, the helping professions, development work, law, environmental studies, international and human resource areas of business, and in many other areas, depending upon individual interests. Many UMSL anthropology graduates have gone on to advanced training in master's, doctoral, and professional programs in respected universities around the country. For more career information, contact the program at 314-516-6020 for an appointment to talk with an appropriate faculty member or to request an information packet.

### Degree

Anthropology BA (p. 318)

### Minor

Anthropology Minor (p. 320)

### Certificates

Global Health and Social Medicine Undergraduate Certificate (p. 467)

## Courses

### ***ANTHRO 1005 Introduction to Biological Anthropology: 4 semester hours***

Topics include evolutionary theory and its development, the evolution/creationist debate, Mendelian & population genetics, the evolutionary place of humans within the animal kingdom, anatomical and behavioral characteristics of primates, fossilization, primate evolution, the human evolutionary fossil record, biological variability in modern humans, race as a biological concept, and applied biological anthropology. In addition to 3 hours of lecture, 1 hour per week is spent in lab classifying ancient human fossils, observing monkeys and apes at the zoo, and doing other projects. Satisfies the Natural Science and Mathematics (SM) breadth of study requirement.

### ***ANTHRO 1011 Introduction to Cultural Anthropology (MOTR ANTH 201): 3 semester hours***

Cultural anthropology is the study of human beings as creatures and creators of society. This course is an introduction to that study which aims to demonstrate how the basic concepts and techniques developed by cultural anthropologists help us to understand societies of various degrees of complexity, including our own. We will consider topics such as language, kinship, gender, ethnicity, economics, politics, religion, and social change in a broad comparative framework. Major goals are an increased awareness of the social and cultural dimensions of human experience, the diversity and flexibility of human cultures, and processes of intercultural communication and conflict. This course satisfies the Cultural Diversity requirement.

### ***ANTHRO 1019 Introduction to Archaeology: 3 semester hours***

Archaeology is a subfield of anthropology that studies past human societies from their material remains. Explores the development of archaeology as a scientific discipline. Archaeological methods and theories will be explained using case studies from the continents of Africa, Asia, Australia, Europe and the Americas. This course satisfies the Cultural Diversity requirement.

### ***ANTHRO 1021 The Body in Culture: 3 semester hours***

This course will compare uses of the body as a social signifier in Western and non-Western cultures. It will explore how culture shapes the images, uses and meanings of the human body. It concentrates on different historical and beliefs in five areas: how the body works; sex and gender; eating manners and food; pain and punishment; beauty and bodily mutilation. This course satisfies the Cultural Diversity requirement.

### ***ANTHRO 1025 World Cultures: 3 semester hours***

An ethnographic survey of the major culture areas of the world (Africa, North and South America, Europe and Oceania). This course satisfies the Cultural Diversity requirement.

### ***ANTHRO 1030 Democracy and War: 3 semester hours***

Using the world's first democracy in ancient Greece as a case study, this course will address questions about the origins of democracy, the key elements of a successful democratic government, the mechanisms by which democratic and non-democratic states go to war, the manner in which they cope with war and the psychological effects of war on warriors and civilian populations that will help us learn how our own democracy works and affects our lives.

**ANTHRO 1033 World Archaeology: 3 semester hours**

Discusses some of the greatest discoveries in archaeology from prehistoric cultures to ancient civilizations of Africa, Asia, Australia, Europe and the Americas. Archaeological examples may include early human origins at Olduvai Gorge in Tanzania, the pyramids of ancient Egypt, the Maya and Aztec of Mexico, the rise of civilization in Mesopotamia, England's Stonehenge, the Roman city of Pompeii, upper Paleolithic cave paintings in France and Spain, and American Indian pueblos of the Southwest. This introductory course is designed for non-anthropology majors, or for those who are considering the major. This course satisfies the Cultural Diversity requirement.

**ANTHRO 1034 Introduction to Ancient Egypt and Its Civilization: 3 semester hours**

Same as HIST 1034. This course will survey ancient Egyptian history and culture from predynastic times to Greco-Roman rule, roughly 3000 BCE to 30 BCE. Students will discuss archaeological sites, mummification, religion, architecture, texts, and more. Through comparing ancient Egyptian culture with our own, students will explore what has changed in the world and what has endured for millennia.

**ANTHRO 1037 The Wonders of Greece: Introduction to Greek History and Culture: 3 semester hours**

Same as HIST 1037. Our democracy and culture have been heavily influenced by Greek civilization. This course will introduce students to the culture and civilization of Greece in order to provide a better understanding of our own society. The course will cover the political and military history, art, literature, philosophy, and science of Greece from prehistoric to modern times, with special emphasis on Greek civilization's enduring democratic and cultural ideals. The course will include screening of films and use of online resources.

**ANTHRO 1041 Sex and Gender Across Cultures: 3 semester hours**

This course considers womanhood, manhood, third genders, and sexuality in a broad cross-cultural perspective. The focus of the course is on the diverse cultural logics that separate females, males, and sometimes third genders into different groups in different societies, with the male group usually being the more prestigious one. Focusing on the indigenous non-Western cultures, this course examines gender roles and sexuality within the broader cultural contexts of ritual and symbolism, family, marriage and kinship, economy, politics, and public life. This course will help students understand what it is like to be male or female in non-Western cultures. This course satisfies the Cultural Diversity Requirement.

**ANTHRO 1091 Introductory Topics in Anthropology: 3 semester hours**

This course features special and current topics at the introductory level in the areas of social, cultural and physical anthropology and archaeology. The course examines the basic concepts and provides an understanding of the development of new trends and areas of study in the field of Anthropology. Topics will focus on the comparative study of non-Western cultures such as ecological practices in tribal societies; religious practices in prehistoric cultures; the roles of women across cultures; etc. Topics may vary and the course may be repeated provided topic is different. This course satisfies the Cultural Diversity requirement.

**ANTHRO 1095 Brief Overview of the Four Fields of Anthropology: 1 semester hour**

Through the use of videos, readings, and the online course management system, this course provides a brief overview of the four traditional fields of anthropology: biological, archaeological, cultural, and linguistic anthropology. This course is designed for video instruction and offers minimal direct interaction with the instructor.

**ANTHRO 1271 Food and Drink: Anthropological Perspective: 3 semester hours**

This course explores the social and cultural aspects of foods and drinks. Topics may include the origins of food production; the evolution of diets, foods, and production systems around the world; the interrelationships between food and identity, gender, race, and class; food and globalization; food politics and food justice movements; water scarcity; and the push for a sustainable future. This course satisfies the Cultural Diversity requirement.

**ANTHRO 2003 Careers in Health and Medicine: 1 semester hour**

Same as INTDSC 2003, GERON 2003, SOC 2003. In this course, students will learn about occupations in such fields as medicine, the allied health professions, health non-profit organizations, and global healthcare delivery. Students will understand the education and skills necessary for various careers and for application to medical, professional, and graduate schools, and will become familiar with majors, certificates and minors that are available at UMSL. They will learn about employment opportunities in the healthcare industry in the St. Louis metropolitan area, and will be introduced to members of the local community who give guest lectures. Students will gain practical experience by shadowing a healthcare professional in their job.

**ANTHRO 2035 Ancient Greek Civilization and Culture: 3 semester hours**

A survey of the history, language, literature, art, science, and philosophy of the ancient Greeks from prehistory to the Roman conquest. It covers the glamorous Minoan-Mycenaean civilization, the rise of classical Greek civilization and the golden age, the history of the city states such as Athens and Sparta, and the Hellenistic period under Alexander the Great and his descendants. Examines the nature of the ancient Greek language, surveys literary classics such as the Iliad and the Odyssey, and describes the archaeology of Greek myths based on the ongoing UM-St. Louis archaeological project in Greece. Discusses the rise of humanism, the ancient Olympic Games, and the legacy of ancient Greece in Western civilization.

**ANTHRO 2100 Languages and World View: 3 semester hours**

Same as FGN LANG 2100 and SOC 2200. Prerequisites: Completion of two semesters of one foreign language at the college level. This course investigates the extent to which peoples' linguistic and cultural background informs their understanding of the world. Experts on a variety of major Western and non-Western languages will introduce students to differences in ideas about time, space, human relationships, and other issues based on language. The course will also analyze common cultural misunderstandings among native speakers of English and speakers of other languages.

**ANTHRO 2101 Girl Cultures: 3 semester hours**

Same as HIST 2120. This course explores themes of identity and gender construction, media representation, and cultural production found in a spectrum of historic and modern international and US girl cultures. 1950s British Teddy Girls, 1970s Japanese Takanozoku, 1990s American Riot Grrrls, 2000s Mexican American Cholas, and other girl cultures teach us about the many strategies teens and young women use to construct their own forms of identity through music, language, zines, fashion, and other diverse activities. This course satisfies the Cultural Diversity requirement.

**ANTHRO 2104 Medicine in Culture and History: 3 semester hours**

Students will explore the diverse beliefs and practices related to anatomy, disease, sexual reproduction, gender, sport, and food. Western biomedicine will be compared with traditional Chinese medicine and other non-Western traditions such as shamanic, Native American, Tibetan, and Ayurvedic systems. The clash between traditional and modern medical systems will also be examined. This course satisfies the Cultural Diversity Requirement.

**ANTHRO 2105 Human Variation: 3 semester hours**

This course will look at the variation that exists within our own species, both between and within populations. It will investigate the evolutionary and genetic basis of human variation, as well as its diversity, adaptive significance, and distribution. Topics covered will include: body shape and physiology, blood groups, susceptibility to disease, and skin color. It will survey historical attempts to classify humans into different 'races'; assess definitions of race as a solely cultural construct; and critique attempts to link race, intelligence and performance.

**ANTHRO 2109 Archaeological Field School: 3-6 semester hours**

Prerequisites: Consent of instructor. Introduction to field methods in archaeology and to the techniques of recording, storing, analyzing, and reporting archaeological findings. Experience is gained through participation in a field research project including excavation and survey projects. Emphasis is placed upon research design and implementation and upon the use of archaeological data in describing and explaining human behavior.

**ANTHRO 2111 Cultures of East Asia: 3 semester hours**

An ethnographic and historical survey of the various people of East Asia including Japan, China, North and South Korea, Hong Kong and Macau. Includes an examination of the varying cultural and social developments within and through the historical, geographical, and cultural environments. This course satisfies the Cultural Diversity requirement.

**ANTHRO 2117 Greek History and Culture: 3 semester hours**

Same as HIST 2117. Greek civilization has had a deep impact on contemporary society in art; social; political; and economic organization; philosophy; law; medicine; and science. This course covers major aspects of Greek history and culture from antiquity to the present. It considers the major political and military events of Greek history, as well as important aspects of Greek culture, including sports and the history of the Olympic Games, literature, philosophy, and mythology.

**ANTHRO 2120 Native Peoples of North America: 3 semester hours**

A survey of Native Peoples of North America including the prehistory, ethnographic and linguistic groupings, social organization, and cultural systems of these cultures.

**ANTHRO 2124 Introduction to Contemporary African Cultures: 3 semester hours**

This introductory course focuses on multiple representations within contemporary African cultures and societies. Students have an opportunity to study and learn about African cultural expressions in belief systems, gender constructions, nationality and ethnicity, socioeconomic class systems, politics, environmental challenges, and cultural adaptations and change. This course satisfies the Cultural Diversity requirement.

**ANTHRO 2132 Archaeology of North America: 3 semester hours**

Examines the archaeological record of human developments throughout prehistoric North America. Topics of discussion include the origins of human culture in America, the processes of prehistoric cultural development in the different regions of the continent, and archaeological approaches to explaining the behavior of North America's prehistoric inhabitants. Satisfies the Cultural Diversity requirement.

**ANTHRO 2134 Archaeology of The Inca, Aztec, and Maya: 3 semester hours**

Provides an overview of human social and cultural developments in Mesoamerica and Andean South America from the first settlements over 20,000 years ago to the Spanish conquest. Focuses on events leading to and including the establishment of Classic Mayan and Aztec societies, and discusses changes that led to what was perhaps the largest nation on earth for its time, the Inca. This course satisfies the Cultural Diversity requirement.

**ANTHRO 2150 Zombies, Vampires, and Monsters: The Supernatural in Popular Culture: 3 semester hours**

Beliefs in the unseen world are universal. Zombies, vampires, and monsters are all elements of the supernatural in popular culture that we can analyze to discover deeper meanings about what it means to be human. This course will also cover magic, witchcraft, ghosts, possession, exorcism, and other beliefs and practices that reveal the views that humans have about their place in the world. This course will use anthropological concepts to make the familiar strange, and the strange familiar.

**ANTHRO 2191 Special Topics in Non-Western Culture: 3 semester hours**

This course focuses on a specific non-western culture, or geographically related groups of cultures. Ethnographic and/or archaeological cultures are chosen and their ecological economic, social, religious, cosmological, political, ethnic, linguistic and other cultural domains are examined. Students are exposed to basic concepts and knowledge for understanding diverse cultures in their historical and/or contemporary contexts of development and relationship. Topics will vary. Satisfies Cultural Diversity Requirement.

**ANTHRO 2192 Anthropological Perspectives on Western Culture: 3 semester hours**

This course focuses on a specific Western culture or geographically-related group of cultures utilizing ethnographic and/or archaeological sources. Ecological, economic, social, political, ethnic, religious, linguistic and cultural domains will be examined. Students are exposed to basic anthropological concepts for understanding diverse cultures in their historical and/or contemporary contexts. Topics will vary.

**ANTHRO 2232 Analysis of Archaeological Artifacts: 3 semester hours**

Prerequisites: ANTHRO 1019 or ANTHRO 2109 or consent of instructor. This course teaches the methods and techniques for analyzing the artifacts from an archaeological dig. Students learn to process, analyze, and interpret ceramics, stone tools, plant and animal debris according to form, design, use wear, and associations. This analysis will form the basis of interpretations about human behaviors and cultural and temporal affiliations. The student will prepare a report of the examined collection.

**ANTHRO 2420 Maiko, Maids, and Masako: Women in Japanese Cultural History: 3 semester hours**

Same as HIST 2420. This course offers perspectives on famous Japanese women who have captured the public eye at various historical junctures. Students will learn to critically assess representations of these mythological, religious, occupational, and subcultural figures, as well as their linkage to notions of nationhood and modernity. This course satisfies the cultural diversity requirement.



***ANTHRO 2425 Food and Drink in Japan: A Cultural History: 3 semester hours***

Same as HIST 2425. This course explores food and drink as core aspects of intimate and public life in Japan and as key elements of nationalism. It examines distinct class, ethnic, and regional dimensions of food and drink that have their own unique histories. Students will learn how food and drink encode a spectrum of historical meanings as well as great cultural hybridity. This course satisfies the Cultural Diversity requirement.

***ANTHRO 2430 Ghosts, Goblins, and Godzillas: 3 semester hours***

Same as HIST 2430. This course explores the spirits, ghouls, and animal tricksters who populate the historic and modern Japanese imagination. Students will learn about the supernatural beings, and the exceptional humans who interact with or control them, who are found in centuries of Japanese religion, folklore, literature, and art, and are also frequent themes in modern art, film, anime and manga. This course satisfies the Cultural Diversity requirement.

***ANTHRO 3209 Forensic Anthropology: 4 semester hours***

Same as CRIMIN 3209. Prerequisites: ANTHRO 1005, or BIOL 1102, or junior standing, or consent of instructor. Students learn basic dental and skeletal anatomy and the methods used by biological anthropologists and archaeologists to collect and analyze human skeletal remains, including how to determine age and sex of skeletal remains, identify ethnic markers, determine stature and handedness, and identify the presence of trauma and/or pathology. Also covers the role of the forensic anthropologist in crime scene investigations and human rights issues. In the weekly lab section students will have an opportunity for hands-on application of techniques to analyze skeletal remains.

***ANTHRO 3212 Medical Anthropology: 3 semester hours***

Same as GERON 3212 and SOC 3212. Prerequisites: ANTHRO 1011 or GERON 2170 or PSYCH 1003 or SOC 1010 or consent of instructor or program director. An examination of the growing interaction between anthropology and medicine, and the increasing use of anthropologists in medical and health-care settings. In addition to teaching current theory in medical anthropology, the course focuses on anthropologically-based skills essential to those working in health-related fields.

***ANTHRO 3214 Writing Systems of the World: 3 semester hours***

Same as HIST 3214. This course studies the writing systems from around the world leads to appreciation for one of humankind's most important technological inventions. Students will explore the origins and development of writing systems over time, the linguistic classification of writing, and the transmission of writing across languages and cultures. This course satisfies the Cultural Diversity requirement.

***ANTHRO 3215 Aging Across Cultures: 3 semester hours***

Same as GERON 3215. Prerequisites: ANTHRO 1011 or PSYCH 1003 or SOC 1010, or consent of instructor. This course examines the wide ranging variability in the roles of older people across different cultures and the effects these have on older people, their families, and their societies.

***ANTHRO 3218 Visual and Material Culture of Japan: 3 semester hours***

Same as HIST 3218. This course offers students the opportunity to research Japanese visual genres and material artifacts, from the iconography of Buddhism and fifteenth century pottery to postwar political cartoons, advertising posters, and etiquette comics. Students will discover how artifacts and images provide a means for communicating cultural meaning, while also reflecting aesthetics, humor, and cultural norms. This course satisfies the Cultural Diversity requirement.

***ANTHRO 3220 Quantitative Data Analysis in Social Science Research: 3 semester hours***

Same as SOC 3220. Prerequisites: SOC 1010 or ANTHRO 1011 and MATH 1030 (or higher). This course examines issues and techniques of statistical analysis relevant to quantitative sociological research, such as elementary probability, measurements of central tendency and dispersion, measures of relationships including linear regression and correlation, inferential and nonparametric statistics. The course includes an introduction to computer-based statistical analysis.

***ANTHRO 3228 People and Plants: 3 semester hours***

Prerequisites: ANTHRO 1011 or ANTHRO 1019 or consent of instructor. This course is designed to introduce students to complex relationships between people and plants. We will focus on how plants are perceived, managed, and used across human societies. Topics span the ages and include collection of wild plants and 'Stone Age' diets; the origins of agriculture in Ancient Egypt, Mesopotamia, China, and the Americas; the development of crops and GMOs; industrial agriculture; organic gardening; and the wilderness-to-table movement. While emphasis will be on food plants, we will also discuss the use of plants as medicines, cosmetics, dyes, and construction materials.

***ANTHRO 3235 Women in Sub-Saharan Africa: A Contemporary Perspective: 3 semester hours***

Prerequisites: ANTHRO 1011, or introductory course in another social science, or consent of instructor. Examines important traditional concerns of anthropologists such as the nature of kinship obligation and privilege; gender as a basis for the division of labor; social organization for formal and informal networks; and ritual and ceremony. In addition we look closely at the changing role of African women, as related by African women testing the very limits of what is 'socially and culturally acceptable.' The roles women continue to play in politics, comprehensive development (i.e. cultural and economic), and evolving social structures are reviewed to gain an understanding of the historical and contemporary mandates for their social action. This course satisfies the Cultural Diversity requirement.

***ANTHRO 3241 Myths and Monuments: 3 semester hours***

This course will provide an overview of Greek myths and legends, as well as their reception in architecture, the visual arts, and literature. Particular emphasis will be given to: 1) the theology and the creation myths of the Greeks and how these relate to the Bible; 2) heroic myths from the Trojan War to Atlantis, and their historicity; 3) famous monuments, works of art, and texts from Greek and world literature, that advance our understanding of Greek myths and the culture that created them.

***ANTHRO 3243 Marriage, Family, and Kinship: 3 semester hours***

Same as SOC 3243 and GS 3243. Prerequisites: ANTHRO 1019, SOC 1010, or consent of the instructor. This course will examine will examine the construction of kinship systems, marriages, families and other forms of intimate relationships from anthropological and sociological perspectives. The cross-cultural structure of this class will incorporate global case studies, including U.S. and European marriage and family structures. Students will have the opportunity to explore topics including love, dating, cohabitation, kinship calculation, alternative lifestyles, and divorce.

***ANTHRO 3244 Religion, Magic and Science: 3 semester hours***

Prerequisites: ANTHRO 1011, or introductory course in another social science, or consent of instructor. A consideration of the roles of religion, magic, and science in culture and social organization.



**ANTHRO 3246 Medicine and Disease in the Ancient World: 3 semester hours**

Prerequisites: ANTHRO 1005 or consent of the instructor. This course explores medicine and disease through case studies from civilizations of the ancient world such as Egypt, Greece, and Peru. Students will discuss how these cultures conceptualized disease, and, in turn, how they contended with illness. This course addresses different ways of identifying disease through medical texts, art, and human remains.

**ANTHRO 3255 Oral History and Urban Culture in St. Louis: 3 semester hours**

Prerequisites: ANTHRO 1011 or instructor's consent. This course involves students in background research and active fieldwork in urban anthropology within the metropolitan area. The focus will be on learning and applying oral history techniques in the city of St. Louis and its neighborhood. They will learn fieldwork methodologies and how to conduct social, cultural, and historical research in preparation for fieldwork. This includes learning to research, conduct, and process interviews. They will also learn to work in teams to construct a group project to be presented to the class.

**ANTHRO 3290 Advanced Topics in Archaeology: 3 semester hours**

Prerequisites: ANTHRO 1019, or consent of instructor. Selected topics in archeology with a strong theoretical and methodological approach. Requires substantial reading and writing. May be repeated with consent of department.

**ANTHRO 3291 Current Issues in Anthropology: 3 semester hours**

Prerequisites: ANTHRO 1011, or introductory course in another social science, or consent of instructor. Selected topics in social, cultural and physical anthropology, with emphasis on current issues and trends in the field of anthropology. May be repeated provided topic is different.

**ANTHRO 4000 Ethnographic Field Research Methods: 3 semester hours**

Prerequisites: ANTHRO 1011, SOC 1010, or consent of instructor. Ethnographic field research is the basis of cultural anthropological inquiry. This course emphasizes hands-on training in the collection and analysis of ethnographic data, including participant observation, taking and managing field notes, key informant interviewing, content analysis and the preparation of ethnographic field reports.

**ANTHRO 4005 Special Research Methods in Cultural Anthropology: 1-3 semester hours**

Prerequisites: ANTHRO 1011 or consent of instructor. Advanced instruction in specialized technical and analytical skills and methods used to conduct research in cultural anthropology and/or linguistic anthropology. May be repeated provided the topic is different.

**ANTHRO 4015 Data Analytics in the Social Sciences: 3 semester hours**

Same as SOC 4015. Prerequisites: MATH 1020 or higher. This course integrates traditional statistical methods with new software and original datasets relevant to students of the social sciences. Students will learn to load, clean, and describe datasets using common software packages and programming languages employed in data science and data analytics. Students will also learn basic descriptive and inferential statistics as well as the visualization tools to successfully graph outputs and present findings. Students with no background in statistics, data analytics, or programming are welcome in the course.

**ANTHRO 4021 Anthropology of Current World Issues: 3 semester hours**

Prerequisites: ANTHRO 1011. This course enhances your understanding of world issues by using an anthropological lens. Students will learn about human adaptations and rationalities, and the way in which anthropology can shed new perspectives on current world issues including ethics, food and water crises, and racial, ethnic, and gender disparities.

**ANTHRO 4100 Field Methods in Archaeology: 3 semester hours**

Prerequisites: ANTHRO 1019 or consent of instructor. Advanced instruction in archaeological field methods including techniques of recording, storing, analyzing, and reporting archaeological findings. Experience is gained through participation in excavations and/or surveys. Emphasis is placed upon research design and implementation and the use of archaeological data in describing and explaining human behavior.

**ANTHRO 4105 Special Research Methods in Archaeology: 1-3 semester hours**

Prerequisites: ANTHRO 1019 or consent of instructor. Advanced instruction in specialized technical and analytical skills and methods used to conduct research in archaeology. May be repeated provided the topic is different.

**ANTHRO 4200 Field Methods in Biological Anthropology: 3 semester hours**

Prerequisites: ANTHRO 1005 or consent of instructor. Course material is based on human skeletal biology and bioarchaeology. The course focuses on 1) training a biological anthropologist; 2) bibliographic research; 3) research methods including skeletal pathology, geographic morphological variants, and developmental changes; 4) giving academic presentations and writing research reports. Students are required to conduct self-directed research on human skeletal remains.

**ANTHRO 4205 Special Research Methods in Biological Anthropology: 1-3 semester hours**

Prerequisites: ANTHRO 1005 or consent of instructor. Advanced instruction in specialized technical and analytical skills and methods used to conduct research in biological anthropology. May be repeated provided the topic is different.

**ANTHRO 4307 Community Based Research in Anthropology: 3 semester hours**

Prerequisites: Junior standing, ANTHRO 1011, ANTHRO 3202, and completion of junior-level writing requirement. An advanced course in qualitative/ethnographic modes of inquiry, building on research and analytical skills learned in previous courses. Some quantitative methods may supplement the research when appropriate. Students experience the process of discovery, representation, presentation, and justification based on fieldwork and/or archival research. The focus is on applying anthropological knowledge to practical issues faced by communities and institutions in the St. Louis area. May be repeated provided the topic is repeated.

**ANTHRO 4310 Laboratory Methods in Archaeology: 3 semester hours**

Prerequisites: ANTHRO 1019, SOC 3220 or equivalent, or consent of instructor. An advanced laboratory analysis and curation methods class. The emphases are 1) mastery of general lab methods and procedures, and 2) development of independent analysis skills in one or more specialty areas such as lithics, ceramics, computer graphics, statistical methods, paleoethnobotany, experimental analysis, and soils.

**ANTHRO 4314 The Archaeology of Death: 3 semester hours**

Prerequisites: ANTHRO 1005 or consent of the instructor. This course will survey some of the different ways people have buried their dead over time. Using archaeology as their foundation, students will explore what burials can tell us about culture and society. During field trips to local cemeteries, they will study current perceptions of death and future archaeological records. Students will conduct demographic analysis of both local and global cemeteries to help them understand the relationships between death, burial, and aging.

**ANTHRO 4315 Anthropology Past, Present, and Future: 3 semester hours**

Prerequisites: Senior standing, one of the following method courses: ANTHRO 4000, ANTHRO 4100, ANTHRO 4200, and consent of the instructor. The capstone course for anthropology majors, ideally to be taken in the final semester of the senior year. In this course, students will 1) explore where anthropology has come from and where it may be going; 2) discuss a series of topics that can be addressed from the perspectives of different subfields by examining different theoretical positions, methods, and types of data; 3) learn to apply the knowledge and skills gained in previous courses to their future, professional careers. Final senior exit projects will be presented orally to Anthropology faculty members.

**ANTHRO 4316 Senior Research Project: 3 semester hours**

Prerequisites: Senior standing and consent of the instructor. For undergraduates who have excelled in their coursework and wish to conduct original research. Students will work with a faculty member with expertise relevant to the research topic. This course offers students the opportunity to build upon strong research, analytic and writing skills. Completion of this course will result in the writing of a thesis, publication of an article, presentation at a professional meeting, or other work that exemplifies high achievement.

**ANTHRO 4325 Internship in Cultural Anthropology: 1-3 semester hours**

Prerequisite: Recommendation of major advisor. Students will be assigned an internship on recommendation of their advisor. Internships will consist of a period of study, observation, and training in an appropriate public or private institution, business, or government office. Cultural Anthropology internships are aimed at providing students with opportunities to learn to apply their knowledge of social and cultural process and diversity to practical situations in the market place of ideas, goods, and services. Specific placements will be selected to match student's interests and career goals.

**ANTHRO 4326 Internship in Archaeology: 1-6 semester hours**

Prerequisite: Recommendation of major advisor. Students will be assigned an internship on recommendation of their advisor. Internships will consist of a period of study, observation, and training in an appropriate public or private institution, business, or government office. Archaeology internships are aimed at providing students with opportunities to work with professional archaeologists in public and private research environments including laboratories and curation centers. Specific placements will be selected to match student's interests and career goals.

**ANTHRO 4328 Internship in Museum Studies: 1-3 semester hours**

Prerequisite: Recommendation of major advisor. Students will be assigned an internship on recommendation of their advisor. Internships will consist of a period of study, observation, and training in an appropriate museum or other exhibition oriented institution. Museum internships are aimed at providing students with opportunities to work with professional museologists to learn skills relating to areas such as exhibition, curation, public programming, research, and publication. Specific placements will be selected to match student's interests and career goals.

**ANTHRO 4329 Internship in Biological Anthropology: 1-3 semester hours**

Prerequisite: Recommendation of major advisor. This course is an internship that consists of a period of study, observation and training in an appropriate institution, lab, or research setting related to forensics, primate behavior and biology, human genetics, population, environmental policy, and other domains related to biological anthropology. Students will be assigned an internship on recommendation of their advisor. This course may be repeated for a maximum of 6 credit hours.

**ANTHRO 4350 Special Study: 1-3 semester hours**

Prerequisite: Consent of instructor. Independent study through readings, reports, or field research. No student may take more than a cumulative total of 6 hours of Special Study.

**ANTHRO 5440 Sociocultural Aspects of Aging: 3 semester hours**

Same as GERON 5440. Prerequisites: Graduate status or consent of the instructor or program director. Focuses on the variety of solutions encountered in different sociocultural contexts for dealing with the problems, challenges and opportunities of growing old. It is organized around topics that are of concern to both anthropology and social gerontology: the status of the aged, intergenerational relations, aging in modernizing societies, ethnic dimensions of aging in complex societies, health in later life, death and dying. Both in-depth case studies and cross-cultural comparisons are examined in an effort to arrive at a culturally informed assessment of factors affecting aging and the aged in the United States.

**ANTHRO 5592 The History of the Visual Arts in American Museums: 3 semester hours**

Same as HIST 5592 and ART HS 5592. Prerequisites: Graduate standing and consent of instructor. This course is an introduction to selected topics in the history of museology, focusing on art and anthropology museums as sites for the interpretations of art and culture, and as contested meeting grounds for various views of history and culture.

**ANTHRO 6138 Museum Studies Master's Project: 5 semester hours**

Same as ART HS 6038 and HIST 6138. Prerequisites: Consent of Director of Museum Studies Program. Research and writing/exhibit development on a selected topic.

## Art and Design

### General Information

### Degrees and Areas of Concentration

The department offers course work leading toward the Bachelor of Fine Arts in Studio Art with emphases in General Fine Arts, Graphic Design and Art Education.

The B.F.A. in Studio Art consists of a foundation art program and an emphasis area in the following: art education, graphic design, and general fine arts. UMSL has transfer agreements with many local and regional community colleges. For information regarding our agreements, please contact the Office of Transfer Services at [transferservices@umsl.edu](mailto:transferservices@umsl.edu) or 314-516-5162.

The Bachelor of Fine Arts Degree in Studio Art has the following learning outcomes:

- to develop visual and verbal responses to visual phenomena, and organize perceptions and conceptualizations both rationally and intuitively;

- to become familiar with the major achievements in the history of art and design, including the works and intentions of leading artists and designers in the past and present;
- to develop the capacity to identify and/or solve problems within a variety of physical, technological, social, and cultural contexts;
- to understand and evaluate contemporary thinking about art or design;
- to become familiar with and develop competence in a number of art or design techniques;
- to make valid assessments of quality and effectiveness in design projects and works of art, especially their own.

To support its teaching and research objectives, the department maintains an extensive and expanding collection of digital images. The collection includes examples of painting, sculpture, architecture, photography and decorative arts, and is under the supervision of a professional visual resource curator, who is available for special assistance to staff and students.

Art history courses can be applied toward minors in Anthropology, American Studies, Classical Studies, Philosophy, and Urban Studies, or certificates in Studies in Religions, Women's and Gender Studies, Photographic Studies and African Studies.

## Gallery 210

Gallery 210, located in Building 7, 44 East Drive, offers visual arts programming of regional, national, and international importance. The gallery's exhibitions and related arts programming have enjoyed a long and distinguished history of service to the university and to the St. Louis community. Gallery activities are supervised by a professional gallery director.

## Gallery FAB

Located in the Fine Arts Building, Gallery FAB exhibits a range of work by artists of regional and national significance. The exhibitions are curated by members of the Studio Art Faculty and complement the teaching emphases of the Fine Arts program.

## Scholarships/Internships

Several scholarships are available on a competitive basis within the department, including the Art Department/Barbara St Cyr Scholarship, the William T. Isbell Jr. Scholarship, the Aronson Scholarship, the Marie Larkin Scholarship in Art Education, and the Hilda and Roy Bergmann Scholarship for Art. The department also sponsors a variety of internships with local arts institutions, including the Saint Louis Art Museum, Contemporary Art Museum St. Louis, Paul ArtSpace, and Laumeier Sculpture Park.

## Ferring Travel Study Program

Each year, student majors in their junior and senior year may apply for the competitive Ferring Travel Study Program, which allows students to travel for free to major art centers in the US, including New York, Chicago, and Los Angeles.

## Career Outlook

Study in art history broadens and enriches a general education, offering insight into the visual, architectural, and cultural artifacts left by earlier, as well as modern, civilizations. Art history graduates have found career opportunities in teaching, museums, galleries, libraries, historical societies,

sales and auction houses, the legal professions, historic preservation, and arts administration.

Students with degrees in studio art find careers in teaching, advertising, public relations, graphic design, illustration, film and video production, arts administration, art restoration, product and industrial design, framing, and commercial photography.

With over 300 art teachers in the greater St. Louis region alone, there is a demand for art teachers statewide each year.

Students in each major receive professional practice development with a new attention paid to entrepreneurial skills.

## Faculty Overview

The Department of Art and Design has a diverse faculty actively engaged in the production of art, its historical and critical evaluation, and the training of art educators. The department prides itself on its commitments to high standards of teaching and sound research achievements. Individual faculty have been cited for their teaching excellence. Art history faculty members have written books, articles, and critical reviews, and regularly participate in national and international conferences. Art and Design Faculty exhibit nationally and internationally in group and solo shows, juried and invited exhibitions; they also curate exhibitions and maintain a high level of professional practice.

## Programs

### Degrees

Studio Art, Bachelor of Fine Arts

Emphasis Areas:

- Graphic Design (p. 640)
- Art Education (p. 639)
- Studio Practice (p. 642)

### Minors

History of Art and Visual Culture (p. 472)

Studio Art (p. 643)

## Art Education Courses

### **ART ED 2179 Visual Art Activities for Elementary School: 3 semester hours**

Students will explore the purpose of visual arts in school settings and will encounter various media and materials through hands-on art experiences. Discussion of social, cultural, and historical influences on creative works will be encountered. Course content highlights the integration of visual art in teaching elementary subjects and emphasizes the role of art-making and imaginative experiences in child development. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

### **ART ED 3328 Art Education: Theory to Practice: 3 semester hours**

Prerequisites: Completion of Level I requirements and Foundation Art Program; concurrent enrollment in ART ED 4260 is required. Development and application of concepts related to comprehensive art education and standards-based curriculum in art education, with an examination of current theories, trends, publications, and on-line resources in the field.

**ART ED 4260 Art Museum as Teaching Resource: 3 semester hours**

Prerequisites: Completion of Level I requirements, 9 hours of ART HS, and completion of Foundation Art Program; concurrent enrollment in ART ED 3328 is required. Students will learn how to strengthen K-12 Art Education by utilizing the collections and resources of the St. Louis Art Museum. A variety of teaching approaches and learning activities for galleries and classrooms will be employed, focusing on art from around the world and throughout history.

**ART ED 4273 Curriculum and Methods of Teaching Art: 3 semester hours**

Prerequisites: ART ED 3328 and completion of, or concurrent enrollment in, ED PSY 3312, SPEC ED 3318, or TCH ED 4391. A study of the scope and sequence of art education in the school curriculum, with emphasis on the preparation, selection, organization and application of materials and methods of instruction and assessment. Attention is also given to learning the research tools of the scholar in the field of art education. Not available for graduate credit.

**ART ED 4290 Special Study in Art Education: 1-6 semester hours**

Prerequisites: Junior, senior, or graduate standing and consent of instructor. Independent study through readings, reports, field research, or special projects. May be repeated for credit, up to a maximum of 6 credit hours.

**ART ED 5228 Foundation and Classroom Application of Art Education: 2 semester hours**

Prerequisites: Graduate standing, admission to the Teacher Education Program, a passing score on the Missouri Content Exam (MoCA) in Art on file, and consent of instructor; concurrent enrollment in ART ED 5260 is required. Development, application, and research of concepts related to comprehensive art education and standards-based curriculum in art education, with an in-depth examination of current theories, trends, publications, and on-line resources in the field.

**ART ED 5260 Museum Collections in the K-12 Curriculum: 2 semester hours**

Prerequisites: Graduate standing. Students will research the value and application of utilizing the collections and resources of the St. Louis Art Museum to strengthen K-12 education. A variety of research-based teaching strategies and learning activities for galleries and classrooms will be employed; a broad cultural perspective and historical understanding of art will be used.

**ART ED 5273 Advanced Methods and Curriculum Development of Teaching Art: 2 semester hours**

Prerequisites: ART ED 5260 and ART ED 5228. An in-depth study of the scope and sequence of art education in the school curriculum, highlighting the preparation, selection, organization and application of materials and methods of instruction and assessment. Emphasis is placed on learning the research tools of the scholar in the field of art education and the role of the teacher as researcher on curriculum development.

**ART ED 5334 Topics in Contemporary Art Education: 3 semester hours**

Prerequisites: Graduate standing or permission of instructor. Intensive study for advanced students and art teachers, emphasizing specialized techniques and innovative concepts. Topics to be announced. May be repeated for credit, up to a maximum of 12 credit hours.

**ART ED 5588 Museum Education and Visitor Research: 3 semester hours**

Prerequisites: Consent of Director of Museum Studies Program. Development and operation of museum educational programs: learning theory; program design; relationships with exhibit development; programming for children and adults. Visitor research: theoretical foundations; research design; impact on programming and strategic planning.

**ART ED 5590 Special Study in Art Education: 1-6 semester hours**

Prerequisite: Graduate standing and consent of instructor. Independent study through readings, reports, field research, or special projects. May be repeated for credit.

**Art History Courses****ART HS 1100 Introduction to Western Art (MOTR ARTS 100): 3 semester hours**

An introduction to major historical movements in Western art.

**ART HS 1120 Global Art and Visual Culture (MOTR ARTS 101): 3 semester hours**

This course explores transcultural perspectives in Art History. Students will be introduced to creative visual traditions from across the globe. The course examines themes such as death and the afterlife, religious practice, visual persuasion, and design aesthetic in historical Europe, Africa, Asia, the Indigenous Americas and Oceania. This course satisfies the Cultural Diversity requirement.

**ART HS 1140 Indigenous Arts of the Americas: 3 semester hours**

This course surveys the indigenous arts of the Americas from precontact through the present. Cultures to be covered may include Iroquois and Ojibway of the Northeast; Navajo and Pueblo of the Southwest; Kwagwuit and Gitsxan of the Northwest Coast; and Inuit from the Arctic. The relationship of art to religion, philosophy, politics, and social life will be explored. This course satisfies the Cultural Diversity requirement.

**ART HS 1150 Introduction to the Art and Visual Cultures of Africa: 3 semester hours**

This course surveys major art forms of Africa and the African Diaspora. It addresses traditional media, such as architecture, masquerade, regalia, sculpture, metalwork, ceramics, and textiles, as well as contemporary sculpture, painting, photography, and performance. This course satisfies the Cultural Diversity requirement.

**ART HS 1160 Introduction to the Art and Visual Cultures of Asia: 3 semester hours**

This course surveys major achievements in architecture, sculpture, and painting of India, China, Japan, and Southeast Asia, with an emphasis on religious, historical, and social context of the arts. This course satisfies the Cultural Diversity requirement.

**ART HS 1190 Ideas in the History of Art and Visual Culture: 3 semester hours**

Prerequisites: ART HS 1100 or consent of instructor. This course studies selected works of art, with attention to the social and cultural factors surrounding their creation.

**ART HS 2211 Art and Archaeology of The Ancient World: 3 semester hours**

Prerequisite: ART HS 1100. A survey of art in Egypt, the ancient Near East, Greece, and Rome, beginning in the Neolithic era (8000-4000 BC) and ending with the Barbarian invasions of Italy in the fifth century A.D. The major highlights of architecture and city planning, sculpture, painting, pottery, and the minor arts will be covered.



**ART HS 2212 Greek Art and Archaeology: 3 semester hours**

General survey of material culture in the Aegean basin, beginning with the Bronze Age (Third Millennium B.C.) and terminating in the late Hellenistic period (Second Century B.C.). For the Hellenistic period the course will trace Greek developments and influences outside of the Aegean, for example in Italy and in Egypt.

**ART HS 2225 Medieval Art: 3 semester hours**

A survey of the art and architecture of the Mediterranean World and northern Europe from late antiquity to the late Gothic period (300-1300 A.D.). Focus on new styles and subject matter in painting, sculpture and architecture.

**ART HS 2235 Renaissance and Baroque Art: 3 semester hours**

Prerequisites: ART HS 1100 or consent of instructor. This course is an introduction to art and architecture in Europe from the fifteenth through the seventeenth centuries.

**ART HS 2250 Rococo to Realism: 3 semester hours**

Prerequisites: ART HS 1100 or consent of the instructor. This course is an introduction to selected European artists and artworks from c. 1720 to 1860.

**ART HS 2261 History of Graphic Design: 3 semester hours**

This course examines the rapport of word, image, artist, client, and viewer that is unique to the genres of book arts and graphic design as studied in their historical and contemporary contexts.

**ART HS 2265 History of Photography: 3 semester hours**

Prerequisite: ART HS 1100 or consent of instructor. A study of photography: its historical development, an examination of it as an art medium, and its influence on the development of modern art.

**ART HS 2270 Art of the United States: 3 semester hours**

Prerequisites: ART HS 1100 or consent of instructor. This course is an overview of art and architecture in the United States from the colonial era through the twentieth century.

**ART HS 2275 History of Illustration: 3 semester hours**

Prerequisites: ART HS 1100 or consent of instructor. This course will analyze the work of artists who specialized in illustration for prints, books, newspapers, magazines, and advertisements, emphasizing the 19th and 20th centuries in the United States. The course will cover topics such as idealizations of the American West and changing roles of women in society, as well as iconic characters and images that continue to inspire artists today.

**ART HS 2280 Modern to Contemporary Art: 3 semester hours**

Prerequisite: ART HS 1100 or consent of the instructor. This course presents an overview of avant-garde modern art in Europe and the United States from the mid-nineteenth century to the contemporary era. It explores traditional media such as painting and sculpture as well as newer forms such as performance and installation art in the context of changing ideas about art's traditions, social functions, and philosophical concerns.

**ART HS 2291 Issues and Ideas in the History of Art and Visual Culture: 3 semester hours**

Prerequisites: ART HS 1100 or permission of instructor. This course is an intensive studies of a few selected works from various eras and cultures, with special attention to the particular social and cultural factors surrounding their creation. This course may be repeated for credit with the permission of an advisor as long as the topic different.

**ART HS 3350 Studies in Design: 3 semester hours**

Prerequisites: Minimum of one 2000-level course in Art History and ENGL 3100, or consent of instructor. The course examines selected topics in the history of design, and may include genres such as architecture, material culture, or graphic design. May be repeated for credit with a different topic, for a maximum of 6 credit hours.

**ART HS 3387 Professional Internship: 1-6 semester hours**

Prerequisites: Minimum of two 2000-level courses in art history and ENGL 3100 and consent of instructor. The internship provides experience in museums, historical societies, galleries, design firms, or visual resource collections. Students will assist in the diverse duties associated with the day-to-day functions of the institution, under the joint direction of a faculty advisor and a supervisor at the institution. Course requirements may include readings, research assignments, and/or a paper. This course may be counted for art history or studio art credit with the department's consent.

**ART HS 3389 Visual Resources Management: 1-3 semester hours**

Prerequisites: Minimum of two 2000-level courses in Art History, ENGL 3100, and consent of instructor. A hands-on course in the Department of Art and Art History's media center that will cover collection development and management as well as technical and theoretical issues in the visual resources profession.

**ART HS 3390 Special Study: 1-4 semester hours**

Prerequisite: Junior or senior standing. Consent of instructor and Art History advisor. Independent study through readings, reports or field research. May be repeated one time with consent of Art History advisor. May not be used for internship credit.

**ART HS 3395 Selected Themes in the History of Art and Visual Culture: 3 semester hours**

Prerequisites: Two 2000-level ART HS courses or consent of instructor. This course is a study of a selected topic in visual culture. It may be repeated for credit with a different topic.

**ART HS 4400 Topics in the History of Art and Visual Culture: 3 semester hours**

Prerequisites: One 3000-level ART HS course or consent of instructor. This course is the study of a selected topic in the history of art and visual culture. It may be repeated for credit with a different topic.

**ART HS 4455 Topics in Modern Art: 3 semester hours**

Prerequisites: ART HS 2280 and ENGL 3100, or one 3000-level course in Art History, or consent of instructor. Intensive study of selected topics in art of the nineteenth and/or twentieth centuries. May be repeated for credit with permission of instructor and advisor.

**ART HS 4490 Special Study: 1-4 semester hours**

Prerequisite: Junior or senior standing, consent of instructor and Art History advisor. Independent study through readings, reports, or field research. May be repeated one time with consent of Art History advisor. May not be used for internship credit.

**ART HS 4495 Senior Seminar: Methods of Art History: 3 semester hours**

Prerequisite: ART HS 3395, ENGL 3100 and senior standing in Art History or consent of instructor. An advanced class in the methods of art historical analysis. Theoretical perspectives will include connoisseurship, style, iconography, social history, and others.

**ART HS 5590 Special Study in Art History: 1-6 semester hours**

Prerequisites: Graduate standing and consent of instructor. Independent study through readings, reports, discussions, and/or special projects. May be repeated for credit with consent of instructor.



**ART HS 5592 The History of The Visual Arts in American Museums: 3 semester hours**

Same as ANTHRO 5592 and HIST 5592. Prerequisites: Graduate standing and consent of instructor. This course is an introduction to selected topics in the history of museology, focusing on art and anthropology museums as sites for the interpretations of art and culture, and as contested meeting grounds for various views of history and culture.

**ART HS 5593 Museum Management and Curatorial Practice: 3 semester hours**

Prerequisites: Consent of the instructor and graduate standing. Museum Management and Curatorial Practice is designed to give students overlapping theoretical and practical experience that will be useful after entry into the museum profession. While exhibitions are at the core of the museum mission, it takes a broad range of skills from different team members to bring shows to fruition. The course provides students with grounded knowledge on how to curate an exhibition for their museum and understand all the elements that serve the mission-driven goals for that institution, and the obligation to uphold best practices as established by the American Alliance of Museums [AAM] and the Association of Art Museum Directors [AAMD] that provide guidance for the field. Students will become familiar with the different types of roles and functions that make museums run (although staffing levels will vary based on the size and budget of the organization), including: executive management, advancement, marketing, curatorial, collections management, education, and others (e.g., archivist, librarian, security, maintenance, groundskeeping, restaurant staff, parking).

**ART HS 6038 Museum Studies Master's Project: 5 semester hours**

Sames as ANTHRO 6138 and HIST 6138. Prerequisites: Consent of Director of Museum Studies Program. Research and writing/exhibit development on a selected topic.

**Studio Art Courses****ST ART 1020 Expanded Artforms: 3 semester hours**

A practical and theoretical exploration of contemporary art practices organized around structured assignments that will explore various modes of working in art. This course is designed to assist studio students in developing a personal, non-medium specific approach to art making and problem solving. Lab fee required. Basic computer lab equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 1130 Ceramics II: 3 semester hours**

Prerequisite: ST ART 1030. A continuation of ST ART 1030. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1140 Drawing I (MOTR PERF 105D): 3 semester hours**

An introduction to drawing through the study of figure, object, and environment. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1142 Figure Drawing I: 3 semester hours**

Basic studies of the human form and anatomy from the model in a variety of drawing media. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1143 Figure Drawing II: 3 semester hours**

Prerequisite: ST ART 1142. Continuation of Figure Drawing I. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1150 2D Design: Surface: 3 semester hours**

This course uses tactile and digital methods to introduce students to imaging in black and white, color, and principles of 2D pictorial space. Using a variety of media, students will explore and understand the foundations of visual thinking. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1151 3D Design: Space: 3 semester hours**

Prerequisites: ST ART 1150 or consent of instructor. This course introduces students to the fundamentals and technical principles of working three dimensionally. Students will experiment with a number of construction methods and materials used to create, represent, respond to, and reflect on form and space. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1181 Painting II: 3 semester hours**

Prerequisite: ST ART 1180 or consent of instructor. Continuation of basic studio problems in painting media. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1210 Graphic Design I: 3 semester hours**

Prerequisite: None. Introduction to graphic design with an emphasis on fundamentals of space, emotion, shape, form, and concept. Projects in design, layout and typography will be addressed. The course is recommended to be taken concurrently with ST ART 1150, Design I. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 1220 Graphic Design II: 3 semester hours**

Prerequisites: ST ART 1150 and ST ART 1210. Continuing introduction to graphic design, focusing on developing concepts and design process, typographic systems and layout systems. The course is recommended to be taken concurrently with ST ART 2220, Computer Design I. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2160 Photography II: 3 semester hours**

Prerequisite: ST ART 1060. An introduction to the techniques and aesthetics of black and white photography and the darkroom. Students must provide a film camera with adjustable speeds and aperture. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2210 Typography: 3 semester hours**

Prerequisites: ST ART 1220 or consent of instructor. Course intends to instill a sense of responsibility relative to typographic and production design, while developing the student's capacity for critical thinking and general typographic rules, visual hierarchy of typographic elements, classical typographic tradition, book design, awareness of typographic aesthetic.

**ST ART 2212 Image Making for Graphic Design: 3 semester hours**

Prerequisites: ST ART 1220 or consent of instructor. This course teaches skills of making images and custom type for use in visual communication. Topics covered include a survey of traditional and experimental illustration techniques with an emphasis on creation of original imagery. The class will discuss how hand images are further developed and combined on the computer for use in design. Creativity, discovery, and craft are highly emphasized. Lab fee required.

**ST ART 2220 Computer Design I: 3 semester hours**

Prerequisites: ST ART 1150 and ST ART 2205, concurrent enrollment in ST ART 3305 recommended. This course introduces students to the use of computer graphics for the creation of artwork applicable to the graphic design industry. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2221 Computer Design II: 3 semester hours**

Prerequisite: ST ART 2220. Designed to familiarize students with the methods processes, software, and computer functions used in graphic design and illustration. The course is recommended to be taken concurrently with ST ART 3310, Graphic Design III. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2230 Drawing II: 3 semester hours**

Prerequisites: ST ART 1140 or consent of the instructor. This course facilitates the development of drawing skills through continued observation and problems of invention. Student will explore and use varied drawing materials and techniques including graphite, charcoal, conte crayon, and inks. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2235 Comics and Cartoon Illustration: 3 semester hours**

This is a course in creating and appreciating the world of comics and cartoons. Students will investigate and learn the tools and techniques for creating cartoons and cartoon illustrations to create their own cartoons through the use of traditional media and computers. While designed for beginners, experienced artists will be encouraged to perfect their personal styles. The class will create and print its own comic book. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2240 Drawing III: 3 semester hours**

Prerequisites: ST ART 1140 and ST ART 1141. This course offers studio problems designed to further the development of drawing skills in various media. Limited color will also be introduced. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2245 Painting I: 3 semester hours**

Prerequisites: ST ART 1140 and ST ART 1150, or consent of instructor. This course is an introduction to the use of oil and/or acrylic painting media. Students will address studio problems to develop technical and expressive skills on various surfaces. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2252 Printmaking I: 3 semester hours**

Prerequisites: ST ART 1150 and ST ART 2230, or consent of instructor. This course provides an introduction to printmaking techniques, materials, and theories. The course will include work in a variety of print materials. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2260 Photography I: 3 semester hours**

This course is an introduction to the techniques and aesthetics of digital photography, along with photo editing software and printing techniques. Students must provide a digital camera. A lab fee is required. Basic computer lab equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2263 Digital Color Process: 3 semester hours**

Prerequisites: ST ART 1060. An extended study in the process of digital printing. The class will help students refine their techniques using digital color management and explore various techniques to assure the closest relationship between the image on the monitor and the resulting print. Hands-on training with different digital printers, digital media and scanning techniques will be offered. This class will involve both learning exercises and the creation of original computer-aided photographic art. Lab fee required. Students must provide a digital camera. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2264 Non-Silver Photography: 3 semester hours**

Prerequisites: ST ART 1060 and ST ART 2160. An introduction to the aesthetics and techniques of nontraditional photographic processes. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2269 Commercial Application in Photo: Photojournalism, Documentary, and Public Relations Photography: 3 semester hours**

Prerequisite: ST ART 2263 or consent of instructor. Exploration of issues and applications within the field of photojournalism, documentary, and public relations photography. The class will concentrate on a variety of photographic applications focusing on news and editorial imagemaking, as well as training the student in public relations assignments. This class will involve both learning exercises and the creation of original computer-aided photographic art. Students must provide a digital camera. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2270 Ceramics I: 3 semester hours**

This course is an introduction to the basic methods and theory of ceramics including work with hand-built construction, wheel techniques and glazing. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2271 Printmaking II: 3 semester hours**

Prerequisite: ST ART 1170 or consent of instructor. A continuation of ST ART 1170. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2273 Printmaking: Etching: 3 semester hours**

Prerequisites: ST ART 1150 and ST ART 1141 or consent of instructor. An introduction to printmaking skills and theory of contemporary etching practices. Development of skills and aesthetic judgements in the media using non-toxic etching processes. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2275 Sculpture I: 3 semester hours**

This course is an introduction to traditional and contemporary materials, aesthetics, and theories of three-dimensional art. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2278 Introduction to Fibers and Textiles: 3 semester hours**

This course provides an exploration of a variety of on- and off-loom weaving and other fiber and textile media and techniques. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2280 Painting III: 3 semester hours**

Prerequisite: ST ART 1181 or consent of instructor. Advanced studio problems in painting media. Attention paid to individual development of theory, expression, and technique. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2283 Watercolor Painting: 3 semester hours**

Prerequisites: ST ART 1150 and ST ART 1141. Beginning problems in watercolor painting. Includes the study of traditional and contemporary approaches to color, color techniques, and treatment of papers. May be repeated for credit. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2285 Entrepreneurship for the Visual Arts: 3 semester hours**

Prerequisites: ST ART 1150 or consent of the instructor. In this course, students will explore ways of establishing, promoting, and sustaining a creative practice. The basics of arts entrepreneurship, which may include marketing, branding, portfolio development, valuing work, and routes to market, are investigated through case studies and practice.

**ST ART 2290 Special Study: 1-10 semester hours**

Prerequisites: Junior/Senior standing and consent of department and instructor. Independent study through readings, reports or field research. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3074 Special Topics in Studio Art: 3 semester hours**

Prerequisites: Minimum completion of 18 hours in Studio Art. Selected topics in studio studies. May be repeated for credit with a change of topic. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3260 Photography III: 3 semester hours**

Prerequisite: ST ART 2160. An exploration into contemporary theories and trends in photography. Advanced projects, portfolios and techniques will be expected from those enrolled. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3310 Graphic Design III: 3 semester hours**

Prerequisite: ST ART 1220 and ST ART 2220. Advanced studio problems to further the understanding of design and its relationship to typographic elements, illustration, and communication. The course will encourage both conceptual and technical development of the designer. The course is recommended to be taken concurrently with ST ART 2221, Computer Design II. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3311 Graphic Design IV: 3 semester hours**

Prerequisite: ST ART 3310 and ST ART 2221. Further studio problems in the graphic arts. The course is recommended to be taken concurrently with ST ART 2210, Typography. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3312 Advanced Topics in Graphic Design: 3 semester hours**

Prerequisites: ST ART 3311 or permission of instructor. Studies of selected topics, which will vary. May be repeated for credit with a different topic, for a maximum of 9 credit hours. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3313 Introduction to Motion: 3 semester hours**

Prerequisites: ST ART 2220 and basic knowledge of Photoshop and Illustrator. This course explores the fundamentals of motion design for the graphic designer. Students will learn the basics of animating, using After Effects software. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3317 Art of 3D Animation II: 3 semester hours**

Prerequisites: ST ART 3316. In this production course, students will work on advanced techniques of animation and the mechanics of spatial graphics software, and will study the storytelling and visual techniques central to creating a successful animated presentation. Each student will produce an animated video presentation during the class. A lab fee is required. Basic computer lab equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3323 Fundamentals of Researching User Experience: 3 semester hours**

Prerequisites: ST ART 3322. In this course, students will discover in greater detail the methods for researching user experiences within interactive systems. This will include basic tools like interviews, surveys, and usability studies. The course will demonstrate how to translate user research into personas, use-case scenarios, and functional requirements for software and other uses, such as implementation in marketing and product design. Course work will include readings, research papers, and user research. A lab fee is required. Basic equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3350 Studio Art Internship: 1-6 semester hours**

Prerequisites: Junior/Senior standing in studio art and consent of the faculty advisor. The internship provides experience in design firms, professional art studios, or comparable settings. Students will assist professionals in the diverse duties associated with studio art activities. Course assignments may include research assignments and/or reports to be reviewed by the faculty advisor and/or supervisor. May be repeated for credit, up to a maximum of 6 credit hours.

**ST ART 3352 Printmaking: Screenprinting: 3 semester hours**

Prerequisites: ST ART 2252 or consent of instructor. This course provides an introduction to the techniques, methods, and aesthetics of screenprinting. Studio problems involving uses and approaches will be emphasized. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3354 Printmaking: Lithography: 3 semester hours**

Prerequisites: ST ART 2252 or consent of instructor. This course provides an introduction to printmaking skills and theory in stone and plate lithography and examines studio problems in the use of materials and equipment. Attention will be given to students' individual development. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3366 Commercial Applications in Photography: 3 semester hours**

Prerequisites: ST ART 3362 or consent of instructor. This course explores of issues and applications within the field of photography. Techniques of lighting, posing, and studio equipment are discussed. This class involves both learning exercises and the creation of original computer-aided photographic art. Students must provide a digital camera. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.



**ST ART 3372 Advanced Lithography: 3 semester hours**

Prerequisite: ST ART 1173. Continuing problems in lithography with problems in black and white, photolithography, and/or color. May be repeated for credit. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3382 Advanced 2D Practices: 3 semester hours**

Prerequisites: ST ART 1150 and two 2000 level courses in 2D art practice. This course will afford students the opportunity to continue to explore and develop advanced technical and conceptual strategies in two-dimensional media. This course may be offered with varying themes, and may be repeated for credit with a different topic. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3383 Advanced Problems in Graphic Design I: 3 semester hours**

Prerequisite: ST ART 3311 and ST ART 2210. This course is focused on professional-level art and portfolio production. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3384 Advanced Problems in Graphic Design II: 3 semester hours**

Prerequisite: ST ART 3383. A continuation of ST ART 3383. The course includes the preparation of a faculty-reviewed portfolio. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3385 Advanced 3D Practices: 3 semester hours**

Prerequisites: ST ART 1151 and two 2000 level courses in studio art, one of which must be in 3D practice. This course will afford students the opportunity to continue to explore and develop advanced technical and conceptual strategies in three-dimensional media. This course may be offered with varying themes, and may be repeated for credit with a different topic. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3390 Special Study: 1-10 semester hours**

Prerequisite: Junior/senior standing and consent of department chairperson and instructor. Independent study through readings, reports, or field research. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 4495 Senior Studio Seminar: 3 semester hours**

Prerequisites: Senior standing and ST ART 3381, ST ART 3341, ST ART 3392 or ST ART 3371. Weekly critiques and discussions of technical and professional issues. Will instruct students in methods of portfolio display, documentation, gallery representation, grant writing, and professional preparation. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies. Offered only during Fall Semester.

**ST ART 4496 Senior Studio Seminar: 3 semester hours**

Prerequisites: Senior standing and ST ART 4495. Weekly critiques and discussions of technical and professional issues. Will instruct students in methods of portfolio display, documentation, gallery representation, grant writing, and professional preparation. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies. Offered only during Winter Semester.

**ST ART 4497 Senior Seminar in Graphic Design I: 3 semester hours**

Prerequisites: Senior standing and ST ART 3384. Students must pass the junior portfolio review. Weekly critiques and discussions of technical and professional issues. Will instruct students in the methods of professional preparation. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 4498 Senior Seminar in Graphic Design II: 3 semester hours**

Prerequisites: ST ART 4497. Continuation of ST ART 4497. Will instruct students in the methods of professional preparation. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 5590 Special Study: 1-6 semester hours**

Prerequisites: Graduate standing and consent of instructor. Independent study through art making, readings, reports, or field research. Studio Art fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies. May be retaken for credit with consent of instructor.

## Biochemistry and Biotechnology

### General Information

#### Degrees

Biochemistry and Biotechnology provides academic programs leading to the undergraduate B.S. degree or the graduate M.S. degree in Biochemistry and Biotechnology. These degrees are offered in cooperation with the Department of Biology and the Department of Chemistry and Biochemistry. Faculty members in this program are engaged in teaching and research in areas such as biochemistry, genetics, molecular biology, and cell biology. Majors have the opportunity through coursework, laboratories, seminars, and research experience to develop the knowledge and skills necessary to enter the workforce or to go on with further graduate education.

#### Career Outlook

The emerging Biotechnology sector is increasing the regional and national demand for workers with significant training in molecular biology, biochemistry, and genetics. The St. Louis metropolitan area has long been a major center for biochemistry and biotechnology, and in the past decade it has become a national hub for life sciences research and development activity. A degree in Biochemistry and Biotechnology provides students with the training they need to become part of the broad biotechnology and life sciences industries.

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Biochemistry and Biotechnology MS, Professional Emphasis (p. 325)

**BIOL 1831 Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L): 5 semester hours**

Prerequisites: A minimum of high school chemistry and MATH 1030; ENGL 1100 or equivalent (may be taken concurrently). Required for students intending to major in biology or take specified biology courses at the 2000 level or above. This course presents and introduction to some of the principles of biology and scientific methodology applied to the molecular/ cellular through organ system levels of organization. Topics include: cell structure, metabolism, reproduction, heredity and major physiological processes regulated by organ systems. Three hours of lecture, three and one half hours of lab, and one hour of discussion per week.

**BIOL 2012 Genetics: 3 semester hours**

Prerequisites: BIOL 1831 (majors must also take BIOL 1821) MATH 1030, and CHEM 1111 or (CHEM 1081 plus CHEM 1091). Fundamental principles of inheritance, including classical genetic theory as well as recent advances in the molecular basis of heredity. Three hours of lecture per week. Fulfills Science/Math requirement.

**BIOL 2013 Genetics Laboratory: 2 semester hours**

Prerequisites: Concurrent registration in BIOL 2012, or consent of instructor. Laboratory to accompany BIOL 2012. Three and one-half hours of organized laboratory time per week. Students may need to return to the laboratory at unscheduled times to complete some exercises.

**BIOL 2482 Microbiology: 3 semester hours**

Prerequisites: BIOL 1831 (majors must also take BIOL 1821), MATH 1030, and CHEM 1111. Study of microorganisms, their metabolism, genetics, and their interaction with other forms of life. Three hours of lecture per week.

**BIOL 2483 Microbiology Laboratory: 2 semester hours**

Prerequisite: BIOL 2482 (may be taken concurrently). Experimental studies and procedures of microbiological techniques. Three and one-half hours of organized laboratory time per week. Students will need to return to the laboratory at unscheduled times to complete some exercises.

**BIOL 3622 Cell Biology: 3 semester hours**

Prerequisites: BIOL 1831, BIOL 2012, CHEM 1121, and MATH 1030. This course examines the organization and basic processes of cells including tissues, organelles, glycolysis, respiration, photosynthesis, trafficking, cytoskeleton, signal transduction, and cell division.

**BIOL 3699 Undergraduate Internship in Biotechnology: 1-4 semester hours**

Prerequisites: BIOL 1821, BIOL 1831, and CHEM 1111 and CHEM 1121 and consent of instructor. Concurrent enrollment in CHEM 2612 or higher is strongly encouraged. A 2.5 GPA and enrollment in the undergraduate Biotechnology Certificate Program is required. Internship will consist of a period of observation, experimentation and on-the-job training in a biotechnology laboratory. The laboratory may be industrial or academic. Credit will be determined by the number of hours a student works each week and in consultation between the intern's supervisor and instructor. Internship assignments will be commensurate with the education and experience of the student. Two credits may be used to fulfill the lab requirement.

**BIOL 4442 Developmental Biology: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 3622. A study of the basic principles that shape the embryonic and post-embryonic development of animals with an emphasis on the underlying cellular and molecular mechanisms. Specific topics include fertilization, determination of cell fate and differentiation, cell migration, establishment of the body plan, formation of selected organs and organ systems, stem cells, and limb regeneration. Environmental influences on development and the impact of developmental biology on modern medicine are also discussed. Three hours of lecture/discussion per week. Students may not receive credit for both BIOL 4442 and BIOL 6442.

**BIOL 4550 Bacterial Pathogenesis: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 2482. Examination of the strategies bacterial pathogens use to infect animals. Topics include host immune responses to infection, bacterial virulence factors, regulation of bacterial virulence, and the cellular and molecular approaches used to study host/parasite interactions. Three hours of lecture per week. Students may not receive credit for both BIOL 4550 and BIOL 6550.

**BIOL 4602 Molecular Biology: 3 semester hours**

Prerequisites: BIOL 2012 and CHEM 2612. This course is a survey of the principles of molecular biology, with emphasis on understanding the genetic regulation of DNA, RNA, and protein synthesis and function in eukaryotic cells.

**BIOL 4608 Synthetic Biology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 2482. A study of the molecular biology of microbial cells, in the context of synthetic biological systems. Topics include DNA replication, transcription, translation, gene regulation and protein structure as well as aspects of genetic engineering as they apply to the construction of novel biological systems. Following an introduction to the design of biological parts used in synthetic biology, students read, discuss and present recent journal articles in order to learn about current advances and applications of synthetic biology. Three hours of lecture per week. Students may not receive credit for BIOL 4608 and BIOL 6608.

**BIOL 4614 Biotechnology Laboratory I: 4 semester hours**

Prerequisites: BIOL 2012 or consent of instructor. An introduction to the fundamental concepts that underlie the field of biotechnology. Both the basic principles of molecular biology and hand-on experience with the techniques of the field will be addressed through lectures, discussions, and a series of laboratory exercises. Two hours of lecture and four hours of laboratory per week. Fulfills a laboratory requirement only; may not be used to fulfill the higher level (4000-5000) lecture course requirement for the B.A. or B.S. degree in biology. Students may not receive credit for BIOL 4614 and a comparable biotechnology course from another institution.

**BIOL 4615 Biotechnology Laboratory II: 4 semester hours**

Prerequisites: BIOL 4614 and either BIOL 4602 or BIOL 4612, or consent of instructor. An in-depth look at theory and practice of biotechnology. Lectures and discussion will examine the underlying principles, and laboratory exercises will present hands-on experience with current techniques. One hour of lecture and six hours of laboratory per week. Fulfills a laboratory requirement only; may not be used to fulfill the higher level (4000-5000) lecture course requirement for the B.A. or B.S. degree in biology. Students may not receive credit for BIOL 4615 and BIOL 6615.



**BIOL 4622 Cellular Basis of Disease: 3 semester hours**

Prerequisites: BIOL 3622. A study of the structural organization and processes of eukaryotic cells, focusing on how defects in cellular function lead to genetic diseases and cancer. Topics of discussion may include membrane dynamics, intracellular trafficking, signal transduction, and the cell cycle. Three hours of lecture per week. Students may not receive credit for both BIOL 4622 and BIOL 6622.

**BIOL 4632 Nucleic Acid Structure and Function: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 4712 or equivalent, or consent of instructor. A comprehensive view of the structural properties of DNA and RNA that promote molecular interactions and biological function. Topics will include the physical properties of nucleic acids, the formation and biological importance of higher order structures, RNA enzymatic activities, nucleic acid-protein interactions, and RNA metabolism. Three hours of lecture per week. Students may not receive credit for both BIOL 4632 and BIOL 6632.

**BIOL 4642 Plant Molecular Biology and Biotechnology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 3622. This course will introduce molecular biology principles that govern plant growth, development, and responses to stress. This course integrates the experimental approaches of genetics, molecular biology, and biochemistry, with a specific focus on biotechnology techniques and applications. Students may not receive credit for both BIOL 4642 and BIOL 6642.

**BIOL 4652 Virology: 3 semester hours**

Prerequisite: BIOL 2012 and BIOL 3622. This first half of the course entails a comparative study of the structure, replication, and molecular biology of viruses. The second half of the course focuses on the pathogenesis, control, and evolution of animal viruses. Three hours of lecture per week. Students may not receive credit for both BIOL 4652 and BIOL 6652.

**BIOL 4662 Human Pathology: 3 semester hours**

Prerequisites: BIOL 3622 or consent of the instructor. A study of disease processes as they affect the human body. The course will examine both the proximate causes and underlying mechanisms of disease. Specific conditions will be used to illustrate application of clinical approaches in determining the origin, development, and effects of a disease.

**BIOL 4797 Biochemistry and Biotechnology Seminar: 1 semester hour**

Same as CHEM 4797. Prerequisites: Senior standing in the Biochemistry and Biotechnology program and consent of faculty advisor. This course will focus on selected publications related to biochemistry and biotechnology from both refereed journals and news sources. Students are expected to participate in discussions and to prepare oral and written presentations. Completion of the Major Field Achievement Test in Biochemistry & Biotechnology is a course requirement. May not be taken for graduate credit.

**BIOL 4822 Introduction to Neuroscience: 3 semester hours**

Prerequisite: BIOL 3802 or consent of instructor. The study of nervous systems, featuring the cellular bases of initiation and conduction to the impulse, synaptic transmission, and the network integrative function of invertebrate and vertebrate nervous systems. This course emphasizes the multidisciplinary nature of the neurosciences, including anatomical, physiological and molecular approaches to understanding neural function. Three hours of lecture per week.

**BIOL 4842 Immunobiology: 3 semester hours**

Prerequisite: BIOL 3622 and CHEM 2612. The fundamental principles and concepts of immunology and immunochemistry. Emphasis on the relation of immunological phenomena to biological phenomena and biological problems. Three hours lecture per week.

**BIOL 4905 Research: 1-3 semester hours**

Prerequisites: Consent of faculty research advisor. Research in an area selected by the student in consultation with and under the direct supervision of an UMSL biology faculty research adviser. Research opportunities are subject to availability and must be approved in advance of beginning research. The project may include the reading of pertinent literature, laboratory or field experience, including keeping of a logbook, and a summary paper and a presentation, all based on an average 8 hours per week per credit during a 15 week semester at the discretion of the instructor. Credit arranged. Course may be repeated for a total of up to 5 credit hours. A maximum of one lab requirement may be satisfied using any two BIOL 4905 credits. Additional credits may be applied toward the total biology hours required for the biology BA or BS. May not be taken for graduate credit.

**BIOL 4920 Selected Topics in Biology: 3 semester hours**

Prerequisites: Junior standing and consent of instructor. The topic for this course will vary each semester. Topics offered for the following semester will be posted in the departmental office. This course may be repeated once if the topic is different.

**BIOL 5069 Topics in Cellular and Molecular Biology: 1 semester hour**

Prerequisite: Graduate standing or consent of instructor. Presentation and discussion of student and faculty research projects and/or current research articles in molecular, cellular and developmental biology. May be repeated. Course graded on a satisfactory/unsatisfactory basis.

**BIOL 5436 Applied Bioinformatics: 3 semester hours**

Prerequisites: BIOL 4712 or BIOL 4602 or consent of instructor. This course provides a survey of the various computational approaches that can be used to solve biological problems. Specific attention will be focused on biological databases and methods for using and interpreting database information, sequence alignments, functional genomics, structure prediction, high-throughput analyses, and proteomics. Three hours of lecture per week.

**BIOL 5798 Practicum in Science in Business: 1-2 semester hours**

Same As CHEM 5798. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis in Chemistry, Biochemistry & Biotechnology, or Biology. Students will integrate and apply their scientific expertise to a practical, business-related problem. The course will emphasize interdisciplinary team-work as well as both written and oral communication skills.

**BIOL 5799 Internship in Sciences in Business: 1-2 semester hours**

Same As CHEM 5799. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis area in Chemistry, Biochemistry & Biotechnology, or Biology. The internship will consist of a period of on-the-job training at a local company. Credit hours will be determined by the number of hours the student works each week and in consultation between the intern's supervisor and the course instructor. Internship assignments will be commensurate with the education and experience of the student, with an emphasis on work at the interface between the scientific and business components of the company. A written report describing the internship project is required.

**BIOL 6550 Advanced Bacterial Pathogenesis: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 2482. Examination of the strategies bacterial pathogens use to infect animals. Topics include host immune responses to infection, bacterial virulence factors, regulation of bacterial virulence, and the cellular and molecular approaches used to study host/parasite interactions. Students may not receive credit for both BIOL 6550 and BIOL 4550. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Three hours of lecture per week.

**BIOL 6602 Advanced Molecular Biology: 3 semester hours**

Prerequisites: BIOL 2012 and CHEM 2612, or consent of instructor. This course covers advanced principles of molecular biology, with an emphasis on primary literature. Students may be required to give an oral presentation and/or write papers on a topic relevant to the course. Students may not receive graduate credit for both BIOL 4602 and BIOL 6602.

**BIOL 6608 Advanced Synthetic Biology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 2482. A study of the molecular biology of microbial cells, in the context of synthetic biological systems. Topics include DNA replication, transcription, translation, gene regulation and protein structure as well as aspects of genetic engineering as they apply to the construction of novel biological systems. Following an introduction to the design of biological parts used in synthetic biology, students read, discuss and present recent journal articles in order to learn about current advances and applications of synthetic biology. Three hours of lecture per week. Students may not receive credit for both BIOL 4608 and BIOL 6608.

**BIOL 6615 Advanced Biotechnology Laboratory II: 4 semester hours**

Prerequisites: BIOL 4614 and either BIOL 4602 or BIOL 4612, or consent of instructor. An in-depth look at the theory and practice of biotechnology. Lectures and discussion will examine the underlying principles, and laboratory exercises will present hands-on experience with current techniques. One hour of lecture and six hours of laboratory per week. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Students may not receive credit for both BIOL 6615 and BIOL 4615 or any course previously called Techniques in Molecular Biology or Advanced Techniques in Molecular Biology.

**BIOL 6622 Advanced Cellular Basis of Disease: 3 semester hours**

Prerequisites: BIOL 3622, or consent of instructor. A study of the structural organization and processes of eukaryotic cells, focusing on how defects in cellular function lead to genetic diseases and cancer. Topics of discussion may include membrane dynamics, intracellular trafficking, signal transduction, and the cell cycle. Three hours of lecture per week. Students may not receive credit for both BIOL 6622 and BIOL 4622.

**BIOL 6632 Advanced Nucleic Acid Structure and Function: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 4712 or equivalent, or consent of instructor. A comprehensive view of the structural properties of DNA and RNA that promote molecular interactions & biological function. Topics will include the physical properties of nucleic acids, the formation and biological importance of higher order structures, RNA enzymatic activities, nucleic acid-protein interactions, and RNA metabolism. Three hours of lecture and one hour of discussion per week. Students may not receive credit for both BIOL 4632 and BIOL 6632.

**BIOL 6642 Advanced Plant Biology and Biotechnology: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce molecular biology principles that govern plant growth, development, and responses to stress. This course integrates the experimental approaches of genetics, molecular biology, and biochemistry, with a specific focus on biotechnology techniques and applications. Student may not receive credit for both BIOL 4642 and BIOL 6642.

**BIOL 6652 Advanced Virology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 3622, and graduate standing. This first half of the course entails a comparative study of the structure, replication, and molecular biology of viruses. The second half of the course focuses on the pathogenesis, control, and evolution of animal viruses. Three hours of lecture, one hour of discussion or seminar per week. Students may not receive credit for both BIOL 4652 and BIOL 6652.

**BIOL 6699 Graduate Internship in Biotechnology: 1-4 semester hours**

Prerequisites: Graduate standing and enrollment in graduate Biotechnology Certificate Program. 6 credit hours maximum (maximum of 8 combined credit hours of BIOL 6905 and internship) Internship will consist of period of observation, experimentation and on-the-job training in biotechnology laboratory. The laboratory may be industrial or academic. Credit will be determined by the number of hours the student works each week and in consultation between the intern's supervisor and the instructor. Internship assignments will be commensurate with the education and experience of the student.

**BIOL 6889 Graduate Seminar: 2 semester hours**

Presentation and discussion of various research problems in biology. Graduate student exposure to the seminar process.

**BIOL 6905 Graduate Research in Biology: 1-10 semester hours**

Research in area selected by student in consultation with faculty members.

**BIOL 6915 Graduate Research Practicum: 1-2 semester hours**

Prerequisite: Consent of instructor. This course is designed for graduate students wishing to pursue research experience in an area outside their dissertation topic. The project can be techniques-oriented or focused on a specific research question. The credit hours will depend on the time commitment to the project as decided by the supervisory faculty member.

**CHEM 1111 Introductory Chemistry I (MOTR CHEM 150L): 5 semester hours**

Prerequisite: MATH 1030 (or a score of 26 or higher on either the Math ACT or the Missouri Math Placement Test) and MATH 1035 (MATH 1035 may be taken concurrently). Presents an introduction to the fundamental laws and theories of chemistry. Laboratory experiments are designed to demonstrate some aspects of qualitative and quantitative analysis and to develop skills in laboratory procedures. Chemistry majors may not include both CHEM 1011 and CHEM 1111 in the 120 hours required for graduation. Three hours of lecture, one and one-half hours of workshop, and three hours of laboratory per week.

**CHEM 1121 Introductory Chemistry II: 5 semester hours**

Prerequisite: CHEM 1111 or advanced placement. Lecture and laboratory are a continuation of CHEM 1111. Three hours of lecture, one and one-half hours of workshop and three hours laboratory per week.

**CHEM 2223 Quantitative Analysis in Chemistry: 3 semester hours**

Prerequisites: CHEM 1121. This course covers basic analytical chemistry theory and techniques, principles of experimental error analysis, and the application of statistics to data treatment. A significant proportion of the laboratory experiments emphasize quantification of unknown samples.

**CHEM 2612 Organic Chemistry I: 3 semester hours**

Prerequisite: CHEM 1121 (may be taken concurrently). An introduction to the structure, properties, synthesis, and reactions of aliphatic and aromatic carbon compounds. Three hours of lecture per week.

**CHEM 2622 Organic Chemistry II: 3 semester hours**

Prerequisite: CHEM 2612. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours of lecture per week.

**CHEM 2633 Organic Chemistry Laboratory: 2 semester hours**

Prerequisite: CHEM 2612. An introduction to laboratory techniques and procedures of synthetic organic chemistry including analysis of organic compounds. One hour of lecture and four and one-half hours of laboratory per week.

**CHEM 3643 Advanced Organic Chemistry Laboratory: 2 semester hours**

Prerequisites: CHEM 2223, CHEM 2622, CHEM 2633, and CHEM 3022 (may be taken concurrently). Identification of organic compounds by classical and spectroscopic methods; advanced techniques in synthesis and separation of organic compounds. One hour of lecture and four and one-half hours of laboratory per week. Not for graduate credit.

**CHEM 3905 Chemical Research: 1-10 semester hours**

Prerequisite: Consent of instructor. Independent laboratory and library study, in conjunction with faculty member, of fundamental problems in chemistry. A written report describing the research is required.

**CHEM 4302 Survey of Physical Chemistry with Applications to the Life Sciences: 3 semester hours**

Prerequisites: CHEM 2612 and MATH 1800 or MATH 1100, and PHYSICS 1012. This course covers the principles of physical chemistry with applications to the life sciences. Topics will include thermodynamics, equilibria, kinetics, and spectroscopy. This course will be taught simultaneously with CHEM 3302, but students in CHEM 4302 will have additional assignments or projects. No student may receive credit for both CHEM 3302 and CHEM 4302. No student may receive credit for both 4302 and 5302.

**CHEM 4712 Biochemistry: 3 semester hours**

Same as BIOL 4712. Prerequisites: CHEM 2612 and either BIOL 1831 or CHEM 2622. Examines the chemistry and function of cell constituents, and the interaction and conversions of intracellular substances. Students may not receive credit for both BIOL 4712 and CHEM 4712.

**CHEM 4722 Advanced Biochemistry: 3 semester hours**

Prerequisite: CHEM 4712. This course covers selected advanced topics in the chemistry of life processes. Students may not receive credit for both CHEM 4722 and CHEM 5722.

**CHEM 4733 Biochemistry Laboratory: 2 semester hours**

Prerequisites: CHEM 4712 (may be taken concurrently), and CHEM 2223. Laboratory study of biochemical processes in cellular and subcellular systems with emphasis on the isolation and purification of proteins (enzymes) and the characterization of catalytic properties. One hour of lecture and four and one-half hours of laboratory per week.

**CHEM 4772 Physical Biochemistry: 3 semester hours**

Prerequisites: CHEM 3312 or CHEM 4712 or BIOL 4712. This course is designed to acquaint students with concepts and methods in biophysical chemistry. Topics that will be discussed include protein and DNA structures, forces involved in protein folding and conformational stability, protein-DNA interactions, methods for characterization and separation of macromolecules, and biological spectroscopy. Students may not receive credit for both CHEM 4772 and CHEM 5772.

**CHEM 4797 Biochemistry and Biotechnology Seminar: 1 semester hour**

Same as CHEM 4797. Prerequisites: Senior standing in the Biochemistry and Biotechnology program and consent of faculty advisor. This course will focus on selected publications related to biochemistry and biotechnology from both refereed journals and news sources. Students are expected to participate in discussions and to prepare oral and written presentations. Completion of the Major Field Achievement Test in Biochemistry & Biotechnology is a course requirement. May not be taken for graduate credit.

**CHEM 4814 Special Topics in Chemistry: 1-10 semester hours**

A reading and seminar course in selected advanced topics.

**CHEM 4897 Seminar in Chemistry: 2 semester hours**

Prerequisites: CHEM 3022 and senior standing. This course will provide students with the opportunity to listen to talks presented by students, faculty, and invited speakers. Students must complete a comprehensive examination before the end of the course. Chemistry majors should enroll during the semester in which they intend to graduate, or during their next-to-last semester before graduation.

**CHEM 5394 Special Topics in Physical Chemistry: 1-3 semester hours**

Prerequisite: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.

**CHEM 5396 Directed Readings in Physical Chemistry: 1-3 semester hours**

Prerequisites: Consent of Physical Chemistry Faculty. A series of readings of monographs, review papers, and/or research publications for a particular student directed at providing that student with appropriate background preparation for experimental or theoretical Ph.D.-level research in an area of physical chemistry. The particular readings will be selected by the physical chemistry staff. Potential topics include but are not limited to advances in Electrochemistry, Surface Chemistry, Thermodynamics, Molecular Spectroscopy, Quantitative Absorption Spectroscopy using new Methodologies, Applications of Group Theory in Spectroscopy, and Computational Chemistry. Assessment may be in various forms including by assignments and seminars. Students may take this course more than once for credit through the particular topic must be different in each case.

**CHEM 5494 Special Topics in Inorganic Chemistry: 1-3 semester hours**

Prerequisite: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.

**CHEM 5694 Special Topics in Organic Chemistry: 1-3 semester hours**

Prerequisite: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.



**CHEM 5774 Bioinformatics: 3 semester hours**

Prerequisites: CHEM 4712 or equivalent. This course introduces modern approaches in bioinformatics and computational biochemistry. Topics to be covered include a survey of biological databases, predictions from protein and DNA sequences, sequence alignment and sequence database searches, building phylogenetic trees, three-dimensional protein structure prediction, molecular modeling and simulation, and computational genomics. Additional independent study work is required. Students may not receive credit for both CHEM 4774 and CHEM 5774.

**CHEM 5794 Special Topics in Biochemistry: 1-3 semester hours**

Prerequisites: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.

**CHEM 5798 Practicum in Science in Business: 1-2 semester hours**

Same as: BIOL 5798. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis in Chemistry, Biochemistry & Biotechnology, or Biology. Students will integrate and apply their scientific expertise to a practical, business-related problem. The course will emphasize interdisciplinary team-work as well as both written and oral communication skills.

**CHEM 5799 Internship in Science in Business: 1-2 semester hours**

Same as: BIOL 5799. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis area in Chemistry, Biochemistry & Biotechnology, or Biology. The internship will consist of period of on-the-job training at a local company. Credit hours will be determined by the number of hours the student works each week and in consultation between the intern's supervisor and the course instructor. Internship assignments will be commensurate with the education and experience of the student, with an emphasis on work at the interface between the scientific and business components of the company. A written report describing the internship project is required.

**CHEM 6787 Problem Seminar in Biochemistry: 1 semester hour**

Prerequisite: Consent of the biochemistry staff. Problems from the current literature, presentations and discussions by faculty, students and visiting scientists. Ph.D. students may take more than once for credit. Up to three credits may be applied to the M.S. degree program.

**CHEM 6897 Chemistry Colloquium: 1 semester hour**

Presentation of papers by students, faculty and invited speakers. One hour per week.

**CHEM 6905 Graduate Research in Chemistry: 1-10 semester hours**

## Biology

### General Information

#### Degrees and Areas of Concentration

The Department of Biology provides academic programs leading to the B.A. or B.S. in Biology. In cooperation with the College of Education, the department offers the B.S. Ed. in Secondary Education with Emphasis in Biology and the B.A. or B.S. in Biology with Master's Level Coursework for Secondary Teacher Certification. It also offers graduate work leading to the Master of Science and the Doctor of Philosophy degrees in Biology. Biology faculty members are engaged in teaching and research in areas ranging from cell and molecular biology to population and community studies.

### Minor in Biology

Students majoring in another discipline may earn a minor in biology by completing a prescribed course of study. Unique programs can be developed to coordinate with special career objectives.

### Departmental Honors

The Department of Biology offers an Honors Program to train students in conducting research in areas of biological research currently under study in the Department.

### Graduate Studies

The Department of Biology offers graduate work leading to the M.S. and Ph.D. degrees in biology. Graduate students will normally work toward an M.S. or Ph.D. degree in two broad areas of biology: a) cellular, molecular, and developmental biology, or b) ecology, evolution, and systematics. Students in the M.S. and Ph.D. programs also have the opportunity to do their graduate work in collaboration with scientists at the Missouri Botanical Garden, the Donald Danforth Plant Science Center, or the Saint Louis Zoo through cooperative graduate programs.

### Facilities

Department facilities include research and teaching laboratories, environmental chambers, greenhouses, and a large array of supporting modern research instrumentation. Graduate research can be pursued using facilities of the Missouri Botanical Garden, the Donald Danforth Plant Science Center, or the Saint Louis Zoo. Several sites within an hour of campus are suitable for regional field studies, including state parks, wildlife conservation areas, the Shaw Nature Reserve, and Washington University's Tyson Research Center. UMSL is a member of the St. Louis University Research Station Consortium that operates Lay and Reis Field Stations in Missouri and is also a member of the Organization for Tropical Studies, which operates three field stations in Costa Rica. CEIBA Biological Centre in Guyana has hosted several UMSL courses and student researchers. Student researchers work independently at research stations throughout the tropics.

### Cooperative Programs

The department participates in a cooperative consortium program in biology with Washington University, Saint Louis University, Southern Illinois University-Edwardsville, and the Missouri Botanical Garden.

### Program Objectives and Career Prospects

The degree program at the baccalaureate level is designed to prepare the student for further professional training in areas such as medicine, dentistry, veterinary medicine, optometry, plant science, conservation, and related areas or for further graduate training in research in biology.

The Undergraduate Certificates in Biotechnology and Conservation Biology are for majors interested in careers in biotechnology and associated areas and in conservation, respectively.

The Master of Science program is an extension of the undergraduate program and provides the research-oriented training and education necessary for students to enter doctoral programs in biology and develops professional biologists qualified to function in responsible technical positions. It also trains students to become effective secondary school and junior college biology teachers.

The Graduate Certificates in Biotechnology and in Tropical Biology and Conservation provides professional training in the areas of biotechnology and conservation.

The Ph.D. program prepares students to be research biologists in academics or other professional fields in ecology, evolution and systematics and cellular and molecular biology. Employment opportunities are available in college or university research and teaching, in government and public institutions such as museums, botanical gardens and conservation organizations, and in industry.

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Biology PhD

- Cell and Molecular Biology Emphasis (p. 337)
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## Minors

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## Certificates

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## Courses

### **BIOL 1010 Introduction to Student Research: 1-3 semester hours**

Prerequisites: Minimum of four semesters of high school science and math courses and consent of the instructor. This course provides high school students an opportunity to develop individual research projects under faculty mentorship. It includes interdisciplinary lectures, demonstrations, seminars, and project guidance. Evaluation will be based on written and oral presentation of the research project and student portfolio.

### **BIOL 1012 General Biology (MOTR BIOL 100): 3 semester hours**

Emphasis on fundamental principles of biology. BIOL 1012 can be applied toward fulfillment of the general education requirement in science. BIOL 1012 does not satisfy the prerequisite requirements in other courses in biology at the 2000 level or above. Students who plan to pursue a career in medicine or one of the medical-oriented professions should enroll in BIOL 1831 rather than BIOL 1012.

### **BIOL 1013 General Biology Laboratory: 1 semester hour**

Prerequisite: BIOL 1012 (may be taken concurrently). This Laboratory course accompanies BIOL 1012. BIOL 1013 can be used to fulfill the general education requirements in a laboratory science. BIOL 1013 does not meet the prerequisite requirements for other courses in biology. Two and one-half hours of laboratory per week.

### **BIOL 1102 Human Biology (MOTR LIFS 150): 3 semester hours**

Lectures and readings concerned with the reproduction, development, genetics, functional anatomy, behavior, ecology, and evolution of the human species. Three hours lecture per week. Fulfills Science/Math requirement.

### **BIOL 1110 Nutrition in Health: 3 semester hours**

This course studies dietary nutrients essential for health, proper selection of foods to provide them and current issues affecting them.

### **BIOL 1131 Human Physiology and Anatomy I: 4 semester hours**

Prerequisites: BIOL 1012 or equivalent or consent of instructor. This course covers the basic aspects of the structure of the healthy human body and how it functions. Special emphasis is on how the human body adapts itself to its environment and how changes affect physiological activities. Three hours lecture and two hours laboratory per week.

### **BIOL 1141 Human Physiology and Anatomy II: 4 semester hours**

Prerequisite: BIOL 1131. A continuation of BIOL 1131. A study of the basic aspects of human physiology and anatomy. Three hours lecture and two hours laboratory per week.

### **BIOL 1162 General Microbiology: 3 semester hours**

Prerequisite: BIOL 1012 or its equivalent. A survey of microbiology structure, genetics, and physiology. Special emphasis will be placed on the transmission and control of such organisms as it relates to the maintenance of human health. Three hours of lecture per week.

### **BIOL 1202 Environmental Biology: 3 semester hours**

An examination of the biological basis of current environmental problems, with emphasis upon resources, energy, pollution and conservation. Three hours lecture per week. Fulfills Science/Math requirement.

### **BIOL 1212 Applied Environmental Sciences: 4 semester hours**

In a combined lecture/laboratory setting, students will get hands-on experience collecting and testing environmental samples for abiotic factors such as contaminants, and experimentally assessing the impact of those contaminants on the biological communities contained within the samples. Important approaches include global positioning and information technologies, microscopy, microbiological techniques, genomics, and quantitative analytical measures for assessing the physical, biological and chemical properties of collected samples.

### **BIOL 1800 Introduction to the Biology Major: 1 semester hour**

Prerequisites: Biology major or consent of the instructor. This course is an orientation to the field of biology for majors and for students who are considering declaring the major. This course introduces students to concepts, skills, and practices that are essential for success as a Biology major and must be completed by all freshman and transfer Biology majors during their first semester of study at UMSL.

### **BIOL 1821 Introductory Biology: Organisms and the Environment (MOTR BIOL 150L): 5 semester hours**

Prerequisites: A minimum of high school chemistry, ENGL 1100 or equivalent (may be taken concurrently), and placement into college algebra or higher. Required for students intending to major in biology or take specified biology courses at the 2000 level or above. This course presents an introduction to some of the principles of biology and scientific methodology applied to the organism and supraorganism levels of biology. Topics to be covered include: ecology, evolution, diversity, and population biology. Three hours of lecture and one hour of discussion per week.



**BIOL 1831 Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L): 5 semester hours**

Prerequisites: A minimum of high school chemistry and MATH 1030; ENGL 1100 or equivalent (may be taken concurrently). Required for students intending to major in biology or take specified biology courses at the 2000 level or above. This course presents an introduction to some of the principles of biology and scientific methodology applied to the molecular/ cellular through organ system levels of organization. Topics include: cell structure, metabolism, reproduction, heredity and major physiological processes regulated by organ systems. Three hours of lecture, three and one half hours of lab, and one hour of discussion per week.

**BIOL 1920 Introductory Topics in Biology: 1-5 semester hours**

Prerequisites: Consent of Instructor. The topics will vary each semester. See online course schedule for topics. Credit arranged. May be taken more than once for credit if topics are different. The applicability toward a Biology degree is dependent on the topic.

**BIOL 1999 Evolution for Everyone: 3 semester hours**

Evolution for Everyone explores the development of our current understanding by examining modern and ancient controversies, and by studying major processes by which change occurs. Lectures will present overviews and many examples on topics in history, mechanisms, and outcome of evolutionary change, and students will participate in classroom and online discussions based on readings, computer exercises, and data collection and analysis. Course may not be applied towards major in Biology. Not eligible for credit with BIOL 3302 (Introduction to Evolution) required for Biology majors.

**BIOL 2010 Introduction to Inquiry Approaches to STEM Education (STEP I): 1 semester hour**

Same as CHEM 2010, PHYSICS 2010, MATH 2010, and SEC ED 2010. Prerequisites: Concurrent enrollment BIOL 1821, BIOL 1831, CHEM 1111, CHEM 1121, PHYSICS 2111, PHYSICS 2112, MATH 1800, or MATH 1900 or have a declared STEM major. Students who want to explore teaching careers become familiar with lesson plan development by writing, teaching and observing lessons in a local school class. Students build and practice inquiry-based lesson design skills and become familiar with and practice classroom management in the school setting. As a result of the STEP I experiences students should be able to decide whether to continue to explore teaching as a career and ultimately finishing the remainder of the WE TEACH MO curriculum leading to teacher certification. The classroom observations and teaching represent a major field component and requires at least one two hour block of free time during the school day once a week.

**BIOL 2011 Designing Inquiry-Based STEM Experiences (STEP II): 1 semester hour**

Same as CHEM 2011, PHYSICS 2011, MATH 2011, and SEC ED 2011. Prerequisites: BIOL 2010, CHEM 2010, PHYSICS 2010, MATH 2010, or SEC ED 2010. Students explore teaching careers, become familiar with STEM school setting through observing and discussing the school environment and by developing and teaching inquiry-based lessons.

**BIOL 2012 Genetics: 3 semester hours**

Prerequisites: BIOL 1831 (majors must also take BIOL 1821) MATH 1030, and CHEM 1111 or (CHEM 1081 plus CHEM 1091). Fundamental principles of inheritance, including classical genetic theory as well as recent advances in the molecular basis of heredity. Three hours of lecture per week. Fulfills Science/Math requirement.

**BIOL 2013 Genetics Laboratory: 2 semester hours**

Prerequisites: Concurrent registration in BIOL 2012, or consent of instructor. Laboratory to accompany BIOL 2012. Three and one-half hours of organized laboratory time per week. Students may need to return to the laboratory at unscheduled times to complete some exercises.

**BIOL 2102 Ecology: 3 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831. This course examines the relationships between living organisms and their environment.

**BIOL 2103 Ecology Laboratory: 2 semester hours**

Prerequisites: BIOL 2102 (may be taken concurrently); a general statistics course is strongly recommended. This laboratory course analyzes environmental factors influencing the abundance and distribution of living organisms. Some classes will be held at field sites in and around St. Louis.

**BIOL 2402 Vertebrate Anatomy: 3 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831. Development, structure, function, interrelationships, and zoogeography of vertebrate animals with particular attention to phylogenetic aspects. Three hours of lecture per week. Fulfills Science/Math requirement.

**BIOL 2403 Vertebrate Anatomy Laboratory: 2 semester hours**

Prerequisite: BIOL 2402 (may be taken concurrently). Laboratory to accompany BIOL 2402. Morphological analysis and systematic survey of major vertebrate groups. Overview of the vertebrate life forms and their adaptations to habitats and resources. Three and one-half hours of laboratory per week.

**BIOL 2482 Microbiology: 3 semester hours**

Prerequisites: BIOL 1831 (majors must also take BIOL 1821), MATH 1030, and CHEM 1111. Study of microorganisms, their metabolism, genetics, and their interaction with other forms of life. Three hours of lecture per week.

**BIOL 2483 Microbiology Laboratory: 2 semester hours**

Prerequisite: BIOL 2482 (may be taken concurrently). Experimental studies and procedures of microbiological techniques. Three and one-half hours of organized laboratory time per week. Students will need to return to the laboratory at unscheduled times to complete some exercises.

**BIOL 2501 Biology of Plants: 5 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831. A general discussion of the plant groups from algae through angiosperms. Plant morphology, physiology, reproduction and ecology will be discussed in lecture (three hours per week). The laboratory (three and one half hours per week) involves examination of representatives of the plant kingdom and experimentation in plant physiology and genetics. Fulfills both a lecture and laboratory requirement.

**BIOL 2920 Contemporary Topics in Biology: 1-5 semester hours**

Prerequisites: Consent of instructor. The topics will vary each semester. See course schedule online for topics. Credit arranged. May be taken more than once for credit if topics are different.

**BIOL 3001 Experiential Practicum in Biosciences: 1 semester hour**

Prerequisites: Consent of Biology Curriculum Committee. Credit for off-campus bioscience projects providing extraordinary student experience and service to a community in need.

**BIOL 3102 Animal Behavior: 3 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831. The study of invertebrate and vertebrate behavior, including neurophysiological, hormonal, developmental, genetic, ecological and evolutionary aspects of behavior; behavior interactions within and between populations. Three hours of lecture per week.

**BIOL 3103 Animal Behavior Laboratory: 2 semester hours**

Prerequisites: BIOL 3102 (may be taken concurrently). Observational and experimental studies of animal behavior in the field and laboratory. Three and one-half hours of formal laboratory time per week, but additional time may be required for independent projects. Some activities involve field trips or trips to the St. Louis Zoo.

**BIOL 3202 Conservation Biology: 3 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831. Introduction to the principles and theories of conservation biology. Course topics include biodiversity, extinctions, population modeling, habitat fragmentation, conservation area management, restoration ecology, and social science elements of conservation strategies. Class sessions will include lectures, discussions, and simulation exercises. Three hours of lecture per week.

**BIOL 3203 Conservation Biology Laboratory: 2 semester hours**

Prerequisite: BIOL 3202 (recommended to be taken concurrently). Laboratory to accompany BIOL 3202. Laboratory will include computer simulations of conservation problems using existing software, 2-3 field trips to local conservation projects, and field interviews with governmental and nongovernmental agencies. Three and one-half hours of laboratory per week.

**BIOL 3302 Evolution: 3 semester hours**

Prerequisites: BIOL 1821, BIOL 1831, BIOL 2012, and MATH 1030. This course covers the theory, events, and processes of organic evolution.

**BIOL 3622 Cell Biology: 3 semester hours**

Prerequisites: BIOL 1831, BIOL 2012, CHEM 1121, and MATH 1030. This course examines the organization and basic processes of cells including tissues, organelles, glycolysis, respiration, photosynthesis, trafficking, cytoskeleton, signal transduction, and cell division.

**BIOL 3631 Histology and Microtechniques: 5 semester hours**

Prerequisites: BIOL 1831 (majors must also take BIOL 1821), BIOL 3622 recommended. The basic principles of histology. A survey of basic tissues and organ systems. Techniques associated with preparation of animal tissues for light microscopic studies. Three hours of lecture and 3 1/2 hours of laboratory per week. (Additional lab hours arranged). Fulfills both a lecture and a laboratory requirement.

**BIOL 3699 Undergraduate Internship in Biotechnology: 1-4 semester hours**

Prerequisites: BIOL 1821, BIOL 1831, and CHEM 1111 and CHEM 1121 and consent of instructor. Concurrent enrollment in CHEM 2612 or higher is strongly encouraged. A 2.5 GPA and enrollment in the undergraduate Biotechnology Certificate Program is required. Internship will consist of a period of observation, experimentation and on-the-job training in a biotechnology laboratory. The laboratory may be industrial or academic. Credit will be determined by the number of hours a student works each week and in consultation between the intern's supervisor and instructor. Internship assignments will be commensurate with the education and experience of the student. Two credits may be used to fulfill the lab requirement.

**BIOL 3802 Vertebrate Physiology: 3 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831 and CHEM 1111 or CHEM 1081 plus CHEM 1091. Basic functional aspects of organ systems in relation to the physiochemical properties of protoplasm. Three hours lecture per week. Fulfills Science/Math requirement.

**BIOL 3803 Vertebrate Physiology Lab: 2 semester hours**

Prerequisite: BIOL 3802 (may be taken concurrently). Instrumental and experimental studies in physiology. Three and one-half hours laboratory per week.

**BIOL 3920 Special Topics in Biology: 1-5 semester hours**

Prerequisites: Consent of instructor. The topics will vary each semester. See course schedule online for topics. Credit arranged. May be taken more than once for credit if topics are different.

**BIOL 4102 Behavioral Ecology: 3 semester hours**

Prerequisite: BIOL 3102 (BIOL 3302 recommended). The evolution and ecology of animal behavior. Topics include the theoretical framework for making predictions, foraging, decision making, sensory ecology, sexual selection, mating systems, sociality and groups, cooperation, signal use and communication. Three hours of lecture per week. Students may not receive credit for both BIOL 4102 and BIOL 6102.

**BIOL 4122 Biometry: 3 semester hours**

Prerequisites: MATH 1030 and a minimum of 15 hours in biology. Reviews descriptive, analytical, and experimental methods useful for the statistical study of biological phenomena. Students will develop the skills needed to better appreciate and evaluate the published literature, as well as the ability to design their own research programs. Topics include: the collection and summarization of biological observations; development, design, and testing of hypothesis; analysis and presentation of data. Three hours of lecture per week. Fulfills the statistics requirement for the B.A. or B.S. degree in biology.

**BIOL 4182 Population Biology: 3 semester hours**

Prerequisite: BIOL 2102 and BIOL 2012 (BIOL 3302 recommended). Introduces concepts and mathematical models of population ecology and population genetics. By integrating the ecology and genetics of populations, the course goal is to understand the processes that contribute to microevolution of populations. Topics include: demography, metapopulation biology, natural selection, migration, gene flow, and genetic drift. Three hours of lecture per week. Students may not receive credit for both BIOL 4182 and BIOL 6182.

**BIOL 4192 Applications of Geographic Information Systems: 5 semester hours**

Prerequisites: BIOL 2102, BIOL 4122 or equivalent, and consent of instructor. Geographic Information Systems (GIS) are sophisticated computer-based systems for analysis, capture, presentation, and maintenance of geographically referenced data. This course provides a foundation in using GIS for spatial analysis. Although biological examples are primarily used, examples from a range of disciplines are employed to emphasize the use of GIS as a tool to support analysis and decision-making. Students will have hands-on use of GIS software during each session. An independent research project applying the spatial analysis tools learned in GIS to biological research will be required. Five hours of combined lecture and computer operations, plus 2-3 hours of open lab per week. Fulfills both a lecture and a laboratory requirement. Students may not receive credit for both BIOL 4192 and BIOL 6192.

**BIOL 4222 Tropical Ecology and Conservation: 3 semester hours**

Prerequisite: BIOL 2102, BIOL 4182, BIOL 5192, or equivalent. This course will cover research areas in tropical population, community and ecosystem ecology, with emphasis on inter-species and environment-organism interactions, population control factors, and genetic structure of populations. Topics include the current status and causes of tropical habitat destruction, ongoing attempts to manage those habitats, and development of strategies leading to sustained use of non-renewable resources. Three hours of lecture per week. Students may not receive credit for both BIOL 4222 and BIOL 6222.

**BIOL 4245 Field Biology: 3 semester hours**

Prerequisite: Three biology courses and consent of instructor. Intensive study of the flora and fauna of selected natural areas of North America, including an extended field trip. Details of the field trip and course schedule will be posted in the Biology department preceding registration for the term in which the course will be offered. Students will be required to pay costs of travel and of the field trip. This is a laboratory course appropriate for advanced undergraduates and non-thesis Master of Science students.

**BIOL 4270 Global Climate Change: 3 semester hours**

Prerequisites: BIOL 3302 or consent of instructor. Topics included are fundamental physical, meteorological, and biological circumstances of global climate change, as well as predictions of its future effects on biological diversity, including humans, and how those estimates are made. In addition, basic environmental economics and politics of climate change at local and global levels will be included. The course will be taught as a series of lectures and discussions led by guest experts in each of the subdisciplines covered. Students may not receive credit for both BIOL 4270 and BIOL 6270.

**BIOL 4299 Practicum in Conservation: 2 semester hours**

Prerequisites: BIOL 3202 and consent of instructor. This course is generally restricted to students officially enrolled in the Certificate Program in Conservation Biology. The course provides practical experience with conservation or environmental agencies. Specific placement will be selected according to student's interests and career goals as well as availability of agency openings. Course requirements include practical experience and final report on practicum experience.

**BIOL 4402 Ornithology: 3 semester hours**

Prerequisites: BIOL 2102 and junior standing. Introduction to avian biology and ecology. Material to be covered will include basic adaptations of anatomy, physiology, and behavior of birds. There will be a strong emphasis on avian ecology and conservation. Specific topics will include flight, reproductive behavior, migration, foraging behavior, community structure, and current conservation concerns. The diversity of birds will be emphasized through comparisons between temperate and tropical regions. Three hours of lecture per week.

**BIOL 4403 Ornithology Laboratory: 2 semester hours**

Prerequisites: BIOL 4402 (may be taken concurrently), or consent of instructor. This course will introduce students to methods of identifying and studying birds. Labs will almost entirely be comprised of field trips to local areas and will emphasize diversity of birds, adaptations shown by different groups, and means of identification, particularly of birds found in Missouri. Field projects will focus on techniques for censusing birds, sampling foraging behavior, and studying habitat selection. Indoor periods will cover internal and external anatomy of birds. Slides and field trips to the St Louis Zoo will be used to survey the diversity of birds worldwide. Three and one-half hours of laboratory per week. Longer (e.g., Saturday) field trips will be made when appropriate.

**BIOL 4422 Entomology: 3 semester hours**

Prerequisites: BIOL 1821, BIOL 1831, 9 additional hours of biology and upper-division standing. Development, structure, function, behavior and ecology of insects, including a systematic survey of the orders of Insecta. Three hours of lecture per week.

**BIOL 4423 Entomology Laboratory: 2 semester hours**

Prerequisites: BIOL 4422 (may be taken concurrently). Laboratory to accompany BIOL 4422. Studies of the morphology, physiology, and behavior of insects to give a sampling of biological studies of the class Insecta. Formation of a collection of insects, comprising a systematic survey of orders and principal families, will be an integral part of the course and will require additional time beyond the official lab hours. Three and one-half hours of lab per week.

**BIOL 4442 Developmental Biology: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 3622. A study of the basic principles that shape the embryonic and post-embryonic development of animals with an emphasis on the underlying cellular and molecular mechanisms. Specific topics include fertilization, determination of cell fate and differentiation, cell migration, establishment of the body plan, formation of selected organs and organ systems, stem cells, and limb regeneration. Environmental influences on development and the impact of developmental biology on modern medicine are also discussed. Three hours of lecture/discussion per week. Students may not receive credit for both BIOL 4442 and BIOL 6442.

**BIOL 4501 Flowering Plant Families: Phylogeny and Diversification: 5 semester hours**

Prerequisites: BIOL 1821, BIOL 1831 and junior standing or consent of instructor. Focusing on the flowering plant families of North America, the aim of the course is to give an understanding of their phylogeny and diversification. Student will also gain an understanding of plant morphology and anatomy, a basis for further developing their knowledge of plants. Three hours of lecture and three to four hours of laboratory per week. Students may need to return to the laboratory at unscheduled times.

**BIOL 4502 Evolution of Cognition: 3 semester hours**

Prerequisites: BIOL 3102 or consent of instructor; BIOL 3302 and PSYCH 2211 are strongly recommended. The evolutionary ecology of animal cognitive abilities. Topics include learning, memory, perception, navigation, and communication from an evolutionary perspective. The focus is on cognitive abilities as adaptations, which have evolved to solve specific environmental problems. Topics include empirical methods for assessing cognitive ability, experimental design, theoretical approaches for generating predictions, and the parsimonious interpretation of data. Two hours of lecture and one hour of discussion per week.

**BIOL 4550 Bacterial Pathogenesis: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 2482. Examination of the strategies bacterial pathogens use to infect animals. Topics include host immune responses to infection, bacterial virulence factors, regulation of bacterial virulence, and the cellular and molecular approaches used to study host-parasite interactions. Three hours of lecture per week. Students may not receive credit for both BIOL 4550 and BIOL 6550.

**BIOL 4602 Molecular Biology: 3 semester hours**

Prerequisites: BIOL 2012 and CHEM 2612. This course is a survey of the principles of molecular biology, with emphasis on understanding the genetic regulation of DNA, RNA, and protein synthesis and function in eukaryotic cells.



**BIOL 4608 Synthetic Biology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 2482. A study of the molecular biology of microbial cells, in the context of synthetic biological systems. Topics include DNA replication, transcription, translation, gene regulation and protein structure as well as aspects of genetic engineering as they apply to the construction of novel biological systems. Following an introduction to the design of biological parts used in synthetic biology, students read, discuss and present recent journal articles in order to learn about current advances and applications of synthetic biology. Three hours of lecture per week. Students may not receive credit for BIOL 4608 and BIOL 6608.

**BIOL 4614 Biotechnology Laboratory I: 4 semester hours**

Prerequisites: BIOL 2012 or consent of instructor. An introduction to the fundamental concepts that underlie the field of biotechnology. Both the basic principles of molecular biology and hand-on experience with the techniques of the field will be addressed through lectures, discussions, and a series of laboratory exercises. Two hours of lecture and four hours of laboratory per week. Fulfills a laboratory requirement only; may not be used to fulfill the higher level (4000-5000) lecture course requirement for the B.A. or B.S. degree in biology. Students may not receive credit for BIOL 4614 and a comparable biotechnology course from another institution.

**BIOL 4615 Biotechnology Laboratory II: 4 semester hours**

Prerequisites: BIOL 4614 and either BIOL 4602 or BIOL 4612, or consent of instructor. An in-depth look at theory and practice of biotechnology. Lectures and discussion will examine the underlying principles, and laboratory exercises will present hands-on experience with current techniques. One hour of lecture and six hours of laboratory per week. Fulfills a laboratory requirement only; may not be used to fulfill the higher level (4000-5000) lecture course requirement for the B.A. or B.S. degree in biology. Students may not receive credit for BIOL 4615 and BIOL 6615.

**BIOL 4622 Cellular Basis of Disease: 3 semester hours**

Prerequisites: BIOL 3622. A study of the structural organization and processes of eukaryotic cells, focusing on how defects in cellular function lead to genetic diseases and cancer. Topics of discussion may include membrane dynamics, intracellular trafficking, signal transduction, and the cell cycle. Three hours of lecture per week. Students may not receive credit for both BIOL 4622 and BIOL 6622.

**BIOL 4632 Nucleic Acid Structure and Function: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 4712 or equivalent, or consent of instructor. A comprehensive view of the structural properties of DNA and RNA that promote molecular interactions and biological function. Topics will include the physical properties of nucleic acids, the formation and biological importance of higher order structures, RNA enzymatic activities, nucleic acid-protein interactions, and RNA metabolism. Three hours of lecture per week. Students may not receive credit for both BIOL 4632 and BIOL 6632.

**BIOL 4642 Plant Molecular Biology and Biotechnology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 3622. This course will introduce molecular biology principles that govern plant growth, development, and responses to stress. This course integrates the experimental approaches of genetics, molecular biology, and biochemistry, with a specific focus on biotechnology techniques and applications. Students may not receive credit for both BIOL 4642 and BIOL 6642.

**BIOL 4652 Virology: 3 semester hours**

Prerequisite: BIOL 2012 and BIOL 3622. This first half of the course entails a comparative study of the structure, replication, and molecular biology of viruses. The second half of the course focuses on the pathogenesis, control, and evolution of animal viruses. Three hours of lecture per week. Students may not receive credit for both BIOL 4652 and BIOL 6652.

**BIOL 4662 Human Pathology: 3 semester hours**

Prerequisites: BIOL 3622 or consent of the instructor. A study of disease processes as they affect the human body. The course will examine both the proximate causes and underlying mechanisms of disease. Specific conditions will be used to illustrate application of clinical approaches in determining the origin, development, and effects of a disease.

**BIOL 4712 Biochemistry: 3 semester hours**

Same as: CHEM 4712. Prerequisites: CHEM 2612 and either BIOL 1831 or CHEM 2622. Examines the chemistry and function of cell constituents, and the interaction and conversions of intracellular substances. Students may not receive credit for both BIOL 4712 and CHEM 4712.

**BIOL 4713 Techniques in Biochemistry: 2 semester hours**

Prerequisites: BIOL 4712 or CHEM 4712 (may be taken concurrently). Laboratory activities introducing fundamental qualitative and quantitative biochemical techniques. Student evaluation will be based on laboratory participation, student laboratory reports, and written examinations. Three and one-half hours of organized laboratory time per week. Students may need to return to the laboratory at unscheduled times to complete some experiments.

**BIOL 4797 Biochemistry and Biotechnology Seminar: 1 semester hour**

Same as CHEM 4797. Prerequisites: Senior standing in the Biochemistry and Biotechnology program and consent of faculty advisor. This course will focus on selected publications related to biochemistry and biotechnology from both refereed journals and news sources. Students are expected to participate in discussions and to prepare oral and written presentations. Completion of the Major Field Achievement Test in Biochemistry & Biotechnology is a course requirement. May not be taken for graduate credit.

**BIOL 4822 Introduction to Neuroscience: 3 semester hours**

Prerequisite: BIOL 3802 or consent of instructor. The study of nervous systems, featuring the cellular bases of initiation and conduction for the impulse, synaptic transmission, and the network integrative function of invertebrate and vertebrate nervous systems. This course emphasizes the multidisciplinary nature of the neurosciences, including anatomical, physiological and molecular approaches to understanding neural function. Three hours of lecture per week.

**BIOL 4842 Immunobiology: 3 semester hours**

Prerequisite: BIOL 3622 and CHEM 2612. The fundamental principles and concepts of immunology and immunochemistry. Emphasis on the relation of immunological phenomena to biological phenomena and biological problems. Three hours lecture per week.

**BIOL 4889 Senior Seminar: 2 semester hours**

Prerequisites: BIOL 1821, BIOL 1831, BIOL 2012, and BIOL 3302, with a total of at least 30 credits in Biology and the consent of your assigned Biology Advisor. Oral and written presentation by students of selected scientific papers or articles. Students are expected to participate in discussions of oral presentations by other students. May not be taken for graduate credit.

**BIOL 4905 Research: 1-3 semester hours**

Prerequisites: Consent of faculty research advisor. Research in an area selected by the student in consultation with and under the direct supervision of an UMSL biology faculty research adviser. Research opportunities are subject to availability and must be approved in advance of beginning research. The project may include the reading of pertinent literature, laboratory or field experience, including keeping of a logbook, and a summary paper and a presentation, all based on an average 8 hours per week per credit during a 15 week semester at the discretion of the instructor. Credit arranged. Course may be repeated for a total of up to 5 credit hours. A maximum of one lab requirement may be satisfied using any two BIOL 4905 credits. Additional credits may be applied toward the total biology hours required for the biology BA or BS. May not be taken for graduate credit.

**BIOL 4915 Biology Internship: 1-3 semester hours**

Prerequisites: Consent of faculty research advisor; generally restricted to junior and senior standing. Research in an area selected by the student to be conducted off-campus in a lab of a professional researcher or faculty person (the internship mentor) other than those in UMSL Biology. Research opportunities are subject to availability and must be approved in advance of beginning research by an UMSL biology faculty liaison and the internship mentor. The project normally includes the reading of pertinent literature, laboratory or field experience, including keeping of a logbook, and a summary paper and a presentation, all based on an average 8 hours per week per credit during a 15 week semester. Credit arranged. This course and BIOL 4905 may be repeated in any combination for a total of up to 5 credit hours. A maximum of one lab requirement may be satisfied using any two BIOL 4905 and/or BIOL 4915 credits. Additional credits may be applied toward the total biology hours required for the biology BA or BS.

**BIOL 4920 Selected Topics in Biology: 3 semester hours**

Prerequisites: Junior standing and consent of instructor. The topic for this course will vary each semester. Topics offered for the following semester will be posted in the departmental office. This course may be repeated once if the topic is different.

**BIOL 5012 Advanced Genetics: 3 semester hours**

Prerequisites: BIOL 2012 or consent of instructor. This course explores advanced topics in the study of genetics, including advanced principles of inheritance, classical genetic theory, advances in understanding the nature of genetic material, and the molecular basis of heredity. Variation between individuals and populations will be considered to emphasize the effects of genetics on both medical and evolutionary questions. A particular focus will be placed on identifying, analyzing, and communicating findings from recent primary literature.

**BIOL 5059 Topics in Ecology, Evolution, and Systematics: 1 semester hour**

Prerequisites: Graduate Standing. Presentation and discussion of faculty and student current research projects in behavior, ecology, evolution, and systematics. May be repeated.

**BIOL 5069 Topics in Cellular and Molecular Biology: 1 semester hour**

Prerequisite: Graduate standing or consent of instructor. Presentation and discussion of student and faculty research projects and/or current research articles in molecular, cellular and developmental biology. May be repeated. Course graded on a satisfactory/unsatisfactory basis.

**BIOL 5079 Topics in Floristic Taxonomy: 1 semester hour**

Prerequisite: BIOL 2501 or equivalent, and graduate standing. Seminar course in systematics of higher plants, arranged in the Cronquist sequence of families, covering morphology, anatomy, palynology, biogeography, chemosystematics, cytology, and other aspects of plant classification and phylogenetics. Given at the Missouri Botanical Garden. One hour per week.

**BIOL 5089 Topics in Animal Behavior: 1 semester hour**

Prerequisites: Graduate standing. Presentation and discussion of current research articles and/or student and faculty research projects in animal behavior, including ecology, evolution, genetics, and mechanisms of behavior. May be repeated.

**BIOL 5099 Biology Colloquium: 1 semester hour**

Prerequisites: Graduate standing. Attendance is required for the Biology weekly seminar series, consisting of research presentations by department faculty and invited speakers. Class sessions will include discussion of scientific research and presentation practices.

**BIOL 5123 Advanced Tropical Resource Ecology Field Studies: 2 semester hours**

Prerequisites: BIOL 5122 (may be taken concurrently). The field component to the lecture and seminar course. Examines the patterns of use and exploitation of resources in the tropics by humans in the context of the theories of behavioral ecology. Two weeks of intensive field research and lectures in Guyana, South America during the second and third weeks of Summer Session I (trip costs to be borne by the student). Students may not receive credit for both BIOL 3123 and BIOL 5123. Offered in odd numbered years.

**BIOL 5177 Graduate Research Writing Workshop in Biology: 1 semester hour**

Prerequisites: Graduate standing. This hands-on course is designed to give Biology graduate students practical assistance and advice on writing, including grant proposal content and organization, writing succinctly but clearly, and editing. The course format will include both informational lectures with discussions and working sessions focused on writing and critiquing drafts. Students are recommended to begin the class ready to write at least one aim of a grant or thesis proposal. Course is graded on a satisfactory/unsatisfactory basis.

**BIOL 5178 Introduction to Graduate Research in Biology: 1 semester hour**

Prerequisites: Graduate standing or consent of instructor. A discussion-based class to introduce new PhD and thesis MS students to the Biology department, graduate school, and best research practices.

**BIOL 5179 Ethical Issues in Biology: 1 semester hour**

Prerequisites: Graduate Standing. Using readings and discussions, students will explore ethical issues in Biology in both professional and social realms. Professional topics include authorship, grants accounting, and academic misconduct; social topics include ethical foundations of basic and applied science, government regulation of science, environmental and individual protection, and current issues. Course graded on a satisfactory/unsatisfactory basis.

**BIOL 5192 Community Ecology: 3 semester hours**

Prerequisites: Graduate standing and either BIOL 2102 and BIOL 4182 or an equivalent course. Studies of structure and organization of natural communities stressing the abundance and distribution of species, the regulation of species diversity, and the evolution of demographic parameters in populations.



**BIOL 5302 Advanced Evolution: 3 semester hours**

Prerequisites: BIOL 3302 or graduate standing. Explores advanced topics in the study of adaptation and the origin of species. Covers phenomena both within populations (e.g. natural selection, sexual selection, and molecular evolution) and between populations (e.g. speciation, coevolution, competition, gene flow, biogeography, and comparative phylogenetics), with a particular focus on recent primary literature.

**BIOL 5312 Theory of Systematics: 3 semester hours**

Prerequisites: BIOL 1821, BIOL 1831 and at least one course beyond the introductory level dealing with animal, plant, or microbial diversity (such as BIOL 2482, BIOL 2501, BIOL 2402, BIOL 4482, BIOL 4501, BIOL 4402, BIOL 4422) or consent of instructor. Course investigates the theory of classification, phylogenetic analysis, systematic biology, and their relation to systematic practice. Will cover goals and schools of systematics, characters and homology, analysis of molecular and morphological data and underlying assumptions, species concepts, classification, naming, and the connections between evolutionary biology and systematics. The course is appropriate for upper level undergraduates & graduate students in all disciplines, animal, plant, and microbial, as an introduction to systematic methods. Three hours of lecture per week.

**BIOL 5436 Applied Bioinformatics: 3 semester hours**

Prerequisites: BIOL 4712 or BIOL 4602 or consent of instructor. This course provides a survey of the various computational approaches that can be used to solve biological problems. Specific attention will be focused on biological databases and methods for using and interpreting database information, sequence alignments, functional genomics, structure prediction, high-throughput analyses, and proteomics. Three hours of lecture per week.

**BIOL 5798 Practicum in Science in Business: 1-2 semester hours**

Same As CHEM 5798. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis in Chemistry, Biochemistry & Biotechnology, or Biology. Students will integrate and apply their scientific expertise to a practical, business-related problem. The course will emphasize interdisciplinary team-work as well as both written and oral communication skills.

**BIOL 5799 Internship in Sciences in Business: 1-2 semester hours**

Same As CHEM 5799. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis area in Chemistry, Biochemistry & Biotechnology, or Biology. The internship will consist of a period of on-the-job training at a local company. Credit hours will be determined by the number of hours the student works each week and in consultation between the intern's supervisor and the course instructor. Internship assignments will be commensurate with the education and experience of the student, with an emphasis on work at the interface between the scientific and business components of the company. A written report describing the internship project is required.

**BIOL 6102 Advanced Topics in Behavioral Ecology: 3 semester hours**

Prerequisite: BIOL 3102 (BIOL 3302 is recommended). The evolution and ecology of animal behavior. Topics include the theoretical framework for making predictions, foraging, decision making, sensory ecology, sexual selection, mating systems, sociality and groups, cooperation, and signal use and communication. Three hours of lecture per week. Assignments will include a heavy emphasis on theory and modelling approaches to behavioral ecology. Students may not receive credit for both BIOL 4102 and BIOL 6102.

**BIOL 6182 Advanced Population Biology: 3 semester hours**

Prerequisites: BIOL 2012 (BIOL 3302 recommended). Introduces concepts and mathematical models of population ecology and population genetics. By integrating the ecology and genetics of population, the course goal is to understand the processes that contribute to microevolution of populations. Topics include: demography, metapopulation biology, natural selection, migration, gene flow, and genetic drift. A discussion section will focus on mathematical elements of population biology models. Three hours of discussion per week. Students may not receive credit for both BIOL 4182 and BIOL 6182.

**BIOL 6192 Applications of Geographic Information Systems: 5 semester hours**

Prerequisites: BIOL 2102, BIOL 4122 or equivalent, and consent of instructor. Geographic Information Systems (GIS) are sophisticated computer-based systems for analysis, capture, presentation, and maintenance of geographically referenced data. This course provides a foundation in using GIS for spatial analysis. Although biological examples are primarily used, examples from a range of disciplines are employed to emphasize the use of GIS as a tool to support analysis and decision-making. Students will have hands-on use of GIS software using Windows 2000/NT based workstations during each session. An independent research project applying the spatial analysis tools learned in GIS to biological research will be required. Five hours of combined lecture and computer operations, plus 2-3 hours of open lab per week.

**BIOL 6222 Advanced Tropical Ecology and Conservation: 3 semester hours**

Prerequisite: BIOL 2102, BIOL 4182, or BIOL 5192, or their equivalent. This course will cover research areas in tropical population, community and ecosystem ecology, with emphasis on inter-species and environment-organism interactions, population control factors, and genetic structure of populations. Topics include the current status and causes of tropical habitat destruction, ongoing attempts to manage those habitats, and development of strategies leading to sustained use of non-renewable resources. A research proposal designed to investigate a current topic in tropical ecology will be required. Students may not receive credit for BIOL 4222 and BIOL 6222. Three hours of lecture per week.

**BIOL 6250 Public Policy of Conservation and Sustainable Development: 3 semester hours**

Same as POL SCI 6452. Prerequisite: Graduate standing in Biology or Political Science and consent of instructor. Prior course in ecology recommended. This course will introduce the student to concepts and techniques for formulating, implementing, and analyzing public policy with an emphasis on environmental concerns, conservation, and sustainable development. The course will be team taught by a political scientist and a biologist. Course materials will include case studies that demonstrate the special problems of environmental policymaking in developing and developed economies.

**BIOL 6270 Advanced Global Climate Change: 3 semester hours**

Prerequisites: Graduate Standing or permission of the instructor. We will cover the fundamental physical, meteorological, and biological circumstances of global climate change, as well as predictions of its future effects on biological diversity, including humans, and how those estimates are made. We will also cover basic environmental economics and politics of climate change at local and global levels. The course will be taught as a series of lectures and discussions led by guest experts in each of the subdisciplines covered. Students may not receive credit for both BIOL 4270 and BIOL 6270.

**BIOL 6299 Internship in Conservation Biology: 1-4 semester hours**

Prerequisite: BIOL 6250 or BIOL 6212 and consent of the director of graduate studies in biology. Internships will consist of a period of study, observation and on-the-job training at a conservation or environmental agency. Specific placements will be selected according to student's interests and career goals. Internships may vary from 2 weeks to 4 months in duration.

**BIOL 6442 Advanced Developmental Biology: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 3622. A study of the basic principles that shape the embryonic and post-embryonic development of animals with an emphasis on the underlying cellular and molecular mechanisms. Specific topics include fertilization, determination of cell fate and differentiation, cell migration, establishment of the body plan, formation of selected organs and organ systems, stem cells, and limb regeneration. Environmental influences on development and the impact of developmental biology on modern medicine are also discussed. Three hours of lecture/discussion per week. Students may not receive credit for both BIOL 4442 and BIOL 6442.

**BIOL 6502 Advanced Evolution of Cognition: 3 semester hours**

Prerequisites: BIOL 3102 and BIOL 3302, or consent of instructor; PSYCH 2211 strongly recommended. The evolutionary ecology of animal cognitive abilities. Topics include learning, memory, perception, navigation, and communication from an evolutionary perspective. The focus is on cognitive abilities as adaptations, which have evolved to solve specific environmental problems. Topics include empirical methods for assessing cognitive ability, experimental design, theoretical approaches for generating predictions, and the parsimonious interpretation of data. Two hours of lecture and one hour of discussion per week. Students may not receive credit for both BIOL 4502 and BIOL 6502.

**BIOL 6550 Advanced Bacterial Pathogenesis: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 2482. Examination of the strategies bacterial pathogens use to infect animals. Topics include host immune responses to infection, bacterial virulence factors, regulation of bacterial virulence, and the cellular and molecular approaches used to study host/parasite interactions. Students may not receive credit for both BIOL 6550 and BIOL 4550. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Three hours of lecture per week.

**BIOL 6602 Advanced Molecular Biology: 3 semester hours**

Prerequisites: BIOL 2012 and CHEM 2612, or consent of instructor. This course covers advanced principles of molecular biology, with an emphasis on primary literature. Students may be required to give an oral presentation and/or write papers on a topic relevant to the course. Students may not receive graduate credit for both BIOL 4602 and BIOL 6602.

**BIOL 6608 Advanced Synthetic Biology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 2482. A study of the molecular biology of microbial cells, in the context of synthetic biological systems. Topics include DNA replication, transcription, translation, gene regulation and protein structure as well as aspects of genetic engineering as they apply to the construction of novel biological systems. Following an introduction to the design of biological parts used in synthetic biology, students read, discuss and present recent journal articles in order to learn about current advances and applications of synthetic biology. Three hours of lecture per week. Students may not receive credit for both BIOL 4608 and BIOL 6608.

**BIOL 6615 Advanced Biotechnology Laboratory II: 4 semester hours**

Prerequisites: BIOL 4614 and either BIOL 4602 or BIOL 4612, or consent of instructor. An in-depth look at the theory and practice of biotechnology. Lectures and discussion will examine the underlying principles, and laboratory exercises will present hands-on experience with current techniques. One hour of lecture and six hours of laboratory per week. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Students may not receive credit for both BIOL 6615 and BIOL 4615 or any course previously called Techniques in Molecular Biology or Advanced Techniques in Molecular Biology.

**BIOL 6618 Practical Next-Generation Sequencing: 3 semester hours**

Prerequisites: Consent of instructor. This is a laboratory course in practical next-generation sequencing. Roughly one-half of the course will focus on bench-top methods for generating sequencing libraries from total RNA as well as the use of next-generation sequencing instruments. The second half of the course will focus on computational methods for analyzing sequencing data, including data visualization and coding.

**BIOL 6622 Advanced Cellular Basis of Disease: 3 semester hours**

Prerequisites: BIOL 3622, or consent of instructor. A study of the structural organization and processes of eukaryotic cells, focusing on how defects in cellular function lead to genetic diseases and cancer. Topics of discussion may include membrane dynamics, intracellular trafficking, signal transduction, and the cell cycle. Three hours of lecture per week. Students may not receive credit for both BIOL 6622 and BIOL 4622.

**BIOL 6632 Advanced Nucleic Acid Structure and Function: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 4712 or equivalent, or consent of instructor. A comprehensive view of the structural properties of DNA and RNA that promote molecular interactions & biological function. Topics will include the physical properties of nucleic acids, the formation and biological importance of higher order structures, RNA enzymatic activities, nucleic acid-protein interactions, and RNA metabolism. Three hours of lecture and one hour of discussion per week. Students may not receive credit for both BIOL 4632 and BIOL 6632.

**BIOL 6642 Advanced Plant Biology and Biotechnology: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce molecular biology principles that govern plant growth, development, and responses to stress. This course integrates the experimental approaches of genetics, molecular biology, and biochemistry, with a specific focus on biotechnology techniques and applications. Student may not receive credit for both BIOL 4642 and BIOL 6642.

**BIOL 6652 Advanced Virology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 3622, and graduate standing. This first half of the course entails a comparative study of the structure, replication, and molecular biology of viruses. The second half of the course focuses on the pathogenesis, control, and evolution of animal viruses. Three hours of lecture, one hour of discussion or seminar per week. Students may not receive credit for both BIOL 4652 and BIOL 6652.

**BIOL 6699 Graduate Internship in Biotechnology: 1-4 semester hours**

Prerequisites: Graduate standing and enrollment in graduate Biotechnology Certificate Program. 6 credit hours maximum (maximum of 8 combined credit hours of BIOL 6905 and internship) Internship will consist of period of observation, experimentation and on-the-job training in biotechnology laboratory. The laboratory may be industrial or academic. Credit will be determined by the number of hours the student works each week and in consultation between the intern's supervisor and the instructor. Internship assignments will be commensurate with the education and experience of the student.

**BIOL 6889 Graduate Seminar: 2 semester hours**

Presentation and discussion of various research problems in biology. Graduate student exposure to the seminar process.

**BIOL 6905 Graduate Research in Biology: 1-10 semester hours**

Research in area selected by student in consultation with faculty members.

**BIOL 6915 Graduate Research Practicum: 1-2 semester hours**

Prerequisite: Consent of instructor. This course is designed for graduate students wishing to pursue research experience in an area outside their dissertation topic. The project can be techniques-oriented or focused on a specific research question. The credit hours will depend on the time commitment to the project as decided by the supervisory faculty member.

**BIOL 6920 Advanced Topics in Biology: 1-5 semester hours**

Prerequisites: Graduate standing. In-depth studies of selected topics in contemporary biology. May be repeated.

## Chemistry and Biochemistry

### General Information

#### Degrees and Areas of Concentration

The Department of Chemistry and Biochemistry offers courses leading to the following baccalaureate degrees:

- B.A. in Chemistry
- B.S. in Chemistry (with a Chemistry or Biochemistry Option)
- B.S. Ed. in Secondary Education with Emphasis in Chemistry (in cooperation with the College of Education)
- B.A. or B.S. in Chemistry with Master's Level Coursework for Secondary Teacher Certification (in cooperation with the College of Education)

The department is accredited by the American Chemical Society. Students completing the B.S. degree (chemistry or biochemistry option) are certified by the American Chemical Society. The B.S. degree is the professional degree in chemistry, and students who earn the B.S. degree are well prepared for a career in the chemical industry or for graduate work in chemistry. The department provides opportunities for undergraduates to become involved in ongoing research projects.

The department also offers graduate work leading to the M.S. or Ph.D. degree in chemistry with most graduate courses being scheduled in the evening. A student may earn a M.S. degree with or without a thesis. The non-thesis option provides a convenient way for students who are employed full-time to earn an advanced degree. The department also offers a non-thesis M.S. with a professional science emphasis. This option includes 9 credit hours of business courses and an internship practicum.

Research leading to a M.S. thesis or Ph.D. dissertation may be conducted in one of four emphasis areas, namely, inorganic chemistry, organic

chemistry, physical chemistry, or biochemistry. The nature of the graduate program allows each student to receive individualized attention from his/her research mentor, and to develop hands-on experience with major instrumentation in the department.

### Fellowships, Scholarships and Awards

The following scholarships, fellowships and awards are available to chemistry majors:

- The John J. Taylor Scholarship is given to a full-time student with high financial need, pursuing a chemistry degree and currently enrolled either of junior or senior status.
- The Friends and Alumni Scholarship is given to a full-time student with high financial need and pursuing a chemistry degree.
- The Monsanto Scholarship in Biochemistry and Biotechnology is open to full-time Sophomore, Junior or Senior students at the University pursuing a Bachelor of Science degree in Biochemistry and Biotechnology.
- William and Erma Cooke Chemistry Scholarships are given annually to outstanding full-time chemistry majors who are at least sophomores and have financial need.
- The Lawrence Barton Scholarship is awarded to a junior, preferably a first generation college student.
- The Barbara Willis Brown Scholarship for Women in Chemistry is given annually to a female chemistry major who is at least 25 years of age. The student is encouraged to enroll in undergraduate research (CHEM 3905), however research is not requirement for this award. Student financial need is a consideration.
- The Eric G. Brunngraber Memorial Scholarship is given to a chemistry major based on GPA, statement of research interests, and performance in completed course work.
- Aid to Education Scholarships are given to junior or senior chemistry majors annually. Faculty select awardees on the basis of merit.
- The Gary S. and Kathy A. Jacob Endowed Scholarship is awarded to a full-time undergraduate student interested in pursuing a degree in Chemistry and Biochemistry or in Biochemistry and Biotechnology.
- The M. Thomas Jones Fellowship is given each semester to the graduate student who is deemed by his/her peers to have presented the best research seminar.
- The Graduate Research Accomplishment Prize is given annually. The recipient is chosen based on his/her publications, presentations at professional meetings, and seminars given at UMSL.
- Alumni Graduate Research Fellowships are available for summer study for selected chemistry graduate students.
- Charles W. Armbruster Scholarship: These scholarships are awarded to outstanding transfer students. The recipients are selected on the basis of need and merit and they must be enrolled in at least 9 credit hours.
- Hal and Mary Harris Endowed Scholarship in Chemistry: Recipients must be juniors seeking a degree in chemistry with a minimum GPA of 3.0 and enrolled in a minimum of 12 credit hours.
- Stephen S. Lawrence Endowed Scholarship in Chemistry: Recipients will be junior or senior chemistry majors who demonstrate financial need, are enrolled in a minimum of 9 credit hours and maintain a cumulative GPA of at least 2.8. Awardees will have demonstrated a good record of departmental citizenship which may include tutoring, teaching, activity in the chemistry club, or other departmental volunteer activities.

- The Rath Family Scholarship: The scholarship shall be awarded to a full-time, undergraduate student who is interested in pursuing a degree in the STEM disciplines at UMSL. Preference may be given to a student who is majoring in Chemistry/Biochemistry who demonstrates financial need and in addition to students from first generation populations from the Indian Subcontinent/South Asia where possible. A GPA of 3.0 or better and a minimum ACT score of 24 (ACT is only applicable for US students) is required. Award recipients will be encouraged to participate in peer-mentoring, tutoring, or similar programs in the STEM disciplines.
- Rudolph E. K. Winter Graduate Scholarship. This scholarship will provide one or more stipend supplements for worthy incoming PhD students, as determined by a decision of the appropriate chemistry faculty committee. Preference will be given to students majoring in some aspect of organic chemistry and the award may be renewable for one year if recipient remains in good academic standing.

Several undergraduate awards are given each year to outstanding students. The Chemical Rubber Company Introductory Chemistry Award is given to the outstanding student in introductory chemistry. The Outstanding Sophomore Chemistry Major award is made to the top sophomore chemistry student. The American Chemical Society Division of Analytical Chemistry Award is given to the outstanding student in analytical chemistry. Similarly awards are given to the top students in Inorganic, Organic and Physical Chemistry. The American Chemical Society-St. Louis Section, Outstanding Junior Chemistry Major Award is given to the outstanding junior chemistry major, and the outstanding senior receives the Alan F. Berndt Outstanding Senior Award.

## Departmental Honors

The Department of Chemistry and Biochemistry will award departmental honors to those B.A. and B.S. degree candidates in chemistry with an overall grade point average of 3.2. They must also successfully complete CHEM 3905, Chemical Research, and must present an acceptable thesis.

## Career Outlook

The St. Louis metropolitan area has long been a major center for industrial chemistry, and in the past decade it has become a focus for the establishment of life sciences research and development. A bachelor's degree in chemistry provides a student with the professional training needed to play a part in this ever-changing industry.

A major in chemistry provides excellent preprofessional training in the health sciences, and a double major in chemistry and biology is often chosen by premedical and pre-dental students and those interested in graduate work in biochemistry and biology. A minor in chemistry provides the minimum qualification and training for a position as a laboratory technician in industry, hospital laboratories, etc.

A Master's degree in chemistry is often required for further advancement in the chemical industry, whereas a doctoral degree opens the door to many opportunities, including careers in the academic world, industrial research and development, and in government laboratories.

## Degrees

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## Minor

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## Affiliated Interdisciplinary Programs

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## Courses

### ***CHEM 1000 Chemistry: The Central Science: 1 semester hour***

This course introduces chemistry majors to the broad nature of the chemical enterprise, including career areas for chemists, trends in chemistry related opportunities in research and industry, and provides an overview of the relevance of chemistry as a discipline. The course reviews the chemistry curriculum and the role of chemistry as a central science and includes presentations from selected current faculty and departmental alumni about research opportunities and other resources within the department. The course is required of all chemistry majors, and is to be taken no later than their second semester of enrollment as a chemistry major at UMSL.

### ***CHEM 1011 Chemistry in the Environment: 3 semester hours***

This course examines the role of chemistry in the environment and the application of chemistry to our understanding of society. The focus of the course will be the relationship between chemistry and the world around us including topics such as the chemistry of air, global climate change, water and energy. The course is designed for non-science, non-engineering and non-allied health majors and can be used to fulfill a general education requirement for undergraduate degrees. The course consists of two hours of lecture per week and, on alternate weeks, one hour of discussion or two hours of laboratory.

### ***CHEM 1021 Beer Brewing: Chemical and Biochemical Principles: 3 semester hours***

This course examines the process of beer brewing as it relates to general topics of chemistry, biochemistry and biology. Each aspect of the brewing process will be examined in detail and the underlying scientific principles identified and discussed. The course is designed for non-science, non-engineering and non-allied health majors and can be used to fulfill a general education requirement for undergraduate degrees. The course consists of two hours of lecture and three hours of lab per week.

### ***CHEM 1022 Principles of Fermentation Science: 3 semester hours***

Prerequisites: CHEM 1021 or a 3 credit-hour 1000 level science course or consent of instructor. This course is designed primarily for students that want to gain insight into the fermentation process from the initial ingredients to the final product. Students will be engaged in analysis of ingredients, impact on the process and evaluation of various styles of beer. Laboratory evaluation will include analysis of water, hops, carbohydrates, alcohol content and sensory science. The course consists of two hours of lecture and three hours of lab per week.



**CHEM 1052 Chemistry for the Health Professions (MOTR CHEM 100): 4 semester hours**

An introduction to general, nuclear, structural organic, organic reactions and biochemistry. This course is designed primarily for students in nursing and related health professions, and should not be taken by students majoring in the physical or biological sciences. Chemistry majors may include neither CHEM 1052 or CHEM 1062 in the 120 hours required for graduation. Four hours of lecture per week.

**CHEM 1062 Organic and Biochem for the Health Professions: 2 semester hours**

Prerequisites: Any college Chemistry course. An introduction to organic reactions and biochemistry. CHEM 1062 is offered during the second half of the semester. Four hours of lecture per week.

**CHEM 1081 Introductory Chemistry I-A (MOTR CHEM 100): 3 semester hours**

Prerequisites: MATH 1030 (or a score of 26 or higher on either the Math ACT or the Math Placement Test). This course is designed for students who want to have an in depth understanding of introductory concepts in Chemistry. CHEM 1081 covers the topics taught in the first half of CHEM 1111 but at a slower pace, thus allowing students time to fully integrate the concepts and thereby build a stronger foundation for their subsequent Chemistry courses. CHEM 1081 consists of the first half of CHEM 1111 (excluding laboratory experiments), whereas CHEM 1091 covers all the laboratory experiments and second half of lecture part of CHEM 1111. Three hours of lecture or workshop per week.

**CHEM 1091 Introductory Chemistry I-B (MOTR CHEM 150L): 3 semester hours**

Prerequisites: CHEM 1081. CHEM 1091 is the completion of CHEM 1111 for students who have completed CHEM 1081. The laboratory portion of this course will start at the beginning of the semester. The lecture part of the course starts in mid-semester and students join an ongoing CHEM 1111 class. Students who completed CHEM 1081 must complete CHEM 1091 to be considered as having completed the equivalent of CHEM 1111. Three hours of lecture and one and one half hours of workshop during the second half of the semester, and three hours of laboratory per week during the entire semester.

**CHEM 1111 Introductory Chemistry I (MOTR CHEM 150L): 5 semester hours**

Prerequisite: MATH 1030 (or a score of 26 or higher on either the Math ACT or the Missouri Math Placement Test) and MATH 1035 (MATH 1035 may be taken concurrently). Presents an introduction to the fundamental laws and theories of chemistry. Laboratory experiments are designed to demonstrate some aspects of qualitative and quantitative analysis and to develop skills in laboratory procedures. Chemistry majors may not include both CHEM 1011 and CHEM 1111 in the 120 hours required for graduation. Three hours of lecture, one and one-half hours of workshop, and three hours of laboratory per week.

**CHEM 1111A CHEM 1111A-Introductory Chemistry 1 - Modular Format: 1 semester hour**

Prerequisites: MATH 1030 (or a score equivalent to completion of MATH 1030 on the UMSL mathematics placement assessment). These courses (1111A-1111L) are identical in content to CHEM 1111 but are offered in a modular format. Each credit hour deals with the lecture or laboratory material covered in CHEM 1111. Completion of all five modules with a grade in each of C- or above is equivalent to completion of CHEM 1111. CHEM 1111A covers the first quarter of lecture material covered in CHEM 1111.

**CHEM 1111B CHEM 1111B-Introductory Chemistry 1 - Modular Format: 1 semester hour**

Prerequisites: CHEM 1111A. Concurrent registration with CHEM 1111A is permitted. CHEM 1111B covers the second quarter of lecture material covered in CHEM 1111.

**CHEM 1111C CHEM 1111C-Introductory Chemistry 1 - Modular Format: 1 semester hour**

Prerequisites: CHEM 1111B. Concurrent registration with CHEM 1111B is permitted. CHEM 1111C covers the third quarter of lecture material covered in CHEM 1111.

**CHEM 1111D CHEM 1111D-Introductory Chemistry 1 - Modular Format: 1 semester hour**

Prerequisites: CHEM 1111C. Concurrent registration with CHEM 1111C is permitted. CHEM 1111D covers the final quarter of lecture material covered in CHEM 1111.

**CHEM 1111L CHEM 1111L-Introductory Chemistry 1 - Modular Format: 1 semester hour**

Prerequisites: CHEM 1111D. Concurrent registration with CHEM 1111D is permitted. CHEM 1111L covers laboratory portion of CHEM 1111.

**CHEM 1121 Introductory Chemistry II: 5 semester hours**

Prerequisite: CHEM 1111 or advanced placement. Lecture and laboratory are a continuation of CHEM 1111. Three hours of lecture, one and one-half hours of workshop and three hours laboratory per week.

**CHEM 1134 Special Topics in Introductory Chemistry: 1-5 semester hours**

Prerequisite: Consent of instructor. A lecture and/or laboratory course to assist transfer students to complete the equivalent of CHEM 1111 and CHEM 1121. Students enrolling in this course should contact the instructor prior to the first day of class for guidelines on course requirements, to choose a lab or workshop section, and to request enrollment in the course website.

**CHEM 2010 Introduction to Inquiry Approaches to STEM Education (STEP I): 1 semester hour**

Same as BIOL 2010, PHYSICS 2010, MATH 2010, and SEC ED 2010. Prerequisites: Concurrent enrollment BIOL 1821, BIOL 1831, CHEM 1111, CHEM 1121, PHYSICS 2111, PHYSICS 2112, MATH 1800, or MATH 1900 or have a declared STEM major. Students who want to explore teaching careers become familiar with lesson plan development by writing, teaching and observing lessons in a local school class. Students build and practice inquiry-based lesson design skills and become familiar with and practice classroom management in the school setting. As a result of the STEP I experiences students should be able to decide whether to continue to explore teaching as a career and ultimately finishing the remainder of the WE TEACH MO curriculum leading to teacher certification. The classroom observations and teaching represent a major field component and requires at least one two hour block of free time during the school day once a week.

**CHEM 2011 Designing Inquiry-Based STEM Experiences (STEP II): 1 semester hour**

Same as BIOL 2011, PHYSICS 2011, MATH 2011, and SEC ED 2011. Prerequisites: BIOL 2010, CHEM 2010, PHYSICS 2010, MATH 2010, or SEC ED 2010. Students explore teaching careers, become familiar with STEM school setting through observing and discussing the school environment and by developing and teaching inquiry-based lessons.

**CHEM 2223 Quantitative Analysis in Chemistry: 3 semester hours**

Prerequisites: CHEM 1121. This course covers basic analytical chemistry theory and techniques, principles of experimental error analysis, and the application of statistics to data treatment. A significant proportion of the laboratory experiments emphasize quantification of unknown samples.

**CHEM 2612 Organic Chemistry I: 3 semester hours**

Prerequisite: CHEM 1121 (may be taken concurrently). An introduction to the structure, properties, synthesis, and reactions of aliphatic and aromatic carbon compounds. Three hours of lecture per week.

**CHEM 2622 Organic Chemistry II: 3 semester hours**

Prerequisite: CHEM 2612. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours of lecture per week.

**CHEM 2633 Organic Chemistry Laboratory: 2 semester hours**

Prerequisite: CHEM 2612. An introduction to laboratory techniques and procedures of synthetic organic chemistry including analysis of organic compounds. One hour of lecture and four and one-half hours of laboratory per week.

**CHEM 3022 Introduction to Chemical Literature: 1 semester hour**

Prerequisites: CHEM 2622 (CHEM 2622 may be taken concurrently). This course will familiarize the student with the literature of chemistry and its use. One hour of lecture per week.

**CHEM 3302 Physical Chemistry for The Life Sciences: 3 semester hours**

Prerequisites: CHEM 2612 and MATH 1800 or MATH 1100, and PHYSICS 1012. Principles and applications of physical chemistry appropriate to students pursuing degree programs in the life sciences. Topics will include thermodynamics, equilibria, kinetics, and spectroscopy. This course is intended for undergraduates seeking the B.S. degree in Biochemistry and Biotechnology and does not fulfill the physical chemistry required for other Chemistry B.A. and B.S. degree programs.

**CHEM 3312 Physical Chemistry I: Thermodynamics and Kinetics: 3 semester hours**

Prerequisites: CHEM 1121 and MATH 2000 (MATH 2000 may be taken concurrently), and PHYSICS 2111. This course discusses the principles of physical chemistry, focusing on thermodynamics, theory of gases, phase equilibria, solution behavior, and kinetics.

**CHEM 3322 Physical Chemistry II: Quantum Chemistry and Spectroscopy: 3 semester hours**

Prerequisites: CHEM 1121, MATH 2000 and PHYSICS 2111. This course discusses the principles of physical chemistry, focusing on atomic and molecular structure, spectroscopy, and quantum mechanics.

**CHEM 3333 Physical Chemistry Laboratory I: 2 semester hours**

Prerequisites: CHEM 2223 and CHEM 3312 (CHEM 3312 may be taken concurrently). This course involves experiments designed to illustrate principles introduced in CHEM 3312.

**CHEM 3412 Basic Inorganic Chemistry: 3 semester hours**

Prerequisite: CHEM 1121. This course reviews the principles of atomic structure and studies covalent and ionic bonding. Topics include properties of the elements and synthesis, reactions and bonding aspects of important main group and transition metal compounds. Two hours lecture per week.

**CHEM 3643 Advanced Organic Chemistry Laboratory: 2 semester hours**

Prerequisites: CHEM 2223, CHEM 2622, CHEM 2633, and CHEM 3022 (may be taken concurrently). Identification of organic compounds by classical and spectroscopic methods; advanced techniques in synthesis and separation of organic compounds. One hour of lecture and four and one-half hours of laboratory per week. Not for graduate credit.

**CHEM 3905 Chemical Research: 1-10 semester hours**

Prerequisite: Consent of instructor. Independent laboratory and library study, in conjunction with faculty member, of fundamental problems in chemistry. A written report describing the research is required.

**CHEM 4212 Instrumental Analysis: 3 semester hours**

Prerequisites: CHEM 3312 and CHEM 3322. This course studies the principles and applications of modern methods of instrumental analysis for analytical chemistry measurements. Topics may be selected from the areas of electrochemistry, absorption and emission spectroscopy, chromatography, mass spectrometry, surface analysis, and nuclear magnetic resonance.

**CHEM 4233 Laboratory in Instrumental Analysis: 2 semester hours**

Prerequisites: CHEM 4212, CHEM 3333. Experiments designed to illustrate the principles and practices of instrumental analysis, involving the use of modern instrumentation in analytical chemistry applications. One hour of discussion and four and one-half hours of laboratory per week.

**CHEM 4302 Survey of Physical Chemistry with Applications to the Life Sciences: 3 semester hours**

Prerequisites: CHEM 2612 and MATH 1800 or MATH 1100, and PHYSICS 1012. This course covers the principles of physical chemistry with applications to the life sciences. Topics will include thermodynamics, equilibria, kinetics, and spectroscopy. This course will be taught simultaneously with CHEM 3302, but students in CHEM 4302 will have additional assignments or projects. No student may receive credit for both CHEM 3302 and CHEM 4302. No student may receive credit for both 4302 and 5302.

**CHEM 4343 Physical Chemistry Laboratory II: 2 semester hours**

Prerequisites: CHEM 2223 and CHEM 3322 (CHEM 3322 may be taken concurrently). This course involves experiments designed to illustrate principles introduced in CHEM 3322.

**CHEM 4412 Advanced Inorganic Chemistry: 3 semester hours**

Prerequisites: CHEM 3322 (may be taken concurrently), CHEM 3412, and CHEM 2622. This course introduces the chemistry of the elements, including atomic and molecular structure, acids and bases, the chemistry of the solid state, and main group and transition metal chemistry. Three hours of lecture per week. Students may not receive credit for both CHEM 4412 and CHEM 5412.

**CHEM 4433 Inorganic Chemistry Laboratory: 2 semester hours**

Prerequisites: CHEM 3333, CHEM 3643, and CHEM 4412 (CHEM 3643 may be taken concurrently). The more sophisticated techniques of physical and analytical chemistry will be used to study inorganic compounds and their reactions. One hour of lecture and four and one half hours of laboratory per week. Not for graduate credit.

**CHEM 4612 Introduction to Macromolecular, Supramolecular, and Nanoscale Chemistry: 1 semester hour**

Prerequisites: CHEM 2622, CHEM 3412, and CHEM 3312. This course introduces students to macromolecular, supramolecular, and nanoscale chemistry. Structure, synthesis and/or preparation, characterization, and physical properties of these systems will be introduced. May not be taken for graduate credit.

**CHEM 4712 Biochemistry: 3 semester hours**

Same as BIOL 4712. Prerequisites: CHEM 2612 and either BIOL 1831 or CHEM 2622. Examines the chemistry and function of cell constituents, and the interaction and conversions of intracellular substances. Students may not receive credit for both BIOL 4712 and CHEM 4712.

**CHEM 4722 Advanced Biochemistry: 3 semester hours**

Prerequisite: CHEM 4712. This course covers selected advanced topics in the chemistry of life processes. Students may not receive credit for both CHEM 4722 and CHEM 5722.

**CHEM 4733 Biochemistry Laboratory: 2 semester hours**

Prerequisites: CHEM 4712 (may be taken concurrently), and CHEM 2223. Laboratory study of biochemical processes in cellular and subcellular systems with emphasis on the isolation and purification of proteins (enzymes) and the characterization of catalytic properties. One hour of lecture and four and one-half hours of laboratory per week.

**CHEM 4772 Physical Biochemistry: 3 semester hours**

Prerequisites: CHEM 3312 or CHEM 4712 or BIOL 4712. This course is designed to acquaint students with concepts and methods in biophysical chemistry. Topics that will be discussed include protein and DNA structures, forces involved in protein folding and conformational stability, protein-DNA interactions, methods for characterization and separation of macromolecules, and biological spectroscopy. Students may not receive credit for both CHEM 4772 and CHEM 5772.

**CHEM 4774 Introduction to Bioinformatics: 3 semester hours**

Prerequisites: CHEM 4712 or equivalent. This course introduces modern approaches in bioinformatics and computational biochemistry. Topics covered include a survey of biological databases, predictions from protein and DNA sequences, sequence alignment and sequence database searches, building phylogenetic trees, three-dimensional protein structure prediction, molecular modeling and simulation, and computational genomics. Students may not receive credit for both CHEM 4774 and CHEM 5774.

**CHEM 4797 Biochemistry and Biotechnology Seminar: 1 semester hour**

Same as CHEM 4797. Prerequisites: Senior standing in the Biochemistry and Biotechnology program and consent of faculty advisor. This course will focus on selected publications related to biochemistry and biotechnology from both refereed journals and news sources. Students are expected to participate in discussions and to prepare oral and written presentations. Completion of the Major Field Achievement Test in Biochemistry & Biotechnology is a course requirement. May not be taken for graduate credit.

**CHEM 4814 Special Topics in Chemistry: 1-10 semester hours**

A reading and seminar course in selected advanced topics.

**CHEM 4897 Seminar in Chemistry: 2 semester hours**

Prerequisites: CHEM 3022 and senior standing. This course will provide students with the opportunity to listen to talks presented by students, faculty, and invited speakers. Students must complete a comprehensive examination before the end of the course. Chemistry majors should enroll during the semester in which they intend to graduate, or during their next-to-last semester before graduation.

**CHEM 5302 Foundations of Physical Chemistry: 3 semester hours**

Prerequisites: Consent of Instructor. A survey of fundamental and advanced topics in physical chemistry including thermodynamics, kinetics, quantum chemistry, and spectroscopy. Three hours of lecture per week. Additional independent study work is required. Students may not receive credit for both CHEM 4302 and CHEM 5302.

**CHEM 5394 Special Topics in Physical Chemistry: 1-3 semester hours**

Prerequisite: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.

**CHEM 5396 Directed Readings in Physical Chemistry: 1-3 semester hours**

Prerequisites: Consent of Physical Chemistry Faculty. A series of readings of monographs, review papers, and/or research publications for a particular student directed at providing that student with appropriate background preparation for experimental or theoretical Ph.D.-level research in an area of physical chemistry. The particular readings will be selected by the physical chemistry staff. Potential topics include but are not limited to advances in Electrochemistry, Surface Chemistry, Thermodynamics, Molecular Spectroscopy, Quantitative Absorption Spectroscopy using new Methodologies, Applications of Group Theory in Spectroscopy, and Computational Chemistry. Assessment may be in various forms including by assignments and seminars. Students may take this course more than once for credit through the particular topic must be different in each case.

**CHEM 5412 Advanced Graduate Inorganic Chemistry: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. An introduction to the chemistry of the elements, including atomic and molecular structure, acids and bases, the chemistry of the solid state, and main group and transition metal chemistry. Additional independent study work is required. Three hours of lecture per week. Students may not receive credit for both CHEM 4412 and CHEM 5412.

**CHEM 5422 Coordination Chemistry: 3 semester hours**

Prerequisite: CHEM 4412 or an equivalent course. Chemistry of the coordination compounds of the transition metals including such topics as kinetics and mechanisms of reaction, stereochemistry, ligand field theory, stability and electronic spectra. Three hours of lecture per week.

**CHEM 5462 Organometallic Chemistry of the Transition Elements: 3 semester hours**

Prerequisites: CHEM 4412 or an equivalent course. A study of transition metal compounds containing metal-carbon bonds and related metal-element bonds, including their synthesis, structure and bonding, and reactions. Applications in organic synthesis and catalysis will also be presented. Three hours of lecture per week.

**CHEM 5494 Special Topics in Inorganic Chemistry: 1-3 semester hours**

Prerequisite: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.

**CHEM 5602 Advanced Organic Chemistry I - Physical Organic: 3 semester hours**

Prerequisites: CHEM 2622 and CHEM 3322. Mechanism and theory of organic chemistry. Topics to include kinetics, transition state theory, reaction intermediates, and stereochemical analysis. Three hours of lecture per week.



**CHEM 5612 Advanced Organic Chemistry II - Reactions And Synthesis: 3 semester hours**

Prerequisite: CHEM 2622. This course will examine a variety of organic transformations typically utilized in organic synthesis. Topics will include carbon-carbon bond formation, pericyclic reactions, oxidation, reduction, and functional group interconversions. Mechanism and stereochemistry will be emphasized. Three hours of lecture per week.

**CHEM 5652 Spectroscopic Identification of Organic Compounds: 3 semester hours**

Prerequisites: Graduate standing or CHEM 3643. An applied approach to the use of spectroscopic techniques in organic chemistry. Topics to include integrated applications of infrared and Raman spectroscopy,  $^{13}\text{C}$  and  $^1\text{H}$  nuclear magnetic resonance spectroscopy and mass spectroscopy for the purpose of elucidating the structure and dynamics of organic compounds. Three hours of lecture per week.

**CHEM 5694 Special Topics in Organic Chemistry: 1-3 semester hours**

Prerequisite: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.

**CHEM 5722 Advanced Graduate Biochemistry: 3 semester hours**

Prerequisites: CHEM 4712 or BIOL 4712. Selected advanced topics in the chemistry of life processes. Three hours of lecture per week. Students may not receive credit for both CHEM 4722 and CHEM 5722.

**CHEM 5772 Advanced Physical Biochemistry: 3 semester hours**

Prerequisites: CHEM 3312 or CHEM 4712 or BIOL 4712. Designed to acquaint students with concepts and methods in biophysical chemistry. Topics that will be discussed include protein and DNA structures, forces involved in protein folding and conformational stability, protein-DNA interactions, methods for characterization and separation of macromolecules, and biological spectroscopy. Three hours of lecture per week. Students may not receive credit for both CHEM 4772 and CHEM 5772.

**CHEM 5774 Bioinformatics: 3 semester hours**

Prerequisites: CHEM 4712 or equivalent. This course introduces modern approaches in bioinformatics and computational biochemistry. Topics to be covered include a survey of biological databases, predictions from protein and DNA sequences, sequence alignment and sequence database searches, building phylogenetic trees, three-dimensional protein structure prediction, molecular modeling and simulation, and computational genomics. Additional independent study work is required. Students may not receive credit for both CHEM 4774 and CHEM 5774.

**CHEM 5794 Special Topics in Biochemistry: 1-3 semester hours**

Prerequisites: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.

**CHEM 5798 Practicum in Science in Business: 1-2 semester hours**

Same as: BIOL 5798. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis in Chemistry, Biochemistry & Biotechnology, or Biology. Students will integrate and apply their scientific expertise to a practical, business-related problem. The course will emphasize interdisciplinary team-work as well as both written and oral communication skills.

**CHEM 5799 Internship in Science in Business: 1-2 semester hours**

Same as: BIOL 5799. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis area in Chemistry, Biochemistry & Biotechnology, or Biology. The internship will consist of period of on-the-job training at a local company. Credit hours will be determined by the number of hours the student works each week and in consultation between the intern's supervisor and the course instructor. Internship assignments will be commensurate with the education and experience of the student, with an emphasis on work at the interface between the scientific and business components of the company. A written report describing the internship project is required.

**CHEM 6487 Problem Seminar in Inorganic Chemistry: 1 semester hour**

Prerequisite: Consent of the inorganic chemistry staff. Problems from the current literature, presentations and discussions by faculty, students and visiting scientists. Ph.D. students may take more than once for credit. Up to three credits may be applied to the M.S. degree program.

**CHEM 6687 Problem Seminar in Organic Chemistry: 1-3 semester hours**

Prerequisite: Consent of the organic chemistry staff. Problems from the current literature, presentations and discussions by faculty, students and visiting scientists. Ph.D. Students may take more than once for credit. Up to three credits may be applied to the M.S. degree programs.

**CHEM 6787 Problem Seminar in Biochemistry: 1 semester hour**

Prerequisite: Consent of the biochemistry staff. Problems from the current literature, presentations and discussions by faculty, students and visiting scientists. Ph.D. students may take more than once for credit. Up to three credits may be applied to the M.S. degree program.

**CHEM 6812 Introduction to Graduate Study in Chemistry: 1 semester hour**

Prerequisite: Consent of Graduate Advisor. Topics to be covered include: techniques of teaching of chemistry in colleges and universities, methods of instruction and evaluation; role and responsibilities of the Graduate Teaching Assistant in laboratory instruction; safety in the undergraduate laboratory, safety practices, emergency procedures; selection of a research project and thesis advisor.

**CHEM 6822 Introduction to Graduate Research in Chemistry: 1 semester hour**

Prerequisite: Consent of instructor. Topics to include: safety in the research laboratory, safety practices, emergency procedures, hazardous materials, waste disposal, radiation safety; research ethics, chemistry information retrieval, computer assisted information retrieval, types of databases, searching bibliographic data bases.

**CHEM 6832 Strategies for Independent Research Proposal Development: 1 semester hour**

Prerequisites: CHEM 6822 and Consent of Graduate Advisor. Topics include: strategies for identification of research topics in chemistry and biochemistry, techniques for database literature search, critical analysis of existing research knowledge, introduction to standard grant proposal formats, technical aspects in preparation of a research plan and accompanying sections, use of bibliographical software, and overview and practice of the peer review process.

**CHEM 6887 Graduate Student Seminar in Chemistry: 1 semester hour**

Prerequisites: Graduate standing. Scientific presentations by students. One hour per week.

**CHEM 6897 Chemistry Colloquium: 1 semester hour**

Presentation of papers by students, faculty and invited speakers. One hour per week.



**CHEM 6905 Graduate Research in Chemistry: 1-10 semester hours**

## Communication and Media

### General Information

The Department of Communication and Media reflects an area of study informed by art and science. Under the rubric of Communication, students explore the construction, delivery, and perception of purposeful messages and their consequences. Whether the intent is to inform, influence, or entertain, students use research and theory to improve effectiveness and achieve outcomes in interpersonal and mass-mediated messaging. In addition, students will find a creative outlet in Media, which focuses on the production of content and its critical and cultural significance. It encompasses the aesthetics of audio and visual media in all its forms. Students learn contemporary and historical concepts in a global context. Importantly, students can hone practical skills ranging from conceptual development to camerawork and post-production editing.

Whether students want to work on a public health campaign to reduce risky behaviors or a documentary designed to educate, Communication and Media offers excellent preparation for rapidly changing world.

### The Bachelor of Arts in Communication

The B.A. in Communication is a flexible degree program that allows the student to tailor their curriculum to meet specific interests and needs while simultaneously providing a strong foundation in the major specializations of the discipline. Students who seek this degree will, upon completion, understand how to communicate competently and effectively in a variety of contexts and mediums. In addition, students will develop a strong foundation in the principles underlying effective communication. Finally, students will demonstrate their competence through the internship and practicum requirements. Students may complete either a general communication degree or they may select one of four different emphasis areas as a focus for their studies: Interpersonal Communication, Mass Communication, Applied Visual Communication, or Strategic Communication.

### Certificate in Health Communication

The Certificate in Health Communication will assist students looking to specialize in a growing field, learn valuable skills for the job market, and get hands-on experience in health organizations that will translate into jobs.

### Certificate in Media Production

The Certificate in Media Production provides a sequence of courses designed to develop multi-channel and multimedia skillsets that can be used by students to record, edit, and produce media for artistic, personal, or commercial applications. Students will develop a portfolio of work that will reflect both independent and client-centered content. Students who complete the Certificate in Media Production will develop the knowledge and skills needed to be competitive in a rapidly changing media environment.

### Certificate in Public Relations

The public relations certificate at UMSL builds professionals with expertise in crafting messages, promoting public images and handling a crisis. It prepares students for success as they pursue a career in communication and public relations. The curriculum includes hands-on learning and real-

world experiences designed to adhere to the requirements set forth by the Public Relations Society of America.

### Other Certificate Programs

In addition to these offerings, the department supports a number of other interdisciplinary certificate programs. For more information, see Certificate Programs and Interdisciplinary Studies (p. 131).

### Master of Arts in Communication

The M.A. in Communication is designed to offer a convenient, high-quality graduate education to students with a variety of interests and professional goals. For individuals who are interested in pursuing a doctorate in communication, we provide first-class preparation that can make students competitive at even the most prestigious institutions. Our graduate faculty come from top-ranked universities, and are closely involved with mainstream scholarship and innovative research. For students who intend to apply communication knowledge and skills in the workplace, the practical and theoretical knowledge woven throughout the curriculum can facilitate the achievement of a broad range of personal and professional goals. We offer the opportunity to tailor students' programs of study to meet their interests and objectives. In addition, our graduate program offers workforce development to major corporations and organizations in the greater St. Louis area, providing an effective and economic alternative to an internal training and development infrastructure.

### Degrees

Communication BA (p. 379)

- Applied Visual Communication (p. 380)
- Interpersonal Communication (p. 382)
- Mass Communication (p. 383)
- Strategic Communication (p. 384)

Media Studies BS (p. 507)

Communication MA (p. 386)

### Minors

Communication Minor (p. 387)

Media Studies Minor (p. 508)

### Certificates

Health Communication Undergraduate Certificate (p. 467)

Media Production Undergraduate Certificate (p. 507)

Public Relations Undergraduate Certificate (p. 604)

ACP in Instructional Communication Graduate Certificate (p. 311)

### Communication Courses

**COMM 1000 Effective Communication for College: 3 semester hours**

A communication by objective approach is used to introduce students to effective communication in a college environment. Emphasis is placed on preparing and delivering effective messages whether written or spoken, formal or informal, digital or hardcopy.

**COMM 1030 Interpersonal Communication I (MOTR COMM 120): 3 semester hours**

Introduction to the theories of interpersonal communication. Emphasis on basic principles involved in one-to-one interactions.

**COMM 1040 Introduction to Public Speaking (MOTR COMM 110): 3 semester hours**

Theories and techniques of organization, argumentation, persuasion and delivery in public speaking.

**COMM 1041 Presentational Speaking: 3 semester hours**

Theories and techniques of presenting information in various contexts, formats, and settings. Emphasis is placed on strategic coordination for message effectiveness in a team-based environment.

**COMM 1042 Reacting to the Past: Communication: 3 semester hours**

This course consists of a series of historical simulations built around key moments and texts from the past. In each simulation, students are assigned a role and develop that character. It offers students a rigorous academic experience in which they conduct historical research and speak extensively. Because this course requires extensive public speaking, it fulfills the core general education requirement for Communication Proficiency.

**COMM 1050 Introduction to Mass Communication: 3 semester hours**

Introduction to oral, print, and electronic media of communication, including emerging digital formats. The course covers the major theories of mass communication effects as well as the social, organizational, economic, political, and technological factors that shape the creation and reception of mass media messages.

**COMM 1150 Introduction to Public Relations: 3 semester hours**

This course provides an introduction to contemporary persuasive social science principles, processes, and issues involved in the management of communications between an organization and its publics. An emphasis on ethics, law, and professional standards is highlighted.

**COMM 1369 Introduction to Health Communication: 3 semester hours**

This course introduces the concept of health communication through interpersonal, organizational, and mass media health contexts. Topics may include patient-provider communication, issues of diversity and culture, social support, health entertainment, marketing, HR and PR in health, and careers in health communication.

**COMM 1950 Finding an Internship in Communication and Media Fields: 1 semester hour**

This course equips Communication majors with the necessary skills to secure an internship or practicum that aligns with their long-term, post-graduation goals. Students will identify internships relevant to their coursework and career goals, create resumes, write cover letters, develop interviewing skills, and more. The concepts of this course prepare students to secure an internship or practicum for the following semester.

**COMM 2230 Small Group Communication (MOTR COMM 125): 3 semester hours**

Development of communication skills needed in small group decision-making. Application of these skills in contemporary problems.

**COMM 2231 Communication in the Organization: 3 semester hours**

Course integrates communication theories applicable to the structure and function of organizations. The effect of communication variables on departmental interface, member satisfaction and motivation, leadership and subordinate styles, and perception of the organization by the external environment.

**COMM 2235 Professional Communication: 3 semester hours**

This course seeks to prepare students to develop and apply the practical communication and self-development skills needed to excel in academic and workplace settings. Topics may include self- and relationship management, communicating effectively in professional settings, and career planning. Students will also become familiar with specific careers in the field of communication and media.

**COMM 2240 Persuasive Communication: 3 semester hours**

A study of persuasive communication including theories, techniques, forms, functions, applications, potential and limitations for individual and organizations. Insights from both classical rhetoric and contemporary communication theory.

**COMM 2332 Intercultural Communication: 3 semester hours**

This course examines culture as a variable in both interpersonal and collective communicative situations. There is emphasis placed upon opportunities and problems arising from similarities or differences in communication patterns, processes, and codes among various cultural groups.

**COMM 3130 Communication in Family, Dating, and Marriage: 3 semester hours**

Prerequisite: COMM 1030. This course examines dating, courtship, and marriage relationships. It focuses on exploring the history and contemporary issues associated with intimate relationships.

**COMM 3150 Crisis, Disaster, and Risk Communication: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. Course will focus on three specialized areas within public relations: communication methods and infrastructure in relation to large-scale disaster management; organizational crisis communication; and public communication regarding environmental, chemical and other public risk issues.

**COMM 3330 Research Methods in Communication I: 3 semester hours**

Introduction to the fundamental tools of quantitative research in communication. Focus of the course is on reading and comprehending communication research reports rather than conducting quantitative research.

**COMM 3337 Male/Female Communication: 3 semester hours**

Prerequisite: Junior standing or consent of instructor. This course explores the influence of gender upon contemporary American communication behavior. Topics include semantic and syntactic variations in male and female speech, gender-role development as process and product of communication, analysis of communication patterns and barriers within gender groups. Mass, public, interpersonal, and dyadic communication contexts are considered.

**COMM 3355 Dangerous Messages: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course examines how communication can be used to promote as well as inhibit societal and individual well-being. Topics include alcohol and tobacco, drugs, sexual behavior, and others pertaining to health and risky behaviors. Stereotyping, diversity in media ownership and content, hate speech, and other topics with implications for the health of citizens individually and as a people may also be covered.

**COMM 3368 Advanced Health Communication: 3 semester hours**

Prerequisites: COMM 1369 or consent of instructor. This course focuses on how to use communication to promote health across interpersonal, organizational, and mass media contexts. Topics may include crisis communication, health interventions and campaigns, and social marketing among others.

**COMM 3370 Social Media in Public Relations: 3 semester hours**

Prerequisites: COMM 1150 or MEDIA ST 1100 or consent of instructor. The course presents an overview of how to use social media and blogging in contemporary public relations. Students will also learn how to evaluate and create a social media plan.

**COMM 3395 Special Topics in Communication: 3 semester hours**

In-depth study of topics pertaining to current research in the department. May be repeated up to six credit hours if topic is different.

**COMM 4100 Communication Campaigns: 3 semester hours**

Prerequisites: COMM 1150, COMM 2180 and junior standing, or consent of instructor. This course focuses on the design, analysis, and implementation of mass communication-based information campaigns by integrating research and theory from interpersonal communication, mass communication, and public relations. It provides an advanced study of an organization's public relations needs and includes researching the situation, analyzing audiences, and preparing strategic plans for approved clients.

**COMM 4199 Applied Strategic Communication: 3-6 semester hours**

Prerequisites: Senior standing and consent of instructor; enrollment limited to PR certificate students. This course allows students to gain advanced, practical work experience emphasizing strategic communication skills within a discipline-relevant organization. Work must be done under supervision of a working professional in the field and in consultation with a faculty member. Proposed sites must be approved by the department. This course may be repeated for a maximum of 6 credit hours.

**COMM 4360 Applied Health Communication: 3 semester hours**

Prerequisites: Senior standing with at least 12 hours of course work in Communication, consent of instructor; enrollment limited to health communication certificate students. Advanced practical work experience emphasizing communication skills within a health organization. Experiences may include organizational and promotional activities, mass communication, public relations, research and writing, strategic communication, or training and development, all with a health communication focus. Internships are off-campus and proposed sites must be approved by the department. Work must be done under supervision of a working professional in the field, and in consultation with a faculty member.

**COMM 4500 Seminar in Fundamental Communication Theory: 3 semester hours**

Prerequisites: Senior standing. This course introduces students to the theoretical, methodological, and philosophy of science issues in the discipline of communication. It includes general, micro, contextual, and interdisciplinary (symbiotic) communication theories.

**COMM 4600 Seminar in Fundamental Organizational Communication Theory: 3 semester hours**

Prerequisites: COMM 2231 and senior standing. This course examines the function of communication in the workplace. Students will learn to evaluate, adapt, and apply various research-supported frameworks for understanding organizational communication and communication processes in organizations. Interpersonal sensitivity, communication skills, and ethical values within organizations are also examined.

**COMM 4650 Seminar in Fundamental Interpersonal Communication Theory: 3 semester hours**

Prerequisites: COMM 1030 and one 3000-level course from the Interpersonal Communication Emphasis Area. This course examines the theories and research pertaining to interpersonal communication. It introduces students to fundamental theoretical writings and current research literature in the field. They will evaluate, adapt, and apply research findings on several interpersonal communication topics, including information management in interpersonal contexts, relational uncertainty in interpersonal communication, deception detection, new technologies, and dating.

**COMM 4700 Seminar in Fundamental Mass Communication Theory: 3 semester hours**

Prerequisites: COMM 1050 and at least three credit hours of 3000-level courses from the Mass Communication Emphasis Area. This course examines the theories and research pertaining to media industries, content, and users. It introduces students to the fundamental theoretical writings and current research literature in the field. Students will evaluate, adapt, and apply research finding in mass communication topics such as the impact of technology on media content and usage patterns, media effects on society and on individuals, media representation patterns, and the reasons users select particular types of content.

**COMM 4900 Directed Readings: 3 semester hours**

Prerequisite: Consent of instructor. Supervised independent study focused on discipline-relevant content that expands on concepts and theories presented in communication courses. May be repeated for credit.

**COMM 4905 Directed Readings in Health Communication: 3 semester hours**

Prerequisites: Consent of instructor. Supervised independent study focused on discipline-relevant content in health communication that expands on concepts and theories presented in health communication courses. May be repeated once for credit.

**COMM 4910 Supervised Research: 1-3 semester hours**

Prerequisites: Consent of instructor. Supervised field, laboratory, or survey research experience that includes activities such as data collection, literature searches, qualitative or quantitative data analysis, survey or experiment administration, and other research related activities. May be repeated with consent of department.

**COMM 4915 Supervised Research in Health Communication: 1-3 semester hours**

Prerequisites: Consent of instructor. Supervised field, laboratory, or survey research experience in the area of health communication. Includes activities such as data collection, literature searches, qualitative or quantitative data analysis, survey or experiment administration, and other research related activities. May be repeated for up to 6 credit hours total with consent of department.

**COMM 4920 Practicum in Applied Communication: 1-3 semester hours**

Prerequisite: Junior standing, at least 12 hours of course work in Communication, and consent of instructor; open to Communication majors/minors. Practicum work experience with any discipline-relevant unit at UMSL including, but not limited to: the offices of students affairs, public relations, and research administration; the school newspaper or radio station; and intra-departmental activities. Work must be done on campus, under supervision of a working professional in the field, and in consultation with a faculty member. Repeatable, but no more than six hours total credit may be earned in practicum courses toward the 36-hour minimum required for the degree.

**COMM 4950 Internship in Applied Communication: 3-6 semester hours**

Prerequisites: Senior standing with at least 12 hours of course work in Communication, consent of instructor; open to communication majors only. Advanced practical work experience emphasizing communication skills with any discipline-relevant entity. Experiences may include organizational and promotional activities, mass communication, public relations, research and writing, strategic communication, or training and development. Internships are off-campus and proposed sites must be approved by the department. Work must be done under supervision of a working professional in the field, and in consultation with a faculty member. Repeatable, but not more than six hours total credit may be earned in internship courses toward the 35-hour minimum required for the degree.

**COMM 5000 ACP - Elements of Public Speaking: 3 semester hours**

Prerequisites: Graduate standing, special consent. This course focuses on the delivery of theory and research based public speaking content for teachers seeking certification to teach communication courses for the Advanced Credit Program.

**COMM 5010 ACP: Elements of Debate: 3 semester hours**

Prerequisites: Graduate standing, special consent. This course focuses on developing a comprehensive understanding of the theory and research typically taught in college level forensics and debate courses. Designed for teachers seeking certification to teach communication courses for the Advanced Credit Program.

**COMM 5020 ACP - Persuasion and Influence: 3 semester hours**

Prerequisites: Graduate standing, special consent. This course focuses on developing a strong background in the research and theory that underlies attempts to persuade and influence others through the use of effective communication. Designed for teachers seeking certification to teach communication courses for the Advanced Credit Programs.

**COMM 5050 ACP - Special Topics: 3-6 semester hours**

Prerequisites: COMM 5000, COMM 5010, and COMM 5020, special consent. This rotating topic course focuses on developing knowledge of communication theory and research applicable to the context of teaching public speaking and debate. Topics may include such issues as nonverbal communication, conflict communication, and argumentation, among others. Designed for teachers seeking certification to teach in the Advanced Credit Program. May be repeated for a maximum of 6 credit hours.

**COMM 5099 ACP - Observation and Implementation: 3 semester hours**

Prerequisites: COMM 5000, COMM 5010, COMM 5020 and COMM 5050, special consent. Provides a capstone experience for teachers seeking to teach communication courses in the advanced credit program. While enrolled, participants will implement an ACP course in their school under the supervision of the Communication Department's advanced Credit Program Liaison.

**COMM 6500 Seminar in Communication Theory: 3 semester hours**

Prerequisite: Graduate standing. Examination of the theoretical, methodological, and philosophy of science issues in the discipline of communication. Examines general, micro, contextual, and interdisciplinary (symbiotic) communication theories. Required of all graduate communication students.

**COMM 6510 Advanced Communication Research Methods I: 3 semester hours**

Prerequisites: Graduate standing. Concerns the logic and forms of communication inquiry including an examination of various communication research and evaluation methods and their theoretical frameworks. Topics include communication research strategy and methodology, scientific process, derivation and test of hypotheses, methods of research design. Provides and orientation to graduate research including proposal development for thesis, internship and paper requirements, and includes a theory-based research project of the student's choice. Required of all graduate communication students.

**COMM 6600 Seminar in Strategic Communication in Organizations: 3 semester hours**

Prerequisite: Graduate standing. Examines the function of communication in the workplace. Students will study various frameworks for understanding organizational communication, implications of major organizational theories, and strategic communication processes in organizations. Interpersonal sensitivity, communication skills, and ethical values within organizations are also examined.

**COMM 6630 Seminar in Interpersonal Communication: 3 semester hours**

Prerequisites: Graduate standing. This course examines the theories and research pertaining to interpersonal communication. Students will evaluate, adapt, apply, and formulate theory and research findings to several interpersonal communication topics, including information management in interpersonal contexts, relational uncertainty in interpersonal communication, deception detection, new technologies, and dating.

**COMM 6700 Seminar in Mass Communication: 3 semester hours**

Prerequisites: Graduate Standing. Examines the theories and research pertaining to media industries, content, and users. Topics include the impact of technology on media content and usage patterns, media effects on society and on individuals, media representation patterns, and the reasons users select particular types of content.

**COMM 6800 Seminar in Health Communication: 3 semester hours**

Prerequisites: Graduate Standing. Examines the theories that researchers use to investigate health communication phenomena, as well as the application of those theories to understanding and enhancing health. Course topics include health campaigns and interventions, patient-provider communication, and cultural perceptions of health.

**COMM 6830 Seminar in Special Topics in Communication: 3 semester hours**

Prerequisite: Graduate standing. Selected topics in the study of communication. Review of the communication theory and methods appropriate to the topic. The course includes a research project. May be repeated if the topic is different.

**COMM 6900 Directed Readings in Communication: 1-6 semester hours**

Prerequisite: Graduate standing and consent of instructor. Independent study of published research and reports relating to a specific topic in communication. May be repeated for credit with permission of advisor.

**COMM 6910 Supervised Research in Communication: 1-3 semester hours**

Prerequisites: Graduate standing and consent of instructor. Primary research on specific topics in communication. May involve collaborative research with a faculty member on a topic of mutual interest or data collection/analysis for a project developed by the student under the guidance of a faculty member. May be repeated for credit with permission of advisor.



**COMM 6920 Practicum in Computer-Mediated Communication: 1-3 semester hours**

Prerequisites: Graduate standing and consent of program director. Applied practice or research in collaboration with a faculty member.

**COMM 6950 Graduate Internship: 3-6 semester hours**

Prerequisites: Graduate standing and approval of graduate coordinator. Individual on-site internship in organizational or mass communication. May be repeated.

**COMM 6960 Thesis Research and Preparation: 1-10 semester hours**

Prerequisites: Graduate standing and consent of instructor. Individual research for and preparation of the graduate thesis.

## Media Studies Courses

**MEDIA ST 1065 Internet Media: 3 semester hours**

This studio course will cover the principles of media design as they apply to the interactive world of the web. Sensitivity to the visual elements of online interfaces will be developed through analysis of the changing nature of communication technologies. Students will conceive and create their own web-based media projects.

**MEDIA ST 1070 Introduction to Cinema: 3 semester hours**

Same as THEATR 1070. This course provides an overview of American cinema from the early beginnings of D.W. Griffith and his contemporaries to the present day. The course will discuss both the Hollywood studio system and today's independent movement. Genre, film theory, criticism, and aesthetics are also covered.

**MEDIA ST 1100 Introduction to Advertising: 3 semester hours**

An introduction to the history, rhetoric, and aesthetics of Advertising. A basic understanding of industry issues and key areas such as account management, research, strategy, creative, media, and production.

**MEDIA ST 1110 Introduction to Broadcasting and Digital Media: 3 semester hours**

This course provides an introduction to the broadcasting and digital media industries. It also addresses topics including history, government regulations, technological changes, and social implications.

**MEDIA ST 1198 Practicum in Media Studies: 1-6 semester hours**

Prerequisites: Consent of instructor. Open to Media Studies majors or minors only; not open to students who have delayed grades outstanding. Practical work in a field related to media studies supervised by a faculty member. This course may be repeated for up to 20 credit hours.

**MEDIA ST 2080 Advertising Copywriting: 3 semester hours**

Same as ENGL 2080. To give students a hands-on approach for writing advertising material for print and broadcast against tight deadlines in a professional setting.

**MEDIA ST 2113 Media Production I: 3 semester hours**

Study of the basic skills needed to create media packages. The class will provide students with practical experience in camera operation, directing, producing, switching, audio mixing, and lighting, as well as basic non-linear editing. Lab arranged.

**MEDIA ST 2180 Introduction to News Writing: 3 semester hours**

This course focuses on developing stories and news writing; staff of The Current and other student publications are encouraged to enroll.

**MEDIA ST 2210 Video Production I: 3 semester hours**

This course covers the basic theories and practice of remote video production. Producing and directing in the field will be examined and practiced. The course will focus on technical and aesthetic aspects of cinematic production. Lab arranged.

**MEDIA ST 2211 Introduction to Digital Multimedia Production: 3 semester hours**

Students will explore different state-of-the-art digital multimedia applications, including audio, video, and computer generated graphics, that are presently used in television, radio, CD, DVD, and online presentation. Current media related software such as QuickTime, Window Media, and Flash multimedia creation will be demonstrated and utilized to develop skill sets in those areas.

**MEDIA ST 2225 Live Events Media: 3 semester hours**

Techniques and aesthetics of recording live video events. Course will include practical application training for single- and multi-camera shoots of concerts, lectures, theatre, dance, weddings, and other special events.

**MEDIA ST 2235 Media Theory: 3 semester hours**

Prerequisite: COMM 1050. This course presents a theory-based explanation of the relationship between mass media and society. The topics covered include agenda-setting, violence and television, and other current issues from a critical perspective.

**MEDIA ST 3025 Current Issues in Strategic Communication: 3 semester hours**

Prerequisites: MEDIA ST 1100 or COMM 1150, junior standing or consent of instructor. The course covers current trends, topics, and controversies in advertising, public relations, and related fields. Students will analyze, evaluate, and critique current topics in group discussions. Students are expected to help select and research the topics as well as lead discussion with the support from the instructor.

**MEDIA ST 3113 Media Production II: 3 semester hours**

Prerequisite: MEDIA ST 2113. Advanced study of the skills needed to create media packages. The class will provide students with a continuation of practical training in camera operations, directing, producing, switching, audio mixing, and lighting, as well as more advanced post production techniques. Lab arranged.

**MEDIA ST 3150 Feature Writing: 3 semester hours**

Same as ENGL 3150. Prerequisites: ENGL 1100 or equivalent. Study of freelance and staff-written magazine or newspaper feature articles. Emphasis on relationship between types of publication and article content, research methods, and writing style. Frequent short assignments - journal entries, interviews, library projects, article critiques, and market reports - lead to production of full-length feature articles. May not be taken on the satisfactory/unsatisfactory option. The course counts toward the English Certificate in Writing.

**MEDIA ST 3201 Narratives from the Forever Wars: 3 semester hours**

Same as MVS 3201 and ENGL 3201. This course studies literature and film written by and about those who served in the wars in Iraq and Afghanistan, with particular interest in how veterans as individuals are represented in it.

**MEDIA ST 3260 Design for Stage and Screen: 3 semester hours**

Same as THEATR 3260. Prerequisites: Consent of instructor. This course surveys the professional theories and practices used in the field of design for stage and screen. It emphasizes a digital design process and collaboration.

**MEDIA ST 3261 Lighting for Stage and Screen: 3 semester hours**

Prerequisite: Consent of instructor. This course surveys the theories and techniques used in digital lighting design and production for the stage and screen. It emphasizes professional practices and applications of lighting for both stage and screen.

**MEDIA ST 3310 Video Production II: 3 semester hours**

Prerequisite: MEDIA ST 2210. Study of advanced theories of media production. Refinement of production principles learned in MEDIA ST 2210. Exploration of complex program formats, and advanced non-linear editing techniques. Lab arranged.

**MEDIA ST 3313 Advanced Video Editing: 3 semester hours**

Prerequisites: Six (6) hours of television production. Study of advanced non-linear editing techniques, animation, and advanced graphics development. Exploration of state of the art editing formats. Lab arranged.

**MEDIA ST 3318 Advanced Independent Video Production: 3 semester hours**

Prerequisites: MEDIA ST 2210. This course will enable students to plan, script, shoot and edit advanced independent video productions for exhibition and competitive formats. Emphasis will be placed upon auteur conceptualization, production, and direction. May be repeated for up to a total of 6 credit hours.

**MEDIA ST 3338 Advertising Technique: 3 semester hours**

Same as MKTG 3738. Prerequisites: MEDIA ST 1100 or MKTG 3700 or consent of instructor. Techniques for creating advertising messages and campaigns to reach target audiences. Focus on the process of persuasion, importance of advertising in modern economics, rationale for company advertisement, evaluation of advertising effectiveness, and assessment of advertising myths and truths. Practical application of messages and campaigns will be stressed.

**MEDIA ST 3355 Media Law and Regulation: 3 semester hours**

Prerequisites: COMM 1050 or MEDIA ST 1110. This course addresses laws affecting the mass media. The topics covered include problems and issues in legal regulation of media content, ownership, access, and accountability as well as industry self-regulation and the influence of citizens' organizations.

**MEDIA ST 3356 Global Media Systems and Trends: 3 semester hours**

This course will survey major theories, global trends, and key stakeholders in the field of mass and digital media. It addresses issues regarding the transnational and transcultural flow of media content and communication technologies. Topics include the historical context and cultural implications of globalization, patterns of international media flow, and the roles of transnational media and communication organizations.

**MEDIA ST 3398 Internship in Media Studies: 3-6 semester hours**

Prerequisites: Senior standing; consent of instructor; open to Media Studies majors only; not open to students who have any delayed grades. Practical work at an off-campus agency, supervised by a professional in consultation with a faculty member. This course may be repeated for up to 20 credit hours.

**MEDIA ST 3990 Directed Readings in Media Studies: 3 semester hours**

Prerequisites: Consent of instructor; not open to students who have any delayed grades. Supervised independent study involving readings, conferences, papers, in one of the department's disciplines: advertising, radio, television, film, or journalism.

**MEDIA ST 4040 Special Topics in Media Studies: 1-6 semester hours**

Prerequisites: Junior, senior, or graduate standing and consent of instructor. Special topics with subject matter dealing with current issues, (theoretical or applied), in the discipline of media studies. Since the topics of MEDIA ST 4040 may change from semester to semester, the course may be repeated for up to 12 credit hours.

**MEDIA ST 4400 Senior Project: 3-6 semester hours**

Prerequisites: Senior status and consent of instructor. The capstone experience requires seniors to produce an original research project, a representative portfolio, or an intrinsic case study, which exemplifies their undergraduate study. Students will present their work to the instructor supervising the course, as well as program related-faculty. Repeatable up to 6 credit hours.

## Computer Science

### General Information

#### Degrees and Areas of Concentration

The Department of Computer Science offers numerous undergraduate and graduate degrees, as well as minors and certificates.

At the undergraduate level, we offer the following degree programs

- B.S. (Bachelor of Science) in Computer Science
- B.S. in Computing Technology
- B.S. in Cybersecurity, Computer Science emphasis, a joint interdisciplinary degree with the Department of Information Systems and Technology

Other undergraduate programs include a minor in Computer Science; certificates in Artificial Intelligence, Computer Programming, Computer Programming Education, Internet and Web, and Mobile Apps and Computing; interdisciplinary certificates in Data Science with the Department of Mathematics and Statistics, and in Cybersecurity with the Department of Information Systems and Technology.

At the graduate level, we offer the following degree programs

- M.S. (Master of Science) in Computer Science
- M.S. in Cybersecurity, Computer Science emphasis, a joint interdisciplinary degree with the Department of Information Systems and Technology
- Ph.D. (Doctor of Philosophy) in Mathematical and Computational Sciences, Computer Science option, a joint degree with the Department of Mathematics and Statistics

Other graduate programs include certificates in Artificial Intelligence, Mobile Apps and Computing, and interdisciplinary certificate in Cybersecurity with the Department of Information Systems and Technology.

### Undergraduate Programs Overview

The B.S. in Computer Science combines traditional computer science studies, with its depth and breadth, with practical exposure to a wide variety of tools and technologies. This program is designed for those interested in software and computer systems. It provides students a solid foundation in computing and mathematics, and facilitates specializations offered through electives and certificates such as Artificial Intelligence, Cybersecurity, Data Science, Mobile Apps and Computing, and Internet and Web. In addition, students are prepared for working in groups and technical reading and writing. Students completing this degree have gained professional and ethical perspectives and are well prepared for a challenging career or further graduate studies in Computer Science.

The B.S. in Computing Technology is designed for those interested in broad and deep computing education but without some traditional advanced courses. This program is designed for students who want

to focus on technologies and transition to fulfilling careers. Students completing this degree can find in-demand careers in many related areas such as cybersecurity, networks, internet programming, software and mobile apps development, data science, AI, graphics, or pursue additional graduate studies.

The joint Interdisciplinary B.S. in Cybersecurity is designed for students who wish to pursue high-demand work roles such as cybersecurity specialist, cyber defense analyst, cyber defense incident responder, information security analyst, vulnerability assessment analyst, security architect, among a variety of other entry to mid-level cybersecurity and computing related fields. The Computer Science emphasis focuses on more technical aspects of the field. The entire program can be completed in the evening or online.

The Certificate in Artificial Intelligence is designed to provide skills and training necessary to start or progress in the growing areas of AI, with a range of electives to focus more specifically in one's desired direction of study.

The Certificate in Computer Programming is designed to provide quick, yet broad training in technologies leading to secure and interesting careers in computer programming or education.

The Certificate in Computer Programming Education is designed to serve secondary school science teachers, with training provided to enable the implementation of a range of computer programming related courses in their schools.

The Certificate in Internet and Web is designed to provide broad training in technologies related to the Internet and Web, with flexibility allowing a student to satisfy specific interests.

The Certificate in Mobile Apps and Computing is designed to provide training in technologies and framework for mobile apps and computing.

The joint Certificate in Cybersecurity is designed to help students from all backgrounds achieve a foundation in cybersecurity. It provides students the flexibility to focus on technical and/or managerial aspects of computer software, network, and information security.

The joint Certificate in Data Science is designed to provide computing and statistical foundations for work with big data and data analytics.

## Dual Program

The Department offers a dual degree program for students with strong academic records. The B.S./M.S. dual degree program in computer science is designed to provide an opportunity for strong undergraduate majors to start earning graduate credit before actually completing their undergraduate degree and to shorten, or accelerate, the time required as students to earn their graduate degrees.

## Graduate Programs Overview

The M.S. degree in Computer Science has three different options to choose from, offering a wide range of career opportunities. One of the options allows students to take courses in a very specific area and earn a graduate certificate. All graduates will have a broad computing background and will be exposed to a wide range of technologies. They will also be prepared for team work, independent research, and technical reporting and presentations.

The joint interdisciplinary M.S. in Cybersecurity is designed for graduates to pursue high-demand work roles such as cybersecurity specialist, cyber

defense analyst, cyber defense incident responder, information security analyst, vulnerability assessment analyst, security architect, among a variety of other entry to mid-level cybersecurity and computing related fields. The Computer Science emphasis focuses on more technical aspects of the field.

The Ph.D. program in Mathematical and Computational Sciences has an option in Computer Science. Students choosing the computer science option will develop a breadth of abilities in the core areas of computer science at the graduate level. They will gain a depth of ability in contemporary research in their chosen sub-field of Computer Science, and will be able to pursue independent research in their area of specialization.

The Certificate in Artificial Intelligence is designed to provide skills and training necessary to start or progress in the growing areas of AI, with a range of electives to focus more specifically in one's desired direction of study.

The Certificate in Mobile Apps and Computing is designed to provide training in technologies and framework for mobile apps and computing.

The joint Certificate in Cybersecurity is designed to help students from all backgrounds achieve a foundation in cybersecurity. It provides students the flexibility to focus on technical and/or managerial aspects of computer software, network, and information security. With primary courses offered by Computer Science and Information Systems and Technology departments, the program also allows students to choose from a range of electives based on their interests. The entire program can be completed in the evening or online.

Students may enroll in any of these graduate programs on a part-time basis, and with proper scheduling all can be completed in the evening, with some certificates and programs available online.

## Career Outlook

A degree in a computing related field prepares well-motivated students for interesting careers. Our graduates find positions in industry, government, and education. The demand for individuals well trained in computer science, computing technology, and cybersecurity is greater than the available supply.

Graduates in all degrees from UMSL are located throughout the country, and they also have a strong local presence. They have careers in banking, health care, engineering and manufacturing, law, finance, public service, management, and actuarial management. Many are working in areas such as systems management, information systems and data management, scientific computing, and scientific positions in the armed services. Others have careers in education, especially at secondary and higher levels.

## Department Scholarships

The Department of Computer Science offers many merit and need based scholarships available to department majors.

The Alumni Scholarship is a monetary award for outstanding undergraduate students open to all junior and senior department majors.

The Edward Z. Andalafte Memorial Scholarship is a monetary award for outstanding undergraduate department majors at the sophomore level or higher.

The Computer Science Scholarship is a monetary award for outstanding computer science majors with preference given to freshman and

sophomore students. Applicants must have a grade point average of 3.5 or higher in courses taken in the department.

The Boeing Company Scholars Program in Computer Science is a monetary award for full-time (at least 12 hours) upper-level undergraduate students in computer science. Recipients must have a minimum GPA of 3.2 and must maintain a GPA of 3.0. Preference will be given to traditionally underrepresented populations.

## Degrees

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Computing Technology BS (p. 391)

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## Minors

Computer Science Minor (p. 390)

## Undergraduate Certificates

Artificial Intelligence Undergraduate Certificate (p. 321)

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## Graduate Certificates

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## Affiliated Interdisciplinary Programs

Cybersecurity Undergraduate Certificate

Data Science Undergraduate Certificate (p. 413)

Cybersecurity Graduate Certificate

## Courses

### ***CMP SCI 1000 Computer Science Experiences: 1 semester hour***

This course is for recently declared undergraduate students majoring in Computer Science or Computing Technology. Topics may include resources that are available on campus and in the department, career opportunities, choosing the right degree, and exploration of concepts, skills and practices that are essential for successful careers. This course should be taken by freshmen and transfers within the first two semesters of declaring the major.

### ***CMP SCI 1011 Introduction to the Internet and World Wide Web: 3 semester hours***

Intended for any student wishing to utilize the Internet and World Wide Web more effectively. Topics include networking basics, the Internet and World Wide Web, browsers, search engines, Web Services, utilities, tools, online privacy and security. Students will learn to develop a personal web page using skills acquired in the course.

### ***CMP SCI 1012 Learning to Program Using Virtual Worlds: 3 semester hours***

Introduces modern programming principles without requiring the knowledge of a traditional programming language. Instead, this course utilizes a novel graphical approach that enables the student to create, populate, and manipulate virtual 3-dimensional worlds which resemble video games. The development of these worlds allows students to gain direct experience and skills in using computers to solve problems. Students will create worlds of varying complexity.

### ***CMP SCI 1250 Introduction to Computing: 3 semester hours***

Prerequisites: MATH 1030 with a B- or better, or MATH 1045 with B- or better, or MATH 1100 (can be taken concurrently), or MATH 1800 (can be taken concurrently), or a 70% on the proctored UMSL Math Placement obtained at most one year prior to enrollment in this course. This course provides an introduction to the concepts of computation, problem solving, and computer systems. It covers topics such as, fundamental programming constructs, basic data types, and modularization using a modern high level language. Problem solving skills are developed through a progression of programming projects.

### ***CMP SCI 2250 Programming and Data Structures: 3 semester hours***

Prerequisite: CMP SCI 1250. Continuation of CMP SCI 1250. Discusses properties and implementation of abstract data types such as lists, trees, stacks and queues. Introduces procedural and class abstraction, basic program architecture, use of interfaces, modular programming, and file processing.

### ***CMP SCI 2261 Object-Oriented Programming: 3 semester hours***

Prerequisite: CMP SCI 2250. Introduces object-oriented concepts, terminology, and notation (UML) using Java. Covers encapsulation, classes, objects, inheritance, and the use of class libraries. Additional topics may include graphical user interfaces, applets, and related tools and technologies.

### ***CMP SCI 2700 Computer Organization and Architecture: 3 semester hours***

Prerequisites: CMP SCI 2250 (can be taken concurrently). This course introduces details of computer systems from architectural and organizational points of view. It covers data representation, basic digital logic circuits, memory types and hierarchies, I/O and storage devices, CPU architectures such as RISC, CISC, parallel, and multi-core.

### ***CMP SCI 2750 System Programming and Tools: 3 semester hours***

Prerequisites: CMP SCI 2250 and CMP SCI 2700 (CMP SCI 2700 can be taken concurrently). This course covers systems programming, scripting, libraries, utilities, and development tools. Additional programming topics include piping, binary files, exception handling, command-line arguments and symbolic debugging. This course also explores tools available in the Unix/Linux environments.



**CMP SCI 3010 Web Programming: 3 semester hours**

Prerequisites: CMP SCI 2261 (can be taken concurrently) or INFSYS 3806. This course provides a comprehensive overview of website development using prevalent LAMP stack architecture. Students will create well-structured, easily maintained, standards-compliant, accessible client-side code (HTML, CSS, JavaScript) in addition to server-side code (PHP and Python). Client-server computing projects are a course requirement. Students leave the course knowing how client-side code, server-side code, web servers, and databases function together.

**CMP SCI 3130 Design and Analysis of Algorithms: 3 semester hours**

Prerequisites: CMP SCI 2250, MATH 1320, and MATH 3000. This course addresses the design and analysis of fundamental algorithms in computer science. Studies basic sorting algorithms, priority queues, order statistics, search trees, and hash tables. Analysis techniques may involve time and space complexity analysis of both iterative and recursive algorithms, analysis of algorithm correctness, and amortized complexity analysis. Additional topics may include data compression, string manipulation, greedy algorithms, dynamic programming, and graph traversal.

**CMP SCI 3200 .NET Framework: 3 semester hours**

Prerequisites: CMP SCI 3010. This course introduces the .NET framework and related languages and technologies. Topics will include Visual Studio and C# for OOP and web applications. Additional topics may include ASP.NET with MVC, data access, and windows communication.

**CMP SCI 3410 Video Game Design and Development: 3 semester hours**

Prerequisites: CMP SCI 2261. This course covers major aspects of the design and development of video games, including world/level design, game UI design, game character design, game engine programming, 2D/3D modeling and rendering, game physics and animation. This is a project-based course in which students learn to apply acquired knowledge and skills to building a video game in a team environment.

**CMP SCI 3702 Introduction to Cyber Threats and Defense: 3 semester hours**

Prerequisites: CMP SCI 2250. This course introduces the importance of cybersecurity and covers its various components. Topics may include different types of malware, phishing, password attacks, spoofing, efficient encryption algorithms, firewalls, intrusion prevention/detection systems, and honeypots. Credit cannot be granted for both CMP SCI 3702 and CMP SCI 5702.

**CMP SCI 3780 Software Security: 3 semester hours**

Prerequisites: CMP SCI 2261, CMP SCI 2750, and CMP SCI 3010. This course introduces the basic software security principles and pitfalls, including topics such as buffer, integer and string problems, runtime errors, SQL and command injection. Additional topics may include data protection, secure file access, password and network security.

**CMP SCI 3990 Undergraduate Internship: 1-3 semester hours**

Prerequisites: Consent of instructor. This course is a computer science internship that provides a student field experience in an organization related to the profession. To be enrolled, students must be employed in an internship or co-op program and find an instructor to supervise the experience. Internship activities may vary by site, but will often require end-of-semester reporting. Typically 1 credit can be earned for about 100 work hours. A maximum of 3 credit hours of CMP SCI 3990 can be counted as major electives and a maximum of 6 credit hours of CMP SCI 3990 and CMP SCI 4880 combined can be counted as major electives.

**CMP SCI 4010 Advanced Web Development with Java: 3 semester hours**

Prerequisites: CMP SCI 3010 and either CMP SCI 2261 or INFSYS 3806; or graduate standing. This course covers more advanced Java topics, along with related concepts and technologies for Web development. Topics may include database connectivity, multi threading, security, networking, MVC pattern, testing and source control for Java applications, and server-side topics such as servlets and web servers.

**CMP SCI 4011 Web Development with Advanced JavaScript: 3 semester hours**

Prerequisites: CMP SCI 3010. This course provides a comprehensive overview of website development using the modern MEAN (MongoDB, Express.js, Angular, Node.js) stack architecture. Students will create web applications that make use of today's modern JavaScript engine. Other topics may include React, Sass (Syntactically awesome style sheets), and Pug template engine.

**CMP SCI 4012 Introduction to Enterprise Web Development: 3 semester hours**

Prerequisites: CMP SCI 4010. This course covers design and implementation issues for enterprise web development, and some popular advanced technologies. Topics include MVC and persistence frameworks, such as Spring and Hibernate. Other topics may include Java Web services, EJB, messaging standards such as JMS, and Java EE design patterns. Students will develop enterprise-level web application projects. Credit cannot be earned for both CMP SCI 4012 and CMP SCI 5012.

**CMP SCI 4020 Introduction to Android Apps: Android Fundamentals: 3 semester hours**

Prerequisite: CMP SCI 2261. This course covers the fundamental programming principles, software architecture, and user experience considerations underlying handheld software applications and their development environments. The course involves in-depth, hands-on examples that are implemented on the Android Platform, along with discussions of security. Credit can not be granted for both CMP SCI 4020 and CMP SCI 5020.

**CMP SCI 4030 Introduction to Intelligent Web: 3 semester hours**

Prerequisites: CMP SCI 3010 and CMP SCI 3130. This course covers the application of artificial intelligence and other modern techniques to help construct, navigate, and experience the Web. Topics may include retrieval models, classification, mining, association, topology, and indexing algorithms such as PageRank and HITS. Credit cannot be earned for both CMP SCI 4030 and CMP SCI 5030.

**CMP SCI 4200 Python for Scientific Computing and Data Science: 3 semester hours**

Prerequisites: CMP SCI 1250 and (MATH 1100 or MATH 1800) and (ANTHRO/SOC 3220 or BIOL 4122 or CRIMIN 2220 or ECON 3100 or MATH 1320 or POL SCI 3000 or PSYCH 2201). This course covers programming using the Python language and related libraries. The course explores problem solving using Python's support of procedural, object-oriented, and functional approaches to programming. Topics may include NumPy arrays, visualization, Pandas DataFrames, and selected functions from statistical and scientific packages.

***CMP SCI 4220 Introduction to iOS Programming and Apps: 3 semester hours***

Prerequisites: CMP SCI 2261 or INFSYS 3806 or graduate standing. This course will use Swift for building iOS apps. It also introduces Xcode, Interface Builder, basic design patterns like MVC and delegation, and core libraries for Swift and iOS. Additional topics may include network communication, data persistence, basic animation, and mapping. This is a project-oriented class that will require significant use of a Mac with Xcode installed.

***CMP SCI 4222 iOS Apps: 3 semester hours***

Prerequisites: CMP SCI 4220 or consent of the instructor. This course focuses on building more sophisticated iOS apps. May include networking such as web services, Bluetooth and wifi connectivity, graphics and animation in 2-d and 3-d, autolayouts, OpenGL, advanced data sources such as plist and core data, source control and unit testing. May also discuss security topics. Credit not granted for both CMP SCI 4222 and CMP SCI 5222.

***CMP SCI 4250 Programming Languages: 3 semester hours***

Prerequisites: CMP SCI 2261 and CMP SCI 3010, or graduate standing. This course studies the principles, approaches, and trade-offs in modern programming languages, including a comparative study of syntax, semantics, and pragmatics. It also examines major programming paradigms: object-oriented, imperative, functional and logic.

***CMP SCI 4280 Program Translation Project: 3 semester hours***

Prerequisites: CMP SCI 2700, CMP SCI 2750, CMP SCI 3130, and CMP SCI 4250, or graduate standing. This course uses program translation as an example of a complex task, and focuses on managing and developing solutions for such complex programming tasks using modular incremental development and testing while applying proper standards. Translation topics may include finite automata, BNF, language semantics, and various translation models.

***CMP SCI 4300 Introduction to Artificial Intelligence: 3 semester hours***

Prerequisites: CMP SCI 3130. This course provides an introduction to artificial intelligence. The list of topics may include search, planning, knowledge-based reasoning, probabilistic inference, machine learning, natural language processing, and practical applications. Credit cannot be granted for both CMP SCI 4300 and CMP SCI 5300.

***CMP SCI 4320 Introduction to Evolutionary Computation: 3 semester hours***

Prerequisites: CMP SCI 2261, CMP SCI 2750 and CMP SCI 3130. This course introduces the concepts of nature-inspired problem solving with artificial evolution using selection, crossover, mutation and inheritance. It discusses applications of evolutionary algorithms, overviews the existing models and instances, and analyzes specific instances such as genetic algorithms, evolutionary programming, evolution strategies, and genetic programming. Credit not granted for both CMP SCI 4320 and CMP SCI 5320.

***CMP SCI 4340 Introduction to Machine Learning: 3 semester hours***

Prerequisites: CMP SCI 4342, or CMP SCI 2261 and CMP SCI 3130, or consent of instructor. This course provides an introduction to machine learning principles, algorithms and applications. Topics may include computational learning theory, VC Dimension, generalization, classification, regression, regularization, validation, and reinforcement learning. Credit cannot be granted for both CMP SCI 4340 and CMP SCI 5340.

***CMP SCI 4342 Introduction to Data Mining: 3 semester hours***

Prerequisites: CMP SCI 4200, or CMP SCI 2261 and CMP SCI 3130. This course provides an introduction to data mining principles, algorithms, and applications. Topics may include data preprocessing, data transformation, similarity and dissimilarity measures, data representation, classification techniques, association analysis, cluster analysis, and anomaly detection. Credit cannot be granted for both CMP SCI 4342 and CMP SCI 5342.

***CMP SCI 4370 Introduction to Biological Data Science: 3 semester hours***

Prerequisites: CMP SCI 3130 or consent of instructor. This course provides an introduction into several key areas of biological data science, with a focus upon genetic data. Relevant background topics in genetics, current issues, and a variety of available resources will be explored. Upon successful completion of this course, the student will be able to evaluate algorithms for analyzing genetic data, including assessments of sources of errors and analysis of time and space complexity; address shortcomings in existing approaches; and implement efficient and effective software for exposing information hidden in genetic data. Credit cannot be granted for both CMP SCI 4370 and CMP SCI 5370.

***CMP SCI 4390 Introduction to Deep Learning: 3 semester hours***

Prerequisites: CMP SCI 3130 or consent of instructor. This course introduces mathematical foundations for deep learning, and follows with practical applications using selected domains such as image classification or protein predictions. It also covers dense neural networks, convolutional neural networks, recurrent neural networks, and other state-of-the-art networks. Credit cannot be granted for both CMP SCI 4390 and CMP SCI 5390.

***CMP SCI 4410 Introduction to Computer Graphics: 3 semester hours***

Prerequisites: CMP SCI 2250 and MATH 2450. This course covers the theoretical foundation and algorithms for computer graphics. Students learn the basics of graphics programming for modeling, rendering, and animation of 2D and 3D objects, using standard graphics API. A brief discussion of special graphics hardware, such as GPU, may be included. Credit cannot be granted for both CMP SCI 4410 and CMP SCI 5410.

***CMP SCI 4420 Introduction to Digital Image Processing and Computer Vision: 3 semester hours***

Prerequisites: MATH 1900, MATH 2450, CMP SCI 2750, and CMP SCI 3130. This course focuses on image analysis and visual perception. Students learn data structures and algorithms for image processing, region and texture analysis, image filtering, edge detection, contour following, and image enhancement in both spatial and frequency domain. Other topics may include color processing, coding for storage, retrieval, transmission, and image restoration. Credit cannot be granted for both CMP SCI 4420 and CMP SCI 5420.

***CMP SCI 4500 Introduction to the Software Profession: 3 semester hours***

Prerequisites: CMP SCI 2261, CMP SCI 3010, and MATH 3000. This course focuses on software development and on the skills required for success in the software profession. Topics related to software development may include software process, models and views, software architectures, documentation, and testing strategies. Topics related to the profession may include ethics, licensing, copyright, trademarks, and professional conduct. Individual and group projects, research, and presentations may be required in this capstone course.

**CMP SCI 4520 Introduction to Object-Oriented Analysis and Design: 3 semester hours**

Prerequisites: CMP SCI 2261 and CMP SCI 3130. This course covers object-oriented development, using UML and following an agile process. It discusses elements of analysis, requirements, design, implementation and deployment, such as use cases, static and dynamic models, patterns, and frameworks. This course includes a semester long project. Credit not granted for both CMP SCI 4520 and CMP SCI 5520.

**CMP SCI 4610 Database Management Systems: 3 semester hours**

Prerequisites: CMP SCI 3010 and MATH 3000; or graduate standing. This course focuses on database theory and applications, with emphasis on the relational model. Topics include database design, modeling, file systems, indexing, integrity constraints, relational algebra, normalization, transaction processing, and concurrency control. Students are exposed to emerging DBMS technologies and applications. Several programming projects will be required using a popular SQL server.

**CMP SCI 4700 Computer Forensics: 3 semester hours**

Prerequisites: CMP SCI 2750 and CMP SCI 3010; or graduate standing. This course explores topics and methodologies for examining digital evidence, along with some principles of the investigative process. Includes memory, file system, operating system, network, and mobile device forensics. This course addresses both theory and hands-on aspects for conducting digital forensic examinations.

**CMP SCI 4730 Computer Networks and Communications: 3 semester hours**

Prerequisites: CMP SCI 2750 and MATH 1320, or graduate standing. The course provides an understanding of computer network fundamentals, design, management and security through the layered Internet architecture and the TCP/IP protocol stack. The topics may include common networking techniques and protocols, as well as more advanced concepts like cloud computing, software-defined networks, and virtual network functions.

**CMP SCI 4732 Introduction to Cryptography for Computer Security: 3 semester hours**

Prerequisites: MATH 1100 or MATH 1800 or consent of instructor. This course provides an introduction to cryptography as it applies to computer security. It describes modern cryptographic systems and potential attacks on against these systems. Topics may include both symmetric and asymmetric encryption algorithms, authentication, key exchange protocols, onion networks and blockchain technology, as well as potential attacks on these systems. Credit cannot be granted for more than one of CMP SCI 4732, CMP SCI 4780, and CMP SCI 5732.

**CMP SCI 4740 Introduction to High Performance Computing: 3 semester hours**

Prerequisites: CMP SCI 2750 and CMP SCI 3130. This course introduces algorithms for multiprocessor and multi-core architectures. Students learn the models of modern parallel computation and techniques to take advantage of parallel architectures for distributed and shared memory multi-processor architectures. Credit not granted for both CMP SCI 4740 and CMP SCI 5740.

**CMP SCI 4750 Introduction to Cloud Computing: 3 semester hours**

Prerequisites: CMP SCI 2750. This course provides an introduction to development and deployment of applications in the cloud space. Touches on different aspects of cloud computing such as IaaS, PaaS, and SaaS. Includes significant discussion on legal and security aspects of clouds in the marketplace. May also include public, private, and hybrid clouds, and Internet of Things. Credit not granted for both CMP SCI 4750 and CMP SCI 5750.

**CMP SCI 4760 Operating Systems: 3 semester hours**

Prerequisites: CMP SCI 2750 and CMP SCI 3130; or graduate standing. This course covers the structure of a generic operating system, considering in detail the algorithms for interprocess communication, process scheduling, resource management, memory management, file systems, and device management. It presents examples from contemporary operating systems and requires practical projects implemented within a modern operating system or simulator environment.

**CMP SCI 4780 Computer and Network Security: 3 semester hours**

Prerequisites: CMP SCI 4730 or graduate standing. This course provides a broad overview of computer and network security technologies and concerns from multiple perspectives, such as cryptography, Public Key Infrastructures (PKI), hashes and message digests, computer viruses and malware, email security, TCP/IP security, IPSec, Secure Socket Layer (SSL), Transport Layer Security (TLS), Virtual Private Networks (VPN), Firewall, AAA (Authentication, Authorization, Accounting), wireless and mobile systems security, secure identifications (IDs), cloud security, privacy and integrity, network attacks, system monitoring, and Intrusion Detection System (IDS). Management and human factors related to security will also be discussed.

**CMP SCI 4782 Information Security: 3 semester hours**

Prerequisites: CMP SCI 2750 and, CMP SCI 3702 or INFSYS 3848, or consent of instructor. This course provides an overview of the cybersecurity profession and the various domains associated with it. Students will be introduced to various information risk management concepts and how it is interconnected to cybersecurity. A broad range of cybersecurity domains will be discussed along with practical applications of information risk management. Additional topics may include labs in select cybersecurity domains. Credit can not be granted for both CMP SCI 4782 and CMP SCI 5782.

**CMP SCI 4792 Introduction to Mobile Computing, Networking, and Security: 3 semester hours**

Prerequisites: CMP SCI 2750 and, CMP SCI 3702 OR INFSYS 3848, or consent of instructor. This course introduces fundamental concepts of mobile wireless networks, mobile edge computing, and security measures at the edge. It discusses challenges related to mobile edge computing systems in general and may include topics such as crowdsourcing/crowdsensing systems, Quality of Experience (QoE) in real-time mobile services, Internet of Things, scalability, secure and verifiable computing, and vehicular and autonomous driving networks. Credit not granted for both CMP SCI 4792 and CMP SCI 5792.

**CMP SCI 4794 Introduction to Security of IoT Systems: 3 semester hours**

Prerequisites: CMP SCI 4730 or consent of instructor. This course covers the cutting-edge techniques on the emerging edge cloud and wireless/mobile Internet of Things (IoT) systems. It covers the IoT reference architecture, integrated IoT security architecture, major threats and vulnerabilities with the IoT devices and edge cloud, and defense mechanisms. It includes hands-on labs on both the vulnerabilities and defense of the systems. Credit cannot be granted for both CMP SCI 4794 and CMP SCI 5794.

**CMP SCI 4880 Individual Studies in Computer Science: 1-3 semester hours**

Prerequisites: Consent of instructor. This course allows a student to pursue individual studies under the supervision of a faculty member. Topics may include learning new technology, software development, or participation in research activities. Students must arrangements for an instructor to supervise their work. A maximum of 6 credit hours of CMP SCI 3990 and CMP SCI 4880 combined can be counted as major electives.



**CMP SCI 4890 Topics in Computer Science: 3 semester hours**

Prerequisites: Consent of the Instructor. This course covers a special topic in computer science to be determined by recent developments in the field and the interests of the instructor. This course may be taken for credit more than once so long as the topic discussed in each semester is different.

**CMP SCI 5012 Enterprise Web Development: 3 semester hours**

Prerequisites: CMP SCI 4010 or consent of instructor. Covers design and implementation issues for enterprise web development, and some popular advanced technologies. Topics include MVC and persistence frameworks, such as Spring and Hibernate. Other topics may include Java Web services, EJB, messaging standards such as JMS, and Java EE design patterns. Students will develop enterprise-level web application projects. Credit cannot be earned for both CMP SCI 4012 and CMP SCI 5012.

**CMP SCI 5020 Android Apps: Android Fundamentals: 3 semester hours**

Prerequisite: Graduate standing. This course covers fundamental programming principles, including software architecture and user experience considerations, which underlie handheld software applications and their development environments. The course involves in-depth, hands-on examples that are implemented on the Android Platform, along with discussions of security. Credit is not granted for both CMP SCI 4020 and CMP SCI 5020.

**CMP SCI 5030 Intelligent Web: 3 semester hours**

Prerequisite: Graduate standing. This course covers the application of artificial intelligence and other modern techniques to help construct, navigate, and experience the Web. Topics may include retrieval models, classification, mining, association, topology, and indexing algorithms such as PageRank and HITS. Credit cannot be earned for both CMP SCI 4030 and CMP SCI 5030.

**CMP SCI 5130 Advanced Data Structures and Algorithms: 3 semester hours**

Prerequisites: Graduate standing in Computer Science. This course covers the design of efficient data structures and algorithms, as well as an advanced analysis of the time and space complexities of iterative and recursive algorithms. Student will learn a variety of techniques including dynamic programming, greedy algorithms, various graph algorithms, and NP-completeness and approximation algorithms.

**CMP SCI 5222 Advanced iOS Apps: 3 semester hours**

Prerequisites: CMP SCI 4220 or consent of instructor. Focuses on building sophisticated apps using iOS. Will cover recent developments in networking such as web services, Bluetooth and wifi connectivity, graphics and animation in 2-d and 3-d, autolayouts, OpenGL, advanced data sources such as plist and core data, source control and unit testing. May also discuss security topics. Credit not granted for both CMP SCI 4222 and CMP SCI 5222.

**CMP SCI 5300 Artificial Intelligence: 3 semester hours**

Prerequisites: Graduate standing. This course provides an introduction to artificial intelligence. The list of topics may include search, planning, knowledge-based reasoning, probabilistic inference, machine learning, natural language processing, and practical applications. Credit cannot be granted for both CMP SCI 4300 and CMP SCI 5300.

**CMP SCI 5320 Evolutionary Computation: 3 semester hours**

Prerequisites: Graduate standing in Computer Science. This course introduces the concepts of nature-inspired problem solving with artificial evolution using selection, crossover, mutation and inheritance. It discusses applications of evolutionary algorithms, overviews the existing models and instances, and analyzes specific instances such as genetic algorithms, evolutionary programming, evolution strategies, and genetic programming. Credit not granted for both CMP SCI 4320 and CMP SCI 5320.

**CMP SCI 5340 Machine Learning: 3 semester hours**

Prerequisites: Graduate standing in Computer Science/Cybersecurity (Computer Science option) or CMP SCI 4342 or CMP SCI 5342 or consent of the instructor. This course provides an introduction to machine learning principles, algorithms and applications. Topics may include computational learning theory, VC dimensions, generalization, classification, regression, regularization, validation, and reinforcement learning. Credit cannot be granted for both CMP SCI 4340 and CMP SCI 5340.

**CMP SCI 5342 Data Mining: 3 semester hours**

Prerequisites: Graduate standing in Computer Science/Cybersecurity (Computer Science option) or consent of the instructor. This course provides an introduction to data-mining principles, algorithms, and applications. Topics may include data preprocessing, data transformation, similarity and dissimilarity measures, data representation, classification techniques, association analysis, cluster analysis, and anomaly detection. Credit cannot be granted for both CMP SCI 4342 and CMP SCI 5342.

**CMP SCI 5370 Biological Data Science: 3 semester hours**

Prerequisites: Graduate standing in Computer Science or consent of instructor. This course provides an introduction into several key areas of biological data science, with a focus upon genetic data. Relevant background topics in genetics, current issues, and a variety of available resources will be explored. Upon successful completion of this course, the student will be able to evaluate algorithms for analyzing genetic data, including assessments of sources of errors and analysis of time and space complexity; address shortcomings in existing approaches; and implement efficient and effective software for exposing information hidden in genetic data. Credit cannot be granted for both CMP SCI 4370 and CMP SCI 5370.

**CMP SCI 5390 Deep Learning: 3 semester hours**

Prerequisites: Graduate standing in Computer Science. This course reviews a typical machine learning recipe, mathematical foundations for deep learning, and provides an introduction to deep learning. Topics include dense neural networks, convolutional neural networks, and recurrent neural networks. The course will cover building, training, and using deep neural networks for solving various machine learning problems like image classification and protein contact prediction. Credit cannot be granted for both CMP SCI 4390 and CMP SCI 5390.

**CMP SCI 5410 Computer Graphics: 3 semester hours**

Prerequisites: Graduate standing in Computer Science. This course covers the theoretical foundation and algorithms of computer graphics. Students learn the basics of graphics programming for modeling, rendering, and animation of 2D and 3D objects, using standard graphics API. A brief discussion of special graphics hardware, such as GPU, may be included. Credit cannot be granted for both CMP SCI 4410 and CMP SCI 5410.



**CMP SCI 5420 Digital Image Processing and Computer Vision: 3 semester hours**

Prerequisites: Graduate standing in Computer Science. This course focuses on image analysis and visual perception. Students will learn data structures and algorithms for image processing, region and texture analysis, image filtering, edge detection, contour following, and image enhancement in both spatial and frequency domain. Other topics may include color processing, coding for storage, retrieval, transmission, and image restoration. Credit cannot be granted for both CMP SCI 4420 and CMP SCI 5420.

**CMP SCI 5500 Software Engineering: 3 semester hours**

Prerequisite: Graduate standing. Introduces software engineering as a discipline, discusses stages of the software life cycle, compares development models such as waterfall, prototyping and incremental/iterative, covers requirements analysis, effort and cost estimation, compares structured and object-oriented analysis and design methods. Discusses verification/validation, quality assurance, software reliability, testing methods, maintenance, documentation, project management and team structure, metrics, and available tools.

**CMP SCI 5520 Object Oriented Analysis and Design: 3 semester hours**

Prerequisite: Graduate Standing in Computer Science. This course covers object-oriented development, illustrated with a visual modeling language and following an agile process. Discusses elements of analysis, requirements, design, implementation, and deployment such as use cases, static and dynamic diagrams, patterns, and frameworks. This course includes a semester long project starting with requirements and culminating with deployment. Credit not granted for both CMP SCI 4520 and CMP SCI 5520.

**CMP SCI 5620 Intelligent Information Retrieval: 3 semester hours**

Prerequisites: CMP SCI 4300 or CMP SCI 5300. This course studies techniques for analysis of information by statistical, syntactical, and logical methods. Topics related to multimedia information are also discussed.

**CMP SCI 5700 Computer Systems: 3 semester hours**

Prerequisite: Graduate standing in Computer Science. This course focuses on parallel computing architectures, including RISC, pipelining, vector processing, SIMD, MIMD, and array processing. It introduces different memory and I/O subsystems, hardware description languages, and it demonstrates performance enhancement using different architectures studied.

**CMP SCI 5702 Cyber Threats and Defense: 3 semester hours**

Prerequisites: Graduate standing. This course introduces the importance of cybersecurity and covers its various components. Topics may include different types of malware, phishing, password attacks, spoofing, efficient encryption algorithms, firewalls, intrusion prevention/detection systems, and honeypots. Credit cannot be granted for both CMP SCI 3702 and CMP SCI 5702.

**CMP SCI 5732 Cryptography for Computer Security: 3 semester hours**

Prerequisites: Graduate standing. This course provides an introduction to cryptography as it applies to computer security. It describes cryptographic code-making and code-breaking, and how they are integrated within larger security systems. Topics include symmetric encryption algorithms like AES, asymmetric encryption using prime number factorization and elliptic curves, message authentication codes, key exchange protocols and attacks on all these systems. Additional topics may include onion networks and blockchain technology, as well as possible attacks on those systems. Credit cannot be granted for more than one of CMP SCI 4732, CMP SCI 4780, and CMP SCI 5732.

**CMP SCI 5740 High Performance Computing: 3 semester hours**

Prerequisite: Graduate Standing in Computer Science. This course introduces algorithms for multiprocessor and multi-core architectures. Students learn the models of modern parallel computation and techniques to take advantage of parallel architectures for distributed and shared memory multi-processor architectures. Credit not granted for both CMP SCI 4740 and CMP SCI 5740.

**CMP SCI 5750 Cloud Computing: 3 semester hours**

Prerequisites: Graduate standing. Provides an introduction to development and deployment of applications in the cloud space. Touches on different aspects of cloud computing such as IaaS, PaaS, and SaaS. Includes significant discussion on legal and security aspects of clouds in the marketplace. May also include public, private, and hybrid clouds, and Internet of Things. Credit not granted for both CMP SCI 4750 and CMP SCI 5750.

**CMP SCI 5782 Advanced Information Security: 3 semester hours**

Prerequisites: CMP SCI 5702 or INFSYS 6828 or consent of instructor. This course provides an overview of the cybersecurity profession and the various domains associated with it. Students will be introduced to various information risk management concepts and how they are interconnected to cybersecurity. A broad range of cybersecurity domains will be discussed along with their practical applications in information risk management. Additional topics may include labs in select cybersecurity domains to further the learning process. Credit cannot be granted for both CMP SCI 4782 and CMP SCI 5782.

**CMP SCI 5792 Mobile Computing, Networking, and Security: 3 semester hours**

Prerequisites: CMP SCI 5702 or INFSYS 6828 or consent of instructor. This course introduces fundamental concepts of mobile wireless networks, mobile edge computing, and security measures at the edge. It discusses challenges related to mobile edge computing systems in general and may include topics such as crowdsourcing/crowdsensing systems, Quality of Experience (QoE) in real-time mobile services, Internet of Things, scalability, secure and verifiable computing, and vehicular and autonomous driving networks. Credit not granted for both CMP SCI 4792 and CMP SCI 5792.

**CMP SCI 5794 Security of IoT Systems: 3 semester hours**

Prerequisites: CMP SCI 4730 or consent of the department. This course covers the cutting-edge techniques on the emerging edge cloud and wireless/mobile Internet of Things (IoT) systems. It covers the IoT reference architecture, integrated IoT security architecture, major threats and vulnerabilities with the IoT devices and edge cloud, and defense mechanisms. It includes hands-on labs on both the vulnerabilities and defense of the systems. Credit cannot be granted for both CMP SCI 4794 and CMP SCI 5794.

**CMP SCI 5870 Computer Science Seminar: 1-3 semester hours**

Prerequisites: Graduate standing. This is a seminar on various topics. Substantial student reading and participation is expected. It may be taken more than once for credit with the consent of the department.

**CMP SCI 5880 Computer Science Independent Project: 1-3 semester hours**

Prerequisites: Graduate standing and consent of instructor. This course offers the student an opportunity to work on a supervised project, individually or in a group. A maximum of 6 hours can be counted toward the M.S. in Computer Science program from a combination of CMP SCI 5880, CMP SCI 5900, and CMP SCI 6900.

**CMP SCI 5888 Cybersecurity Capstone: 3 semester hours**

Prerequisites: INFSYS 6828 and one of either INFSYS 6858 or CMP SCI 5782. This course provides students an opportunity to participate in the full cybersecurity lifecycle in an applied setting using a project-based approach. Students from technical and non-technical backgrounds will work together in teams. Major tasks may include creating an information security management plan, conducting risk assessments, implementing technical and administrative controls to mitigate information security risks, and managing security operations with a focus on incident detection and response. Students may work on projects through an actual organization and demonstrate application of knowledge gained through all prior courses in the degree program. This course must be taken the last semester prior to graduation. Cannot receive credit for CMP SCI 5888 and INFSYS 6888.

**CMP SCI 5890 Topics in Computer Science: 1-3 semester hours**

Prerequisites: Graduate standing. This course offers various topics not offered on a regular basis. This course may be taken for credit more than once so long as the topic discussed in each semester is different.

**CMP SCI 5900 Graduate Internship in Computer Science: 1-3 semester hours**

Prerequisites: Consent of instructor. This course is an internship that provides a student field experience in an organization related to the profession. To be enrolled, students must be employed in an internship or co-op program. If an instructor is not named, the student must find an instructor to supervise the internship. Internship activities may vary by site, but will require some reporting. Typically 1 credit can be earned for about 100 work hours. Only up to 3 hours total can be counted toward the M.S. in Computer Science program, and at most 6 hours can be counted from a combination of CMP SCI 5880, CMP SCI 5900, and CMP SCI 6900.

**CMP SCI 6320 Advances in Evolutionary Computation: 3 semester hours**

Prerequisites: CMP SCI 5320. This course focuses on some advanced topics in genetic and evolutionary computation (both theory and applications). Topics may include genetic algorithm variants, intelligent metaheuristics, evolutionary machine learning, differential evolution, swarm intelligence, learning classifier systems, and Markov models. A substantial part of the course will be based on selected topics from recent literature. This is a project-based course, with the project typically involving literature search and conducting and reporting research. Projects may involve developing specific applications or implementing a specific model.

**CMP SCI 6340 Genetic Programming: 3 semester hours**

Prerequisites: CMP SCI 5320. This course provides an in-depth exploration of Genetic programming, including advanced concepts such as scalability, evolution of modularity and regularity, and constrained evolution with CGP, STGP, or CFG-based GP. It may be reading, research, or application oriented.

**CMP SCI 6410 Topics in Computer Graphics: 3 semester hours**

Prerequisites: CMP SCI 4410 or CMP SCI 5410. This course covers various aspects of advanced graphics techniques, such as geometric modeling, rendering, shading, texturing, and computer animation. The course provides an in-depth study of recent advanced topics in computer graphics.

**CMP SCI 6420 Topics In Image Processing and Computer Vision: 3 semester hours**

Prerequisites: CMP SCI 5420. This course covers new developments in digital image processing, computer vision, and multimedia. Topics to be covered may include image databases, object tracking, and large-scale data visualization.

**CMP SCI 6900 Thesis in Computer Science: 1-6 semester hours**

Prerequisites: Completion of at least 12 graduate credits and approval of research topic by thesis advisor. This course is designed for students intending to pursue a thesis as part of their M.S. in Computer Science program. A maximum of 6 hours can be counted toward the program from a combination of CMP SCI 5880, CMP SCI 5900, and CMP SCI 6900.

**CMP SCI 7990 Ph.D. Dissertation Research in Computer Science: 1-9 semester hours**

Prerequisites: Completion of comprehensive examinations. This course is used to pursue research work for a Ph.D. dissertation under the supervision of a faculty advisor. This course is available only to the students pursuing a Ph.D. under the Computer Science option.

## Criminology and Criminal Justice

### General Information

### Degrees and Areas of Concentration

The department offers courses leading to the Bachelor of Science, the Master of Arts, the 2+3 Bachelor of Science and Master of Arts program, and Ph.D. in criminology and criminal justice.

### Cooperative Programs

Faculty members in the Criminology and Criminal Justice department work with the Center for International Studies. Workshops, projects, credit courses, and other social services are brought to the criminal justice community.

### Internships

Majors are strongly encouraged to participate in CRIMIN 3280 Internship in Criminology and Criminal Justice, during their junior or senior year. The internship affords students the opportunity to gain experience in a criminal justice agency under the joint supervision of agency personnel and criminology and criminal justice faculty.

### Minor in Criminology and Criminal Justice

The minor gives recognition to those students from other major areas who find that criminology and criminal justice courses fit their academic or professional needs and/or interests.

### Certificate in Criminology and Criminal Justice

The certificate in Criminology and Criminal Justice is designed to provide students information about criminal behavior and the criminal justice system to advance current careers, prepare for new career paths, or earn valuable credit toward a Bachelor's degree. The certificate will offer information to gain a solid foundation in career relevant topics that include: policing, security, victim services, juvenile justice, law, social services, and corrections.

### Chair's List

Each year, faculty members nominate undergraduates who have done outstanding work in one or more of their courses to the department's Chair's List. In addition to being nominated by a faculty member, the student must meet a cumulative grade-point average threshold for placement on the Chair's List. The list is featured on the department's website, and the Dean of Arts and Sciences is notified of their accomplishment.

## Career Outlook

The orientation of the criminology and criminal justice faculty and of the degree program prepares the graduate to work professionally for local, state, and federal agencies concerned with maintaining public safety by the prevention of crime and apprehension and rehabilitation of offenders. The B.S. in criminology and criminal justice is also advantageous for careers with various social agencies, especially those connected with the juvenile court system, probation and parole, and local police. Many students use the B.S. in criminology and criminal justice as preparation for law school.

The interdisciplinary curricula unify a body of knowledge from criminology, social science, law, public administration, and corrections, and provide the student with an understanding of the assumptions, values, and processes of the system of justice. Many pre-law students choose criminology and criminal justice as an undergraduate major because of the excellent preparation offered for law school. An internship program is offered for college credit. The liaison, supervision, and experience with public agencies that form an integral part of this program help the student arrive at a career decision.

## Degrees

Criminology and Criminal Justice BS (p. 400)

Criminology and Criminal Justice BS/MA Dual Degree Program (p. 401)

Criminology and Criminal Justice MA (p. 402)

Criminology and Criminal Justice PhD (p. 403)

## Minor

Criminology and Criminal Justice Minor (p. 403)

## Certificate

Criminology and Criminal Justice Undergraduate Certificate (p. 403)

## Courses

### ***CRIMIN 1100 Introduction to Criminology and Criminal Justice: 3 semester hours***

Introduction to the basic concepts and approaches in the study of criminology and criminal justice. The major components of the criminal justice system are examined.

### ***CRIMIN 1101 Crime and Criminal Justice Today: 1-2 semester hours***

This course provides students insight into crime and the criminal justice system in contemporary America. All students, whether enrolled for one or two hours, will complete the same core course requirements. Those students enrolled for two hours will complete additional course work as outlined in the course syllabus.

### ***CRIMIN 1110 Theories of Crime: 3 semester hours***

This course provides an introduction to major theoretical approaches to the study of crime and justice.

### ***CRIMIN 1120 Criminal Law: 3 semester hours***

This course provides an analysis of substantive criminal law, evidence, and judicial procedure.

### ***CRIMIN 1150 Violence in America: 3 semester hours***

Prerequisites: CRIMIN 1100 or consent of instructor. Overview of patterns and correlates of violence in America. Emphasis on the variety of forms of violent crimes, such as murder, assault, robbery, rape, and gang violence. Includes an examination of violence as a response to lawbreaking.

### ***CRIMIN 1200 Foundations of Law: An Introduction to Legal Studies: 3 semester hours***

Same as POL SCI 1200. As a broad liberal-arts approach to the study of law, this course is designed to familiarize students with legal ideas, legal reasoning, and legal processes. It also provides comparative and historical perspectives on law that will help explain legal diversity and legal change. Finally, it offers opportunities to explore some of the persistent issues in law and legal theory: for example, issues about the sources of law, the responsibilities of the legal profession, or the relative merits of the adversary system.

### ***CRIMIN 2130 Criminal Justice Policy: 3 semester hours***

This course provides an introduction to criminal justice policy making, planning, and implementation.

### ***CRIMIN 2180 Alcohol, Drugs and Society: 3 semester hours***

Same as SOC 2180. Prerequisite: SOC 1010 or PSYCH 1003. This course examines the medical, legal and social aspects of alcohol and drug use. Medical aspects considered include treatment approaches and the role of Physicians in controlling such behavior. In the legal realm, past and present alcohol and drug laws are explored. Cultural and social influences on alcohol and drug use are discussed.

### ***CRIMIN 2210 Research Methods in Criminology and Criminal Justice: 3 semester hours***

This course provides an examination of basic methods of research design, measurement, and data collection in criminology and criminal justice.

### ***CRIMIN 2220 Statistical Analysis in Criminology and Criminal Justice: 4 semester hours***

Prerequisites: CRIMIN 2210 (may be taken concurrently) and the university math proficiency requirement. This course is an introduction to techniques of quantitative data analysis. Both descriptive and inferential statistics are applied to problems in criminology and criminal justice. Includes a one hour lab.

### ***CRIMIN 2240 Policing: 3 semester hours***

This course provides an overview of current and historical perspectives on the function of American policing. There is emphasis on the management of police organizations and relationships with the community.

### ***CRIMIN 2250 Courts: 3 semester hours***

This course provides an overview of current and historical perspectives on the function of the American courts. There is emphasis on the dynamics of courthouse justice, with special attention placed on the roles of the prosecutors, judges, defense attorneys, defendants, victims, and jurors regarding the decisions that impact the adjudication process.

### ***CRIMIN 2251 Youth Gangs: 3 semester hours***

This course provides an overview of research and policy concerning youth gangs. Definitional and methodological issues are examined, along with both qualitative and quantitative research. Topics may include the causes of gangs and gang involvement with focus on variations by race, gender, time period, and geography.

### ***CRIMIN 2252 Crime and Punishment: 3 semester hours***

Same as PHIL 2252. This course will address fundamental conceptual, ethical, and moral issues that arise in the context of the legal system. Topics may include punishment, pre-trial detention, the death penalty, acquittal of persons who are legally guilty, plea bargaining, moral obligation to obey the law, and laws restricting civil liberties.

### ***CRIMIN 2260 Corrections: 3 semester hours***

This course provides an examination of correctional philosophies and practices. There is emphasis on the history of corrections, the formal and informal organization of correctional facilities, inmate rights, and correctional alternatives.



**CRIMIN 3043 History of Crime and Justice: 3 semester hours**

Same as HIST 3043. Prerequisites: Junior standing or consent of instructor. The analysis development, and change in philosophies and responses to crime. Emphasis on major forms and definitions of crime, the emergence of modern policing, the birth of the prison and the juvenile court.

**CRIMIN 3209 Forensic Anthropology: 4 semester hours**

Same as ANTHRO 3209. Prerequisites: ANTHRO 1005 or BIOL 1102 or consent of instructor. Students learn basic human dental and skeletal anatomy and the methods used by biological anthropologists and archaeologists to collect and analyze human skeletal remains, including how to age and sex skeletal remains, identify ethnic markers, determine stature and handedness, and identify the presence of trauma and/or pathology. Also covers the role of the forensic anthropologist in crime scene investigations and human rights issues. In the weekly lab section students will have an opportunity for hands-on application of techniques to skeletal remains.

**CRIMIN 3230 Crime Prevention: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an examination of situational, social, and legislative approaches to the prevention of crime and delinquency. There is emphasis on theories, implementation, and consequences of these approaches.

**CRIMIN 3270 Juvenile Justice and Delinquency: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an examination of formal and informal responses to juvenile delinquency. There is emphasis on theories of delinquency and the decision-making processes of police, court and probation officials.

**CRIMIN 3280 Internship in Criminology and Criminal Justice: 3 semester hours**

Prerequisites: Junior standing. This course consists of an internship in a criminal justice setting under faculty supervision. It may be repeated for a maximum of six credit hours.

**CRIMIN 3290 Special Readings: 1-6 semester hours**

Prerequisite: Consent of instructor. Individualized study, under regular faculty supervision, designed to meet particular educational needs of selected students.

**CRIMIN 3305 Crime and Justice in a Globalized World: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course will provide an analysis of crime and criminal justice systems in selected cultures around the world. It will emphasize the ways in which various cultures define and respond to criminal behavior. It fulfills the CRIMIN diversity requirement.

**CRIMIN 3310 Computers in Criminal Justice: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course will critically examine computer crime, cyber-criminology, and the ways in which technology and the Internet facilitate criminal and deviant behavior. Discussion will focus on the types of crime using computer technology, theories addressing digital criminals, and an overview of the criminal justice response to these issues.

**CRIMIN 3320 The Death Penalty: 3 semester hours**

Prerequisite: CRIMIN 1100. An examination of the history, application, and attitudes toward the death penalty.

**CRIMIN 3330 Corporate, Organizational, and White Collar Crime: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course will critically examine how technological innovations have changed both the mechanisms of crime commission as well as opportunities for computer crime. New techniques, new offenders, and new victims of computer crime will be explored. The mechanisms of computer crime prevention and control utilized in the criminal justice system by the police, the courts, and corrections will be addressed. Discussions will focus on how technology creates new ways of thinking about crime, criminals, and criminality.

**CRIMIN 3345 Constitutional Law and the Criminal Justice System: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of the objectives of criminal law regarding the United States Constitution. It emphasizes the rights of persons suspected or convicted of crime within the institutional settings of the police, courts, and corrections.

**CRIMIN 4300 Communities and Crime: 3 semester hours**

Same as SOC 4300. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of the sources, consequences, and control of crime within communities. There is emphasis on social and ecological theories of crime, and on population instability, family structure, and the concentration of poverty as causes of crime.

**CRIMIN 4320 Forms of Criminal Behavior: 3 semester hours**

Same as SOC 4320. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an examination of major types of criminal behavior including violent, property, public order, and organizational offenses. There is emphasis on theories of and responses to these crimes.

**CRIMIN 4325 Gender, Crime, and Justice: 3 semester hours**

Same as SOC 4325 and GS 4325. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of the role of gender in crime and in the justice system. There is emphasis on gender differences in crime commission, criminal processing, and the employment of women in criminal justice agencies. Fulfills CRIMIN diversity requirement.

**CRIMIN 4330 Violence Against Women: 3 semester hours**

Same as GS 4330. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course examines the nature, extent, causes, and consequences of various types of violence against women, including rape, sexual assault, stalking, and intimate partner violence. Criminal justice policy and practice regarding violence against women are also examined.

**CRIMIN 4335 Probation and Parole: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of alternatives to incarceration and postincarceration supervision. There is emphasis on diversion, restitution, and community reintegration.

**CRIMIN 4340 Race, Crime, and Justice: 3 semester hours**

Same as SOC 4340. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of the involvement of racial minorities in crime and the criminal justice system. There is emphasis on group differences in offending, processing, victimization, and employment in criminal justice agencies. Fulfills CRIMIN diversity requirement.



**CRIMIN 4345 War Crimes, Genocide, and Justice in the 20th and 21st Centuries: 3 semester hours**

Same as SOC 4345, POL SCI 4345, MVS 4345. Prerequisite: ENGL 3100. This course provides advanced undergraduate and Master's level students a comprehensive overview of the subject of war crimes, crimes against humanity, genocide and legal responses to these crimes in the modern era. The goal of this course is to engage students in sustained, critical thought about these issues and to foster a deeper understanding of both the causes and consequences-legal, social and human-of these egregious crimes.

**CRIMIN 4350 Victimology: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of major perspectives on victimization. There is emphasis on patterns of victimization, the role of victims in the generation of crime, and the experience of the victim in the criminal justice system.

**CRIMIN 4360 Sociology of Law: 3 semester hours**

Same as SOC 4362. Prerequisites: CRIMIN 1120, CRIMIN 2130, CRIMIN 2210, CRIMIN 2220, and ENGL 3100, or consent of instructor. The interaction of legal, political and social forces in the US is explored. Course examines historical developments in law and politics in the US, including law and economics, crime policy, socioeconomic inequality, race relations, and state sanctioned punishment. The course considers how America's federalist structure shapes law, politics and social relations. Examines how legal and political institutions establish and shape power relations between social groups.

**CRIMIN 4370 Crime, Justice, and the Media: 3 semester hours**

Prerequisites: ENGL 3100. This course provides a fresh take on issues of crime and justice through the exploration of media, such as *The Wire*, and its role in shaping the public's perception of crime and justice. Students will learn to synthesize ideas and perspectives about crime and justice as well as critically assess popular media images of crime.

**CRIMIN 4380 Special Topics in Criminology and Criminal Justice: 3 semester hours**

Prerequisites: ENGL 3100, which may be taken concurrently, or consent of instructor. This course provides an in-depth study of a selected topic in criminology and criminal justice. This course may be repeated for credit if the topic differs.

**CRIMIN 4390 Seminar in Criminology and Criminal Justice: 3 semester hours**

Prerequisites: CRIMIN 2210, CRIMIN 2220, and ENGL 3100, or consent of instructor. In this capstone course, students demonstrate the ability to work independently, integrating theory and research in criminology and criminal justice in a major paper supervised by the instructor.

**CRIMIN 4487 Philosophy of Law: 3 semester hours**

Same as PHIL 4487. Prerequisites: CRIMIN 1100 and 3 hours of philosophy and/or consent of instructor. An intensive study of recent philosophical debate about such issues as the authority of law, legal equality and justice, legal responsibility, self-determination and privacy, and legal punishment.

**CRIMIN 5415 Foundations of Criminological Theory: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. Examination of the history of criminological thought incorporating the major works of such theorists as Bentham, Beccaria, Marx, Durkheim, Lombroso, Sutherland and Merton.

**CRIMIN 5533 Philosophy of Law: 3 semester hours**

Same as PHIL 5533. Prerequisite: Graduate standing or consent of instructor. Examination of origins of law and the basis for legal obligation. Specific consideration of the justification of punishment, morality and law, and legal reasoning.

**CRIMIN 6400 Proseminar: 3 semester hours**

Prerequisite: Graduate standing. (Must be taken in the first Semester). A critical examination of theoretical, methodological and policy issues in criminology and criminal justice. Focus is on the nature of crime, policing, pretrial processes, adjudication and corrections.

**CRIMIN 6405 Methods: 3 semester hours**

Prerequisite: Graduate standing and consent of instructor. Examination of basic methods for research design and data collection. Topics include participant observation and interviewing, survey research, aggregate data analysis, and experimental design.

**CRIMIN 6410 Statistical Applications in Criminology and Criminal Justice: 3 semester hours**

Prerequisite: CRIMIN 6405. Examination of elementary principles of quantitative analysis and their application to crime and justice problems. Topics include univariate, bivariate and multivariate procedures for discrete and continuous data, and a comprehensive introduction to ordinary least squares regression.

**CRIMIN 6420 Contemporary Criminal Theories: 3 semester hours**

Prerequisite: CRIMIN 5415. Examination of contemporary explanations of crime and criminal justice. Theories covered include strain, control, cultural, labeling, conflict, as well as more recent attempts at theoretical integration and multidisciplinary integration.

**CRIMIN 6422 Law Courts, and Public Policy: 3 semester hours**

Same as POL SCI 6422. Prerequisite: Graduate Standing. An analysis of the role of courts as policymaking institutions and the law as policy. We will explore the role of judges as policymakers, consider the attributes of courts, (both trial and appellate), that make them appropriate yet limited targets for advocates of reform, and the implementation and impact of court decisions. We will consider recent examples of judicial involvement in state and national policymaking. In addition, we will examine the role of lawyers and interest groups in selecting litigation rather than alternative political processes for policy change.

**CRIMIN 6430 Law and Social Control: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. Examination of the relationship between law and other social institutions, the values and interests that are expressed in law and shaped by legal structures and processes, and law as an instrument of public policy, social control and social change. Same as Sociology 5461.

**CRIMIN 6436 Comparative Criminology: 3 semester hours**

Prerequisite: Graduate Standing. Examination of crime and criminal justice systems in world perspective.

**CRIMIN 6440 Nature of Crime: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of patterns and correlates of crime at the individual, situational, and aggregate levels. Topics include definitions of crime, offending topologies, and criminal careers.

**CRIMIN 6441 Juvenile Delinquency: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of youth crime and juvenile offenders. Topics include definitions of juvenile crime, and theories of juvenile crime causation in the U.S.

**CRIMIN 6442 Communities and Crime: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of the trends and sources of crime and social disorder across communities. The course emphasizes relationships among crime, neighborhood change, neighborhood responses to crime, and public policies.

**CRIMIN 6443 Violent Crime: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of the sources and patterns of violent offending across time and space. Topics include conceptions and typologies of violent crimes and offenders, victim-offender relationships, and efforts to predict and control violent offending.

**CRIMIN 6448 Victimization: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of the risks and consequences of crime for its victims. Issues considered include victim-offender relationships, characteristics of victims, the nature of the injuries they experience and criminal justice procedures that involve them.

**CRIMIN 6450 Criminal Justice Process and Policy: 3 semester hours**

Prerequisite: Graduate standing. An analysis of criminal justice as a network of decisions and complex organizations. Topics include sources of criminal justice policy, policy agendas, implementation and evaluation.

**CRIMIN 6452 The Police: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Historical, social and political analysis of policing in America. Examination of federal, state, county and municipal agencies.

**CRIMIN 6454 Corrections: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of the history, forms, and functions of correctional philosophies, institutions, programs and policies. Topics include the structure and functions of prisons and jails, community corrections, intermediate sanctions, and the growth of correctional control in modern society.

**CRIMIN 6465 Qualitative Research Design: 3 semester hours**

Prerequisites: CRIMIN 6405. Examination of participant observation and informant and respondent interviewing. Topics include gaining access, sampling, data collection and analysis, and legal and ethical concerns.

**CRIMIN 6470 Quantitative Research Design: 3 semester hours**

Prerequisites: CRIMIN 6405, CRIMIN 6410, and CRIMIN 6480. Examination of experimental, longitudinal, and cross-sectional designs. Sources of data, sampling procedures, operational definitions, and issues of reliability are also discussed.

**CRIMIN 6471 Evaluating Criminal Justice Interventions: 3 semester hours**

Prerequisites: CRIMIN 6405 and CRIMIN 6410. This course examines a broad range of interventions designed to prevent crime or improve some aspect of the criminal justice system. The validity, reliability, and feasibility of differing intervention designs are addressed. Several major criminal justice evaluations are discussed.

**CRIMIN 6480 Multivariate Statistics in Criminology: 3 semester hours**

Prerequisites: CRIMIN 6405 and CRIMIN 6410. Introduction to the general linear model with applications to multivariate problems in criminal justice and criminology. Topics include advanced ordinary least squares, causal modeling, time series analysis, simultaneous equations, and analysis of limited dependent variables.

**CRIMIN 6485 Directed Readings/Research in Criminology and Criminal Justice: 1-6 semester hours**

Prerequisite: Consent of instructor. Directed reading and research, under faculty supervision, designed to meet particular educational needs of selected students.

**CRIMIN 6495 Internship in Criminology and Criminal Justice: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Supervised placements with criminal justice agencies. Designed primarily for students with limited field experience.

**CRIMIN 6498 M A Thesis Research: 1-6 semester hours**

Prerequisite: Graduate standing and consent of instructor.

**CRIMIN 6550 Seminar in Criminology and Criminal Justice: 3 semester hours**

Prerequisites: Graduate standing and CRIMIN 5415, CRIMIN 6400, and CRIMIN 6405 or consent of the instructor. Research and policy approaches to the study of criminology and criminal justice. Class may be repeated for credit when the subject matter is different.

**CRIMIN 7499 Ph.D. Dissertation Research: 1-6 semester hours**

To be arranged.

## Economics

### Undergraduate Programs Overview

#### Bachelor of Arts (B.A.) in Economics

The B.A. in Economics is more 'liberal arts' in its focus than the B.S. degree. The B.A. degree requires completion of the BA foreign language requirement of the College of Arts and Sciences.

#### Bachelor of Science (B.S.) in Economics

The B.S. in Economics provides more in-depth development of the analytical and quantitative skills used in economic analysis. Students are required to complete calculus, econometrics, and additional quantitative coursework. The B.S. also offers very strong students the option of pursuing the Dual B.S./M.A. program.

#### B.S./M.A. Dual Degree Program in Economics

The B.S./M.A. ("2+3") dual degree program in Economics is an accelerated program that allows students to complete a B.S. and a M.A. in Economics in five years. The program is targeted at students who are comfortable with mathematics and have demonstrated success in undergraduate-level quantitative and analytical economics courses.

#### Bachelor of Science (B.S.) in Actuarial Science

Principles of Microeconomics, Principles of Macroeconomics, as well as a couple of quantitative courses offered by the department are part of the B.S. in Actuarial Science program. In addition, the Principles courses fulfill the VEE requirements in Economics. These courses have received approval of the Society of Actuaries (SOA). For more information see the Actuarial Science undergraduate program (p. 311).

#### Minor in Economics

The Department offers a minor in Economics to students who want to develop some knowledge in this field but wish to major in another discipline.

#### Certificate in Applied Econometrics and Data Analysis

This Certificate is designed to prepare students to perform applied econometric analysis in a variety of professional settings: banks, telecomm companies, consulting firms, etc. BS students can further

distinguish themselves with this Certificate, which can be combined with the BS, the MA, or completed as a freestanding certificate.

## Certificate in Actuarial Studies

Principles of Microeconomics, Principles of Macroeconomics help satisfy the prerequisites for the Certificate in Actuarial Studies and help fulfill the VEE requirements in Economics. These courses have received approval of the Society of Actuaries (SOA). For more information on the Certificate in Actuarial Studies, see the Actuarial Science undergraduate program (p. 311).

## Courses in Geography

The department offers a number of courses in geography, both online and on campus.

## Resources

A valuable campus resource available to economics students is the Economic Resources Center (ERC). The ERC serves as a University Computer lab, study, and meeting space. The ERC also provides peer tutors for undergraduate economics courses (especially for Principles of Microeconomics and Principles of Macroeconomics).

## Graduate Programs Overview

### Master of Arts (M.A.) in Economics

The M.A. in Economics is specifically designed for those seeking to work as professional economists. Students acquire knowledge and a versatile set of skills that are highly valued in the workplace. The M.A. program has an excellent track record in job placement and placement in top Ph.D. programs. A unique feature of the program is the large number of applied econometrics and quantitative courses offered. The program can accommodate prospective full-time students as well as those who wish to study part-time. Classes are small, and student-faculty interaction is encouraged.

## About the Faculty

The economics faculty considers research an integral part of good teaching. Research projects in recent years have dealt with energy, public choice, industrial organization, property rights, wage discrimination, urban economic development, health economics, economics of science, economics of gender, poverty and welfare, economics of culture, and government regulations.

## Career Outlook in Economics

Nearly every decision that a person, business, or government makes falls under the purview of economic analysis. In economics course work, students learn to think analytically and apply their knowledge to a broad range of topics and problems. These skills are highly valuable in our ever changing economy, as well as in everyday life. For this reason, those with economics degrees are in high demand in a wide number of occupations, whether in business or government. In addition, economics majors are especially sought after by law schools, M.B.A. programs and, of course, graduate programs in economics. Job prospects for those with economics degrees at both the undergraduate and graduate levels are expected to remain strong over the next decade. For additional information on the undergraduate program, contact the Director of Undergraduate Studies 516-5306 or 314-516-5353. Regarding the graduate program, contact the Director of Graduate Studies at 516-5553. Additional information is also available at the Department of Economics website.

## Degrees

Economics BA (p. 419)

Economics BS (p. 420)

Economics BS/MA Dual Degree Program (p. 421)

Economics MA (p. 422)

Economics MA, Business Economics Emphasis (p. 423)

## Minor

Economics Minor (p. 423)

## Certificate

Applied Econometrics and Data Analysis Undergraduate Certificate (p. 320)

## Affiliated Interdisciplinary Programs

Actuarial Science BS (p. 311)

Actuarial Studies Undergraduate Certificate (p. 413)

Data Science Undergraduate Certificate (p. 413)

## Economics Courses

### ***ECON 1000 Economics in Everyday Life (MOTR ECON 100): 3 semester hours***

This course is an introduction to economic concepts, analysis, and issues for non-majors. ECON 1000 does not substitute for ECON 1001 or ECON 1002. Students who have already completed ECON 1001 or ECON 1002 may not take ECON 1000 for credit.

### ***ECON 1001 Principles of Microeconomics (MOTR ECON 102): 3 semester hours***

Prerequisite: MATH 1030. Introduction to the determinants of household demand, production and cost, and market prices. Applies the principles of individual decision-making behavior to understanding goods, services and resource markets.

### ***ECON 1002 Principles of Macroeconomics (MOTR ECON 101): 3 semester hours***

Prerequisite: MATH 1030 and ECON 1001. Introduction to the determination of levels of and changes in aggregate income, output, employment and prices. Applies economic principles of choice to the formulation and achievement of public policies that affect national employment, income distribution, and economic growth.

### ***ECON 1005 Family Economics and Household Development: 3 semester hours***

Provides social service professionals that work with low income individuals and families with an understanding of the principles of personal financial management. Case studies are used to apply course content and to develop training strategies for clients to improve household financial management. The role of financial institutions and government policies as well as their impact on low income families is also examined. Resources to use with clients will be identified. ECON 1005 does not count toward a major or minor in Economics.

**ECON 1052 Microeconomics for the School Curriculum: 3 semester hours**

Analysis of market forces, with emphasis on business firms, households, and productive-factor markets, price determination and resource allocation. Special reference to topics included in elementary and secondary school social science curricula. ECON 1052 may not be used by Economics majors to meet degree requirements.

**ECON 1900 Introductory Topics in Economics: 3 semester hours**

This course provides an analysis of an introductory economic topic. May be repeated for credit when topic varies.

**ECON 2010 The Business Firm: History, Theory, and Policy: 3 semester hours**

Prerequisites: ECON 1000 or ECON 1001 or consent of instructor. This course presents a history of the development of modern business firms and examines the evolution of the economic theory of the firm. Special attention is paid to the role that firms play in fostering social and economic development. The ultimate objective of the course will be to provide students with a deeper understanding of firms so they can make better policy decisions as firm owners, managers, lawmakers, regulators, and voters.

**ECON 2800 History of American Economic Development: 3 semester hours**

Same as HIST 2800. Prerequisites: ECON 1000 or ECON 1001 or consent of instructor. Uses economic concepts to explain historical developments in the American economy, beginning with the hunter-gatherers who crossed the Bering land bridge around 12,000 BC. Main topics include the Native American economies, European exploration and conquest, the colonial economies, indentured servitude, the American Revolution, the US Constitution, westward expansion, transportation, the Industrial Revolution, state banking and free banking, slavery, the Civil War, post-bellum agriculture, the rise of big business and anti trust, banking panics, the Federal Reserve Act, the First and Second World Wars, the New Deal, and the growth of government in the postwar economy.

**ECON 3001 Intermediate Microeconomics: 3 semester hours**

Prerequisite: MATH 1030 and ECON 1001. Analysis of prices in terms of equilibrium of the business firm and consumer demand in markets of varying degrees of competition.

**ECON 3002 Intermediate Macroeconomics: 3 semester hours**

Prerequisites: MATH 1030, ECON 1001, and ECON 1002. This course examines national income and expenditure and the forces determining the level of economic activity. Special emphasis is placed on the theory of income determination and its application to public policy.

**ECON 3003 Game Theory and Strategic Decision Making: 3 semester hours**

Prerequisites: ECON 1001. When the best course of action depends on the decisions made by others, strategy becomes important. Game theory provides the tools for analyzing such strategic decision making. Strategic behavior is analyzed in the context of business, logistics, biology, war, government, politics, and everyday life. A wide variety of in-class experiments are used to illustrate key concepts.

**ECON 3100 Economic Data and Statistics: 3 semester hours**

Prerequisite: MATH 1030, ECON 1001, and ECON 1002. This course is an introduction to economic data sources, data interpretation, and statistical inference as used in economic analysis. It emphasizes the testing of economic hypotheses and the development and estimation of economic models. Students will be introduced to statistical software used in economics.

**ECON 3200 Money, Banking and Monetary Theory: 3 semester hours**

Prerequisites: ECON 1001 and ECON 1002. Factors influencing bank reserves and the money supply. Ability of the Federal Reserve System and the Treasury to control these factors. Introduction to monetary theory: integration of monetary phenomena with national income theory. Analysis of current policy issues.

**ECON 3300 International Economic Analysis: 3 semester hours**

Prerequisite: ECON 1001. Introduction to the theories of international trade and factor movements including determinants of trade, the effects of trade on sectors and on overall economic performance, trade restrictions, and balance of payments and exchange rates. Discussion of current institutions and economic developments in the global economy.

**ECON 3400 Labor Economics: 3 semester hours**

Prerequisites: ECON 1001. Examines the labor market in the economy, considers the theories of labor supply, labor demand, and market determination of wages. Other topics include noncompetitive markets, international labor markets, the theory of human capital, compensating wage differentials, labor market discrimination, unions and collective bargaining, unemployment, and poverty and the distribution of income.

**ECON 3500 The Economics of Government Spending and Taxation: 3 semester hours**

Prerequisites: MATH 1030 and ECON 1001. Analysis of the role of government expenditures and taxation. Topics include: (1) analysis of public goods and externalities, models of collective choice, elements of benefit-cost analysis the theory of bureaucracy, governments as agents in markets; and (2) analysis of the economic role of governments, subsidies and taxes in the federal system, criteria for tax evaluation, the nature of tax legislation, private decision making under different tax institutions, and government borrowing.

**ECON 3600 Market Structure, Strategy, and Pricing: 3 semester hours**

Prerequisite: ECON 1001. A theoretical and empirical analysis of the actions of firms under alternative forms of market organization. The role of economies of scale, product differentiation, mergers, and advertising in affecting industry structure and the impact of the resulting industry structure on pricing, output, promotion, and technology decisions of firms.

**ECON 3610 Economics of Sports, Gaming, and Gambling: 3 semester hours**

Prerequisite: ECON 1001. This course focuses on applications of fundamental economic principles to the world of sports, gaming, and gambling. It analyzes incentives present in sports and the rise of e-sports. Legal and illegal gambling are analyzed in regard to their effect on the local economy and impact of legalized gambling on sports. In addition to professional sports, NCAA, Olympic, and sports popular around the world are explored.

**ECON 3900 Selected Topics in Economics: 3 semester hours**

Prerequisites: ECON 1001 and ECON 1002. Analysis of a selected economic topic. The topic selected will vary from semester to semester. This course may be taken for credit more than once so long as the topic discussed in each semester is different.

**ECON 4030 Managerial Economics: 3 semester hours**

Prerequisites: ECON 3001; MATH 1800 or MATH 1100 recommended. Application of microeconomic theory to decision-making process in the business firm. Topics include pricing and profit strategy, cost analysis, decision making under uncertainty, technology, innovation, and productivity growth, and the structure and organization of firms. Problem-solving and case-study approach used.



***ECON 4040 Booms and Busts in the Economy: Data and Theory: 3 semester hours***

Prerequisites: ECON 3002 and ECON 3100. This course focuses on the empirical regularities in macroeconomics commonly referred to as the business cycle. Students explore the variability and co-movements of aggregate economic variables and consider alternative theoretical explanations of these phenomena.

***ECON 4100 Introduction to Econometrics: 4 semester hours***

Prerequisites: ECON 1001 and ECON 1002; ECON 3100 or MATH 1320 or SCMA 3300; MATH 1800 or MATH 1100. An introduction to quantitative analysis of economic behavior. The ordinary least squares technique and the assumptions underlying it are developed. Methods designed to detect and correct for the violations of these assumptions are examined. Special emphasis is given to the practical application of the procedures discussed through the use of computer exercises.

***ECON 4110 Applied Econometrics: 4 semester hours***

Prerequisites: ECON 4100 or equivalent. Concepts, techniques, & advanced applications of econometrics. Emphasis on developing a critical understanding of the appropriateness and limitations of a variety of state-of-the-art techniques used to model economic or political processes. Topics will include joint tests of hypotheses, estimation of lagged effects, models of qualitative choice, simultaneous systems, and outlier diagnostics. This course includes laboratory work in quantitative economic analysis.

***ECON 4120 Time Series Econometrics for Economics and Finance: 4 semester hours***

Prerequisites: ECON 4100 or equivalent and a solid foundation in statistics. Introduction to application of econometric methods to timeseries data. Emphasis on model specification as it appears to macroeconomic or financial data. Topics include: Stationary and non-stationary time-series, seasonality, random walks, unit roots, Dickey-Fuller tests, cointegration, ARCH/GARCH models, and general to specific modeling (ADLs). Specific applications to macro-economics, international economics and/or financial markets.

***ECON 4130 Business and Economic Forecasting: 4 semester hours***

Prerequisites: ECON 4100 or equivalent. Alternative forecasting methodologies for economic time series will be analyzed and discussed. The focus of the course will be: (1) the development of time-series (ARIMA) models and their application to forecasting; (2) the use of standard econometric models for forecasting; and (3) evaluation and comparison of these methods and the conditions under which each is the appropriate methodology. This course includes laboratory work in quantitative economic analysis.

***ECON 4150 Mathematical Economics: 3 semester hours***

Prerequisites: MATH 1800 or MATH 1100, ECON 3001. This course uses calculus and other mathematical tools to analyze economic phenomena. In addition to exploring techniques used to solve unconstrained and constrained optimization problems, the course also examines how matrix algebra is used in economic modeling. This course allows students to mathematically analyze economic models which receive graphical treatment in lower level courses. Students may not receive credit for both ECON 4150 and ECON 5150.

***ECON 4160 Geospatial Analysis in the Social Sciences: 3 semester hours***

Prerequisites: Junior standing. ECON 1001 or consent of instructor. Analysis of geospatial data relating to a variety of social phenomena using geographic information systems (GIS) software. Students will learn how geospatial analysis can be integrated into research projects and presentations (e.g., creating maps to present and analyze social, political, and economic data). Students will also learn how criminal activity, economic activity, voting patterns and other social behavior are spatially correlated with demographic data. As a culminating project, students will learn how to apply GIS techniques, including but not limited to sophisticated spatial modeling of social behavior.

***ECON 4170 Fundamentals of Cost-Benefit Analysis: 3 semester hours***

Prerequisites: ECON 3001 or equivalent. The purpose of this course is to provide a systemic and rigorous way of thinking about the measurement of benefits and costs when evaluating public projects, programs or regulations. Cost-benefit analysis has wide application, including: environmental resource use, highway construction projects, safety regulations, taxation of cigarettes, and investment in higher education. Given the prevalence of cost-benefit analysis in government budgetary processes, this course will develop critical appraisal skills to evaluate the appropriateness of these analyses.

***ECON 4210 Financial Markets And Institutions: 3 semester hours***

Prerequisite: ECON 3200. Demand, supply and flow of funds in the macrofinancial system, including money, capital, futures and foreign exchange markets. Examines types and historical development of domestic and international financial intermediaries operations within these markets, decision-making within individual intermediaries, their regulatory environment, and how their portfolio decisions affect flows of funds in the financial system.

***ECON 4550 Natural Resource Economics: 3 semester hours***

Prerequisites: ECON 1001 or consent of instructor; junior standing. The relationship between human activity and the world's natural resources requires choices. This course uses an economics perspective to study these choices. This perspective uses the view of the environment as an asset for its starting point. Issues concerning the optimal and sustainable use of natural resources are examined in this context. Special emphasis is given to potential policy responses to environmental problems.

***ECON 4900 Advanced Topics in Economic Analysis: 3 semester hours***

Prerequisite: ECON 3001 or ECON 3002 or consent of instructor. Study of a specific topic in Economics that may vary from semester to semester. May be taken for credit more than once if the topics are different.

***ECON 4980 Special Readings: 1-6 semester hours***

Prerequisite: Consent of instructor; grade point of 3.0 or higher in Economics. Unscheduled, independent directed readings on topics mutually acceptable to student and instructor. Maximum credit limited to six hours.

***ECON 4990 Internship in Applied Economics: 2-6 semester hours***

Prerequisites: ECON 3001, junior standing and consent of instructor. Independent study involving work with an appropriate private firm or public agency. A maximum of six hours may be earned, only three of which may be applied to the Economics major.

**ECON 4995 Internship in Actuarial Science: 1-3 semester hours**

Same as MATH 4995. Prerequisites: Junior standing and consent of program director. Supervised off-campus training in a private or public sector position in which the student applies the knowledge and skills learned in their actuarial science coursework. The internship is monitored by a faculty member and the student must provide a written report at the end of the project. This course may be repeated for a maximum of 6 credit hours.

**ECON 5001 Microeconomic Analysis: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001; ECON 3002 or BUS AD 5002; ECON 4150. Survey of Microeconomic comparative statistics. Detailed examination of demand and supply, product and factor markets. Partial equilibrium in competitive, imperfectly competitive and monopolistic markets.

**ECON 5002 Macroeconomic Analysis: 3 semester hours**

Prerequisites: ECON 3200; ECON 3001 or BUS AD 5001; ECON 3002 or BUS AD 5002; and ECON 4150. Aggregate economic theory, including analysis of the determinants of income, output, employment, and prices. Employment and price-level effects of consumer and investment demand, the money supply and interest rates, and government policies.

**ECON 5052 Microeconomics for the School Curriculum: 1-3 semester hours**

Prerequisites: Bachelor's degree from an accredited institution or consent of instructor. Analysis of market forces, with emphasis on business firms, households, productive factor markets, price determination and resource allocation. Special reference to topics included in the elementary and secondary school social science curricula.

**ECON 5055 Economic Issues for School Curriculum: 1-3 semester hours**

Prerequisite: Junior standing and consent of instructor. An analysis of selected economic issues appropriate to instruction in secondary and elementary schools. May be taken more than once for credit provided the topic of the course is different each time. May not normally be used by economics majors to meet degree requirements.

**ECON 5100 Econometric Theory and Methods: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001; ECON 3002 or BUS AD 5002; ECON 4100; ECON 4150 or equivalent. A rigorous review of statistical models and methods relevant to the estimation and testing of economic relationships. Emphasis on the theoretical underpinnings of techniques commonly used for multivariate regression analysis and hypothesis testing. Topics include ordinary least squares, generalized least squares, and instrumental variables estimation.

**ECON 5110 Topics in Applied Econometrics: 3 semester hours**

Prerequisites: ECON 4100, or ECON 5100 or SCMA 5300. Concepts and application of advanced econometric techniques. Students will develop a thorough understanding of the appropriateness and application of a variety of state-of-the-art techniques. Topics will include specification tests, polynomial distributed lags, discrete choice, pooled time-series cross-section, simultaneous equations and outlier detection.

**ECON 5120 Advanced Topics in Time Series Econometrics: 3 semester hours**

Prerequisites: ECON 4100 or equivalent and a solid foundation in statistics. Application of econometric methods to time-series data. Emphasis on model specification as it applies to macroeconomic or financial data. Advanced topics include: Stationary and nonstationary time-series, seasonality, random walks, unit roots, Dickey-Fuller tests, cointegration, ARCH/GARCH models, and general to specific modeling (ADLs). Specific applications to macro-economics, international economics and/or financial markets.

**ECON 5130 Advanced Topics in Business and Economic Forecasting: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001; ECON 3002 or BUS AD 5002; ECON 4150; ECON 4100 or SCMA 5300. This course develops the alternative techniques which are used to forecast economic time series. Each forecasting technique will be evaluated in terms of its theoretical soundness and predictive track record. Students will also learn to use these techniques to differentiate among competing economic models.

**ECON 5150 Mathematical Methods for Economics: 3 semester hours**

Prerequisites: MATH 1100 or MATH 1800, ECON 3001. This course presents the mathematics used in economics at an advanced level. Subjects covered include multivariate calculus, linear algebra, comparative statics, and unconstrained and constrained optimization. Emphasis is placed on the interpretation of mathematical results in economic terms. Students may not receive credit for both ECON 4150 and ECON 5150. This course may not be used by Economics students to meet M.A. degree requirements.

**ECON 5200 Monetary Theory and Policy: 3 semester hours**

Prerequisites: ECON 3200; ECON 3001 or BUS AD 5001; ECON 3002 or BUS AD 5002; and ECON 4150. An examination of how monetary policy has affected the economy in the past and how it can improve economic performance in the future. Topics include: the origins of money, money supply, money demand, the determinants of real and nominal interest rates, the term structure of interest rates, the impact of discretionary monetary policy on the domestic economy and foreign exchange markets, and the domestic economy and foreign exchange markets, and the relationship between monetary policy and federal government deficits.

**ECON 5210 Financial Markets: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001; ECON 3002, and ECON 3200. Demand, supply, and flow of funds in allocating credit and distributing risk in the macrofinancial system. The saving investment process, the rationale for financial markets, and the role of financial intermediaries are studied within the framework of the flow of funds accounts. Special attention is given to the operation of money, capital, futures, and foreign financial markets and the impact of public policy on the structure and performance of financial markets.

**ECON 5300 International Trade: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001. Survey of the modern theories of international trade and their applications including factor endowments and other, trade restrictions, foreign investment, trade and economic development, and balance of payments and exchange rates. Discussion of current institutions and economic developments in the global economy.

**ECON 5301 International Monetary Analysis: 3 semester hours**

Prerequisites: ECON 3200 and ECON 3002 or BUS AD 5002. Application of macroeconomic theory to the international monetary system. Topics include the balance of payments, exchange rates, international linkages, world inflation, capital flows, and the gold standard.

**ECON 5400 Labor Economics: Theory and Public Policy: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001. This course examines labor supply, labor demand, and market determination of wages. Topics covered include the effect of technological change on employment, trends in labor force participation, the impact of government taxes and transfers on labor supply, poverty, and its economic consequences, the human capital model and its implications for investment in education and on-the-job training, and theories of economic discrimination and empirical measurement issues. Throughout the course, current public policy debates are examined using the theoretical models developed.

**ECON 5550 Economics for Public Policy Analysis: 3 semester hours**

Prerequisite: Graduate standing. This course focuses on the role of the government in the economy, with particular attention paid to the way government affects the allocation of resources and the distribution of income. This course covers microeconomic principles and key economic concepts used in public policy analysis. Practical application of theoretical concepts is emphasized. This course may not be used by Economics students to meet M.A. degree requirements.

**ECON 5900 Advanced Topics in Economic Analysis: 3 semester hours**

Prerequisite: Consent of the instructor. Study of a specific economics topic, which may vary from semester to semester. May be taken more than once if the topic is different.

**ECON 5980 Directed Readings: 1-6 semester hours**

Prerequisite: Consent of the instructor. Independent study through readings, reports, research projects, and conferences.

## Geography Courses

**GEOG 1001 Introduction to Geography (MOTR GEOG 101): 3 semester hours**

An introduction to geography as a social science. The identification and explanation of order in the human landscape. A survey of the social, political, economic, and psychological factors which influence geographic patterns.

**GEOG 1002 World Regions (MOTR GEOG 101): 3 semester hours**

Survey of the major regions of the world. Designed to give the student an awareness of the character of each of these major regions through the interrelationships of the various attributes of place. Each semester the geographic perspective will be applied in greater depth to one significant country such as Afghanistan, Iraq, or North Korea.

**GEOG 2001 Cultural Geography: 3 semester hours**

This course examines the effect of geography on culture and cultural groups. Essential to the geographic perspective is identifying the effect on cultures of the current trend toward increasing globalization. Topics include language, religion, attitudes, and the effect of technology. The major goals are to increase awareness of the diversity of human cultures and to prepare students for a world of increasing intercultural communication and conflict. Satisfies cultural diversity.

**GEOG 4900 Advanced Readings in Geography: 3 semester hours**

Prerequisite: Consent of instructor. This course will provide a more in-depth analysis of the various factors which influence geographic patterns employing methods appropriate to graduate level instruction. The topic selected will vary from semester to semester. This course may be taken for credit more than once as long as the topic discussed in each semester is different.

## English

### General Information

#### Degrees and Areas of Concentration

The English department offers or participates in offering the B.A. in English, the B.A. in English with certification for secondary teaching, and the B.S. in secondary education with an emphasis area in English. The department also offers a minor in English. Additionally, students with any major in the university may earn a Certificate in Writing so that they may

demonstrate evidence of training in creative, journalistic, or technical writing.

The department has a graduate program leading to the Master of Arts degree. Students may pursue a literature track where they acquire a broad coverage in British and American writers or a writing track where half of the course work deals with composition and writing theory. The department also offers the Master of Fine Arts in creative writing, in which half of the courses are writing workshops and independent writing projects. In addition, the department of English participates in a Graduate Certificate in the Teaching of Writing.

### Departmental Honors

Candidates for departmental honors in English must achieve a 3.2 average in English at graduation and complete an undergraduate or graduate seminar in English, the final paper for which must be acceptable to the instructor as an honors thesis.

### Career Outlook

In addition to traditional employment as teachers at the primary, secondary, and community-college levels, recent UMMSL graduates in English are working in journalism, editing, advertising, public relations, and other fields that place a premium upon creation and interpretation of the written word. Numerous recent English majors have successfully entered law school.

### Degrees

English BA (p. 456)

English MA (p. 458)

Creative Writing MFA (p. 398)

### Minor

English Minor (p. 459)

### Certificates

Technical Writing Undergraduate Certificate (p. 646)

Teaching of Writing Graduate Certificate (p. 645)

### Courses

**ENGL 1030 Beginning Creative Writing: 3 semester hours**

This course introduces students to the building blocks of creative writing and the writing workshop classroom. Students will explore how creative writers decide what material is best suited for a story, an essay, or a poem. Pairing creativity with critical thinking, the course offers basic writing practice and familiarizes students with primary concepts and techniques of craft (e.g. narrative, point-of-view, voice and style, character development, setting, imagery, and figurative language).

**ENGL 1100 First-Year Writing (MOTR ENGL 200): 3 semester hours**

Integrates critical reading, writing, and thinking skills and studies actual writing practices. Sequenced reading and writing assignments build cumulatively to more complex assignments. Includes formal and informal writing, drafting and revising, editing for correctness, synthesizing source material, and documenting sources accurately. Fulfills 3 hours of the General Education requirement for Communicating Skills. Does not count toward the major in English.



**ENGL 1110 First-Year Writing for International Students: 3 semester hours**

Prerequisite: Essay proficiency test or a TOFEL score of 500 or above. Designed for any student whose first language is not English. Integrates critical reading, writing, and thinking skills and studies actual writing practices. Sequenced reading and writing assignments build cumulatively to more complex assignments. Includes formal and informal writing, drafting and revising, editing for correctness, synthesizing source material, and documenting sources accurately. Special attention given to verb tenses, idioms, articles, and syntax. Does not count toward the major in English. Substitutes for ENGL 1100 in all university requirements.

**ENGL 1120 Introduction to Literature (MOTR LITR 100): 3 semester hours**

The student is introduced to the various literary types, including poetry, drama, fiction, and the essay.

**ENGL 1170 American Literary Masterpieces: 3 semester hours**

An introduction to major authors, works, and themes in American Literature from the nineteenth century to the present.

**ENGL 1710 Native American Literature: 3 semester hours**

The course surveys the literature of American Indians from its oral tradition of myth, legend, song and oratory through its modern forms. The course satisfies the ethnic literature requirement for Missouri state certification in secondary education and the cultural diversity requirement.

**ENGL 1800 Reading Life: 3 semester hours**

This course teaches college-level reading in the Humanities. The course primarily covers written texts, but may also include various genres in music, television and film, and theater. The course may be counted towards the major or minor in English.

**ENGL 1950 Topics in Literature: 3 semester hours**

This course will introduce the student to selected literary topics and/or genres. Each semester the department will announce topics and course content. Topics such as alienation, justice, and the absurd, and genres such as science fiction and contemporary drama are typical possibilities.

**ENGL 2020 Introduction to Creative Writing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course is a creative writing survey and workshop focusing on the study of three genres—short fiction, poetry, and creative nonfiction. Students learn primary concepts and techniques of craft, including narrative, voice, character, setting, imagery, metaphor, point-of-view. Students will explore literary conventions specific to each genre, as well as universal qualities that make all writing effective for an audience. The course requires three different kinds of writing: brief analytic essays, open-ended exploratory exercises, and carefully-revised original work. This course fulfills the core requirement in Creative Writing and counts toward the Certificate in Writing.

**ENGL 2030 Poetry Writing Jumpstart: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course provides new poets, would-be poets, and curious non-poets with exercises, experiments, and activities to explore two questions: what is a poem, and how does one get written? Students will read published poems and examine their use of imagery, metaphor, form, and other techniques, and experiment with those techniques in their own writing. This course satisfies the English core requirement for the Creative Writing area and counts toward the Certificate in Writing.

**ENGL 2040 Fiction Writing Jumpstart: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course provides exercises, discussions, models, and practice for discovering short stories and the many ways to tell them. Students will read published short stories to learn how other writers have worked with point of view, distance, voice, plot, dialogue, setting, and characterization. Students will also write exercises and stories for workshop critique. Students who have taken ENGL 2060 may not take ENGL 2040 for credit. This course fulfills the English core requirement for the Creative Writing area and counts toward the Certificate in Writing.

**ENGL 2080 Advertising Copywriting: 3 semester hours**

Same as MEDIA ST 2080. To give students a hands-on approach for writing advertising material for print and broadcast against tight deadlines in a professional setting.

**ENGL 2110 Information Literacy: 3 semester hours**

Designed especially for humanities and fine arts majors, this course introduces students to the main components of information literacy, including digital, web, and media literacies as well as library databases. Students work with both digital and print materials to find, evaluate, and synthesize information while applying the critical thinking habits of questioning and reasoning. Frequent writing and multimedia assignments will provide practice in using various technologies to assemble and to share information.

**ENGL 2120 Topics in Writing: 3 semester hours**

Prerequisite: ENGL 1100 or equivalent, or consent of instructor. This course will introduce the student to writing in specific areas. Possible topics are argumentation, reading and writing about public affairs, sports reporting and writing, and writing about science. A student may repeat the course once when topics are different. The course counts toward the Certificate in Writing.

**ENGL 2125 Introduction to Technical Communication (MOTR ENGL 110): 3 semester hours**

This course introduces students to the role of the professional technical communicator in business and industry. Students will explore methods of developing technical documents, including critical analysis, information design, and rhetorical expression.

**ENGL 2160 Introduction to American Studies: 3 semester hours**

Same as HIST 2160. This course introduces students to the multidisciplinary nature of American Studies and is a required course for those who wish to complete the minor in American Studies. It reviews the discipline from its origins in the 1930s, and it introduces students to St Louis' rich resources for American Studies.

**ENGL 2330 Poetry: The Greatest Hits: 3 semester hours**

This course examines a selection of the most important poems written in English. Students will study poems to understand both their literary elements—form, metaphor, theme, and so on—and their cultural/historical context. Through a careful examination of poetry, students will sharpen their ability to read, discuss, and write about literary texts. This course satisfies the core curriculum requirement for the Literature in English area.

**ENGL 2340 Introduction to Drama: 3 semester hours**

A close study of major dramatic works in various modes, to introduce the student to the forms and techniques of dramatic literature.



**ENGL 2360 Hey, Have You Read \_\_\_\_\_?: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent, or consent of instructor. This course introduces students to approaches to reading literature in the 21st century. The course can focus on a specialty area, such as a genre, time period, or nationality, or on a theme transcending several specialty areas. Students will learn to read closely and begin to look at literature through various theoretical or cultural lenses. This course satisfies the English core requirement for the Literature in English area.

**ENGL 2370 Drama: The Greatest Hits: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent, or consent of instructor. This course introduces students to some of history's most famous dramas both as literary forms and as cultural expressions. Plays will therefore be considered for themselves-for their genre, structure, and language-as well as for their social function, in an effort to better understand the complex communal values, settings, and crises which produced them. Students will read and discuss a wide variety of well-known plays from ancient Greece and Rome, the early modern English stage, and modern and contemporary culture. This course satisfies the English core requirement for the Literature in English area.

**ENGL 2400 Rhetorical Ways with Words: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course focuses on the diverse purposes and uses of language and writing, encouraging students to consider these functions beyond solely academic and literary realms. Specifically, students will investigate how language and writing are connected to identity, power, community, and knowledge creation. To accomplish these broad goals, students will read critical scholarship from a variety of related disciplines. They may practice field-specific methods of inquiry and/or investigate local, regional, individual rhetorical and language practices and engage in print and/or multimodal composition. This course satisfies the English core requirement for the Language and Writing Studies area.

**ENGL 2410 Literate Lives: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course raises definitional and exploratory questions: What is literacy? How does it change across time? Who has access to it? How can literacy both empower and marginalize people? To explore these complex questions, students will investigate the ways in which contemporary practices of literacy-reading, writing, listening, speaking, digital composing, and critical thinking-function in the lives of individuals, communities, and cultures. Students will interrogate current definitions of literacy, study scholarship about literacy, explore literacy myths, and reflect on how their own literate lives have been shaped. They may engage in field work and interact with local literacy communities. This course satisfies the core curriculum requirement for the Language and Writing Studies area.

**ENGL 2810 Traditional Grammar: 3 semester hours**

An introduction to the terms and concepts of traditional grammar, beginning with functions of the noun and forms of the verb in simple sentences, moving to more complex structures such as subordinate clauses and verbal phrases, and ending with the application of this material to issues of Standard English.

**ENGL 2830 Introduction to English Language Variety: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course introduces students to the intersections of language and culture, including some of the many dialects of English. Students will learn about the social dimensions of language variation: why people from different cultural groups and regions use different versions of English, how they define themselves based on vocabulary, accent, and phrasing, and how these aspects of language change over time. This course satisfies the English core requirement for the Language and Writing Studies area.

**ENGL 3030 Improving on the Blank Page: Writing Poetry: 3 semester hours**

Prerequisite: ENGL 1100 or the equivalent or consent of instructor. This course digs into questions of form and technique in poetry. Students will study and practice form, prosody, figurative language, and other techniques for (to borrow from Chilean poet Nicanor Parra) improving on the blank page. This course may be repeated once for a total of 6 credit hours. It counts toward the Certificate in Creative Writing.

**ENGL 3040 Lying to Tell a Truth: Writing Fiction: 3 semester hours**

Prerequisite: ENGL 2040 or ENGL 2060 or the equivalent or consent of instructor. This course examines and provides examples of characterization, dialogue, point-of-view, distance, weight, plot, setting, and more. Students will read published short stories, and discuss the idea of writing as discovery and exploration, that writers work out of curiosity and bewilderment and tell lies to arrive at a truth.

**ENGL 3090 Turning the Kaleidoscope: How We Look at Texts: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent and 56 credit hours. This course introduces the use of literary theory in reading and writing about literary texts. Students learn and practice conventions of writing in English studies, basic literary research, and MLA documentation. Strongly recommended for English majors specializing in literature or anticipating graduate study in English. May not be taken on satisfactory/unsatisfactory basis. Counts towards the Certificate in Writing.

**ENGL 3100 Junior-Level Writing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 credit hours) and 56 credit hours. This course enhances analytical, communicative, persuasive, and explanatory capabilities in contemporary American English. It emphasizes academic reading, writing, research, and documentation. It fulfills the university's junior-level writing requirement and counts towards the Writing Certificate.

**ENGL 3110 Junior-Level Writing for International Students: 3 semester hours**

Prerequisites: ENGL 1110 or equivalent (3-6 credit hours) and 56 credit hours. This course, designed for any student whose first language is not English, enhances analytical, communicative, persuasive, and explanatory capabilities in contemporary American English. It emphasizes academic reading, writing, research, and documentation. It fulfills the university's junior-level writing requirement and counts toward the Certificate in Writing.

**ENGL 3120 Business Writing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and 56 credit hours. This course further develops the experienced writer's style and analytical capabilities to the level of sophistication necessary for business and professional settings. Writing assignments may include business correspondence, reports, resumes, proposals, analyses, presentations, marketing, promotional, and multi-modal materials, discussion postings and blogs, articles for in-house publications, and research and documentation. The course fulfills the University's junior-level writing requirement and may not be taken on a satisfactory/unsatisfactory basis.

**ENGL 3130 Technical Writing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and 56 credit hours. This course introduces students to the major elements of industrial technical writing. Writing assignments include technical definitions, abstracts and summaries, mechanism descriptions, instructions, process analyses, technical reports and proposals. The course includes an introduction to research methods and documentation. This course fulfills the University's junior-level writing requirement and may not be taken on the satisfactory/unsatisfactory option.

**ENGL 3150 Feature Writing: 3 semester hours**

Same as MEDIA ST 3150. Prerequisite: ENGL 1100 or equivalent. Study of freelance and staff-written magazine or newspaper feature articles. Emphasis on relationship between types of publication and article content, research methods, and writing style. Frequent short assignments -- journal entries, interviews, library projects, article critiques, and market reports -- lead to production of full-length feature articles. May not be taken on the S/U option. The course counts toward the Certificate in Writing.

**ENGL 3160 Writing in the Sciences: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and 56 credit hours. This course is designed to teach students how to write effectively in the sciences. Writing assignments include short reports, proposals and a major project; projects may include a research or analytical report, a formal proposal or a procedures/instructions manual. The course includes an introduction to research methods and documentation. This course fulfills the University's junior-level writing requirement and may not be taken on the satisfactory/unsatisfactory option.

**ENGL 3200 Composing Disability: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course offers students an understanding of disability as a complex and crucial part of the world and human experience. Students will approach disability as a matter of identity, language, writing, power, education, politics, literature, art, and more. More specifically, they will read disability studies critical theory, literary works, and personal narratives; create accessible multimodal projects; engage in scholarly and/or community-based research; and candidly discuss assumptions about disability. Through this work, students will assess the value and effect of different ways of thinking about disability and understand the core concepts of disability studies and its emergence as a field.

**ENGL 3201 Narratives from the Forever Wars: 3 semester hours**

Same as MEDIA ST 3201 and MVS 3201. This course studies literature and film written by and about those who served in the wars in Iraq and Afghanistan, with particular interest in how veterans as individuals are represented in it.

**ENGL 3280 Public Relations Writing: 3 semester hours**

Prerequisite: ENGL 3100 or equivalent. An introduction to the process of planning, producing, and evaluating written public relations messages. Writing assignments include media releases, letters, memos, position papers, background papers, brochures, and reports and proposals.

**ENGL 3310 English Literature Before 1790: 3 semester hours**

Prerequisite: ENGL 1100 or equivalent. This course examines the development of English literature from the Middle Ages through the eighteenth century. Students will be introduced to major literary movements and themes through the reading and analysis of representative works of selected major authors. This course fulfills the British Literature requirement for the major.

**ENGL 3320 British Literature in the Long 19th Century: 3 semester hours**

Prerequisite: ENGL 1100 or equivalent. This course meets the requirement for one 3000 level course in British literature. It surveys the arc of British literature from about 1790 into the early 20th century: the Romantic, Victorian, and Modernist eras.

**ENGL 3330 Reformers, Revolutionaries, and Romantics in the British Romantic Era: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. Students read poetry and prose by several major writers of the British Romantic period. This course meets the requirement for one 3000 level course in British literature.

**ENGL 3340 Full Speed Ahead! Literature in the Dizzying Victorian Era: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. Students read poetry, essays, and fiction by major writers from the Victorian era of British literature. This course meets the requirement for one 3000 level course in British literature.

**ENGL 3350 Slouching Toward Chaos: the Early 20th Century in British Literature: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. Students read poetry, drama, and fiction by major writers of the Modernist era of British literature. This course meets the requirement for one 3000 level course in British literature.

**ENGL 3500 Special Studies: 1-3 semester hours**

Prerequisite: A course in area of proposed work and consent of instructor. Individual work, with conferences adjusted to needs of the student. May not be used to meet specific English department distribution and language requirements. May be repeated for a maximum total of four hours credit.

**ENGL 3510 World Literature Before 1650: 3 semester hours**

Prerequisite: ENGL 1100. This course surveys World Literature from the earliest times to 1650. Students will examine diverse literary works in a variety of genres and voices. The course will include literary works from diverse traditions throughout the world, excluding literature from the United States and England.

**ENGL 3520 World Literature After 1650: 3 semester hours**

Prerequisites: ENGL 1100. This course surveys World Literature from 1650 to the present. Students will examine diverse literary works in a variety of genres and voices. The course will include literary works from diverse traditions from throughout the world.

**ENGL 3530 Contemporary World Literature: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course covers selected World Literature from the 20th and 21st centuries with emphasis on non-European literatures. This course may include works from Europe, Latin American, the Middle East, Africa, and Asia; it excludes literature from the United States and England.

**ENGL 3710 American Literature Before 1865: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course features representative selections from American authors from the early seventeenth century to the Civil War. This course fulfills the American Literature requirement for the major.

**ENGL 3720 American Literature After 1865: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course examines dramatic upheavals in society that have engendered continuous innovation in American literature since 1865. It will look closely at a variety of individual authors motivated by these artistic, cultural, political, and psychological disturbances; we will also pay close attention to specific literary movements, from Naturalism to Transrealism, energized by these societal changes. This course fulfills the American Literature requirement for the major.

**ENGL 3800 Topics in Women and Literature: 3 semester hours**

An examination of the role of women in literature, either as figures in literary works or as writers. Specific topics to vary from semester to semester. Since the topics of ENGL 3800 may change each semester, the course may be repeated for credit if the topics are substantially different.

**ENGL 4030 Contemporary Critical Theory: 3 semester hours**

This course is to acquaint students with a range of critical methodologies that have gained currency since the 1960's; topics may include formalist, structuralist, post-structuralist, Marxist, reader-response, psychoanalytic, feminist, cognitive, and evolutionary approaches to literature and culture.

**ENGL 4060 Adolescent Literature: 3 semester hours**

The course will expose students to the large variety of quality adolescent literature available for reading and study in middle and high school classes. It will also examine the relevance of a variety of issues to the reading and teaching of adolescent literature, among them: reader response; theory and practice; multi-culturalism; literacy; the relation of adolescent literature to 'classic' literature the role of adolescent literature in interdisciplinary studies; adolescent literature as an incentive to extracurricular reading.

**ENGL 4080 The Truth about Fiction: Biological Reality and Imaginary Lives: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent (may be taken concurrently). This course presupposes that works of literature center on the main phases, motives, and social relationships in the human life cycle, for instance, survival, growing up, establishing an identity, becoming part of a community, mating, parenting and family life, conflicts between communities, imaginative culture (religion, ideology, the arts), growing old, and dying. Readings include literary works along with psychological studies and literary theory and criticism that draw on biologically grounded research on human behavior.

**ENGL 4130 A Machine Made of Words: Writing Your Best Poems: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course examines in more detail the ways in which poets construct machines from words—that is, the way that the words of a poem provide its verbal, emotional, and intellectual energy. Through the examination and discussion of both contemporary published poetry and the work of students in the class, students will consider the question: how do poems use language to make sense of (or to defamiliarize) the world and our experience of it? The course counts toward the Certificate in Writing.

**ENGL 4140 Polishing Your Stories: Producing a Publishable Short Story: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course gives student writers tools and practice in re-thinking and rewriting their stories. It is for students who are serious about writing stories that can be published in litmag, Bellerive, or other journals. Students will produce drafts for workshop critique and will rewrite them producing at least one that is polished enough for publication. The course counts toward the certificate in Writing.

**ENGL 4150 Creative Non-Fiction: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course will examine the aesthetic and technical concerns of the writer of creative non-fiction. Students will read published essays and write their own to submit for workshop. This course counts toward the Certificate in Writing.

**ENGL 4160 Special Topics in Writing: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. Special topics in writing that are not covered in other 4000level English courses. Since the topics of ENGL 4160 may change each semester, the course may be repeated for credit if the topics are substantially different.

**ENGL 4180 Novel Beginnings: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course teaches students to engage the reader when writing a Sci-fi / Fantasy / Thriller / Young Adult / Literary novel. Students will work on getting the balance right, on creating a compelling event, dimensional characters, an engaging plot, a setting that feels real, and a point-of-view strategy. Students learn about key ingredients that make a novel beginning interesting to a reader and present their novel beginnings in a workshop format for revision.

**ENGL 4260 Chaucer: 3 semester hours**

The course concentrates on the poetry of Geoffrey Chaucer, including the Canterbury Tales, early poetic works, and the Troilus and Criseyde. All readings are in the original Middle English.

**ENGL 4270 Medieval English Literature: 3 semester hours**

A survey of old and middle English literature from Beowulf to Malory's Morte d'Arthur, exclusive of Chaucer. All works are read in modern English translations.

**ENGL 4360 Shakespeare's Friends and Rivals: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course studies the professional London stage from the 1580s to the 1620s with particular emphasis on the drama of Shakespeare's contemporaries. Though Shakespeare will not be the focus in this course, connections with his works will be discussed. Students will learn the conventions of dramatic genres and how to situate plays in their historical, cultural, and literary contexts. They will also explore how playwrights responded to the theater market in which they exhibited their dramatic wares and the extent to which they saw one another as rivals or collaborators.

**ENGL 4370 Shakespeare: Tragedies and Romances: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course explores Shakespeare's tragedies and romances, with particular attention to their genre as well as their relation to the cultural issues of Shakespeare's time. Students will learn to see Shakespeare as a dramatic craftsman and explore the question of his contribution to English literature: whether he saw himself as an innovator or inheritor of well-known stories from the classical tradition, Britain's chronicle histories, scripture, and legend. Shakespeare's narrative poems as well as modern film adaptations may also be featured.

**ENGL 4380 Shakespeare: Comedies and Histories: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course explores Shakespeare's comedies and histories, with particular attention to their genre as well as their relation to the cultural issues of Shakespeare's time, above all the place of women and the importance of marriage and male friendship. Students will learn how Shakespeare's plays explore the rights of citizens and perhaps challenge accepted notions of political power. Students will also uncover Shakespeare's debt to ancient and contemporary forms of comedy as well as his innovative contributions to that dramatic form. The sonnets as well as modern film adaptations may also be brought into the discussion of these questions.



**ENGL 4450 The Eighteenth-Century English Novel: 3 semester hours**

The origins and early development of the English novel, from Defoe to Jane Austen.

**ENGL 4540 The Nineteenth-Century English Novel: 3 semester hours**

Novels of the Romantic and Victorian periods, from Austen to George Eliot.

**ENGL 4550 Novels into Films: The Nineteenth Century: 3 semester hours**

Prerequisites: ENGL 3090, ENGL 3320. Novels by Austen, Eliot, Wilde, Hardy, and others read in themselves and as interpreted in film. Comparisons of the representational and aesthetic techniques available to novels and film.

**ENGL 4580 Literature of the Late Nineteenth and Early Twentieth Centuries: 3 semester hours**

Literature of the period between 1870 and the First World War, including works by writers such as Hardy, Conrad, James, Wilde, Stevenson, Shaw, Jefferies, and Wells.

**ENGL 4610 Selected Major American Writers I: 3 semester hours**

American literature of the nineteenth century: Emerson, Thoreau, Hawthorne, Melville, Whitman and others.

**ENGL 4620 Selected Major American Writers II: 3 semester hours**

American literature of the late nineteenth and early twentieth centuries: Dickinson, James, Twain, Cather, Frost, Dreiser and others.

**ENGL 4650 Modern American Fiction: 3 semester hours**

The novel and short story in America since World War I. There may be some attention to British and continental influences.

**ENGL 4740 Poetry Since World War II: 3 semester hours**

Reading and analysis of contemporary poetry.

**ENGL 4750 Modern British Fiction: 3 semester hours**

Critical reading and analysis of British fiction of the twentieth century. There may be some attention to American and continental influences.

**ENGL 4770 Modern Poetry: 3 semester hours**

Critical reading and analysis of poetry of the late nineteenth and early twentieth centuries. Yeats, Eliot, Frost, Williams and others.

**ENGL 4790 Rhetoric and Social Justice: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course introduces students to rhetoric as integral to language, communication, and meaning-making. Students will read rhetorical history and contemporary scholarship and theory; apply theories to various scenarios and artifacts; and become more thoughtful practitioners of rhetoric in their own lives. Specifically, the course introduces rhetoric through the lens of social justice, offering students an opportunity to use rhetorical theories and methods to better understand current social events, activist movements, practices of civic engagement, and corresponding media representations.

**ENGL 4800 Introduction to English Linguistics: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course presents a survey of linguistics with emphasis on what the field reveals about the English language. Topics include the sounds of language, grammar, writing systems, language acquisition, language in society, language history, dialects, and usage.

**ENGL 4810 Descriptive English Grammar: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent; ENGL 2810 or passing grade on English-Education Test of Basic Grammar. This course presents a descriptive study of modern English morphology and syntax (grammar) from the perspectives of traditional, structural, and transformational grammar.

**ENGL 4820 History of the English Language: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. A historical survey of the English language from its Indo-European roots through Old and Middle English to the present. Topics include changes in sound, meaning, and grammar, as well as developments in American English, including regional and social dialects.

**ENGL 4830 English Sociolinguistics: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course presents a survey of topics in sociolinguistics, the study of the relation between language and society, with some emphasis on language variation in English. The course offers both quantitative and qualitative approaches to topics such as social dialectology, variationist and third-wave sociolinguistics, ethnography of communication, and language in relation to education, ethnicity, gender, and sexuality.

**ENGL 4850 Topics in the Teaching of Writing: 1-3 semester hours**

Same as TCH ED 5850. Prerequisites: ENGL 3100 or equivalent. Special topics in the practice of and pedagogy of writing designed for in-service teachers. Topics may include writing at specific grade levels, writing/reading workshops, writing in urban settings, writing across the curriculum, action research, new technology, classroom and district-level assessment. May be repeated once for credit if topics differ. Counts toward Certificate in Writing.

**ENGL 4860 Editing and the Production Process: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent; ENGL 2810 or ENGL 4810. This course provides students an opportunity to perform professional-level copyediting and proofreading, navigate several industry-standard publishing style manuals, understand the basic stages of the book production process and editorial roles at various stages during that process, and recognize and question trends in the practice and execution (media, format) of copyediting. This course counts toward the Professional, Creative, and Technical Writing Certificates.

**ENGL 4864 Technical Editing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course covers the principles and practices of technical editing, including usability, audience analysis, contextual editing, the conventions of scientific and technical communication, and the role of the editor in document development and publication. Students will also learn standard practices of copy editing and the use of style guides.

**ENGL 4865 Content Strategy: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course examines the practice of technical communication in content management system (CMS) environments and covers such subjects as single sourcing, topic-based writing, and adaptive content. Students will learn how to perform a content audit, engage in content modeling, create content templates, and use Framemaker or a similar tool to structure content.

**ENGL 4866 Help Authoring: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course addresses the technological and rhetorical skills necessary for creating effective online help systems, including context-sensitive help for computer applications.

**ENGL 4867 Proposal Writing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course familiarizes students with many aspects of writing proposals for various purposes in academic, professional, and public spheres. It offers students opportunities to write documents to promote their academic, professional, or personal goals or those of their organization(s).



**ENGL 4869 Usability Studies: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course addresses the methods used by technical communicators to evaluate usability. It focuses on methods used to evaluate human interaction with communication tools and students will learn how to make products more suitable for human use.

**ENGL 4870 Advanced Business and Technical Writing: 3 semester hours**

Prerequisites: ENGL 3100 or its equivalent as judged by the instructor. An advanced, project-oriented course to produce substantial, multifaceted business and technical writing projects. These might include reports, manuals, proposals, Web projects, computer documentation, or other advanced written assignments. These projects demonstrate the ability to handle complex assignments requiring initiative, independent work, and professional-level writing skills.

**ENGL 4871 Publishing: Writers, Editors, and Readers: 3 semester hours**

Prerequisites: ENGL 3120, ENGL 3130; or equivalent. Students will explore how the technological revolution has changed the way writers write, editors edit, and readers read. Topics covered will include the social and political implications of these technological advances in book, magazine, and online publishing. We will discuss how the roles of editors and writers have changed. Students will develop a semester writing or editing project that emerges out of this exploration. This course is for writers interested in having their work published and for anyone interested in working in the publishing field. This course counts toward the Professional, Creative, and Technical Writing Certificates.

**ENGL 4872 Technical Presentations: 3 semester hours**

Prerequisites: ENGL 3120, ENGL 3130, or equivalent. Students learn about different kinds of presentations given in professional contexts and the technologies used to produce them. They will learn to create powerful presentations that make memorable presentations. The course is asynchronous and 100% online, and is designed for graduate students preparing papers for conferences, and for technical and business professionals presenting to their bosses, colleagues, and clients. This course counts toward the Professional and Technical Writing Certificate.

**ENGL 4874 International Dimensions of Technical Communication: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course examines complexities of communication of technical information worldwide. It includes topics such as graphics, icons, symbols; user interface design; intercultural communication.

**ENGL 4876 Research Methods in Technical Communication: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course addresses essential research methods in technical communication, including audience analysis, interviewing techniques, working with subject matter experts, and experimental research design.

**ENGL 4877 Writing in Social Media: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course will address theory and practice of communication through social media. It will emphasize the role of social media in industry.

**ENGL 4880 Writing for Teachers: 3 semester hours**

Same as SEC ED 4880. Prerequisite: ENGL 3090 or junior level English. Writing for Teachers is an English-education course that supports writing across the curriculum for both pre-service English and content area teachers. Teacher candidates learn writing theories and literacy strategies to help their future students construct meaning from their discipline. The course works best for those who are completing level II or beginning level III education courses. The course counts toward the Certificate in Writing.

**ENGL 4890 Writing Internship: 3 semester hours**

Prerequisites: ENGL 3100 or its equivalent as judged by the instructor. Course limited to students who are completing certificates in writing. May be taken concurrently with the final course in the certificate sequence. Students work in a supervised internship to complete professional writing assignments. Special consent form required.

**ENGL 4892 Independent Writing Project: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent as judged by instructor. Course limited to students who are completing their certificates in writing. May be taken concurrently with the final course in the certificate sequence. Students work individually with an instructor to complete an extensive creative writing or critical analysis writing project. This course is available on a limited basis only with the approval of the Coordinator and faculty sponsor. Special consent form is required.

**ENGL 4895 Editing 'Litmag': 3 semester hours**

Prerequisites: ENGL 3100 or equivalent and at least two creative writing courses. Course is primarily for students nearing the end of their certificates in writing. Students in this course create 'Litmag', the UM-St. Louis student literary magazine. Students will call for submissions; they will read and select work to be published; and they will produce the magazine, dealing with issues like format, budget, proofreading, print run, advertising, distribution, and publicity. The course is offered only in the spring and culminates with the publication of 'Litmag' in late April.

**ENGL 4925 The Short Story in World Literature: 3 semester hours**

Students will read a wide variety of short fiction, from very brief pieces to novellas, including stories from all over the world and from several different centuries either in translation or in the original English. The course will also cover short theoretical works on narrative and critical commentaries on some of the fiction.

**ENGL 4932 Female Gothic: 3 semester hours**

Same as GS 4932. The course examines the historical development of the female gothic, a genre which employs narrative strategies for expressing fears and desires associated with female experience. From the late 18th century to the present, we will trace the persistence of the Gothic vision in fiction and film.

**ENGL 4950 Special Topics In Literature: 3 semester hours**

Special topics in literature that are not covered in other 4000-level English courses. Since the topics of ENGL 4950 may change each semester, the course may be repeated for credit if the topics are substantially different.

**ENGL 5000 Introduction to Graduate Study in English: 3 semester hours**

A course designed to prepare students for the professional study of English. The course will both familiarize students with basic bibliographic tools and scholarly methods and introduce them to issues that are of current critical interest to those engaged in the advanced study of literature. These issues include gender, textuality, reader-response, multiculturalism, feminism, psychoanalysis, cultural studies, literary history and the relationship of literature to philosophy, history, and science. Must be taken within the first twelve hours of graduate study.

**ENGL 5100 Graduate Workshop in Poetry: 3 semester hours**

Prerequisites: Open to students in the creative writing program and to others with permission of instructor. Consists of a writing workshop in which the poetry written by the students enrolled in the course is discussed and analyzed by the instructor and members of the class. Students taking this course will be expected to write original poetry throughout the course. May be repeated for maximum graduate credit of fifteen (15) hours.

**ENGL 5110 Graduate Workshop in Fiction: 3 semester hours**

Prerequisites: Open to students in the creative writing program and to others with permission of instructor. Consists of a writing workshop in which the fiction (short stories or chapters of a novel) written by the students enrolled in the course is discussed and analyzed by the instructor and members of the class. Students taking this course will be expected to write original fiction throughout the course. May be repeated for maximum graduate credit of fifteen (15) hours.

**ENGL 5170 Techniques, Methods, and Effects in Fiction Writing: 3 semester hours**

Prerequisite: Open to students in the MFA program and to others with consent of the instructor. This course analyzes the technical choices made by important contemporary fiction writers in the areas of point of view, tone, setting, form, and plot structure, and it examines the effects of those choices. Close consideration is given to fictional techniques that contribute to a story's characterization, tension, interest, reliability, drama, irony, and humor. The course is primarily for creative writers.

**ENGL 5180 Form and Theory of Poetry: 3 semester hours**

Prerequisites: Open to students in the MFA Program and other graduate students with consent of instructor. This course explores various aspects of traditional and contemporary poetry. The student will gain an understanding of formal poetry-rhyme and meter-as well as of traditional types of poetry, for example, the lyric and the narrative. Throughout the course, an emphasis will be maintained on free verse and a greater understanding of its practice. Students will read selectively in the poetry, theory, and critical approaches of various periods, for example, the romantic and the modern, and within various movements, such as the symbolist or confessional.

**ENGL 5190 Literary Journal Editing: 3 semester hours**

Prerequisites: Open to students in the MFA program who have had at least two graduate writing workshops and to others with consent of the instructor. In this course students serve as the first readers of all submissions to the university's literary magazine, *Natural Bridge*. Students will read and evaluate poems, short stories, and essays and recommend a body of work to the editorial board of the magazine. The editorial board will then consider the class consensus in its final selection of material for publication. In addition to this primary task of editorial selection, students will also be involved in the productions of an issue of the magazine. May be repeated for maximum graduate credit of nine hours.

**ENGL 5200 MFA Readings: 3 semester hours**

Prerequisites: Open to students in the MFA program and to others with consent of the instructor. This is an independent reading course. In consultation with an MFA faculty member, students choose works from the MFA Reading List and read them with the goal of broadening and sharpening their technical skills as writers. Students ordinarily choose works in one genre: poetry, the short story, or the novel. Each week the student reads and reports on at least one work. The course may be taken only once.

**ENGL 5250 Studies in Middle English Literature: 3 semester hours**

Special topics in English literature before 1500.

**ENGL 5300 Renaissance Literature: 3 semester hours**

Special topics in English literature from 1500 to 1660.

**ENGL 5400 Eighteenth Century Literature: 3 semester hours**

Studies in Augustan poetry and prose, including drama and fiction, with emphasis on background and major figures.

**ENGL 5500 Nineteenth Century Literature: 3 semester hours**

Special topics in English romanticism, in Victorian life and thought, and in the development of the novel and of poetry between 1797 and 1914.

**ENGL 5600 American Literature Before 1900: 3 semester hours**

Selected American writers or topics from the colonial period to 1900.

**ENGL 5700 Twentieth-Century American Literature: 3 semester hours**

Selected American writers or topics from 1900 to the present.

**ENGL 5750 Twentieth-Century British Literature: 3 semester hours**

Selected British and Commonwealth writers of the twentieth century.

**ENGL 5800 Modern Linguistics: 3 semester hours**

Prerequisite: A study of selected topics in the structure of the English language, combining readings in current linguistics publications with original research.

**ENGL 5840 Theories of Writing: 3 semester hours**

An analysis of major modern theories in composition.

**ENGL 5850 Studies in Composition: 3 semester hours**

The study of special topics in composition. Topics may include history of composition, psychology of writing, reader response theory, etc.

**ENGL 5860 Writing/Reading Theory: 3 semester hours**

This course studies the parallel evolution of reading and writing theory and pedagogy. Topics include the influence of psycholinguistics and reader-response theory and the link between reading and writing theory and instruction.

**ENGL 5880 Writing in the Content Areas: 3 semester hours**

Same as TCH ED 5880. Prerequisites: Graduate standing. This course emphasizes the importance of integrating writing instruction in classrooms across subject areas. Theories of writing and writing instruction will be explored, and students will discuss how to put the theories into practice in their classrooms. Students will learn to explore their own writing process while learning strategies that will help them to teach writing rather than just assign writing. The course examines the tools pre-service and in-service teachers will need to work with diverse learning communities, to utilize best practice in the teaching of writing, and to use writing as a tool for student learning in any content area. Students in this class will be held to professional writing and speaking standards. The course counts toward the Certificate in Writing.

**ENGL 5910 Studies in Poetry: 3 semester hours**

Study of a few selected British and American poets.

**ENGL 5920 Studies in Fiction: 3 semester hours**

Study of a few selected British and American novelists and short story writers.

**ENGL 5940 Seminar in Gender and Literature: 3 semester hours**

Same as GS 5940. Gender studies in literature of different periods, types, and genres; satisfies area requirement (1-6) appropriate to its period, national literature, and genre.

**ENGL 5950 Seminar in Special Topics: 1-3 semester hours**

Special topics which are not covered in other graduate-level English courses.

**ENGL 5970 Independent Reading: 1-3 semester hours**

Directed study in areas of English for which courses are not available.

**ENGL 6000 Thesis: 1-6 semester hours**

Prerequisite: 3.5 graduate GPA. Thesis research and writing on a selected topic in English studies. May be taken over two semesters, three (3) hours each semester.

**ENGL 6880 Gateway Writing Project: 6 semester hours**

Same as TCH ED 6880. Prerequisite: Graduate standing. An intensive course in the writing process and the writing curriculum, designed for experienced teachers. Readings of current theory and research will be related to participants' experience as writers and as teachers. May be repeated for credit, but no more than 6 hours may be applied toward the M.Ed. Counts toward the Graduate Certificate in Teaching Writing.

**ENGL 6890 Seminar in Professional Writing for Teachers: 3 semester hours**

Same as TCH ED 6890. Prerequisites: TCH ED 6880 and consent of instructor. Capstone seminar for the Graduate Certificate in the Teaching of Writing. Participants will pursue the dual role of writer/ writing teacher by designing individual projects with one of these emphases: (1) research writing based on a classroom inquiry into the teaching of writing; (2) expository and creative writing based on an inquiry into the teacher's own evolution as a writer.

## History

### General Information

#### Degrees and Areas of Concentration

Students and Faculty in the History Department are curious and creative. We ask big questions about the past to understand the present and build the future. Faculty members bring our diverse backgrounds, experiences, and expertise to the courses we offer in African, African American, European, Latin American, Japanese, World, and United States history from ancient to modern times. Our students go on to thrive in a wide range of careers: business, museums and public history, education, libraries, law, management and more.

The department offers the B.A. in history, and, in cooperation with the College of Education, the B.S. Ed. in Secondary Education with Emphasis in History and Social Studies and the B.A. in History with Secondary Social Studies Teacher Certification. Students can complete the History major and minor online. Faculty collaborations on campus and in the community make the History Department a starting place for interdisciplinary certificates and minors in African and African American Studies, American Studies, Latina/Latino Studies, and Religious Studies.

Students can access internship and research opportunities through our partnerships with museums, archives, schools, and cultural organizations.

Majors and minors build their skills in writing, research, communication, and analysis, and enjoy small, advanced level classes, ensuring they receive individual attention from faculty committed to their intellectual and professional development.

At the graduate level, the department offers an M.A. in History and an M.A. in Museums, Heritage, and Public History. The department also offers a graduate certificate in History Education and a graduate certificate in Museums, Heritage and Public History. These certificates can be taken by itself or in conjunction with the M.A. in History or M.Ed. in Secondary Education.

#### Bachelor of Liberal Studies Option:

A minor in history may be combined with a minor in another discipline and a capstone to form a Bachelor of Liberal Studies. The relevant capstones are either HIST 4999 or any HIST 4142/HIST 4143 level

course. Since students taking HIST 4999 must have taken HIST 3199, it is suggested such students use this class to satisfy the Logic and Methodology requirement. Students can use the same course to satisfy the Logic and Methodology requirement of both minors, but cannot use the same science courses. Also, a Bachelor of Liberal Studies program is easily combined, in turn, with a major in any science as a double major. Employers appreciate this pathway as it provides graduates with a deeper historical and conceptual understanding of the science(s) he or she is studying.

### Career Outlook for B. A. and M. A. graduates

Study and research in history sharpens organizational and writing skills important to success in a variety of fields. Professionals in business, education, law, banking, libraries, and foreign service all find it relevant to their careers. Interest in local history has created employment opportunities in museum, archival, and preservation work that are growing faster than the norm. History alumni in a wide variety of fields are as conscious of and appreciative of their training in history as those who have chosen it as a profession. For more information on the national outlook for history majors, see American Historical Association's Career Resources.

### Degrees

History BA (p. 467)

History MA (p. 470)

- Museums, Heritage and Public History Emphasis (p. 471)

History BA/MA Dual Degree Program (p. 469)

### Minors

History Minor (p. 472)

Latina/Latino Studies Minor (p. 485)

### Certificates

History Education Graduate Certificate (p. 470)

Museums Heritage and Public History Graduate Certificate (p. 518)

### Courses

**HIST 1000 Introductory Topics in History: 3 semester hours**

This course covers various special topics in history to be determined by the field, availability of instructors and interest of students. The course may be repeated for credit with the consent of the instructor.

**HIST 1001 American Civilization to 1865 (MOTR HIST 101): 3 semester hours**

This course considers the development of the Americas and the United States from the pre-Columbian era to the Civil War, with emphasis on the ideas and institutions that shaped U.S. Americans' experiences. Students will work with primary sources and additional materials to deepen understanding of the relationship between the U.S. and the world. Assignments further develop students' written communication skills. Course fulfills American History and Government General Education requirement.



**HIST 1002 American Civilization 1865 to Present (MOTR HIST 102): 3 semester hours**

This course examines the development of the modern United States from Reconstruction through the present. It considers the ideas, institutions, economic and social changes that shaped Americans' experiences. Students work with primary sources and additional materials to deepen understanding of the relationship between the U.S. and the world. The course further develops students' written communication skills. Course fulfills the American History and Government General Education requirement.

**HIST 1003 African American History: 3 semester hours**

This course will selectively survey the experiences of African Americans from the period of the Trans-Atlantic slave trade to the late twentieth century. Topics may include the development of the slave trade and the institutionalization of slavery, slave culture and resistance, the role of African Americans during the Civil War and Reconstruction period, the rise of segregation and the disfranchisement of African Americans, the Depression and WWII eras, and recent protest movements. Course fulfills American History and Government General Education Requirement.

**HIST 1007 Introduction to African and African American Studies: 3 semester hours**

This course draws from history, literature, sociology, art, and economics to survey the impact of African migrations on the Americas. It highlights the movements, conditions, and experiences that have shaped the development of African American history, culture, and society. Course fulfills American History and Government General Education Requirement.

**HIST 1010 U.S. Business History: 3 semester hours**

This course explores key developments in the business and economic history of America from the founding to the present. It offers foundational knowledge of the history of American business, connecting it to key issues in American history.

**HIST 1030 Ancient Greece and the Roman Empire: 3 semester hours**

This course surveys the history of ancient Greece and Rome in the context of the larger Mediterranean world. Topics may include politics and economy, war and society, and culture. The chronological span is from the establishment of the Minoan and Mycenaean civilizations (2000-1500 BCE) to the fall of the Western Roman Empire in the fifth century CE.

**HIST 1031 From the Middle Ages to the Age of Revolutions (MOTR WCIV 101): 3 semester hours**

This course covers the development of western European societies and traditions from the fall of the Western Roman Empire in the fifth century CE, through the Middle Ages to the Renaissance, and the Enlightenment to the end of the French Revolution in 1799. Themes may include politics and economy, war and society, and culture.

**HIST 1032 Topics in European Civilization: 1715 to the Present (MOTR WCIV 102): 3 semester hours**

This course covers the development of western European societies and traditions from 1715 to the present. Themes may include politics and economy, war and society, and culture.

**HIST 1034 Introduction to Ancient Egypt and Its Civilization: 3 semester hours**

Same as ANTHRO 1034. This course will survey ancient Egyptian history and culture from predynastic times to Greco-Roman rule, roughly 3000 BCE to 30 BCE. Students will discuss archaeological sites, mummification, religion, architecture, texts, and more. Through comparing ancient Egyptian culture with our own, students will explore what has changed in the world and what has endured for millennia.

**HIST 1037 The Wonders of Greece: Introduction to Greek History and Culture: 3 semester hours**

Same as ANTHRO 1037. Our democracy and culture have been heavily influenced by Greek civilization. This course will introduce students to the culture and civilization of Greece in order to provide a better understanding of our own society. The course will cover the political and military history, art, literature, philosophy, and science of Greece from prehistoric to modern times, with special emphasis on Greek civilization's enduring democratic and cultural ideals. The course will include screening of films and use of online resources.

**HIST 1041 East Asian Civilization: 3 semester hours**

The development of Asian civilization from earliest times to the Manchu conquest.

**HIST 1043 Topics in East Asian History and Culture: 3 semester hours**

This course introduces students to historical and cultural issues in different areas of East Asia, especially Japan, Korea, and China. Topics may include a survey of history, as well as more specialized areas of politics, culture, literature, art, gender or more contemporary issues. The regional emphasis is determined by the instructor. It may be taken more than once, provided the course topic is different.

**HIST 1062 Modern Africa: From Colonies to Nations: 3 semester hours**

This course uses film, fiction, music, and historical sources to explore the history of twentieth century Africa, focusing on African experiences of the colonial and postcolonial periods.

**HIST 1075 World History to 1500: 3 semester hours**

A survey of the history of humankind to 1500 including the beginnings of civilization Mesopotamia, Africa, Asia and the Americas, the rise of Classical civilizations and the development of major transnational social, economic, political and religious networks.

**HIST 1076 World History Since 1500: 3 semester hours**

A survey of the history of humankind since 1500, emphasizing the growing interdependency of regional economic, political, and social systems. Topics will include imperialism, industrialization, and globalization.

**HIST 1111 Reacting to the Past: 4 semester hours**

Reacting to the Past is a series of historical simulations built around key moments and texts from the past. In each simulation, students are assigned a role and develop that character. The course offers students a rigorous academic experience in which they conduct historical research, speak, and write extensively. Because this course requires extensive writing, it fulfills the requirement for Freshman Composition.

**HIST 1901 Capitalism in American History: 3 semester hours**

Same as POL SCI 1901. This course offers students the opportunity to approach America's political economy with tools different from those offered by more quantitative economic constructs. Students will analyze market processes through a three dimensional approach that focuses not just on market competition but also on relationships of command-the exercise of power in firms, among nations, and between social groups-and on processes of historical change from the late colonial era through the twentieth century.

**HIST 1999 Big History: From the Big Bang to the Present: 3 semester hours**

Same as INTDSC 1999. An introduction to the humanities, social science, and science disciplines through a sweeping overview of natural and human history from the Big Bang to the present. Course will include lectures from faculty in various Arts and Sciences units, films, and group discussions.



**HIST 2000 Selected Topics in History: 3 semester hours**

This course covers various special topics in history to be determined by the field, availability of instructors and interest of students. The course may be repeated for credit with the consent of the instructor.

**HIST 2002 Introduction to Latinx Studies: 3 semester hours**

This course introduces the experiences and conditions of U.S. Latinx of Caribbean, Latin American, and, especially, Mexican descent. Students will examine how people from Hispanic- and Indo-America are both incorporated into American culture, history, and occupational life and often marginalized as either outsiders or foreigners. The course studies how historical forces push and pull people from Latin America to the United States, where they create new U.S. ethnic, racial and local identities. Using films, novels/memoirs, music, and art as windows, students will identify patterns of identity formation, ethnic culture, community politics, labor struggles, and social mobility, and will map the heterogeneous mosaic of Latin American and Caribbean migrations and communities.

**HIST 2004 The Civil War Era: Slavery, Emancipation, and the Greater Reconstruction: 3 semester hours**

Prerequisites: Sophomore standing or consent of instructor. This course examines one of the most significant experiences in U.S. history across three chronological units: American slavery and debates over it; historical explanations for U.S. slavery's demise; and the broader meaning and legacies of the Civil War and Reconstruction. Students pay particular attention to Civil War St. Louis. This is a hands-on course with field trips and community engagement. Course fulfills the American History and Government General Education Requirement.

**HIST 2005 Becoming Modern America: From the Gilded Age to the Great Depression: 3 semester hours**

Prerequisites: Sophomore Standing or consent of the instructor. This course explores the economic, political, cultural, and social transformations of the emerging industrial United States from 1877 through the Great Depression of the 1930s. Students will use historical sources, such as memoirs, film, images, newspapers, literature, and historians' accounts to consider how the United States changed during these crucial decades. This course fulfills the American History and Government General Education requirement.

**HIST 2008 History of St. Louis: 3 semester hours**

Prerequisites: Sophomore standing or the consent of the instructor. This course will provide an overview of the history of the St. Louis metropolitan region. Topics may include the St. Louis region before the Europeans, forces leading to the founding of the city, St. Louis as an 'urban frontier,' the Age of Steam on water and rail, the questions of slavery and the Civil War, St. Louis in the Gilded Age, the World's Fair, early efforts at city planning, impact of the automobile, St. Louis during the Depression and World War II, post-war suburbanization, urban renewal, and 21st century prospects. This is an experiential course requiring field trips and community engagement.

**HIST 2017 African American History: From Civil Rights to Black Power: 3 semester hours**

Prerequisites: Sophomore standing or consent of instructor. This seminar focuses on the activities, ideas, movement centers, and personalities that created the Civil Rights and Black Power movements in the U.S. from the 1950s through the 1970s. Some familiarity with the broad contours of U.S. History is presupposed. Special attention will be devoted to the roles of the African American masses, college students, and women, and to the points of conflict, cooperation, and intersection between African America and the larger American society.

**HIST 2020 Women and Social Movements in U.S. History: 3 semester hours**

Same as GS 2020. Prerequisites: Sophomore standing or consent of the instructor. This course explores the role of women in social movements that transformed the United States during the nineteenth and twentieth centuries. It asks broad questions about how ideas, experiences, and laws regarding gender and sexuality have shaped ordinary people's lives, as well as U.S. institutions, and have been touchstones for social change movements. It considers abolitionism, suffrage, progressive reforms, labor, civil rights, and second wave feminism, among other movements.

**HIST 2021 War and Violence in Modern Times: 3 semester hours**

Same as MVS 2021. Prerequisites: Sophomore standing or consent of the instructor. This course examines the connections between warfare and resistance, gangs and poverty, and state and non-state officials as enactors of violence. It explores the effects of war and violence on the poor in Brazil and the United States, prisoners of war in Asia, and resistance fighters in Latin America and northern Africa. Students will watch films/short videos, read academic and newspaper articles, and listen to short podcasts to grapple with the issues underlying structures of violence.

**HIST 2025 U.S. Foreign Relations and Military History: 3 semester hours**

Same as MVS 2025. This course surveys the development of American land, sea, air, space, and cyber power from the start of the colonial era to the present, with an emphasis on the interrelationship between U.S. foreign and military policies and between diplomacy and force.

**HIST 2026 Baseball and the Making of Modern America: 3 semester hours**

This course uses the lens of baseball to aid in the development of a deeper understanding of the United States. It explores how social, cultural, economic, and political forces shaping the U.S. after the Civil War were reflected in the national past time. In the study of key trends and events in baseball history, students will learn how broader themes in U.S. history, such as industrialization and urbanization, race and ethnicity, imperialism, war, gender, and business impacted and were influenced by the sport.

**HIST 2028 Sex, Drugs, and Rock 'n Roll: The 1960s in Song, Fashion, Dating, and Protest: 3 semester hours**

Prerequisites: Sophomore standing or consent of the instructor. This course examines the turbulent 1960s and the period's identification with sex, drugs, and rock 'n roll by looking historically at drugs, music, and changes in gender roles. It uses these histories to explore the cultural and political movements of the 1960s (1955 through 1973)-civil rights, black power, new left, antiwar, and feminist movements-along with the emergence of the counterculture, hallucinogenic drugs, the sexual revolution, and the whole hip scene. The class is discussion-based. There is a mid-term exam and several assignments, including a class presentation and papers on readings, music, and movies.

**HIST 2030 U.S. Immigration: 1790 to the 21st Century: 3 semester hours**

This course examines the history of free and forced newcomers to the U.S. and the laws that shaped their ability to immigrate. It looks at the conditions that newcomers faced and their subsequent struggles for political, social, and economic rights and freedoms. It explores the legal foundations that grounded the admission of certain newcomers and the exclusion or marginalization of others.

**HIST 2050 Introduction to Public History: 3 semester hours**

This course introduces students to the foundations, theory, and practice of public history, which is the study of whose history is preserved, remembered, and celebrated in American society. It explores how everyday people engage with history, the diverse venues in which history is presented and produced, and the efforts public historians must make in order to respectfully represent the histories of underrepresented groups. Students will acquire a knowledge about the practices of public history and its professional opportunities, as well as the challenges faced by public historians today.

**HIST 2066 Women and Gender in African History: 3 semester hours**

Same as GS 2066. Using documentaries, popular culture, graphic histories, and more conventional sources, this course explores the history of Africa, highlighting African women's lives, experiences, and agency, and questioning the application of Western concepts of gender to an African setting.

**HIST 2067 African History through Fiction and Film: 3 semester hours**

Prerequisites: Sophomore standing or consent of the instructor. This course will examine modern African history with literature and film, focusing on works that have poignantly captured important events in African history such as slavery, colonialism, and independence.

**HIST 2068 Aiding Africa: 3 semester hours**

This course examines the history of economic development on the African continent. Students will learn about the local and the international encounters that development has fostered; they will explore how Africans have experienced and reformulated development in different contexts and time periods; and they will study the changing international policies on development, which have deeply shaped the lives of Africans. This course satisfies the Cultural Diversity requirement.

**HIST 2082 Christianity: From Jesus to Martin Luther: 3 semester hours**

This course orients students in the scholarship about the Christian Church in the Western tradition as an institution. Open discussion is encouraged, and all traditions will be respected in the interest of expanding our knowledge of the past as well as communities today.

**HIST 2083 Europe in Early Middle Ages: Paganism to Christianity: 3 semester hours**

Prerequisite: Sophomore standing or consent of the instructor. The end of the Roman Empire as a universal entity; the successor states of the Mediterranean and Northern Europe; the emergence of a Western Christendom under the Franks; the development of feudal states; the Gregorian reforms; the Crusades; the revival of education and learning in the twelfth century.

**HIST 2084 Crusades and Plagues: Europe in the High and Late Middle Ages: 3 semester hours**

Prerequisite: Sophomore standing or consent of the instructor. Medieval society at its political, economic, and intellectual zenith; the crisis of the later Middle Ages; the Papal schism and the development of national particular churches within Catholicism; and the rise of estate institutions.

**HIST 2085 Medieval England: From Arthur to Richard III: 3 semester hours**

Prerequisite: Sophomore standing or consent of the instructor. A brief summary of the Anglo-Saxon heritage and the impact of the Norman Conquest, followed by an investigation of the institutional, social, and legal evolution of the realm of England. English development will be viewed in its European context.

**HIST 2100 Careers with a History Degree: 1 semester hour**

This course is an orientation to career opportunities for history majors. It is recommended for majors and minors and is open to students who are considering the field. It explores careers directly related to history and other sectors for which the degree is valuable, including business, law, education, communication and more. Students engage in activities that help them to identify their professional goals, network in the region, and become familiar with internships, minors, and certificates that enhance their degree.

**HIST 2102 Introduction to Gender Studies: 3 semester hours**

Same as GS 2102, SOC WK 2102, POL SCI 2102, and SOC 2102. This core class is required for all Gender Studies Certificate earners. This class introduces students to cultural, political and historical issues that shape gender. Through a variety of disciplinary perspectives in the humanities, social sciences, and natural sciences, the course familiarizes students with diverse female and male experiences and gendered power relationships.

**HIST 2112 Democracy, Freedom, and Equality: Historical Role Playing Games: 3 semester hours**

This course uses historical game simulations built around key moments and texts from the past that explore issues of democracy, freedom, and equality in the U.S. In each simulation, students are assigned a role and develop their character for game sessions. The course offers students a rigorous academic experience in which they conduct historical research, work collaboratively, speak, and write extensively. It can be repeated with different historical topics and games.

**HIST 2117 Greek History and Culture: 3 semester hours**

Same as ANTHRO 2117. Greek civilization has had a deep impact on contemporary society in art; social, political, and economic organization; philosophy; law; medicine; and science. This course covers major aspects of Greek history and culture from antiquity to the present. It considers the major political and military events of Greek History, as well as important aspects of Greek culture, including sports and the history of the Olympic Games, literature, philosophy, and mythology.

**HIST 2120 Global Girl Cultures: 3 semester hours**

Same as ANTHRO 2101. This course explores themes of identity and gender construction, media representation, and cultural production found in a spectrum of historic and modern international and US girl cultures. 1950s British Teddy Girls, 1970s Japanese Takanokozoku, 1990s American Riot Grrrls, 2000s Mexican American Cholas, and other girl cultures teach us about the many strategies teens and young women use to construct their own forms of identity through music, language, zines, fashion, and other diverse activities. This course satisfies the Cultural Diversity requirement.

**HIST 2160 Introduction to American Studies: 3 semester hours**

Same as ENGL 2160. Prerequisite: Sophomore standing or consent of the instructor. This course introduces students to the multidisciplinary nature of American Studies and is a required course for those who wish to complete the minor in American Studies. It reviews the discipline from its origins in the 1930s, and it introduces students to St Louis' rich resources for American Studies.

**HIST 2185 Introduction to Religious Studies: 3 semester hours**

Same as PHIL 2185. This course introduces students to the interdisciplinary study of religion. With an emphasis on research methods and perennial philosophical and historical topics, students will develop tools for investigating the various dimensions of worldview and gain exposure to many different religious traditions.

**HIST 2420 Maiko, Maids, and Masako: Women in Japanese Cultural History: 3 semester hours**

Same as ANTHRO 2420. This course offers perspectives on famous Japanese women who have captured the public eye at various historical junctures. Students will learn to critically assess representations of these mythological, religious, occupational, and subcultural figures, as well as their linkage to notions of nationhood and modernity. This course satisfies the cultural diversity requirement.

**HIST 2425 Food and Drink in Japan: A Cultural History: 3 semester hours**

Same as ANTHRO 2425. This course explores food and drink as core aspects of intimate and public life in Japan and as key elements of nationalism. It examines distinct class, ethnic, and regional dimensions of food and drink that have their own unique histories. Students will learn how food and drink encode a spectrum of historical meanings as well as great cultural hybridity. This course satisfies the Cultural Diversity requirement.

**HIST 2430 Ghosts, Goblins, and Godzillas: 3 semester hours**

Same as ANTHRO 2430. This course explores the spirits, ghouls, and animal tricksters who populate the historic and modern Japanese imagination. Students will learn about the supernatural beings, and the exceptional humans who interact with or control them, who are found in centuries of Japanese religion, folklore, literature, and art, and are also frequent themes in modern art, film, anime and manga. This course satisfies the Cultural Diversity requirement.

**HIST 2800 History of American Economic Development: 3 semester hours**

Same as ECON 2800. Prerequisites: ECON 1000 or ECON 1001 or consent of instructor. Uses economic concepts to explain historical developments in the American economy, beginning with the hunter gatherers who crossed the Bering land bridge around 12,000 BC. Main topics include the Native American economies, European exploration and conquest, the colonial economies, indentured servitude, the American Revolution, the US Constitution, westward expansion, transportation, the Industrial Revolution, state banking and free banking, slavery, the Civil War, post-bellum agriculture, the rise of big business and antitrust, banking panics, the Federal Reserve Act, the First and Second World Wars, the New Deal, and the growth of government in postwar economy.

**HIST 3000 Special Topics in History: 3 semester hours**

Prerequisite: Junior standing or consent of instructor. This course covers various special topics in history to be determined by the field, availability of instructors and interest of students. The course may be repeated for credit with the consent of the instructor.

**HIST 3032 Modern China: From the Decline of the Qing Empire to the Global Age: 3 semester hours**

Prerequisite: Junior Standing or consent of instructor. The economic, social, and political development of modern China.

**HIST 3035 Gender and Sexuality in Modern U.S. History: 3 semester hours**

This course will examine how gender has been historically constructed in the United States during the 20th and 21st centuries. It considers how women and men have understood their place in society, what social and cultural forces informed their understandings, and how these concepts changed over time. Students will critically engage with the categories of gender and sexuality as historical and cultural productions within the context of 20th century US politics, culture, and social movements.

**HIST 3043 History of Crime and Justice: 3 semester hours**

Same as CRIMIN 3043. Prerequisites: Junior standing or consent of instructor. The analysis, development, and change in philosophies and responses to crime. Emphasis on major forms and definitions of crime, the emergence of modern policing, the birth of the prison, and the juvenile court system.

**HIST 3065 From Ivory to Oil: Mining and Extraction in African History: 3 semester hours**

Prerequisites: Sophomore standing or consent of the instructor. This course focuses on mining and its effects on economic and human development in twentieth century Africa. It examines specific case studies, which may include oil, diamonds, uranium, copper, and ivory to understand how African states and economies have been affected by valuable resources.

**HIST 3092 War and Upheaval in Europe, 1900-1950: 3 semester hours**

Prerequisites: Junior standing or consent of the instructor. This course is a social, political, economic, and cultural survey of Europe during the eras of two world wars. Topics may include the 'Belle Epoque,' the cataclysm of World War I, peace treaties, the rise of communism and fascist states, the Great Depression and collapse of democracy, World War II, the Holocaust, and the efforts at a postwar settlement.

**HIST 3093 Europe in Peace and Prosperity, 1950-Present: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course surveys the main social, economic, political, military, and cultural trends in Europe from the end of World War II. Topics may include the postwar settlement, the development of the social welfare state, the establishment, development, and collapse of communism, and the various phases of the European Union.

**HIST 3199 Introduction to Historical Inquiry: 4 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently). This course is designed to develop historical thinking and research skills. Students will read historical sources, exploring the rhetoric of history, identifying perspectives in historical sources, and the process of formulating historical questions, and building research plans. Other topics covered may include proper citation procedures and historiography. The course is writing intensive and will involve primary source research at libraries and archives.

**HIST 3214 Writing Systems of the World: 3 semester hours**

Same as ANTHRO 3214. This course studies the writing systems from around the world leads to appreciation for one of humankind's most important technological inventions. Students will explore the origins and development of writing systems over time, the linguistic classification of writing, and the transmission of writing across languages and cultures. This course satisfies the Cultural Diversity requirement.

**HIST 3218 Visual and Material Culture of Japan: 3 semester hours**

Same as ANTHRO 3218. This course offers students the opportunity to research Japanese visual genres and material artifacts, from the iconography of Buddhism and fifteenth century pottery to postwar political cartoons, advertising posters, and etiquette comics. Students will discover how artifacts and images provide a means for communicating cultural meaning, while also reflecting aesthetics, humor, and cultural norms. This course satisfies the Cultural Diversity requirement.

**HIST 3999 Internship: 3 semester hours**

Prerequisites: Consent of supervising instructor and institution offering the internship. This supervised practicum in a museum, historical agency, or other institution offers an opportunity for hands-on experience in public history. Contact the History Department undergraduate advisor for information on arranging an internship.



**HIST 4001 Special Readings: 1-10 semester hours**

Prerequisite: Consent of the instructor. Independent study through readings, reports and conferences.

**HIST 4002 Collaborative Research: 3 semester hours**

Prerequisite: Consent of instructor. Faculty-student collaboration on a research project designed to lead toward the publication of a jointly-authored article. The faculty member will direct the research.

**HIST 4014 World History for the Secondary Classroom: 3 semester hours**

Prerequisites: TCH ED 3310 or consent of the instructor. This course is required for Social Studies certification. It adapts the themes and subject matter of World History to the secondary classroom and trains teachers in techniques particularly designed to maximize the use of primary sources, foster critical inquiry, and encourage knowledge of subject matter. This course cannot be counted towards the minimum 33-hour history major requirement, but does count towards the 45 hour maximum and for Social Studies Certification.

**HIST 4142 Inquiries in U.S. History: 3 semester hours**

Prerequisites: HIST 2999. This course will develop historical thinking and writing skills through investigation in topics in National History.

**HIST 4143 Inquiries in World History: 3 semester hours**

Prerequisites: HIST 2999. This course will develop historical thinking and writing skills through investigation in topics in World History.

**HIST 4999 Senior Seminar: 5 semester hours**

Prerequisites: HIST 3199, presentation of three examples of formal written work submitted in prior upper-division courses in history, and consent of department. This course studies in historical methodology and historiography. Directed readings, research, and writing leading to the production of an original piece of historical scholarship. An exit interview is required. This course is required for majors seeking Degree with Distinction. It may not be taken for graduate credit.

**HIST 5000 Advanced Selected Topics in History: 3 semester hours**

Prerequisite: Graduate standing. Special topics in history. The course may be repeated for credit with consent of the instructor.

**HIST 5142 Advanced Inquiries in U.S. History: 3 semester hours**

Prerequisite: Graduate standing. This course will develop historical thinking and writing skills through investigation in topics in United States history.

**HIST 5143 Advanced Inquiries in World History: 3 semester hours**

Prerequisite: Graduate standing. This course will develop historical thinking and writing skills through investigation in topics in World history.

**HIST 5592 The History of the Visual Arts in American Museums: 3 semester hours**

Same as ANTHRO 5592 and ART HS 5592. Prerequisites: Graduate standing and consent of instructor. This course is an introduction to selected topics in the history of museology, focusing on art and anthropology museums as sites for the interpretations of art and culture, and as contested meeting grounds for various views of history and culture.

**HIST 6000 The Historian's Craft: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce incoming students to graduate work, both in the field of history generally and to the M.A. program at UM-St. Louis in particular. It will familiarize them with the fields of historical study and the UMSL faculty who teach them, protocols of the profession, and methodologies of historical research, writing, and analysis. It will also help students learn about and prepare for careers outside the academy and/or Ph.D. programs in the field. Students may be required to attend colloquia off campus.

**HIST 6001 Introduction to Public History and Cultural Heritage: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. This seminar will introduce students to the theory and practice of public history and cultural heritage. Readings will acquaint students with these fields of study and offer commentary on a variety of strategies for making the past relevant for contemporary audiences.

**HIST 6002 Material Culture in Historical Context: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. This course will present various theoretical and methodological approaches to the study of material culture. It will explore how the interpretation of objects has contributed to the understanding (or misunderstanding) of past and present cultures. The course will also examine contemporary museum practice in the display of material culture. Students will be expected to make on-site observations at different types of local museums, and will conduct research into a category of material culture that appeals to their individual interests.

**HIST 6003 Economics of Museums and Heritage: 3 semester hours**

Prerequisites: Graduate standing and consent of the instructor. This course introduces students to the financial history of museums and heritage, explores debates about economic strategies for museums and heritage, and empowers museum professionals to work effectively with the chief financial/administrative officer of their museum or heritage site. Topics include: government policies toward museums and heritage, the economics of blockbuster exhibitions, debates concerning collections as an economic resource for museums and cities, daily financial management, best practices for using financial resources to achieve institutional mission and priorities, long-term strategic planning, the history and development of public-private partnerships, cultural philanthropy and donations.

**HIST 6004 Writing for Museums: 3 semester hours**

Prerequisites: Graduate standing and consent of Museum Studies program director. This course will develop skills for professionals working in museum settings who need to communicate effectively with multiple audiences through various platforms. Topics will include writing for proposals, object descriptions, interpretive texts, and digital storytelling.

**HIST 6014 World History for the Secondary School Classroom: 3-6 semester hours**

Prerequisites: Graduate standing or consent of instructor. The intent of this course is to adapt the themes and subject matter of World history to the secondary classroom and to train teachers in the methodology of the Socratic symposium, techniques designed to maximize the use of sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting themes of World history, on expanding bibliography, and on methods for choosing primary sources for use in an interactive classroom.

**HIST 6115 Historical Thinking in Research and Practice: 3 semester hours**

Same as TCH ED 6115. Prerequisites: Graduate Standing or consent of instructor. In this hands-on course, students examine current research and effective teaching strategies that facilitate historical thinking while also broadening content knowledge. Students further design, implement, and assess educational materials and practices that foster historical thinking, reading, and writing.



**HIST 6116 Historical Thinking in Theory and Practice II: 3 semester hours**

Same as TCH ED 6116. Prerequisites: HIST 6115 / TCH ED 6115 or consent of instructor. Building upon HIST 6115 / TCH ED 6115, this course emphasizes the design, implementation, and assessment of teaching materials and practices that foster historical thinking and reading. In this hands-on, action research course, students will focus on their own teaching materials and practices to improve their capacity to teach and assess students' historical thinking.

**HIST 6121 Directed Readings: 1-3 semester hours**

Prerequisites: Consent of a member of the Doctoral Faculty. Directed research at the graduate level.

**HIST 6122 Collaborative Research: 3-6 semester hours**

Prerequisites: Graduate Standing and consent of instructor. Faculty-student collaboration on a research project designed to lead toward the publication of a jointly-authored article. The faculty member will direct the research.

**HIST 6123 Thesis Seminar: 1-6 semester hours**

Prerequisites: Graduate standing and consent of instructor. Thesis research and writing on a selected topic in history.

**HIST 6124 Graduate Internship: 3 semester hours**

Prerequisites: Consent of supervising instructor and institution offering the internship. Supervised practicum in a museum, historical agency, and other institution offering an opportunity for hands-on experience in public history.

**HIST 6125 Practicum in Public History and Cultural Heritage: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. In collaboration with a designated community partner, students will research and interpret the past for contemporary audiences. The course will combine traditional classroom sessions with hands-on training.

**HIST 6126 Museum Studies Internship: 1-4 semester hours**

Prerequisites: Graduate standing and consent of instructor. Professionally-supervised work experience in a museum setting. Requires a minimum of 50 hours of on-site attendance per credit hour and submission of a final paper.

**HIST 6127 Museums and Communities: 3 semester hours**

Prerequisites: Graduate standing and consent of the Director of Museum Studies. As museums and heritage institutions have sought to attract new audiences, they have tried to re-present their collections with new stories, address topics of concern to the denizens of their cities, and provide a broader range of programming than ever before. This course considers how to identify community characteristics and needs, create entry points for multiple audiences at museums, and build strong, long-term relationships with local partners. We consider difficult histories, conflict, and strategies to create space for diverse perspectives; the role of communications technologies in soliciting participation and promoting dialogue; and networks and the organizational skills for community development. Students will examine case studies of community-based museum programming, and develop an engagement strategy around an exhibit.

**HIST 6129 Emerging Museum Practices: 3 semester hours**

Prerequisites: Graduate students in Museum Studies or Public History or consent of the Director of Museum Studies. This course examines emerging trends and models in the museum field. The museum's educational role in society is quickly changing. Learning is not only more collaborative but also more accessible beyond the walls of the museum. Through readings, activities, and exercises, students will explore the mechanics of partnerships with cultural organizations, creative individuals, and the local community, while considering how museums should function in society today. We will examine interdisciplinary programming via collaboration with the creative class; creating social/participatory experiences; making collections personally relevant to audiences; and engaging in the sharing city. We pay particular attention to the museum's responsibility to civic duty and sustainable practices.

**HIST 6131 Museum Origins and Evolution: 3 semester hours**

Prerequisites: Consent of Director of Museum Studies Program. This course traces the social and cultural history of museums from their origins in curiosity cabinets, princely collections, freak shows, and exhibitions, through their late 19th and early 20th century institutionalization, to present-day developments such as blockbuster exhibitions, community collaborations, masterpiece architecture, and the spread of museal and heritage institutions around the globe. Topics include colonialism, modernity, and the production of taxonomical knowledge; museums and nationalism; theories of culture, patrimony, and ownership; manufacture, marketing, and museums; the relationships between museums and academia; identity politics and culture wars; community-based initiatives; and virtual and digital museum spaces.

**HIST 6132 Digital Video for Museums and Community History: 3 semester hours**

Prerequisites: Consent of Director of Museum Studies Program. This course covers basic production and post-production in digital video, and examines how digital video has been and can be used for community history projects and museum installations. Students will learn basics of shooting, lighting, sound, scripting, and non-linear editing; interviewing and observational footage; and produce a series of documentary shorts. Readings will include the special characteristics of the cinematic medium and case studies of digital video for community-based research, advocacy, and museum audiences.

**HIST 6133 Museums and History in the Digital Age: 3 semester hours**

This course introduces and explores the key issues, analyses, critical debates, opportunities and potential drawbacks for museums and public historians using digital media to engage with communities. Students will gain facility in implementing digital strategies for museum and public history initiatives, including how to plan, manage, and assess the success of media projects.

**HIST 6134 History Curatorship: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. Principles and practices of curatorship, with a focus on historical collections. Curatorial responsibilities for object care. Role of curator in exhibit research, design, and implementation. Issues of inclusivity and shared authority. Historical shifts in curatorial practice, collecting, and museum missions.

**HIST 6138 Museum Studies Master's Project: 5 semester hours**

Same as ART HS 6038 and ANTHRO 6138. Prerequisites: Consent of Director of Museum Studies Program. Research and writing/exhibit development on a selected topic.

**HIST 6139 Practicum in Exhibit and Program Development: 3 semester hours**

Prerequisites: Consent of the instructor and graduate standing. Development of exhibits and related education programs. Students work as teams with museum professionals to develop and implement an exhibit concept that integrates design, education, and marketing from the onset. Methods in planning, flow charting, budgeting, team dynamics and related skills.

**HIST 6142 Readings in U.S. History: 3-5 semester hours**

Prerequisite: Graduate Standing. Directed readings and writing in selected topics and areas in United States History.

**HIST 6143 Readings in World History: 3-5 semester hours**

Prerequisite: Graduate Standing. Directed readings and writing on selected topics and areas in World History.

**HIST 6145 Topics in Environmental History: 3-5 semester hours**

Prerequisite: Graduate standing. This course is an interdisciplinary examination of the interactions people have had with the land and sea, the biophysical environment, over time. Satisfies the elective requirement outside the Biology Department for the Tropical Biology and Conservation Graduate Certificate Program. May be repeated provided the topic is different.

**HIST 6152 Directed Readings in U.S. History: 1-3 semester hours**

Prerequisites: Consent of a member of the graduate faculty. Directed readings and research at the graduate level.

**HIST 6153 Directed Readings in World History: 1-3 semester hours**

Prerequisites: Consent of a member of the graduate faculty. Directed readings and research at the graduate level.

## Interdisciplinary Programs

The university offers a number of interdisciplinary programs and courses. These programs combine course offerings from several departments so the subject is examined from a multidisciplinary approach. While most persons who earn certificates do so in the process of completing their undergraduate degree, non-degree seeking students may complete a certificate. Below are links to the descriptions of these interdisciplinary offerings:

### Degrees

Actuarial Science BS (p. 311)

Biochemistry and Biotechnology BS (p. 322)

Cybersecurity BS

- Computer Science Emphasis (p. 405)
- Information Systems Emphasis (p. 407)

Interdisciplinary Studies BIS (p. 480)

Liberal Studies BLS (p. 486)

Organizational Leadership BA (p. 564)

### Certificates

Child Advocacy Studies Undergraduate Certificate (p. 375)

Cybersecurity Undergraduate Certificate (p. 412)

Entrepreneurship Undergraduate Certificate (p. 460)

Gender Studies Undergraduate Certificate (p. 465)

### Minors

American Studies Minor (p. 317)

Child Advocacy Studies Minor (p. 375)

Latina/Latino Studies Minor (p. 485)

Urban Studies Minor (p. 649)

Environmental Studies Minor (p. 461)

### Courses

**INTDSC 1000 Special Topics: 3 semester hours**

Topics may vary from semester to semester, however, they will all focus in the cultural heritage of Great Britain with material taken from art, theater, literature, and selected topics in philosophy.

**INTDSC 1003 University Studies: 1 semester hour**

This course, required of all new freshmen in the College of Arts and Sciences, is designed to assist students in making the transition to the university experience and to UMSL by giving students the knowledge and tools needed to succeed as a scholar. The course will also familiarize students with the relationship between their education and their career and personal goals, and will assist in developing positive connections with faculty, staff, and peers at UMSL. Students will learn about faculty expectations, support services, and student life, as well as academic disciplines. The course counts toward the 120 credit hours needed for graduation.

**INTDSC 1004 SUCCEED Special Topics: 1-3 semester hours**

Prerequisites: By consent of SUCCEED director. This course is designed to assist students in the SUCCEED program make the transition to the university experience and to UMSL. This course gives students in SUCCEED the opportunity to be co-enrolled in courses that meet their interests and abilities through a mutual agreement between SUCCEED staff and UMSL course instructors regarding enrollment and student expectations.

**INTDSC 1010 Information Research and Student Success: 1 semester hour**

Students will use online library resources to learn search techniques for different types of information. Course content will be delivered through interactive, online tutorials and short, informative videos. Students will develop an understanding of academic research that will set a foundation for critical thinking skills. The course will help students in practical ways, such as for researching term papers, but also in more abstract ways, such as exposing them to the world of scholarship and academic knowledge.

**INTDSC 1011 Introduction to Disability Studies: 3 semester hours**

This course introduces the theory and scholarship of the interdisciplinary field of Disability Studies. Disability will be addressed as a matter of identity, culture, language, writing, power, education, politics, literature, art, and more.

**INTDSC 1012 History of Disability: 3 semester hours**

This course explores the history of disability from various perspectives, moving from antiquity to present day. Perspectives will include: the individual, society at large, the family, sexuality and disability, educational systems, and legal and ethical issues. Students will explore how these perspectives can drive public policy and service delivery systems. Students will gain knowledge and a foundational understanding of current legislation, Independent Living Philosophy, advocacy, empowerment, and self-empowerment that will enable them to create an organized and efficient independent living plan.

**INTDSC 1030 Language and Communicative Arts Across the Disciplines: 3 semester hours**

This course is designed to advance the academic skills of university-level students. This course consists of listening to academic lectures across the disciplines; reading texts and articles to supplement lectures; writing summaries, essays and responses to exam questions; understanding and editing grammar and sentence structure; phonetics and word stress patterns; presentation skills; and advancing skills in note-taking, critical thinking, and comprehension of advanced college-level vocabulary of various fields of study.

**INTDSC 1500 Prior Learning Assessment Portfolio Preparation: 1 semester hour**

Prerequisites: Consent of the faculty coordinator for the BA in Organizational Leadership. This course is designed to help students identify areas of learning they may want to have evaluated for college-level equivalency. It will also guide students through the preparation and compilation of components that will be required for the evaluation of a portfolio of prior learning. This course is required for students to apply for Prior Learning Assessment (PLA) via portfolio review.

**INTDSC 1700 Major and Career Exploration: 1 semester hour**

This course is designed to provide students with the opportunity to learn and explore various majors and career paths within a structured setting. Both informative and interactive, the course will provide students with the opportunity to learn broadly about college majors and their relationship to the 'world of work,' while also researching specifically the options they are interested in pursuing. The course seeks to assist students with answering two questions, 'What do I want to study?' and 'How do I want to make a life for myself (and family)?' Components of the course will also educate students about the current and projected employment market, and how to further research pertinent career information.

**INTDSC 1999 Big History: From the Big Bang to the Present: 3 semester hours**

Same as HIST 1999. An introduction to the humanities, social science, and science disciplines through a sweeping overview of natural and human history from the Big Bang to the present. Course will include lectures from faculty in various Arts and Sciences units, films, and group discussions.

**INTDSC 2001 Introduction to Organizational Leadership: 3 semester hours**

This course will survey current research and case studies of leadership with a strong focus on self-awareness and introspection as drivers of organizational leadership success. It will invite students to consider leadership as a process more than a product.

**INTDSC 2003 Careers in Health and Medicine: 1 semester hour**

Same as ANTHRO 2003, GERON 2003, SOC 2003. In this course, students will learn about occupations in such fields as medicine, the allied health professions, health non-profit organizations, and global healthcare delivery. Students will understand the education and skills necessary for various careers and for application to medical, professional, and graduate schools, and will become familiar with majors, certificates and minors that are available at UMSL. They will learn about employment opportunities in the healthcare industry in the St. Louis metropolitan area, and will be introduced to members of the local community who give guest lectures. Students will gain practical experience by shadowing a healthcare professional in their job.

**INTDSC 3010 Peer Mentoring: 1-3 semester hours**

Prerequisites: Consent of instructor. The objective of this interdisciplinary course is to prepare and support undergraduate students working across campus as learning assistants, tutors, peer mentors, student leaders, etc. The course will support the development of general pedagogical knowledge of active learning, leadership and facilitation skills, and effective communication and listening skills, that they will use to facilitate learning in settings where students are working collaboratively, reviewing course content, or receiving supplemental instruction to guide their success. This course may be repeated for up to 6 credit hours.

**INTDSC 4001 Organizational Leadership Capstone: 3 semester hours**

Prerequisites: INTDSC 2001. This course will help students achieve and demonstrate proficiency in organizational leadership. Students will apply insights gained from previous coursework into individual and group projects that identify and address real-world leadership challenges.

## Language and Cultural Studies

### General Information

#### Degrees and Areas of Concentration

Language and Cultural Studies offers courses in French, Japanese, and Spanish, as well as a Dual Language Professional option, leading to the B.A. in Modern Language degree, and an emphasis in each of these languages for students seeking the B.S. Ed. in Secondary Education as well as the B.A. in Modern Language with Master's Level Coursework for Secondary Teacher Certification. In addition, the program offers courses in English for Academic Purposes, Chinese, and German.

Minors may also be earned in the department. For details, see the specific requirements which appear later in this section.

#### Study Abroad

Language students who have been at the University of Missouri-St. Louis at least one semester and have studied the language for at least one year may receive credits for formal study abroad. Students must present a list of language course descriptions from the institution abroad to receive prior consent of the department, and must present a transcript for evaluation upon return to receive credit for those courses. Exchange programs are available with many universities in foreign countries. For information, please contact the Study Abroad Office at <http://www.umsl.edu/services/abroad/>.

#### Alumni Scholarship

Qualified junior and senior language majors may apply for the Modern Language Alumni Scholarship, which is renewable each year on a

competitive basis. For information, please contact Student Financial Aid at <http://www.umsl.edu/services/finaid/>.

### Marcus Allen Memorial Scholarship

Qualified students of French may apply for the Marcus Allen Memorial Scholarship which is awarded on a competitive basis and must be used within one semester of the award. For information, please contact Student Financial Aid.

### Baldini Family Scholarship

Qualified full-time students pursuing a Modern Language degree with teacher certification may apply for this scholarship which is awarded on a competitive basis and must be used within one semester of the award. For information, please contact Student Financial Aid.

### Community College Scholarship

Qualified community college students may apply for the Modern Language Community College Scholarship to be used for educational fees toward enrollment in third semester or higher courses in French, German, Japanese, or Spanish. This scholarship must be used within one semester of the award. For information, please contact Student Financial Aid.

### German Scholarship

Students of German may apply for the German Scholarship. Funds may be used toward educational fees for German courses or toward study abroad in a German-speaking country. For information, please contact Student Financial Aid

### Allen B. and Helen S. Shopmaker Spanish Scholarship

Qualified full-time students pursuing a Modern Language degree with a concentration in Spanish may apply for this scholarship. For information, please contact Student Financial Aid.

### Departmental Honors

Candidates for departmental honors in Modern Languages must meet the following requirements:

1. Achieve a GPA of 3.5 in the major for all hours attempted beyond the first two semesters. (Language Courses 1001 and 1002).
2. Maintain an overall GPA of 3.0.

### Degrees

Modern Language BA, Dual Language Emphasis Professional (p. 509)

Modern Language BA, Japanese Emphasis (p. 514)

Modern Language BA, Spanish Emphasis (p. 516)

Modern Language BA, French Emphasis (p. 511)

### Minors

French Minor (p. 463)

Japanese Minor (p. 484)

Spanish Minor (p. 634)

Modern Languages Minor (p. 518)

### Courses

Courses offered by the department can be found at the links below:

Arabic (ARABIC)

Chinese (CHINESE)

English for Academic Purposes (EAP)

Foreign Language - Other (FGN LANG)

French (FRENCH)

German (GERMAN)

Japanese (JAPAN)

Spanish (SPANISH)

## Mathematics and Statistics

### General Information

Studying mathematics allows one to develop critical thinking and technical problem-solving skills widely applicable to many career paths. Consequently, a degree or minor in mathematics can be a boon to one's career opportunities in addition to being a worthwhile academic endeavor on its own.

### Degrees and Areas of Concentration

The Department of Mathematics and Statistics offers numerous undergraduate degree programs, graduate degree programs, minors, and certificates.

Our undergraduate degrees include a Bachelor of Arts (B.A.) in Mathematics, a Bachelor of Science (B.S.) in Mathematics, a B.S. in Mathematics with an emphasis in Data Science, and a B.S. in Mathematics with an emphasis in Fiscal Mathematics. With the departments of Economics and Accounting, we offer an interdisciplinary B.S. in Actuarial Science. In cooperation with the College of Education, we offer the Bachelor of Secondary Education (B.S.Ed.) in Secondary Education with an emphasis in Mathematics and the B.A. or B.S. in Mathematics with master's level coursework for secondary teacher certification.

The department offers a minor in Mathematics, a minor in Statistics, an interdisciplinary Certificate in Actuarial Studies, and an interdisciplinary Certificate in Data Science.

At the graduate level, the department offers a Master of Arts (M.A.) degree in Mathematics with an emphasis in Mathematics or Data Science, a Doctor of Philosophy (Ph.D.) in Mathematical and Computational Sciences – with options in Mathematics, and Statistics.

### Undergraduate Programs Overview

The program leading to the B.A. in Mathematics provides a broad grounding in different areas of mathematics, giving students a well-rounded education.

The programs leading to our various B.S. degrees allow students to develop a deep and substantial background in mathematics sufficient to produce graduates who can work in areas requiring applied mathematical techniques and tools. These B.S. degrees are structured to provide students the opportunity to explore their interests within the various degree programs.



The B.S. in Actuarial Science is designed to produce graduates who are well prepared for an entry-level career in the actuarial profession.

The B.S.Ed. in Secondary Education with an emphasis in mathematics introduces students to those branches of mathematics most relevant to the teaching of secondary school mathematics.

The Certificate in Data Science is designed to provide computing and statistical foundations for work with big data and data analytics.

The Certificate in Actuarial Studies is designed to help prepare students for entry-level employment in the actuarial profession.

### Dual Program

The Department offers a dual Bachelor's and Master's degree program in mathematics for students with strong academic records. The dual degree program in mathematics is designed to provide an opportunity for strong undergraduate majors to start earning graduate work credit before actually completing their undergraduate degree, thus accelerating their education.

## Graduate Programs Overview

Students pursuing the M.A. degree in Mathematics may choose the traditional track of M.A. in either pure or applied mathematics or the track in data science.

The data science track of our M.A. degree is the only graduate program in data science available at UMSL, and it is designed for students preparing to work in industry as data scientists. These graduates will acquire a solid foundation in statistics and computational skills with emphasis on applications to data science.

The traditional track is ideal for students interested in honing their technical problem solving and critical thinking skills while simultaneously pursuing the beauty inherent in a deeper understanding of mathematics.

This degree is also well suited for those preparing to teach at the high school or junior college level. Those who concentrate on applied courses in the traditional track build a foundation for the application of mathematics in industry and the continuation of their education in the Ph.D. program in mathematical and computational sciences. Our graduates with the traditional track will have abilities in the basic areas of mathematics, and a breadth of knowledge in core subjects at the graduate level.

The Ph.D. program in Mathematical and Computational Sciences is designed to provide the highest level of academic study and research in mathematical and computational sciences. The goal is to produce highly qualified professionals for teaching and research positions in the academic world, as well as equivalent positions in industry and government.

The demand for these professionals continues to exceed the current production and is expected to remain so for the foreseeable future.

Students may enroll in any of these graduate programs on a part-time basis, and with proper scheduling all can be completed in the evening.

## Career Outlook

A degree in mathematics prepares well-motivated students for interesting careers. Our graduates find positions in industry, government, and education. The demand for individuals well trained in statistics, data science, and mathematics is greater than the available supply. In addition, a number of graduates in mathematics have elected careers in business,

law and other related fields where they find logical and analytical skills valuable.

Graduates in mathematics from UMSL are located throughout the country, and they also have a strong local presence. They have careers in banking, health care, engineering and manufacturing, law, finance, public service, management, and actuarial management. Many are working in areas such as systems management, information systems and data management, scientific computing, cryptography, and scientific positions in the armed services. Others have careers in education, especially at secondary and higher levels.

## Department Scholarships

The Department of Mathematics and Statistics offers many merit-based and need-based scholarships available to undergraduate department majors.

The Alumni Scholarship is awarded to outstanding undergraduate students and is open to all junior and senior department majors.

The Edward Z. Andalafte Memorial Scholarship is awarded to outstanding undergraduate department majors at the sophomore level or higher.

The Raymond and Thelma Balbes Scholarship in Mathematics is awarded to students at the sophomore level or higher who are pursuing a degree in mathematics, have an overall GPA of at least 3.0 and a GPA of at least 3.2 in mathematics and who have completed three semesters of calculus.

The Joseph M. and Mary A. Vogl Scholarship in Mathematics is a need based monetary award for undergraduate department majors.

## Degrees

Mathematics BA (p. 494)

Mathematics BS (p. 497)

- Data Science Emphasis (p. 499)
- Fiscal Mathematics Emphasis (p. 501)

Mathematics BA or BS/MA Dual Degree Program (p. 496)

Mathematics MA (p. 503)

- Data Science Emphasis (p. 504)

Mathematical and Computational Science PhD

- Mathematics Emphasis (p. 491)
- Statistics Emphasis (p. 493)

## Minors

Mathematics Minor (p. 505)

Statistics Minor (p. 638)

## Affiliated Interdisciplinary Programs

Actuarial Science BS (p. 311)

Actuarial Studies Undergraduate Certificate (p. 313)

Data Science Undergraduate Certificate (p. 413)

## Courses

### **MATH 0005 Intermediate Algebra: 3 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. Preparatory material for college level mathematics courses. Covers systems of linear equations and inequalities, polynomials, rational expressions, exponents, quadratic equations, graphing linear and quadratic functions. This course carries no credit towards any baccalaureate degree.

### **MATH 1020 Contemporary Mathematics (MOTR MATH 120): 3 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. Presents methods of problem solving, centering on problems and questions which arise naturally in everyday life. May include aspects of algebra and geometry, the mathematics of finance, probability and statistics, exponential growth, and other topics chosen from traditional and contemporary mathematics which do not employ the calculus. Designed for students who do not plan to take calculus and may not be used as a prerequisite for other mathematics courses. Credit will not be granted for MATH 1020 if credit has been granted for MATH 1310, MATH 1800, MATH 1100, MATH 1102, or MATH 1105. Concurrent enrollment in MATH 1020 and any of these courses is not permitted. This course fulfills the University's general education mathematics proficiency requirement.

### **MATH 1021 Choice and Chance: 3 semester hours**

Same as PHIL 1021. Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. This course provides an introduction to inductive logic and the theory of probability in an organized and systematic way, so as to give students tools for more effective decision-making. We will introduce the probability calculus, basic concepts of utility theory, decision theory and different approaches to understanding probability. This course is designed to be accessible to students of all levels. This course fulfills the University's general education mathematics proficiency requirement.

### **MATH 1025 Geometry in the Real World: 3 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. Presents topics in geometry designed to enrich the student's understanding of mathematics. Geometry as it applies to the physical world and such fields as art, music, nature, motion, architecture and city planning will be examined. This course is designed to be accessible to students of all levels. This course fulfills the University's general education mathematics proficiency requirement.

### **MATH 1026 The Music of Math: 3 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. This course presents topics in mathematics as they relate to music. Fundamental concepts of music such as intervals, scales, chords, tuning will be explored by developing an understanding of their mathematical underpinnings. An ability to read music in treble and bass clef is strongly recommended. Satisfies the general education mathematics proficiency requirement.

### **MATH 1030 College Algebra (MOTR MATH 130): 3 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course, or approval of the department. This is a foundational course in math. Topics may include factoring, complex numbers, rational exponents, simplifying rational functions, functions and their graphs, transformations, inverse functions, solving linear and nonlinear equations and inequalities, polynomial functions, inverse functions, logarithms, exponentials, solutions to systems of linear and nonlinear equations, systems of inequalities, matrices, and rates of change. This course fulfills the University's general education mathematics proficiency requirement.

### **MATH 1035 Trigonometry: 2 semester hours**

Prerequisite: MATH 1030 or MATH 1040, or concurrent registration in either of these two courses, or a satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. A study of the trigonometric and inverse trigonometric functions with emphasis on trigonometric identities and equations.

### **MATH 1045 PreCalculus (MOTR MATH 150): 5 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. This course covers topics including factoring, simplifying rational functions, functions and their graphs, solving linear and nonlinear equations, polynomial functions, inverse functions, the binomial theorem, logarithms, exponentials, solutions to systems of equations using matrices, solutions to nonlinear systems of equations, and sequences. Students will also study trigonometric and inverse trigonometric functions with emphasis on trigonometric identities and equations. This course is intended for students planning to take MATH 1800 and fulfills the University's general education mathematics proficiency requirement.

### **MATH 1100 Basic Calculus: 3 semester hours**

Prerequisites: MATH 1030 or MATH 1040 or MATH 1045 or a satisfactory score on the UMSL ALEKS Placement Examination, obtained at most one year prior to enrollment in this course. This course introduces plane analytic geometry and basic differential and integral calculus with applications to various areas. No credit for Mathematics majors. Credit not granted for both MATH 1800 and MATH 1100.

### **MATH 1102 Finite Mathematics: 3 semester hours**

Prerequisites: MATH 1030 or MATH 1040 or MATH 1045 or a satisfactory score on the UMSL ALEKS Math Placement Examination, obtained at most one year prior to enrollment in this course. This course introduces logic and set theory, partitions and counting problems, elementary probability theory, stochastic processes, Markov chains, vectors and matrices, linear programming, and game theory.

### **MATH 1105 Basic Probability and Statistics: 3 semester hours**

Prerequisites: MATH 1030 or MATH 1040 or MATH 1045 or a satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course or consent of the department. This course is an introduction to probability and statistics. Topics may include the concept of probability and its properties, descriptive statistics, discrete and continuous random variables, expected value, distribution functions, the central limit theorem, random sampling, and sampling distributions. Credit will not be granted for more than one of MATH 1310, MATH 1320, and MATH 1105.

**MATH 1150 Structure of Mathematical Systems I: 3 semester hours**

Prerequisites: 45 hours of college credit and a satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course OR successful completion of MATH 1030 no more than 2 years prior to enrollment in this course. This course examines topics including problem solving, patterns, sets, numeration systems, whole numbers and operations, positive rational numbers and operations, and an introduction to variables and equations, with an emphasis placed on using multiple techniques for each of the aforementioned topics.

**MATH 1310 Elementary Statistical Methods: 3 semester hours**

Prerequisites: MATH 1030 or MATH 1040 or MATH 1045 or a satisfactory score on the UMSL ALEKS Math Placement Examination, obtained at most one year prior to enrollment in this course. An introduction to the basic tools and elementary methods of statistics, such as testing of hypotheses, analysis of variance, method of least squares, and time series. A student may not receive credit for more than one of MATH 1310, MATH 1320, and MATH 1105.

**MATH 1320 Introduction to Probability and Statistics: 3 semester hours**

Prerequisites: MATH 1030 or MATH 1040 or MATH 1045 or consent of the department. The course will cover basic concepts and methods in probability and statistics. Topics include descriptive statistics, probabilities of events, random variables and their distributions, sampling distributions, estimation of population parameters, confidence intervals and hypothesis testing for population means and population proportions, chi-square tests. A student may not receive credit for more than one of MATH 1310, MATH 1320 and MATH 1105.

**MATH 1800 Analytic Geometry and Calculus I: 5 semester hours**

Prerequisites: MATH 1030 and MATH 1035, or MATH 1040 and MATH 1035, or MATH 1045, or a satisfactory score on the UMSL ALEKS Math Placement Examination, obtained at most one year prior to enrollment in this course, or approval of the department. This course provides an introduction to differential and integral calculus. Topics include limits, derivatives, related rates, Newton's method, the Mean-Value Theorem, Max-Min problems, the integral, the Fundamental Theorem of Integral Calculus, areas, volumes, and average values.

**MATH 1900 Analytic Geometry and Calculus II: 5 semester hours**

Prerequisite: MATH 1800. Topics include conic sections, rotation of axes, polar coordinates, exponential and logarithmic functions, inverse (trigonometric) functions, integration techniques, applications of the integral (including mass, moments, arc length, and hydrostatic pressure), parametric equations, infinite series, power and Taylor series.

**MATH 2000 Analytic Geometry and Calculus III: 5 semester hours**

Prerequisite: MATH 1900. Topics include vectors, cylindrical and spherical coordinates, vector-valued functions, arc length and curvature, functions of several variables, partial and directional derivatives, gradients, extrema, Lagrange multipliers, multiple integrals, change of variables, surface area, vector fields, Stokes' Theorem.

**MATH 2010 Introduction to Inquiry Approaches to STEM Education (STEP I): 1 semester hour**

Same as CHEM 2010, PHYSICS 2010, BIOL 2010, and SEC ED 2010. Prerequisites: Concurrent enrollment BIOL 1821, BIOL 1831, CHEM 1111, CHEM 1121, PHYSICS 2111, PHYSICS 2112, MATH 1800, or MATH 1900 or have a declared STEM major. Students who want to explore teaching careers become familiar with lesson plan development by writing, teaching and observing lessons in a local school class. Students build and practice inquiry-based lesson design skills and become familiar with and practice classroom management in the school setting. As a result of the STEP I experiences students should be able to decide whether to continue to explore teaching as a career and ultimately finishing the remainder of the WE TEACH MO curriculum leading to teacher certification. The classroom observations and teaching represent a major field component and requires at least one two hour block of free time during the school day once a week.

**MATH 2011 Designing Inquiry-Based STEM Experiences (STEP II): 1 semester hour**

Same as CHEM 2011, PHYSICS 2011, BIOL 2011, and SEC ED 2011. Prerequisites: BIOL 2010, CHEM 2010, PHYSICS 2010, MATH 2010, or SEC ED 2010. Students explore teaching careers, become familiar with STEM school setting through observing and discussing the school environment and by developing and teaching inquiry-based lessons.

**MATH 2020 Introduction to Differential Equations: 3 semester hours**

Prerequisite: MATH 2000. Topics will be chosen from: linear differential equations, equations with constant coefficients, laplace transforms, power series solutions, systems of ordinary differential equations.

**MATH 2300 Introduction to Discrete Structures: 3 semester hours**

Prerequisites: MATH 1100 or MATH 1800, and CMP SCI 1250. This course treats fundamental mathematical concepts in discrete structures useful for computer science. Topics include logic, sets, equivalence relations and partitions, functions, elementary number theory, cardinality, basic combinatorial methods, trees and graphs.

**MATH 2450 Elementary Linear Algebra: 3 semester hours**

Prerequisite: MATH 1100 or MATH 1900. An introduction to linear algebra. Topics will include complex numbers, geometric vectors in two and three dimensions and their linear transformations, the algebra of matrices, determinants, solutions of systems of equations, eigenvalues and eigenvectors.

**MATH 2510 Structure of Mathematical Systems II: 3 semester hours**

Prerequisites: MATH 1150. Topics include an introduction to probability, statistics, and displays of data; a study of elementary geometry, including points, lines, planes, angles, properties of triangles, properties of quadrilaterals, other 2- and 3-dimensional shapes; similarity; measurement and conversions; Pythagorean Theorem; perimeter; area; surface area, and volume. This course does not apply towards the elective requirements for any of the majors, minors or related areas in mathematics and statistics.

**MATH 3000 Discrete Structures: 3 semester hours**

Prerequisites: MATH 1800 or MATH 1100, and CMP SCI 1250 or equivalent. This course introduces fundamental concepts and important data structures in Discrete Mathematics and serves as an important foundation for subsequent courses in Computer Science. It provides a formal system on which mathematical reasoning is based, and various problem-solving strategies with emphasis on the algorithmic approach (both iterative and recursive). Topics include logic, sets, functions and relations; methods of proof, including mathematical induction; elements of number theory; order of growth and basic analysis of algorithms efficiency; recurrence relations; basic counting methods; graphs and trees. This course does not apply towards the elective requirements for any of the majors, minors or related areas in mathematics and statistics.

**MATH 3250 Foundations of Mathematics: 3 semester hours**

Prerequisites: MATH 1900 and CMP SCI 1250. The course will focus on developing an understanding of proofs and rigorous mathematical reasoning. Topics will include logic, sets, relations, functions, number theory, and counting methods.

**MATH 3320 Applied Statistics: 3 semester hours**

Prerequisites: MATH 1320. The course will cover topics including multiple regression, analysis of variance, generalized linear models, and applications of these methods. Using R for statistical analysis will be part of the course.

**MATH 3520 Structure of Mathematical Systems III: 3 semester hours**

Prerequisites: MATH 2510. Topics from MATH 1150 and MATH 2510 are continued. Other topics include integers and the real number system, relations and functions, coordinate system and linear equations, congruence, geometric constructions, geometric proofs, isometries, tessellations, and trigonometry. This course does not apply towards the elective requirements for any of the majors, minors or related areas in mathematics and statistics.

**MATH 4005 Exploratory Data Analysis with R: 3 semester hours**

Prerequisites: (MATH 1100 or MATH 1800) and (ANTHRO 3220 /SOC 3220 or BIOL 4122 or CRIMIN 2220 or ECON 3100 or MATH 1320 or POL SCI 3000 or PSYCH 2201). This course covers data analysis methods with R. It introduces the basic goals and techniques of the data science process, methods of characterizing and visualizing data and building predictive and inferential models. R will be introduced at the beginning of the class and then used throughout the rest of the class.

**MATH 4010 Financial Mathematics I: 3 semester hours**

Prerequisites: MATH 1900 or MATH 1100, and MATH 1320 or SCMA 3300 (or equivalents). This course introduces the theory of interest, annuities (certain), annuities with differing pay periods, amortization schedules, and sinking funds.

**MATH 4020 Financial Mathematics II: 3 semester hours**

Prerequisite: MATH 4010. This course introduces the premium-discount formula for bonds, bond amortization, term structure of interest rates, and pricing theory for options.

**MATH 4030 Applied Mathematics I: 3 semester hours**

Prerequisite: MATH 2020 and MATH 2450. Topics chosen from Fourier series, special functions, partial differential equations, and boundary value problems.

**MATH 4060 Applied Differential Equations: 3 semester hours**

Prerequisites: MATH 2020 and MATH 2450. The study of ordinary differential equations and partial differential equations is continued with applications in such areas as physics, engineering and biology.

**MATH 4070 Introduction to Nonlinear Optimization: 3 semester hours**

Prerequisites: MATH 1320, MATH 2000, MATH 2450 and (MATH 3000 or MATH 3250). This course will introduce the theory, methods, and applications of nonlinear optimization. It will cover convex functions, convex analysis, linear and quadratic programs, semidefinite programming and other optimization problems. Topics may include duality theory, algorithms of descent method, Newton's method and interior-point methods, and applications to signal processing, statistics and other fields will be covered. Credit cannot be earned for both MATH 4070 and MATH 5070.

**MATH 4080 Introduction to Scientific Computation: 3 semester hours**

Prerequisites: MATH 2000 and MATH 2450. This course will introduce fundamental algorithms in numerical linear algebra, matrix factorizations including SVD and QR, direct and iterative methods for solving linear systems, least squares problems and eigenvalue problems. Other topics covered will be chosen from numerical integration and differentiation, iterative methods for ODEs and PDEs, Discrete Fourier transform and FFT, spline smoothing and kernel smoothing. Credit cannot be earned for both MATH 4080 and MATH 5080.

**MATH 4090 Introduction to High-dimensional Data Analysis: 3 semester hours**

Prerequisites: MATH 1320, MATH 2000 and MATH 2450. This course introduces several advanced classical and modern techniques for modeling and analysis of high-dimensional datasets with low-dimensional structures. The topics covered in this course include principal component analysis, factor analysis, clustering-based methods, and sparse and low-rank recovery theory and algorithms. Credit cannot be earned for both MATH 4090 and MATH 5090.

**MATH 4100 Real Analysis I: 3 semester hours**

Prerequisites: MATH 3250, or CMP SCI 3130, or consent of instructor. This course provides an introduction to real analysis in one variable. Topics include the real number system, limits, continuity, differentiability, and sequences and series of functions.

**MATH 4160 Complex Analysis I: 3 semester hours**

Prerequisites: MATH 2000 or consent of the instructor. This course introduces complex numbers and their geometrical representation, point sets, analytic functions of a complex variable, complex integration, Taylor and Laurent series, residue theorem, and conformal mapping.

**MATH 4200 Mathematical Statistics I: 3 semester hours**

Prerequisites: MATH 1320 and MATH 2000. Introduction to the theory of probability and statistics using concepts and methods of calculus.

**MATH 4210 Mathematical Statistics II: 3 semester hours**

Prerequisites: MATH 4200. Continuation of MATH 4200. Sampling distributions, estimation theory, properties of estimators, hypothesis testing, Neyman-Pearson Theorem, likelihood ratio tests, introduction of analysis of variance and linear models. Basics of some nonparametric procedures.

**MATH 4220 Bayesian Statistical Methods: 3 semester hours**

Prerequisites: MATH 1320, MATH 2000 or MATH 1100; or consent of the instructor. This course introduces Bayesian methods in data analysis and the use of the R language and BUGS. The first half of the course covers inferential theorems and computation methods on fundamental Bayesian statistics, such as estimation, hypothesis testing, MCMC methods, model selection and hierarchical modeling. The second half of the course concentrates on particular models used in practice, such as Bayesian generalized linear models, Bayesian two-factor ANOVA, Bayesian logistic and probit models.



**MATH 4225 Introduction to Statistical Computing: 3 semester hours**

Prerequisites: MATH 1320, MATH 2000 and MATH 2450. This course will introduce fundamental algorithms in Monte Carlo methods: random variable generation, Monte Carlo integration, Monte Carlo optimization, Markov chain Monte Carlo, Metropolis-Hastings algorithm, Gibbs sampler, Langevin algorithms and Hamilton Monte Carlo, perfect, iterated and sequential importance sampling. Other topics covered may include particle systems, hidden Markov models, parallel and cloud computing. Credit cannot be earned for both MATH 4225 and MATH 5225.

**MATH 4230 Numerical Analysis I: 3 semester hours**

Prerequisites: MATH 2020, MATH 2450, and the ability to program in an upper-level language. Solutions of equations, interpolation and approximation numerical differentiation and integration, and numerical solutions of initial value problems in ordinary differential equations. Selected algorithms will be programmed for solution on computers.

**MATH 4250 Introduction to Statistical Methods in Learning and Modeling: 3 semester hours**

Prerequisites: MATH 1320, MATH 2000 and MATH 2450. This course will introduce basic statistical principles and methods for modeling, inference, prediction and classification. The topics will be chosen from linear regression, basis expansion methods, kernel smoothing methods, model regularization, model selection and assessment, and other nonparametric methods. Credit cannot be earned for both MATH 4250 and MATH 5250.

**MATH 4260 Introduction to Stochastic Processes: 3 semester hours**

Prerequisites: MATH 4200. Basic theory and applications of stochastic processes. Markov chains, recurrent and transient states, stationary distributions, ergodic theorem, renewal processes, discrete martingales and stationary processes.

**MATH 4350 Theory of Numbers: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3000 or MATH 3250; or consent of instructor. This course examines the properties of integers, multiplicative functions, congruences, primitive roots, and quadratic residues.

**MATH 4390 Topics in Probability and Statistics: 3 semester hours**

Prerequisites: Consent of instructor. A seminar on special topics in probability and statistics to be determined by the interests of the instructor. May be repeated for credit provided different topics are studied.

**MATH 4400 Introduction to Abstract Algebra I: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3250 or CMP SCI 3130; or consent of instructor. This course introduces groups, rings, and fields, with an emphasis on groups and rings.

**MATH 4450 Linear Algebra: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3250 or CMP SCI 3130; or consent of instructor. This course focuses on topics selected from vector spaces, bases, linear transformations, matrices, canonical forms, eigenvalues, hermitian and unitary matrices, inner product spaces, and quadratic forms.

**MATH 4460 Introduction to Coding Theory: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3000 or MATH 3250. This course is an introductory course in coding theory. Topics may include linear codes, generator and parity check matrices, dual codes, weight and distance, encoding and decoding, and the Sphere Packing Bound; various examples of codes like the Hamming codes, Golay codes, binary Reed-Muller codes, and the hexacode; Shannon's theorem for the binary symmetric channel, upper and lower bounds on the size of linear and nonlinear codes; constructions and properties of finite fields, basic theory of cyclic codes; concepts of idempotent generator, generator polynomial, zeros of a code, and defining sets, special families of BCH and Reed-Solomon cyclic codes as well as generalized Reed-Solomon codes. Credit cannot be granted for both MATH 4460 and MATH 5460.

**MATH 4500 Special Readings: 1-10 semester hours**

Prerequisites: 6 credit hours at the Math 4000 level and consent of the instructor. Advanced topics in Mathematics. May be repeated for credit if the topic differs.

**MATH 4550 Combinatorics: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3000 or MATH 3250; or consent of instructor. This course introduces advanced counting methods including the use of generating functions for the solution of recurrences and difference equations. Additional topics may include: graphs and trees, combinatorial designs, combinatorial games, error-correcting codes, and finite-state machines.

**MATH 4580 Mathematical Logic: 3 semester hours**

Prerequisites: MATH 2450 and one of MATH 3250, CMP SCI 3130, or PHIL 4460; or consent of instructor. This course focuses on a study of the logic of mathematics by the axiomatic method, with a development of the propositional calculus and restricted predicate calculus emphasizing its application to the foundations of mathematics.

**MATH 4660 Foundations of Geometry: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3250 or CMP SCI 3130; or consent of instructor. This course focuses on a development of portions of Euclidean geometry from a selected set of axioms, including a discussion of consistency, independence, categoricity, and completeness of the axioms.

**MATH 4670 Introduction to Non-Euclidean Geometry: 3 semester hours**

Prerequisites: MATH 2000, MATH 2450, and either MATH 3250 or CMP SCI 3130; or consent of instructor. This course focuses on a summary of the history of the non-Euclidean geometries and a study of hyperbolic plane geometry.

**MATH 4800 Introduction to Topology: 3 semester hours**

Prerequisites: MATH 2000 and either MATH 3250 or CMP SCI 3130; or consent of instructor. This course focuses on the study of topological spaces, including the concepts of limit, continuity, connectedness, compactness, etc. Special emphasis is placed on, and examples taken from, the space of real numbers.

**MATH 4890 Topics in Mathematics: 3 semester hours**

Prerequisite: Consent of instructor.

**MATH 4995 Internship in Actuarial Science: 1-3 semester hours**

Same as ECON 4995. Prerequisites: Junior standing and consent of program director. Supervised off-campus training in a private or public sector position in which the student applies the knowledge and skills learned in their actuarial science coursework. The internship is monitored by a faculty member and the student must provide a written report at the end of the project. This course may be repeated for a maximum of 6 credit hours.

**MATH 5060 Computational Harmonic Analysis: 3 semester hours**

Prerequisites: MATH 4030, MATH 4100 and MATH 4450. The course covers the basics of Fourier analysis and wavelet analysis. Topics include Fourier transforms and series, discrete Fourier transform, discrete cosine transform and their fast computational schemes, fast wavelet transform, and the lifting scheme. Additional topics include industrial standards for image compression and several aspects of signal processing.

**MATH 5070 Nonlinear Optimization: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce the theory, methods, and applications of nonlinear optimization. It will cover convex functions, convex analysis, linear and quadratic programs, semidefinite programming and other optimization problems. Topics chosen from duality theory, algorithms of descent method, Newton's method and interior-point methods, and applications to signal processing, statistics and other fields will be covered. Topics are identical to Math 4070 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be earned for both MATH 4070 and MATH 5070.

**MATH 5080 Scientific Computation: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce fundamental algorithms in numerical linear algebra, matrix factorizations including SVD and QR, direct and iterative methods for solving linear systems, least squares problems and eigenvalue problems. Other topics covered will be chosen from numerical integration and differentiation, iterative methods for ODE's and PDE's, Discrete Fourier transform and FFT, spline smoothing and kernel smoothing. Topics are identical to MATH 4080 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be earned for both MATH 4080 and MATH 5080.

**MATH 5090 High-dimensional Data Analysis: 3 semester hours**

Prerequisites: Graduate standing. This course introduces several advanced classical and modern techniques for modeling and analysis of high-dimensional datasets with low-dimensional structures. The methods covered in this course include principal component analysis, factor analysis, clustering-based methods, and sparse and low-rank recovery theory and algorithms. Topics are identical to MATH 4090 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be earned for both MATH 4090 and MATH 5090.

**MATH 5100 Real Analysis II: 3 semester hours**

Prerequisites: MATH 4100. Introduction to measure and integration. Topics include the Riemann-Stieltjes integral, Lebesgue measure, measurable functions, the Lebesgue integral, Radon-Nikodym and Fubini theorems and the basics of  $L_p$ -spaces.

**MATH 5140 Set Theory and Metric Spaces: 3 semester hours**

Prerequisites: MATH 4100 or consent of instructor. Naive set theory, cardinal arithmetic, ordinal numbers, the axiom of choice and equivalents, metric spaces, convergence, continuity, compactness, contraction principals and applications. Construction of completions and examples like real numbers and  $p$ -adic numbers. Other topics could include the Stone-Weierstrass theorem and metrizability theorems.

**MATH 5160 Complex Analysis II: 3 semester hours**

Prerequisites: MATH 4160 and either MATH 4100 or MATH 4800. A second course in complex analysis, emphasizing the theory of analytic functions, and including various topics like the Riemann mapping theorem, normal families, analytic continuation, representations of analytic functions, and elliptic functions.

**MATH 5225 Statistical Computing: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce fundamental algorithms in Monte Carlo methods: random variable generation, Monte Carlo integration, Monte Carlo optimization, Markov chain Monte Carlo, Metropolis-Hastings algorithm, Gibbs sampler, Langevin algorithms and Hamilton Monte Carlo, perfect, iterated and sequential importance sampling. Other topics covered may include particle systems, hidden Markov models, parallel and cloud computing. Topics are identical to Math 4085 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be earned for both MATH 4225 and MATH 5225.

**MATH 5250 Statistical Methods in Learning and Modeling: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce basic statistical principles and methods for modeling, inference, prediction and classification. The topics will be chosen from linear regression, basis expansion methods, kernel smoothing methods, model regularization, other nonparametric methods, and model selection and assessment. Topics are identical to MATH 4250 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be earned for both MATH 4250 and MATH 5250.

**MATH 5320 Topics in Statistics and its Applications: 3 semester hours**

Prerequisites: MATH 4210 or consent of instructor. The course studies classical and recently developed statistical procedures selected from areas including multivariate analysis, linear and non-linear models, nonparametric methods, and statistical learning. Emphasis is on applications of the procedures.

**MATH 5460 Coding Theory: 3 semester hours**

Prerequisites: Graduate standing. This course is an introductory course in coding theory. Topics may include linear codes, generator and parity check matrices, dual codes, weight and distance, encoding and decoding, and the Sphere Packing Bound; various examples of codes like the Hamming codes, Golay codes, binary Reed-Muller codes, and the hexacode; Shannon's theorem for the binary symmetric channel, upper and lower bounds on the size of linear and nonlinear codes; constructions and properties of finite fields, basic theory of cyclic codes; concepts of idempotent generator, generator polynomial, zeros of a code, and defining sets, special families of BCH and Reed-Solomon cyclic codes as well as generalized Reed-Solomon codes. Topics are identical to MATH 4460 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be granted for both MATH 4460 and MATH 5460.

**MATH 5500 Directed Readings: 1-6 semester hours**

Prerequisite: Consent of instructor. Independent readings at an advanced level.

**MATH 5550 Topics in Advanced Math for the Teacher: 3 semester hours**

Prerequisite: Consent of instructor. This course will look at various topics in Algebra, Analysis, and Geometry that will deepen a teacher's understanding of the Mathematics of the precollegiate curriculum. It can be taken more than once for credit.

**MATH 5600 Topics in Computation: 3 semester hours**

Prerequisite: Consent of instructor. The course will cover various advanced topics in computation, and can be taken more than once for credit. Examples of such topics are: computer graphics, computer architecture, theories of language, analysis of operating systems, numerical geometry and computer aided design, etc.

**MATH 5700 Topics in Applied Mathematics: 3 semester hours**

Prerequisite: Consent of instructor. The course will cover various advanced topics on applied mathematics, and can be taken more than once for credit. Examples of such topics are: fast transforms, digital filters, etc.

**MATH 5710 Topics in Analysis: 3 semester hours**

Prerequisites: MATH 5100 or consent of instructor. Topics selected from the areas of Fourier analysis, harmonic analysis, functional analysis, special functions, generalized functions, and partial differential equations. May be taken more than once for credit with consent of department.

**MATH 5770 Advanced Topics in Nonlinear Optimization: 3 semester hours**

Prerequisites: MATH 4070 or MATH 5070; or consent of the instructor. Topics chosen from theory and algorithms of Lagrange multipliers, algorithms for solving variational inequalities, forward-backward splitting algorithms and proximal alternating minimization algorithm for non-convex optimization problems.

**MATH 5820 Topics in Algebra: 3 semester hours**

Prerequisite: Consent of instructor. Topics selected from the theory of groups, rings, fields, algebras and other algebraic systems. May be taken more than once for credit with consent of department.

**MATH 5890 Advanced Topics in Mathematics: 3 semester hours**

Prerequisites: Consent of the instructor. The course will cover various advanced topics in mathematics, statistics, or data science. May be taken more than once if the topic differs.

**MATH 6900 Masters Thesis: 1-6 semester hours**

Prerequisite: Consent of instructor. Thesis work under the supervision of a faculty member. The course is designed for those students intending to present a thesis as part of their M.A. program. Students who do not write a thesis cannot apply MATH 6900 to a degree.

**MATH 7990 Ph.D. Dissertation Research: 1-9 semester hours**

Prerequisites: Completion of comprehensive examinations. May be taken for no more than nine hours.

## Music

### General Information

#### Degrees and Areas of Concentration

The Department of Music offers programs of study leading to the B.M. degrees in Music Education (and state teaching certification in grades K-12); Music Performance; Music Composition; Music Theory; Music with Elective Studies in business; and the B.A. degree in music.

Instruction in piano, organ, voice, and all band and orchestral instruments is given by full-time faculty and adjunct faculty who are also professional musicians. Some are members of the St. Louis Symphony Orchestra. Faculty recitals are regularly scheduled.

#### Music Minors

Minors in music and jazz studies are available.

#### Faculty

Music faculty members have received recognition for distinguished achievements in conducting, composition, and performance. The faculty is also recognized for high-profile research in musicology, music theory, and music education.

Applied instruction in piano, organ, voice, and all band and orchestral instruments is provided by full-time and adjunct faculty, all of whom are actively performing and/or recording musicians in the St. Louis region and beyond. Faculty recitals are regularly scheduled and are free for students to attend.

### Facilities

The Department has teaching, rehearsal, classroom, practice, and study spaces in the Music Building, the Arts Administration Building, and the nationally-renowned Touhill Performing Arts Center.

### Ensembles

Membership in Music Department performing ensembles (choral, orchestral, concert band, pep band, jazz, chamber) is open to UMSL students in all majors and minors. Admission to most ensembles is by audition (contact the individual ensemble's director for more information about participation guidelines).

EN PER 1410	The University Singers (MOTR PERF 102C)	1
EN PER 1500	University Orchestra (MOTR PERF 102O)	1
EN PER 1520	University Symphonic Band (MOTR PERF 102B)	1
EN PER 1530	University Wind Ensemble	1
EN PER 1541	Chamber Ensemble Brass	1
EN PER 1542	Jazz Combo	1
EN PER 1543	Chamber Ensemble Percussion	1
EN PER 1544	Chamber Ensemble Strings	1
EN PER 1545	Chamber Ensemble Voice	1
EN PER 1546	Chamber Ensemble Woodwinds	1
EN PER 1550	Jazz Orchestra	1
EN PER 1560	Opera Workshop	1

### Career Outlook

A degree in music prepares students for careers in a wide range of specialties such as professional performance, teaching in public schools, holding positions in the music industry (e.g. recording, publishing, radio programming, manufacturing), or working as a musical entrepreneur carving out your own niche in the field. Additionally, employers in many fields outside of music take notice of applicants with music degrees because they understand that self-discipline, collaboration, creativity, and adaptability to new and unfamiliar scenarios are central to the work of musicians, and these skills transfer to non-musical areas in beneficial ways.

UMSL music graduates are highly sought-after in the job market, particularly in K-12 school music programs in Missouri and Illinois. Many others develop busy careers as professional performers and composers. Those graduates who choose to seek further study in music have been readily accepted into many of the nation's top graduate programs. Others still are applying what they learned in their musical studies at UMSL in careers outside of music.

Additional information may be obtained by contacting the Department of Music: (314) 516-5980.

The Department of Music is accredited by the National Association of Schools of Music.

## Degrees

Music BA (p. 519)

Music BM

- Elective Studies in Business Emphasis (p. 521)
- Jazz Studies Emphasis (p. 523)
- Performance Emphasis (p. 532)
- Music Education Emphasis (p. 527)
- Music Theory (p. 530)
- Music Composition Emphasis (p. 525)

Music Education MME (p. 536)

## Minors

Jazz Studies Minor (p. 484)

Music Minor (p. 536)

## Courses

Courses offered by the department can be found at the links below:

Applied Music (AP MUS)

Ensemble Performance (EN PER)

Music Education (MUS ED)

Music History (M H L T)

Pedagogy (PDGOGY)

Practicum (PRACTM)

Theory and Composition (THRY COM)

## Philosophy

### General Information

Philosophy continues to keep alive the tradition begun by Socrates, Plato, and Aristotle of critically examining one's most cherished assumptions. Moreover, it deals with questions that are common to several areas of inquiry, such as art, ethics, the social sciences, the natural sciences, and the various professions. The study of philosophy also encourages logical precision, a heightened awareness of assumptions used in any discussion, and an attitude of both open-mindedness and responsible criticism toward new and unusual ideas. These skills are particularly useful for students planning careers in law, business, computer science, writing, or other fields requiring such disciplines of mind. For these reasons many students have found it useful to combine a major in another field with a major in philosophy. To accommodate such students, the department has a special program for double majors.

The philosophy faculty has an unusually wide range of research interests. Faculty members have written books and articles addressing not only the classical and traditional concerns of philosophy, but also contemporary controversies in the fields of law, psychology, sociology, political theory, biology, medical ethics, theology, logic, and philosophy of history as well. For their research in some of these areas, members have been awarded a number of national research grants, including fellowships from the National

Science Foundation, the American Council of Learned Societies, and the National Endowment for the Humanities.

In keeping with this emphasis on diversity, the department is represented by scholars trained in widely different approaches to philosophy, such as the analytic tradition, Continental idealism and existentialism, Marxist dialectic, and Asian modes of thought.

## Programs

### Degrees

Philosophy BA (p. 565)

Philosophy MA (p. 567)

Philosophy BA and MA Dual Degree Program (p. 566)

### Minors

Law and Philosophy (p. 485)

Philosophy (p. 567)

Philosophy of Science and Technology (p. 568)

## Courses

### ***PHIL 1021 Choice and Chance: 3 semester hours***

Same as MATH 1021. Prerequisites: A satisfactory score on the UMSL ALEKS Math Placement Examination, obtained at most one year prior to enrollment in this course. This course provides an introduction to inductive logic and the theory of probability in an organized and systematic way, so as to give students tools for more effective decision-making. We will introduce the probability calculus, basic concepts of utility theory, decision theory and different approaches to understanding probability. This course is designed to be accessible to students of all levels. Satisfies mathematics proficiency.

### ***PHIL 1030 Present Moral Problems: 3 semester hours***

This course will explore a range of ethical dilemmas with an eye towards living the best life. How should I live? What actions are right and wrong? How should I treat myself and others? In this class, we will consider these and other issues by investigating practical problems in daily life including: human rights, the environment, hunger and poverty, war and violence, racial and ethnic discrimination, gender roles and marriage, abortion, and euthanasia.

### ***PHIL 1050 Existentialism and Phenomenology: 3 semester hours***

The course will cover classic works by philosophers and writers in the existential and phenomenological traditions. Topics include free will, existential crisis, despair, anxiety, faith, the death of God, the origin of morals, authentic life, as well as the structure and content of conscious experience.

### ***PHIL 1091 Great Philosophers: 3 semester hours***

This online course introduces philosophy through a survey and examination of the ideas of fifteen of the most important figures in the history of the subject. From Socrates to Nietzsche, the questions, answers, and lives of the great philosophers are explored in a multimedia context. This course does not satisfy any of the requirements for philosophy major or minor.



**PHIL 1110 Western Philosophy I: Antiquity to the Renaissance: 3 semester hours**

Lectures and discussions tracing the development of western philosophy from its beginnings among the pre-Socratics through the Middle Ages and Renaissance. Philosophical ideas will be examined in the cultural and historical context: the Greek city-state, the rise of Christianity, etc.

**PHIL 1111 Western Philosophy II: Descartes to the Present: 3 semester hours**

Lectures and discussions on the development of western philosophy from Descartes (1596-1650) to the present. Philosophical ideas will be examined with an eye to their historical and cultural setting: the rise of modern science, the industrial revolution, the rise of capitalism, etc.

**PHIL 1120 Asian Philosophy: 3 semester hours**

Critical study of selected philosophical classics of India and China. This course fulfills the cultural diversity requirement.

**PHIL 1125 Islamic Philosophy: 3 semester hours**

An introduction to arabic philosophy in the islamic classical period (roughly from the mid-ninth through the twelfth centuries). We consider the philosophical and theological background, and then examine the thought of such notable Islamic philosophers as al-Kindi, Ibn Sina, al-Ghazali, and Ibn Rushd. Topics treated typically include proofs for the existence of God, whether the world is eternal or had a beginning, the nature of the soul and whether it is immortal, and the distinction between essence and existence. This course fulfills the cultural diversity requirement.

**PHIL 1130 Approaches to Ethics (MOTR PHIL 102): 3 semester hours**

A study and discussion of representative topics in moral philosophy such as moral skepticism, moral objectivity, theories of obligation and value, evaluation of social institutions and the relation between morality and science. Traditional and contemporary writers will be considered.

**PHIL 1150 Introduction to Philosophy (MOTR PHIL 100): 3 semester hours**

A study and discussion of representative topics in philosophy such as free will and determinism, concepts of mind and body, the basis of value judgments, knowledge and belief, and the possibility of constructing a world view.

**PHIL 1151 Love 101: 3 semester hours**

A critical review of what media personalities, philosophers, criminal justice experts, medical experts, neuroscientists, and psychologists have said about love and its place in our lives. Included will be such topics as the neuroscience of love, love across culture, love and commitment issues, marriage and the 'seven-year itch,' jealousy, domestic violence, and verbal abuse. Larger questions will include the role of love in the good life; the ethics of love; the psychological consequences of obsession, breakups and divorce; arranged marriages vs. freely chosen love; and the morality of laws that affect relationships between loving partners.

**PHIL 1159 Blind Spots: 3 semester hours**

This course provides a comprehensive introduction to cognitive biases, and to the strategies that can be used to address them. After an introductory unit devoted to the psychology of human reasoning, the course is structured around historical and contemporary case studies of particular biases, such as confirmation bias, negativity bias, and overconfidence.

**PHIL 1160 Critical Thinking (MOTR PHIL 101): 3 semester hours**

An introduction to the language and logical structure of arguments, the principles of sound reasoning, and application of these principles in a variety of contexts.

**PHIL 1180 Science vs. God: 3 semester hours**

This course examines whether religion and science are compatible, discusses the science-religion debate historically, and broaches philosophical issues surrounding belief, especially whether belief should be based in empirical evidence or in faith. Following these introductory course sessions, the class will discuss, in detail, topics in science and religion, including creation versus evolution; human nature (including abortion and stem cell research); the nature of sexuality and gender; the science of religion; morality; the environment from a religious perspective; meaningfulness in the universe; and finally, evidence for or against the afterlife, existence of a divinity, and divine providence.

**PHIL 1185 Philosophy of Religion: 3 semester hours**

A philosophical investigation of such problems as the nature of religious faith and experience, the relation of faith and reason, alternative concepts of deity and the problem of evil.

**PHIL 2185 Introduction to Religious Studies: 3 semester hours**

Same as HIST 2185. This course introduces students to the interdisciplinary study of religion. With an emphasis on research methods and perennial philosophical and historical topics, students will develop tools for investigating the various dimensions of worldview and gain exposure to many different religious traditions.

**PHIL 2249 Accounting Ethics: 3 semester hours**

Same as ACCTNG 2430. Prerequisites: ACCTNG 2400 and ACCTNG 2410 (may be taken concurrently). This course examines moral problems as they relate to the profession of accounting and the professional Codes of Conduct that govern the accounting profession. Students will apply the requirements of the Codes of Conduct to cases where ethical dilemmas or violations of professional standards may be present.

**PHIL 2251 Sexual Ethics: 3 semester hours**

A critical review of what philosophers, both classical and contemporary, have said about sexual experience and its place in our lives. Included will be such topics as sexual desire, sexual perversion, love and commitment, marriage and adultery, larger questions might include that role of sexual experience in the good life, issues of sexual privacy, and the morality of laws which regulate sexual activity.

**PHIL 2252 Crime and Punishment: 3 semester hours**

Same as CRIMIN 2252. This course will address fundamental conceptual, ethical, and moral issues that arise in the context of the legal system. Topics may include punishment, pre-trial detention, the death penalty, acquittal of persons who are legally guilty, plea bargaining, moral obligation to obey the law, and laws restricting civil liberties.

**PHIL 2253 Philosophy and Feminism: 3 semester hours**

Same as GS 2253. A critical examination of what various philosophers have said about issues of concern to women. Sample topics include oppression, racism, women's nature, femininity, marriage, motherhood, sexuality, pornography, the ethics of care.

**PHIL 2254 Business Ethics: 3 semester hours**

A critical survey from the perspective of moral theory of businesses and business practices. Topics vary but usually include some of the following: Whether the sole moral obligation of businesses is to make money; whether certain standard business practices, e.g., the creation of wants through advertising, are moral; whether businesses ought to be compelled, e.g., to protect the environment or participate in affirmative action programs.

**PHIL 2255 Environmental Ethics: 3 semester hours**

Examines such issues as the value of wilderness, our duties to animals and the natural world, pollution and development, environmental justice.

**PHIL 2256 Bioethics: 3 semester hours**

Same as GERON 2256. An examination of ethical issues in health care practice and clinical research and in public policies affecting health care. Topics include: abortion, euthanasia, health care, experimentation, informed consent and the right to health care.

**PHIL 2257 Happiness and the Meaning of Life: 3 semester hours**

This course is an accessible introduction to the historical and contemporary perspectives on happiness and the meaning of life in philosophy. It examines the nature of happiness by focusing on three major theories: happiness as pleasure, happiness as excellence and happiness as desire satisfaction. Other issues examined may include the relevance of virtue for happiness, the experience machine argument, the best way to pursue happiness as a personal or a policy goal, and other related topics.

**PHIL 2258 Medicine, Values, and Society: 3 semester hours**

Social, conceptual, and policy issues connected with medicine form the focus of the course. Topics may include: (1) role played by race & gender in design of research and distribution of care; (2) whether diseases are socially constructed categories reflecting the values of society; (3) development of social policies that offer universal access to health care; (4) the legitimacy of using psychotropic drugs to enhance life, rather than treat the disease. The course differs from Bioethics by emphasizing policy issues and their conceptual basis. Content of this course may vary.

**PHIL 2259 Engineering Ethics: 3 semester hours**

An examination of ethical issues in engineering using professional engineering codes as a starting point. The course will have a problem solving orientation, focusing on the analysis of particular cases. Actual high-profile cases such as the Challenger disaster will be considered, as well as hypothetical cases illustrating the more commonly encountered moral problems in engineering (such as accepting gifts from vendors). Topics include the engineer/manager relationship, engineers and the environment, honesty in engineering, and risk, safety, and liability.

**PHIL 2280 Minds, Brains, and Machines: 3 semester hours**

An introduction to basic philosophical issues in cognitive science. General topics include minds as computers; computers as minds, or the possibility of artificial intelligence that is truly intelligent; relationship between mental function and brain function. Some areas of current research, such as reasoning, vision, and emotion.

**PHIL 2380 Ethics in Science: 3 semester hours**

This course provides an overview of ethical issues in the practice of the sciences. Students will be introduced to basic concepts and theories of ethics and will apply them to contemporary and historical cases.

**PHIL 3286 International Business Ethics: 3 semester hours**

Same as INTL BUS 3286. The course will deal with moral issues that are raised by the increasing globalization of business. Apart from the general issue of whether this globalization is itself a good thing, we will discuss such issues as child labor, working conditions, safety standards, environmental policies, bribery and other 'corrupt' practices, respect for intellectual property, etc. Frequent short papers will be assigned.

**PHIL 3301 Ancient Philosophy: 3 semester hours**

Freshman admitted by consent of department. The principle philosophical doctrines of the ancient world, with special emphasis on the philosophies of Plato and Aristotle. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

**PHIL 3302 Medieval Philosophy: 3 semester hours**

A critical study of the important philosophies of the period from August to the Renaissance. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

**PHIL 3303 Early Modern Philosophy: 3 semester hours**

Principal figures in the development of rationalism, empiricism and skepticism in early modern Europe, from Descartes through Hume. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

**PHIL 3304 19th and 20th Century Philosophy: 3 semester hours**

This course covers major nineteenth and twentieth century philosophers. It may include such major figures as Hegel, Nietzsche, Mill, Pierce, James, Carnap, Wittgenstein, Russell and Sartre.

**PHIL 3320 Topics in Applied Ethics: 3 semester hours**

This course has variable content related to topics in applied ethics. Topics covered may include feminism, sexual ethics, environmental ethics, business ethics and bioethics. Philosophy majors should enroll in this course rather than any 2000-level applied ethics course. This course may be repeated for credit as long as the topic differs.

**PHIL 3327 Race and Racism: 3 semester hours**

This course will investigate the concepts of race and racism through an examination of metaphysical, psychological, ethical, and political problems associated with race.

**PHIL 3340 Knowledge and Reality: 3 semester hours**

This course introduces students to basic issues in contemporary metaphysics and theories of knowledge. Topics may include universals, causality, skepticism and truth.

**PHIL 3360 Formal Logic: 3 semester hours**

An introductory study of logical truth and deductive inference, with emphasis on the development and mastery of a formal system.

**PHIL 3378 Philosophy of Mind: 3 semester hours**

Prerequisites: Three hours of philosophy or consent of instructor. An introduction to philosophical issues pertaining to the mind. Topics may include how the mind relates to the body, how the mind represents the world, how the mind works, consciousness, and free will.

**PHIL 3380 Philosophy of Science: 3 semester hours**

An examination of science: what makes science special? Topics may include (but are not limited to): empiricism and of induction; paradigms and revolutions; explanation, causation and laws; realism versus instrumentalism; critiques of science such as those of feminism or postmodernism; and reductionism - ultimately is it all just physics?.

**PHIL 4401 Plato: 3 semester hours**

Prerequisites: Six hours of philosophy, a course in Ancient Philosophy recommended, graduate standing, or consent of instructor. A study of selected Platonic dialogues.

**PHIL 4402 Aristotle: 3 semester hours**

Prerequisites: Six hours of philosophy, a course in Ancient Philosophy recommended, graduate standing, or consent of instructor. A selective study of Aristotle's major works.

**PHIL 4407 Kant: 3 semester hours**

Prerequisites: Six hours of philosophy, PHIL 3304 or equivalent recommended, graduate standing or consent of instructor. A systematic study of the Critique of Pure Reason.

**PHIL 4410 Topics and Figures in the History of Philosophy: 3 semester hours**

Prerequisites: Nine hours of philosophy, graduate standing, or consent of instructor. In-depth examination of a particular topic, significant figure or philosophical movement from the history of philosophy. The philosopher or movement to be studied will be announced prior to registration. This is a variable content course and may be taken again for credit with the consent of the instructor and department chair.

**PHIL 4420 Topics in Non-Western Philosophy: 3 semester hours**

Prerequisites: PHIL 1120, graduate standing or consent of instructor. An extensive exploration of issues in some particular non-Western tradition (Islamic, Indian, or Chinese). This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 4421 The Analytic Tradition: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. PHIL 3305 and PHIL 3360 strongly recommended. Course studies in depth the development of analytic philosophy with a broad emphasis on its style and substance. Topics may include early writings that set the stage for this tradition (Frege, Moore, Russell), the basic texts of Logical Positivism (Carnap, Schlick, Neurath, Hempel), and later responses including reassessment of the doctrine, the revival of naturalism, and the "death" of philosophy (Wittgenstein, Quine, Sellars). This is a variable content course that may be taken again for credit with consent of the instructor and the department chair.

**PHIL 4430 Social and Political Philosophy: 3 semester hours**

Prerequisites: Six credit hours of philosophy required or consent of instructor. This course will cover several classic works of political theory, with a particular focus on the nature of justice, the proper extent of liberty, and social contract arguments for the legitimacy of state authority. Readings from Plato, Hobbes, Locke, Hume, Rousseau, Bentham, Mill, Marx and Rawls.

**PHIL 4435 Classical Ethical Theory: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. Significant contributions to moral philosophy from Plato and Aristotle to Bentham and Mill.

**PHIL 4437 Metaethics: 3 semester hours**

Prerequisites: Six credit hours of Philosophy. This course deals with questions regarding the foundations of ethics and the status of our ethical judgments about what's right and wrong, good and bad. The course will consider contemporary approaches to issues such as moral motivation, moral reasons, moral explanations, moral disagreement, moral knowledge, and moral supervenience, as well as various debates between realists and antirealists, and between cognitivists and expressivists.

**PHIL 4438 Recent Ethical Theory: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. A study of major contributions to twentieth-century ethics, including works by such writers as Moore, Dewey, Ross, Stevenson, Hare, and Rawls.

**PHIL 4440 Theories of Knowledge: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. An examination of concepts and problems involved in the characterization of knowledge. Specific topics will vary, but will usually include knowledge, belief, skepticism, evidence, certainty, perception, truth, and necessity.

**PHIL 4445 Metaphysics: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. An examination of selected metaphysical topics such as substance, universals, causality, necessity, space and time, free will, being, and identity.

**PHIL 4450 Special Readings in Philosophy: 1-3 semester hours**

Prerequisite: Consent of department. Independent study through readings, reports, and conferences. This is a content course and may be taken again up to a total of 6 credit hours with consent of instructor and department chair.

**PHIL 4451 Special Topics in Philosophy: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. A critical study of classical and/or contemporary contributions to a selected topic in philosophy. The topic to be considered will be announced prior to registration. This is a variable content course and can be taken again for credit with the consent of the instructor and the department chair.

**PHIL 4458 Ethics and the Computer: 3 semester hours**

Prerequisites: Six hours of coursework above the level of MATH 1030 in Math/Computer Science or at least six hours of philosophy or consent of instructor. An examination of ethical issues concerning the use of computers generally and software engineering in particular. Aims at developing awareness of these issues, and skills for ethical decision-making regarding them through careful, analytical methods. Typical issues include privacy, intellectual property, computer fraud, and others.

**PHIL 4460 Advanced Formal Logic: 3 semester hours**

Prerequisites: PHIL 3360, graduate standing, or consent of instructor. Rigorous study of major developments in contemporary logic. Emphasis is given to theoretical problems and some attention is devoted to philosophical issues arising from logic.

**PHIL 4465 Theory of Decisions and Games: 3 semester hours**

Same as POL SCI 4060. Prerequisites: Six hours of Philosophy and junior standing, or POL SCI 6401 (or the equivalent) or consent of the instructor. A study of rational decision-making, including games against nature, zero-sum games, and social choices. Topics will include the following: expected utility maximization, the Prisoner's Dilemma, Nash equilibria, and Arrow's theorem on the impossibility of a social welfare function. Parts of the course are technical in nature; a prior course in mathematics (e.g., finite mathematics, calculus, statistics or an economics course with a mathematical component), symbolic logic, or some other course with comparable mathematical content.

**PHIL 4474 Topics in Aesthetics: 3 semester hours**

Prerequisites: PHIL 3374, graduate standing or consent of instructor. Selected topics, such as vision and representation, musical aesthetics, and recent theorists. This is a variable content course that may be taken again for credit with the approval of the instructor and the department chair.

**PHIL 4478 Topics in Philosophy of Mind and Philosophy of Language: 3 semester hours**

Prerequisites: PHIL 3378 or six hours of other philosophy courses or consent of instructor. This course is an examination of selected topics at the interface of philosophical and psychological research. This is a variable content course and can be taken again for credit with the consent of the instructor and the department chair.

**PHIL 4479 Philosophy of Cognitive Science: 3 semester hours**

Prerequisites: PHIL 3378 or PHIL 4478 or nine hours of other philosophy courses or consent of instructor. An exploration of the philosophical foundations of cognitive science, a cooperative effort of philosophers, cognitive psychologists, brain scientists, computer scientists, and others to understand the relationship between the mind and the brain.

**PHIL 4480 Topics in Philosophy of Science: 3 semester hours**

Prerequisites: Consent of the instructor. An advanced introduction to the philosophy of science for advanced undergraduates in philosophy and graduate and professional students. Topics covered include scientific method, confirmation, explanation, the nature of theories, scientific progress, science criticism, ethics in science, and science and religion.

**PHIL 4487 Topics in Philosophy of Law: 3 semester hours**

Same as CRIMIN 4487. Prerequisites: CRIMIN 1100 and three hours of philosophy, graduate standing, or consent of instructor. An intensive study of recent philosophical debate about such issues as the authority of law, legal equality and justice, legal responsibility, self-determination and privacy, and legal punishment. This is a variable content course and may be taken again for credit with consent of the instructor and the department chair.

**PHIL 5400 Proseminar in Philosophy: 3 semester hours**

Prerequisites: Graduate standing. Required of all entering Graduate Students in the Fall Semester of the first full year of residency. Topics vary. Other graduate students may take this course with the permission of the instructor and the director of Graduate Studies in Philosophy. Students will be expected to write papers, give presentations, and join in class discussion.

**PHIL 5410 Seminar in Significant Figures in Philosophy: 3 semester hours**

Prerequisites: Graduate standing. In depth study of the work of a single philosopher. The philosopher selected will be announced prior to registration. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5478 Seminar in Philosophy of Mind: 3 semester hours**

Prerequisites: Graduate standing. Topics may include functionalism and physicalism; representation and the nature of propositional attitudes such as belief, desire, and the various emotions; folk psychology and knowledge of other minds; introspection and knowledge of one's own mind; conscious and unconscious mental states and processes. This is a variable content course and may be taken again for credit with consent of the instructor and the department chair.

**PHIL 5495 Thesis Research: 1-3 semester hours**

Prerequisites: Graduate standing or consent of instructor. May be repeated once for credit with the consent of the instructor and the department chair.

**PHIL 5521 Seminar in Analytic Philosophy: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. Intensive study of selected topics, texts, or individuals in historical or contemporary analytic philosophy. Topics may include, but are not limited to, Frege semantics, Russell's theory of definite descriptions, logical positivism, Wittgenstein's philosophy of language, Quine on the analytic/ synthetic distinction, Kripke possible-world semantics, theories of propositions, the analysis of knowledge, contextualism in epistemology and language, relative semantics, epistemic two-dimensionalism, conceivability vs. possibility, three-dimensionalism vs. four-dimensionalism, presentism vs. eternalism, and applications of core concepts in other areas of philosophy. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

**PHIL 5530 Seminar in Social and Political Philosophy: 3 semester hours**

An intensive study of contemporary philosophical debate about such issues such as civil liberty, economic justice, political decision-making, and state authority. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5533 Philosophy of Law: 3 semester hours**

Same as CRIMIN 5533. Prerequisite: Graduate standing or consent of instructor. Examination of origins of law and the basis for legal obligation. Specific consideration of the justification of punishment, morality and law, and legal reasoning.

**PHIL 5537 Seminar in Metaethics: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. The course deals with questions regarding the foundations of ethics and the status of our ethical judgements about what's right and wrong, good and bad. The course will consider contemporary approaches to issues such as moral motivation, moral reasons, moral explanations, moral disagreement, moral knowledge, and moral supervenience, as well as various debates between realists and antirealists, and between cognitivists and expressivists.

**PHIL 5538 Seminar in Ethical Theory: 3 semester hours**

Prerequisites: Graduate standing or consent of the instructor. In this course we will seek to answer questions from normative ethics or metaethics, which may include: What do all morally wrong actions have in common? What does the word 'wrong' mean? How, if at all, can we verify moral judgements? Are any moral judgements valid for all societies? Do we always have good reason to be moral?.

**PHIL 5540 Seminar in Epistemology: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. Close study of selected topics, texts, or individuals in epistemology. Topics may include (but are not limited to) theories of justification, naturalism in epistemology, and conceptions of knowledge. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5545 Seminar in Metaphysics: 3 semester hours**

Prerequisite: Graduate standing. Intensive study of a selected topic or problem area in metaphysics, e.g. mind-body identity, nature of the self, or conception of time. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5551 Special Readings in Philosophy: 1-3 semester hours**

Prerequisites: Graduate Standing, written consent of instructor. Independent study through readings, reports, and conferences. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5560 Seminar in Logic: 3 semester hours**

Prerequisites: Graduate standing. A focused study of topics in logic and/ or its history. Representative topics include: Aristotelian logic, modal logic, the Godel incompleteness theorems, relevance logic, paraconsistent logic, free logic. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5561 Graduate Formal Logic: 3 semester hours**

Prerequisite: Graduate standing; permission of the department. A rigorous introduction to formal logic that includes sentential calculus, predicate logic, and completeness proofs. May be taken for graduate credit only with permission of the graduate advisor and chair.



**PHIL 5579 Seminar in Philosophy of Cognitive Science: 3 semester hours**

Prerequisites: Graduate standing. General topics include the role of computation in cognitive science, the merits of symbolic computation and connectionism, the aims and methods of artificial intelligence, and the relationship between cognitive science and our everyday understanding of people. Specific topics may include perception, reasoning, consciousness, language, emotion, and will. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5580 Seminar in Philosophy of Science: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. Focus is on recent issues and controversies. Topics may include: theories and observation, models of explanation, confirmation, realism and antirealism, empiricism & naturalism, 'social construction' and feminist views of science. This is a variable content course and may be taken again with the consent of the instructor and the department chair.

## Physics and Astronomy

### General Information

The Department's faculty members have a diversity of interests and are active in various experimental and theoretical research areas. Students successfully completing this program will obtain an understanding of basic physics concepts, mathematical and problem-solving skills needed to solve basic physics problems, experimental skills in physics, astrophysics, or biophysics, and the ability to analyze and interpret scientific data and write scientific papers or reports.

### Degrees and Areas of Concentration

The Department of Physics and Astronomy offers superb course work leading to the following baccalaureate degrees:

- B.A. in Physics
- B.S. in Physics with emphasis areas of
  - Astrophysics
  - Engineering Physics
  - General Physics
  - Biophysics
- B.A. or B.S. in Physics with Master's Level Coursework for Secondary Teacher Certification
- B.S. in Secondary Education with Emphasis in Physics.

The Department of Physics and Astronomy also offers the following graduate degree programs:

- Master of Science in Physics: The M.S. program combines a sound basis in the fundamental areas of classical and modern physics from both a theoretical and an applied perspective. The program is designed to enable students with undergraduate backgrounds in physics or other technical areas to further their professional development and maintain and improve their technical development. Students receiving a M.S. in physics will obtain an understanding of advanced physics concepts and mathematical and problem-solving skills needed to solve advanced physics problems. Students are strongly encouraged to be involved with faculty research programs that will develop experimental skills in physics, astrophysics, or biophysics as well as experience in analyzing and interpreting scientific data and the writing of scientific papers, reports, or theses. The writing of a thesis is optional.

- Ph.D. in Physics: The Ph.D. degree is offered in cooperation with the Missouri University of Science and Technology Physics Department. Students must satisfy the Missouri S&T admission standards, and the Missouri S&T Qualifying Exam in Physics is required of University of Missouri-St. Louis Ph.D. students. However, all course work and dissertation research may be completed while the student is in residence at UMSL. In addition to obtaining an understanding of advanced physics concepts and mathematical and problem-solving skills needed to solve advanced physics problems, Ph.D. students are expected to conduct independent scientific research in physics, astrophysics, or biophysics while learning to analyze and interpret scientific data and write scientific papers, reports, and a dissertation.

### Fellowships and Scholarships

The Department of Physics and Astronomy offers a number of scholarships and awards.

- Physics & Astronomy Alumni Scholarship is available to new physics majors with outstanding ACT or SAT scores or continuing physics majors with outstanding academic records.
- The Richard D. Schwartz Scholarship is available to full-time junior/senior physics majors in good standing.
- The Don C. and Susan P. Winter Endowed Scholarship in Physics & Astronomy is available to physics majors with a minimum ACT score of 24 or who have a minimum GPA of 3.0.
- The Pierre Laclède/Physics & Astronomy Alumni Scholarship for undergraduate physics majors is available to physics majors who are also accepted into the Pierre Laclède Honors College.
- The Junior Alumni Award is awarded to physics majors who attain a 3.5 average or better in Physics 2111 and 2112. The award is given to the student in the semester they enroll in Physics 3200. Transfer students must take Physics 2112 on this campus to be eligible for this scholarship.
- The Senior Alumni Award is given to the outstanding physics major at the senior level with the highest GPA among the senior class.
- The Jeffrey Earl Award is given to an outstanding graduating senior every May.
- Undergraduate Research Awards are available for undergraduate physics majors who conduct a research project with a faculty mentor. Students receiving this award are required to enroll for at least one credit hour of Physics 3390 and present their research results at the campus Undergraduate Research Symposium in April.
- Teaching Assistantships with stipends may also be available to qualifying students to prepare them for the independent effort required in industry or graduate school.
- NASA Research Internships for the summer and academic year are available for students interested in astrophysics through the NASA/Missouri Space Grant Consortium.

### Departmental Honors

The Department of Physics & Astronomy will award departmental honors to those B.A. and B.S. degree candidates in Physics with an overall grade point average of 3.2 or better. They must also successfully complete at least 3 credits of PHYS 3390 (Research).

### Career Outlook

Many of our students have been successful in subsequent graduate studies in astrophysics and meteorology, as well as physics. Our alumni have pursued graduate studies and earned doctorate degrees

at institutions such as Cornell University, MIT, University of Wisconsin, University of Chicago and Washington University. Students who have elected for careers in industry are now working in a variety of settings for such firms as Emerson Electric, Hewlett Packard, IBM, Boeing and MEMC Electronic Materials (now SunEdison). Several former students are currently teaching physics in high schools around the St. Louis area.

## Degrees

Physics, Bachelor of Arts (p. 570)

Physics, Bachelor of Science

Emphasis Areas:

- Astrophysics (p. 571)
- Engineering Physics (p. 575)
- General Physics (p. 576)
- Biophysics (p. 573)

Physics, Master of Science (p. 579)

Physics, Doctor of Philosophy (p. 579)

## Minor

Physics (p. 578)

## Other Affiliated Programs

B.S. in Secondary Education with Emphasis in Physics. (p. 614)

## Astronomy Courses

### ***ASTRON 1001 Cosmic Evolution Introductory Astronomy (MOTR ASTR 100): 3 semester hours***

This course presents an overview of astronomy from the planets to the Big Bang. Topics include the celestial motions, planets and the formation of the solar system, stars and stellar evolution, galaxies, and cosmology. Students will be introduced to the latest discoveries and how they affect our understanding of the universe.

### ***ASTRON 1001A Cosmic Evolution/Introduction Astronomy (MOTR ASTR 100): 3 semester hours***

Overview of astronomy, from the planets to the Big Bang. Topics include the celestial motions, planets and the formation of the solar system, stars and stellar evolution, galaxies, and cosmology. Students will be introduced to the latest discoveries and how they affect our understanding of the universe. Three classroom hours per week. Same as ASTRON 1001 without the laboratory.

### ***ASTRON 1001L Introductory Astronomy Laboratory: 1 semester hour***

Prerequisite: ASTRON 1001 (may be taken concurrently). An introductory Astronomy laboratory to accompany ASTRON 1001. The format is a 2-hour laboratory session per week to enhance lecture material.

### ***ASTRON 1011 Planets and Life in the Universe: 3 semester hours***

Man's concept of the solar system from Stonehenge to Einstein; geology and meteorology of the planets of our solar system, with particular attention to results from the space program; exobiology--study of the possibilities of life on other worlds and the best method of communicating with it. Three lecture hours per week.

### ***ASTRON 1012 The Violent Universe and the New Astronomy: 3 semester hours***

A nontechnical course focusing on recent results which larger telescopes and the space program have made available. Pulsars, x-ray stars, and black holes; radio astronomy, our galaxy, and interstellar molecules; exploding galaxies and quasars; origin of the expanding universe. Three lecture hours and one observing session per week.

### ***ASTRON 1050 Introduction to Astronomy I (MOTR ASTR 100): 3 semester hours***

Prerequisites: MATH 1030 and MATH 1035. A survey of the history of astronomy from the ancient times to present. Theories for the formation and evolution of the solar system and the general features of the solar system and planetary motions are discussed. The physical concept of gravity is presented. The detailed properties of the planets, comets, and asteroids are reviewed, concentrating on recent results from space missions.

### ***ASTRON 1051 Introduction to Astronomy II: 3 semester hours***

Prerequisites: MATH 1030 and MATH 1035. A survey of astronomy beyond the solar system. Topics include stars and stellar evolution, neutron stars, and black holes. The physical concept of light and the design of telescopes is discussed in detail. The structure of the Milky Way Galaxy and the large scale structure of the universe are explored. Dark matter, quasars, and active galactic nuclei are discussed in the context of theories for the formation and evolution of the universe. Course does not need to be taken in sequence with ASTRON 1050.

### ***ASTRON 4301 Astrophysics: 3 semester hours***

Prerequisite: PHYSICS 3231 or consent of instructor. A moderately technical introduction to astrophysics. Topics will include: physics of stellar interiors and atmospheres; interpretation of stellar spectra; stellar evolution; radio astronomy; and cosmology.

### ***ASTRON 4322 Observational Astronomy: 4 semester hours***

Prerequisite: ASTRON 1050, ASTRON 1051 and PHYSICS 3231. Tools of the astronomer: telescopes, spectroscopy, photoelectric photometry. Students will work on a number of projects which will enable them to develop expertise in obtaining, reducing, and analyzing astronomical observations. Student night observing will be an important part of the course. This course is primarily for persons who are astronomy or physics majors or who have some equivalent background.

### ***ASTRON 5322 Intermediate Observational Astronomy: 4 semester hours***

Prerequisites: ASTRON 1050, ASTRON 1051, and PHYSICS 3231; or graduate standing. This course covers the tools of the astronomer: telescopes, spectroscopy, photoelectric photometry. Students will work on a number of intermediate projects, which will enable them to develop expertise in obtaining, reducing, and analyzing astronomical observations. Student night observing will be an important part of this course. This course is primarily for astronomy or physics majors. Students may not receive credit for both ASTRON 4322 and ASTRON 5322.

## Atmospheric Science Courses

### ***ATM SCI 1001 Elementary Meteorology: 3 semester hours***

Prerequisites: MATH 1020 or equivalent. This course covers atmospheric phenomena, weather, and climate. Topics include temperature, pressure, and moisture distributions in the atmosphere and dynamical effects such as radiation, stability, storms, and general circulation.

**ATM SCI 1001L Elementary Meteorology Laboratory: 1 semester hour**

Prerequisite: Must be concurrently enrolled in ATM SCI 1001. An introductory meteorology laboratory to accompany ATM SCI 1001. The lab exercises consist of current weather studies to enhance the material in ATM SCI 1001.

**ATM SCI 1002 Earth Climate Studies: 3 semester hours**

Prerequisite: MATH 1020 or equivalent. This course covers the physical foundations of the Earth's climate system, scientific evidence for climate change and its causes, and the effects of climate change on the ecosystem of the Earth. This course satisfies the information literacy general education requirement.

**Geology Courses****GEOL 1001 General Geology: 3 semester hours**

This course looks at earth materials and processes, including geological aspects of the resource/energy problem.

**GEOL 1001L General Geology Lab: 1 semester hour**

This geology laboratory involves identification of common rocks and minerals.

**GEOL 1002 Historical Geology: 3 semester hours**

This course is a study of changes in geography, climate, and life through geological time. This study includes the origin of the continents, ocean basins, and mountains in the light of continental drift.

**GEOL 1002L Historical Geology Lab: 1 semester hour**

Prerequisites: GEOL 1002 (may be taken concurrently). This course is a Geology laboratory, which primarily involves the description and identification of fossils.

**GEOL 1053 Oceanography (MOTR PHYS 110): 3 semester hours**

The atmospheric and ocean circulations; the chemistry and geology of the deep sea; and their effects on the distribution of marine organisms.

**Physics Courses****PHYSICS 1001 How Things Work (MOTR PHYS 100): 3 semester hours**

Can baseball players hit home runs more easily when the weather is hot and humid? This course provides a practical introduction to understanding common life experiences by using physical intuition and basic ideas of physics. Powerful scientific principles are demonstrated through topics ranging from airplane wings to compact disk players, from lightning strikes to lasers.

**PHYSICS 1011 Basic Physics I: 3 semester hours**

Prerequisites: MATH 1030 and MATH 1035 required, MATH 1100 or MATH 1800 strongly recommended, concurrent enrollment in PHYSICS 1011L recommended. This course is specifically designed for students in health and life sciences covering the topics in classical mechanics such as kinematics, Newton's laws, energy, momentum and oscillations. This course will not fulfill the PHYSICS 2111 requirement for physics, chemistry, and engineering majors.

**PHYSICS 1011L Basic Physics I Laboratory: 1 semester hour**

Prerequisite: PHYSICS 1011 (may be taken concurrently). This laboratory course accompanies PHYSICS 1011, which is specifically designed for students in health and life sciences covering topics in classical mechanics such as kinematics, Newton's laws, energy, momentum and oscillations.

**PHYSICS 1012 Basic Physics II: 3 semester hours**

Prerequisites: PHYSICS 1011, concurrent enrollment in PHYSICS 1012L recommended. This continuation of PHYSICS 1011 is specifically designed for students in health and life sciences covering electricity, magnetism, light, optics and waves. This course will not fulfill the PHYSICS 2112 requirement for physics, chemistry, and engineering majors.

**PHYSICS 1012L Basic Physics II Laboratory: 1 semester hour**

Prerequisites: PHYSICS 1012 (may be taken concurrently). This laboratory course accompanies PHYSICS 1012, which is specifically designed for students in health and life sciences, covering electricity, magnetism, light, optics and waves.

**PHYSICS 1099 Windows on Physics: 1 semester hour**

A seminar designed to introduce physics majors to research areas in physics and physics-related fields in the Department of Physics and Astronomy. In addition to fundamental areas of physics, the areas of astrophysics, biophysics, materials science, and nanotechnology will be included. Career opportunities for students with physics degrees will be discussed and the physics curriculum will be reviewed. The course meets weekly and is required of all physics majors and minors who are transfer students.

**PHYSICS 2010 Introduction to Inquiry Approaches to STEM Education (STEP I): 1 semester hour**

Same as CHEM 2010, BIOL 2010, MATH 2010, and SEC ED 2010. Prerequisites: Concurrent enrollment BIOL 1821, BIOL 1831, CHEM 1111, CHEM 1121, PHYSICS 2111, PHYSICS 2112, MATH 1800, or MATH 1900 or have a declared STEM major. Students who want to explore teaching careers become familiar with lesson plan development by writing, teaching and observing lessons in a local school class. Students build and practice inquiry-based lesson design skills and become familiar with and practice classroom management in the school setting. As a result of the STEP I experiences students should be able to decide whether to continue to explore teaching as a career and ultimately finishing the remainder of the WE TEACH MO curriculum leading to teacher certification. The classroom observations and teaching represent a major field component and requires at least one two hour block of free time during the school day once a week.

**PHYSICS 2011 Designing Inquiry-Based STEM Experiences (STEP II): 1 semester hour**

Same as CHEM 2011, BIOL 2011, MATH 2011, and SEC ED 2011. Prerequisites: BIOL 2010, CHEM 2010, PHYSICS 2010, MATH 2010, or SEC ED 2010. Students explore teaching careers, become familiar with STEM school setting through observing and discussing the school environment and by developing and teaching inquiry-based lessons.

**PHYSICS 2111 Physics: Mechanics and Heat: 4 semester hours**

Prerequisites: MATH 1900 (may be taken concurrently). This course introduces students to the phenomena, concepts, and laws of mechanics and heat for physics majors and students in other departments. Three classroom hours and one hour discussion per week.

**PHYSICS 2111L Mechanics and Heat Laboratory: 1 semester hour**

Prerequisites: PHYSICS 2111 (may be taken concurrently). This laboratory course accompanies PHYSICS 2111, which covers the phenomena, concepts, and laws of mechanics and heat.

**PHYSICS 2112 Physics: Electricity, Magnetism, and Optics: 4 semester hours**

Prerequisites: PHYSICS 2111 and MATH 2000 (MATH 2000 may be taken concurrently). This course provides a phenomenological introduction to the concepts and laws of electricity and magnetism, electromagnetic waves, optics and electrical circuits for physics majors and students in other departments. Three hours of lecture and one hour of discussion per week.

**PHYSICS 2112L Electricity, Magnetism, and Optics Laboratory: 1 semester hour**

Prerequisites: PHYSICS 2112 (may be taken concurrently). This laboratory course accompanies PHYSICS 2112, which covers the phenomena, concepts and laws of electricity and magnetism, electromagnetic waves, optics and electrical circuits.

**PHYSICS 3200 Mathematical Methods of Theoretical Physics: 3 semester hours**

Prerequisites: PHYSICS 2112 and MATH 2000. Mathematical techniques specifically used in the study of mechanics, electricity, magnetism, and quantum physics are developed in the context of various physical problems. Course includes the topics of vector calculus, coordinate systems, the Laplace equation and its solutions, elementary Fourier analysis, & complex variables. Applications to electrostatics, mechanics, and fluid dynamics are emphasized. Three hours of lecture per week.

**PHYSICS 3221 Mechanics: 3 semester hours**

Prerequisites: PHYSICS 3200 and MATH 2020 (MATH 2020 may be taken concurrently). Advanced course covering single and many particle dynamics, rigid-body dynamics, and oscillations. Variational principles and Hamiltonian formulations of mechanics are covered. Three hours of lecture per week.

**PHYSICS 3223 Electricity and Magnetism: 3 semester hours**

Prerequisites: PHYSICS 3200 and MATH 2020 (MATH 2020 may be taken concurrently). Advanced course covering the rigorous development, from basic laws, of Maxwell's equations for electromagnetic fields along with applications of these equations. Topics covered are electrostatics and electrodynamics including currents, magnetic fields, motion of charged particles in fields and an introduction to electromagnetic waves. Three hours of lecture per week.

**PHYSICS 3231 Introduction to Modern Physics I: 3 semester hours**

Prerequisites: PHYSICS 2111, PHYSICS 2112, and MATH 2020 (may be taken concurrently) and PHYSICS 3200 strongly recommended. Photons and the wave nature of particles, wave mechanics, Schrodinger equation, with applications to atomic physics; and radiation; the physics of solids; elementary particles; special relativity; health physics. Three hours of lecture per week.

**PHYSICS 3281 Directed Readings in Physics: 1-5 semester hours**

Prerequisite: Consent of instructor. An independent study of special topics in physics. A paper may be required on an approved topic. Topics must be substantially different. Hours arranged.

**PHYSICS 3390 Research: 1-10 semester hours**

Prerequisite: Consent of department. Independent physics research projects arranged between student and instructor. Hours arranged.

**PHYSICS 4304 Introduction to Nanotechnology: 3 semester hours**

Prerequisites: PHYSICS 3231. This course presents a broad overview of the field of nanotechnology with an emphasis on physical phenomena involved with three main parts: Nanoscale Fabrication and Characterization (nano-lithography, self-assembly and self-organization, scanning probe microscopes); Nanomaterials and Nanostructures (low-dimensional materials, graphene, carbon nanotubes, quantum dots, nano-composites, etc); Select Applications (nanoscale and molecular electronics, nano-magnetism, nano-photonics, bio-inspired nanomaterials). The goal is to lay a foundation for a research career in the rapidly growing area of nanotechnology and to enhance student's competitiveness in the job market.

**PHYSICS 4305 Bayesian Data Analysis for the Sciences: 3 semester hours**

Prerequisites: Consent of instructor. This is a cross-disciplinary course in two parts. Part one covers Bayesian inference as applied to data analysis in general, with a special focus on the mathematics of model-selection in the physical and life sciences. Part two concentrates specifically on the Bayesian use of log-probability (i.e. information) measures to track order-disorder transitions in thermodynamics, and to track the evolution of subsystem correlations (via both digital and analog means) in a wide variety of complex systems. Expect weekly empirical observation exercises, and opportunities for asynchronous as well as synchronous collaboration.

**PHYSICS 4306 Nanoscience Practicals: 1-3 semester hours**

Studies of Nanoscience characterization, synthesis, modeling techniques designed for clients of these tools, as well as for technical users interested in a current overview. Course consists of a set of 1/3 semester modules. Check with the instructor on more specialized modules, (e.g. on materials microscopy), if interested. Each module will cover instrumentation, current applications, weaknesses, and will involve lab visits for hands-on experience, weekly web interaction and classroom hours.

**PHYSICS 4310 Modern Electronics: 3 semester hours**

Prerequisite: PHYSICS 2112. This course is an integrated recitation/laboratory study of modern analog and digital electronics with emphasis on integrated circuits, which consist of active and passive electrical circuit elements integrated on a single semiconductor substrate. This course includes the study of the properties of the various specialized electronic devices that are constructed with integrated circuits along with a study of the various circuit elements. This course has four contact hours of lecture/laboratory per week.

**PHYSICS 4311 Advanced Physics Laboratory I: 3 semester hours**

Prerequisite: Advanced standing with at least nine completed hours of Physics at or above the 3000 level. Physics majors are introduced to the experimental techniques used in research. A student will choose and do several special problems during the semester. Six hours laboratory per week.

**PHYSICS 4323 Modern Optics: 3 semester hours**

Prerequisite: PHYSICS 3223. A study of modern optics including diffraction theory, polarization, light propagation in solids, quantum optics, and coherence.

**PHYSICS 4331 Intro to Quantum Mechanics: 3 semester hours**

Prerequisites: PHYSICS 3200 and PHYSICS 3231. Photons and the wave nature of particles; wave mechanics, Schrodinger equation, operator and matrix formulations, and Dirac notation; applications to single particle systems, atomic physics, and spectroscopy.

**PHYSICS 4341 Thermal and Statistical Physics: 3 semester hours**

Prerequisites: MATH 2000 and PHYSICS 3231. Introduction to statistical mechanics, classical thermodynamics, and kinetic theory.



**PHYSICS 4343 Selected Topics in Physics I: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, PHYSICS 3231, PHYSICS 4341. Topics include special phenomena for research areas such as physics of waves, biophysics, nonlinear physics, geophysical fluid dynamics and the atmospheric sciences treated by methods of advanced mechanics, electromagnetism, statistical mechanics, thermodynamics and quantum mechanics. Three hours of lecture per week.

**PHYSICS 4347 Introduction to Biophysics: 3 semester hours**

Prerequisites: PHYSICS 3231, BIOL 1821, and BIOL 1831; or permission of instructor. This course is an introduction to the application of physical principles to problems in biology. The course may cover topics such as molecular biophysics (e.g., ion transport, protein folding, molecular motors), collective dynamics and self-assembly of biological systems, nonlinear dynamics and electrophysiology in the heart and brain, and physics-based approaches to modeling gene networks and evolutionary dynamics. Students will complete a final project investigating a particular area of biophysics. Students may not receive credit for both PHYSICS 4347 and PHYSICS 5347.

**PHYSICS 4350 Computational Physics: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, PHYSICS 4331 and MATH 2450. This course explains how to solve physics-based problems using computational techniques. Mechanics, electrodynamics, and quantum physics problems are solved by (1) numerically solving ordinary and partial differential equations, (2) using Fourier analysis, and (3) solving eigenvalue problems.

**PHYSICS 4351 Elementary Solid State Physics: 3 semester hours**

Prerequisites: PHYSICS 4331. Theoretical and experimental aspects of solid state physics, including one-dimensional band theory of solids; electron emission from metals and semiconductors; electrical and thermal conductivity of solids.

**PHYSICS 4353 Physics of Fluids: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, and PHYSICS 4341, or consent of instructor. Dynamical theory of gases and liquids. Course covers the mathematical development of physical fluid dynamics with contemporary applications.

**PHYSICS 4358 Introduction to Global Geodynamics: 3 semester hours**

Prerequisites: PHYSICS 3221 and PHYSICS 3223. This advanced course covers the development, from basic laws, of equations describing the many geodynamic processes underpinning geological modeling and geological data. Topics covered are paleomagnetism, plate tectonics, viscoelastic media, heat transfer, gravity, fluid mechanics, rheology, faulting, and geochronology.

**PHYSICS 4370 Relativity and Cosmology: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223 and PHYSICS 3231. An introduction to Einstein's general theory of relativity. Topics will include special relativity in the formalism of Minkowski's four dimensional space-time, Principle of Equivalence, metric description of curved space, geodesic equation, Einstein Field Equation, black holes, and cosmology.

**PHYSICS 4381 Directed Readings in Physics: 1-10 semester hours**

Prerequisite: Consent of instructor. An independent study of special topics in physics for senior undergraduates or graduate students.

**PHYSICS 5306 Advanced Nanoscience Practicals: 1-3 semester hours**

Prerequisites: Graduate standing in physics or consent of instructor. Advanced studies of Nanoscience characterization, synthesis, and modeling techniques designed for clients of these tools, as well as for technical users interested in a current overview. The course consists of a set of 1/3 semester modules. Check with the instructor on more specialized modules, (e.g. on materials microscopy), if interested. Each module will cover instrumentation, current applications, and weaknesses and will involve lab visits for hands-on experience, weekly web interaction and classroom hours.

**PHYSICS 5345 Nonlinear Dynamics and Stochastic Processes: 3 semester hours**

Prerequisites: PHYSICS 3221 and PHYSICS 4341 and consent of instructor. Dynamical systems; theory of oscillations; introduction to bifurcation theory and chaos in dissipative systems with applications in physics and biology; introduction to stochastic processes with applications in physics, chemistry and biology; dynamics of nonlinear systems perturbed by noise; noise-induced phase transitions; linear and nonlinear time series analysis. Three classroom hours per week.

**PHYSICS 5347 Intermediate Biophysics: 3 semester hours**

Prerequisites: Graduate standing, PHYSICS 3231, BIOL 1821 and BIOL 1831 or permission of instructor. This course applies physical principles to problems in biology. Topics may include molecular biophysics (e.g., ion transport, protein folding, molecular motors), collective dynamics and self-assembly of biological systems, nonlinear dynamics and electrophysiology in the heart and brain, and physics-based approaches to modeling gene networks and evolutionary dynamics. Students will complete a final project investigating a particular area of biophysics. Students will be expected to design projects containing a significant component of original research. Students may not receive credit for both PHYSICS 4347 and PHYSICS 5347.

**PHYSICS 5350 Intermediate Computational Physics: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, PHYSICS 4331 and MATH 2450; or graduate standing. This course explains how to solve physics-based, intermediate-level problems using computational techniques. Mechanics, electrodynamics, and quantum physics problems are solved by (1) numerically solving ordinary and partial differential equations, (2) using Fourier analysis, and (3) solving eigenvalue problems. Students may not receive credit for both PHYSICS 4350 and PHYSICS 5350.

**PHYSICS 5353 Intermediate Physics of Fluids: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, and PHYSICS 4341; or graduate standing. This course covers intermediate level dynamical theory of gases and liquids. This course examines mathematical fluid dynamics along with some contemporary applications. Students may not receive credit for both PHYSICS 4353 and PHYSICS 5353.

**PHYSICS 5357 Fundamental Particles and Forces: 3 semester hours**

Prerequisites: PHYSICS 3223, PHYSICS 3231, and PHYSICS 4331, may be taken concurrently Introduction to nuclear and particle physics. Nuclear phenomenology and models; high energy particle accelerators and detectors; phenomenology of strong, electromagnetic and weak interactions; symmetry principles; quark compositions of strongly interacting baryons and mesons; gauge theories and the standard model of particle interactions; grand unification.

**PHYSICS 5358 Intermediate Global Geodynamics: 3 semester hours**

Prerequisites: Graduate standing, PHYSICS 3221 and PHYSICS 3223 or permission of the Instructor. This course intermediate course covers the development of equations describing the many geodynamic processes underpinning geological modeling and geological data. Topics covered may include paleomagnetism, plate tectonics, viscoelastic media, heat transfer, gravity, fluid mechanics, rheology, faulting, and geochronology. Students will complete a final project investigating a particular area of geodynamics. Students will be expected to develop a more advanced project. Students may not receive credit for both PHYSICS 4358 and PHYSICS 5358.

**PHYSICS 5370 Intermediate Relativity and Cosmology: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, and PHYSICS 3231; or graduate standing. Topics will include special relativity in the formalism of Minkowski's four dimensional space-time, Principle of Equivalence, geodesic equation, Einstein Field Equation, black holes, and cosmology. Differential geometry from metric description to Riemann curvature tensor will be studied.

**PHYSICS 5402 Introduction to Mathematical Physics: 3 semester hours**

Prerequisites: Graduate standing in physics or consent of instructor. A course covering mathematical techniques as applied in advanced theoretical physics including generalized vector spaces and their dual spaces, linear operators and functionals, generalized functions, spectral decomposition of operators, tensor analysis, and complex variables. Three hours of lecture per week.

**PHYSICS 5403 Principles of Mathematical Physics: 3 semester hours**

Prerequisites: Graduate standing in physics or consent of instructor. Boundary value problems; Sturm-Liouville theory and orthogonal functions; Green's function techniques; and introduction to group theory with emphasis on representations of Lie Algebras. Three hours of lecture per week.

**PHYSICS 6300 Master's Thesis: 3 semester hours**

Prerequisite: Consent of instructor. Thesis work under the supervision of a faculty member. The course is designed for those students intending to present a thesis as part of their M.S. program. Students who do not write a thesis cannot apply PHYSICS 6300 to a degree. This course transfers to the Cooperative Ph.D. program as three research credits.

**PHYSICS 6400 Special Problems: 1-5 semester hours**

Must have faculty mentor and approval of Department Chairperson. A study of special topics in physics for graduate students.

**PHYSICS 6401 Special Topics: 1-4 semester hours**

Prerequisite: Consent of instructor. This course is designed to give the department an opportunity to test a new course.

**PHYSICS 6409 Theoretical Mechanics I: 3 semester hours**

Prerequisite: PHYSICS 3221. Classical mechanics, methods of Newton, Lagrange, and Hamilton applied to motion of particles and rigid bodies, elasticity, hydrodynamics.

**PHYSICS 6410 Seminar: 1-3 semester hours**

Prerequisite: Approval of Department Chair. Discussion of current topics.

**PHYSICS 6411 Electrodynamics I: 3 semester hours**

Prerequisite: PHYSICS 3223. A rigorous development of the fundamentals of electromagnetic fields and waves. Electrostatics, magnetostatics, Maxwell's equations, Green's functions, boundary value problems, multipoles, conservation laws.

**PHYSICS 6413 Statistical Mechanics: 3 semester hours**

Prerequisite: PHYSICS 4331, PHYSICS 4341. A study of statistical ensembles; Maxwell-Boltzmann, Fermi-Dirac and Einstein-Bose distribution laws, application to some physical systems.

**PHYSICS 6423 Electrodynamics II: 3 semester hours**

Prerequisite: PHYSICS 6411. A continuation of PHYSICS 6411. Applications of time-dependent Maxwell's equations to such topics as plasmas, wave guides, cavities, radiation: fields of simple systems and multiples. Relativity: covariant formulation of Maxwell's equations and conservation laws, fields of uniformly moving and accelerated charges.

**PHYSICS 6461 Quantum Mechanics I: 3 semester hours**

Prerequisite: PHYSICS 4331. A study of the Schrodinger wave equation, operators and matrices, perturbation theory, collision and scattering problems.

**PHYSICS 6463 Quantum Mechanics II: 3 semester hours**

Prerequisite: PHYSICS 6461. Continuation of PHYSICS 6461. To include such topics as Pauli Spin-Operator Theory, classification of atomic states, introduction to field quantization, and Dirac Electron Theory.

**PHYSICS 6481 Physics of Solid State: 3 semester hours**

Prerequisite: PHYSICS 6461. Crystal symmetry, point and space groups, lattice vibrations, phonons, one-electron model, Hartee-Fock approximation, elementary energy band theory, transport properties, the Boltzmann equation, introduction to superconductivity, semiconductors and magnetism.

**PHYSICS 6490 Research: 1-10 semester hours**

Prerequisite: Must have a faculty mentor and approval of the department chair. Investigations of an advanced nature leading to the preparation of a thesis or dissertation.

**PHYSICS 6495 Continuous Registration: 1-6 semester hours**

Doctoral candidates who have completed all requirements for the degree except the dissertation, and are away from the campus must continue to enroll for at least one hour of credit each registration period until the degree is completed. Failure to do so may invalidate the candidacy.

## Political Science

### General Information

### Undergraduate Degrees and Areas of Concentration

The political science department offers undergraduate work leading to the B.A. degree in political science, B.A. degree in international relations, B.S. degree in public policy and administration, and, in cooperation with the College of Education, the B.A. in political science with teacher certification and the B.S. in education with an emphasis in social studies. (See College of Education section in this Bulletin for details.) Minors in political science are available to students who are majoring in another discipline and who have a special interest in law, government, politics, nonprofit, international relations, and public policy.

Principal areas of concentration include urban politics, American politics and behavior, international politics, comparative politics, public policy and administration, public law, and political theory. In many courses, emphasis is placed on the ways in which public policies are developed and administered. In addition to formal course work, internships are available in which the student can relate classroom learning to practical field experience.

## Graduate Degrees

The political science department also offers graduate courses leading to the M.A. and Ph.D. in political science. The M.A. program in political science offers advanced education for those seeking careers in government, business, secondary education, community, or not-for-profit agencies. The principal foci of the 33-hour program are public administration and public policy analysis/evaluation in the local, state, national, and international areas. The flexibility of the general master's degree allows for individualized programs in urban politics, prelegal education, American national government, comparative politics, international relations, and political theory.

The Ph.D. in political science emphasizes the study of theoretic, analytic, and substantive approaches to public policy. Core courses include research methods, normative and empirical theory, and policy processes and institutions. Doctoral candidates, in consultation with the faculty, develop a policy concentration, which can be interdisciplinary. Internships, when appropriate, may be a component. All successful doctoral candidates must complete a dissertation, which makes a significant contribution to knowledge in the field.

Most graduate classes are scheduled so those employed outside the university can participate in the programs on a part-time basis.

## Special Interdisciplinary Degree

The Department of Political Science also offers a master's degree in public policy administration (MPPA) in cooperation with the Department of Economics in the College of Arts and Sciences and the College of Business Administration.

## Cooperative Programs

Political science students may also study abroad, or obtain a Certificate in International Studies, European Studies, African Studies, East Asian Studies, Latin American Studies, Gender Studies, or Writing, in conjunction with their political science major. See Certificate Programs in this Bulletin.

Research in political science is encouraged for students at all levels. Assistance is available at UMSL's Public Policy Research Centers, International Studies and Programs. The department's membership in the Interuniversity Consortium for Political and Social Research provides access to a wide range of survey data on local-state-national, comparative, and international politics. In addition, extensive research opportunities are available within the metropolitan St. Louis area. Scholarships are available for qualified students; details can be obtained from the department office.

## Faculty

Political science faculty are nationally known scholars in their respective fields, dedicated to high-quality teaching and education. Department faculty members have received distinctions such as the Curators' Research Award, Curators' Distinguished Teaching Professor Award, Presidential Award for Research and Creativity, Chancellor's Award for Research and Creativity, Chancellor's Award for Excellence in Teaching, Governor's Teaching Awards, Burlington Northern Faculty Achievement Award, Emerson Electric Excellence in Teaching Award and E. Desmond Lee Endowed Professor Award. They have received research grants from such prestigious agencies as the John F. Kennedy Library, the Ford Foundation, the MacArthur Foundation, the National Science Foundation, the German Marshall Fund, the United States Department of Education, the Fulbright Program, and the United States Institute for Peace. The

faculty has published its research in more than 80 books and 400 articles in scholarly journals and is devoted to using its research findings to improve teaching.

In addition to helping students become more knowledgeable about politics and public policy, political science course work provides rich opportunities for students to develop a variety of practical skills--such as information-gathering and processing, analysis, research, decision making and oral and written communication--that are transferable to many career paths and job settings after graduation.

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## Graduate Certificates

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## Political Science Courses

***POL SCI 1100 Introduction to American Politics (MOTR POSC 101): 3 semester hours***

Introduction to basic concepts of government and politics with special reference to the United States, but including comparative material from other systems. Course fulfills the state requirement.

**POL SCI 1200 Foundations of Law: An Introduction to Legal Studies: 3 semester hours**

Same as CRIMIN 1200. As a broad liberal-arts approach to the study of law, this course is designed to familiarize students with legal ideas, legal reasoning, and legal processes. It also provides comparative and historical perspectives on law that will help explain legal diversity and legal change. Finally, it offers opportunities to explore some of the persistent issues in law and legal theory: for example, issues about the sources of law, the responsibilities of the legal profession, or the relative merits of the adversary system.

**POL SCI 1450 Labor, Work, Society, and Politics: 3 semester hours**

This course explores the evolution of work in the United States, and how labor unions shaped and influenced society, politics, and the workplace. This course examines the role of workers, (past present and future) unions' organizational structure, the role of collective bargaining, labor and the media, and labors' political and social campaigns.

**POL SCI 1500 Introduction to Comparative Politics (MOTR POSC 202): 3 semester hours**

This course introduces students to western and non-western systems. It examines similarities and differences in the basic political ideologies, structures, economies, social institutions and governmental processes of developed and developing countries. It also provides frameworks for understanding the cultures of the world that are the basis for formal economic and political institutions. In addition, the course examines the role of non-state institutions, including trans-national ones, in shaping national policies. It uses case studies from Africa, Asia, Latin America, as well as Europe, to enhance student understanding of comparative politics. This course fulfills the cultural diversity requirement.

**POL SCI 1800 World Politics (MOTR POSC 201): 3 semester hours**

An introduction to the field of international relations, covering such topics as nationalism, power, foreign policymaking, diplomacy, war, terrorism, arms control and disarmament, economic interdependence, the regulation of conflict, and other aspects of politics among nations.

**POL SCI 1820 Global Issues: 3 semester hours**

A freshman and sophomore level course designed to introduce students to a range of global concerns, including population, hunger, trade, energy, and the environment. The worldwide implications of these and other problems will be considered, as well as their effects on local communities such as st louis.

**POL SCI 1901 Capitalism in American History: 3 semester hours**

Same as HIST 1901. This course offers students the opportunity to approach America's political economy with tools different from those offered by more quantitative economic constructs. Students will analyze market processes through a three dimensional approach that focuses not just on market competition but also on relationships of command—the exercise of power in firms, among nations, and between social groups—and on processes of historical change from the late colonial era through the twentieth century.

**POL SCI 2102 Introduction to Gender Studies: 3 semester hours**

Same as SOC WK 2102, SOC 2102, GS 2102, HIST 2102. This core class is required for all Gender Studies Certificate earners. This class introduces students to cultural, political and historical issues that shape gender. Through a variety of disciplinary perspectives in the humanities, social sciences, and natural sciences, the course familiarizes students with diverse female and male experiences and gendered power relationships.

**POL SCI 2260 Law, Politics and Society: 3 semester hours**

Prerequisites: POL SCI 1100 or POL SCI 1200 or consent of instructor. This course examines the ways in which law in America connects with politics and society. The course will cover the litigation process, access to the courts, how and why individuals and groups bring litigation to pursue political and policy goals, and how lawyers, judges and other political actors use law to solve policy problems. Attention will be placed on current legal policy issues facing American society.

**POL SCI 2280 Judicial Politics: 3 semester hours**

Prerequisites: POL SCI 1100 or POL SCI 1200 or consent of instructor. This course is an examination of the American state and federal legal systems. Topics examined in this course include an analysis of the structure, organization and foundation of courts. Emphasis will be placed on the role of juries, judges, attorneys, litigants, and interest groups in the judicial system. The objective of the course is to evaluate courts as political institutions and analyze the policy-making role of judges.

**POL SCI 2290 Gender and the Law: 3 semester hours**

Same as GS 2290. This course examines the ways in which laws and interpretations of the laws affect gender equality in the United States. Emphasizing how traditional roles impact both women and men historically and currently, the course highlights major pieces of legislation and court rulings related to employment, economics, education, sexual harassment, pornography, rape, reproductive rights, and domestic relations. The course stresses the impact of federal and state institutions and non-governmental influences on equality. It also addresses gender representation in the legal profession and its effect on judicial decisions. (This course satisfies State requirements in American History and Government).

**POL SCI 2300 State Politics: 3 semester hours**

Prerequisite: POL SCI 1100 or consent of instructor. An examination of contemporary state politics in the U.S. Covers social, economic and political determinants of policies; federal-state-local relations, elections, interest groups and participation; executive legislative and judicial institutions and processes, policies and their impact.

**POL SCI 2320 African Americans and the Political System: 3 semester hours**

Prerequisites: POL SCI 1100 or consent of instructor. Examination of the status of African Americans in the context of the American political system. The course will focus on a number of issues, including: attitudes of various publics toward racial concerns; nature of problems in specific policy areas (e.g., unemployment, school desegregation, housing, poverty); representation of African Americans in governmental institutions and the private sector; and the role of African American leadership and civil rights groups in the political process. Course fulfills the state requirement.

**POL SCI 2330 The American Presidency: 3 semester hours**

Prerequisite: POL SCI 1100 or consent of instructor. This course studies the constitutional, political, legislative, and administrative roles played by the American chief executive in the development of public policy.

**POL SCI 2331 Congressional Politics: 3 semester hours**

Prerequisites: POL SCI 1100 or consent of instructor. This course examines the Congress of the United States, its history and evolution, its contemporary politics, and its role in the national policy-making process. Topics may include candidate recruitment, campaigns and elections, representation, committees, legislative leadership, roles and norms, voting alignments, lobbyists and interest groups, oversight of administration, and House-Senate comparisons. The course may also introduce students to the role of Congress in foreign policy, economic policy, and social-welfare policy.



***POL SCI 2350 Introduction to Urban Politics: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. Examination of structure and process of politics in the urban community, with emphasis on their relationships to community power structures.

***POL SCI 2370 The Politics of Identity and Social Justice: 3 semester hours***

Examines the meaning of social justice at the intersections of identities linked to race, ethnicity, class, gender, sexuality, age, ability, religion, and citizenship in the United States. We will dissect how the social construction of 'difference' within systems of power has resulted in social policies that marginalize some groups more than others. We will also discuss how oppression linked to delineations of difference can be challenged and socially reconstructed, and ultimately used as a source of political empowerment.

***POL SCI 2380 The Politics of Gender in the United States: 3 semester hours***

Same As GS 2380. Prerequisites: POL SCI 1100 or consent of instructor. This course examines the role of gender in political institutions, practices and policy in the United States, past for political equality, the relationship between gender and political participation, vote choice, and public opinion, and how legislative, executive, and judicial offices are gendered at the national, state, and local levels.

***POL SCI 2400 Public Administration: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. Survey of Public Administration, with reference to organization, financial administration, personnel management, judicial control of the administrative process.

***POL SCI 2420 Introduction to Public Policy: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. Study of differing approaches to understanding the public policy process. Course surveys the application of social science to public issues and problems.

***POL SCI 2430 Public and Nonprofit Organizational Behavior: 3 semester hours***

This course examines behavior in public and nonprofit organizations, including theory about how organizations work and how groups and individuals behave within organizations. Theories will be applied in an attempt to explain and predict behavior in an organizational context. Topics include motivation, leadership, goal complexity and ambiguity, organizational structure, culture, and communication in public and nonprofit organizations, as well as the relationship between public and private organizations.

***POL SCI 2500 Comparing Different Worlds: 3 semester hours***

This course focuses on the role of political institutions, economic structures and social groups in explaining differences in forms of government and levels of socio-economic development. It explores in detail one or more of these themes in cases drawn from developing and developed nations.

***POL SCI 2510 The Politics of European Union: 3 semester hours***

Prerequisite: POL SCI 1500 or consent of instructor. The European Union has become the driving force in European economic and social development. This course assesses the changing nature of national identity and national sovereignty in Europe. It compares and contrasts key public policies, (single market, welfare, migration, gender mainstreaming, 'democratic deficits'), along with core EU actors and institutions, and includes participation in the annual Midwest Model EU.

***POL SCI 2530 Political Systems of South America: 3 semester hours***

Prerequisites: POL SCI 1500 or consent of instructor. An introduction to the study of the political systems of South America. Examination of the cultural context that has shaped the political, economic, and social development of states in the region. This course satisfies the Cultural Diversity requirement.

***POL SCI 2540 Political Systems of Mexico, Central America and the Caribbean: 3 semester hours***

Prerequisites: POL SCI 1500 or consent of instructor. An introduction to the study of the political systems of Mexico, Central America, and the Caribbean. Examination of the cultural context that has shaped the political, economic, and social development of these countries. This course satisfies the Cultural Diversity requirement.

***POL SCI 2551 National Security Policy and Practice: 3 semester hours***

Same as MVS 2850. This simulation-driven course focuses on national security policies and the processes that put these policies into practice. It examines the elements that underpin national security policy and the processes employed by the US government for integrating and synchronizing those instruments in the pursuit of national security objectives.

***POL SCI 2580 African Politics: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. An introduction to the nature of societies, governments, and international relations in Africa. The course deals with forms of governance on the continent, regional groupings of states, and persistent conflicts within and among states. Problems of economic underdevelopment, food supplies, health and population trends, and cultural change are analyzed, along with the role of outside major power intervention. Fulfills the Cultural Diversity requirement.

***POL SCI 2590 Globalization: Prospects and Problems: 3 semester hours***

Globalization is a multidimensional construct, which calls for its study from a multidisciplinary perspective: i.e., economics, political science, history, and anthropology. The course will explore the forces undergirding economic globalization, as well as the factors that are giving rise to a global democratic dispensation. It will also examine previous forms of globalization including archaic globalization, proto-globalization, and modern globalization as well as so-called deviant globalization - the trade in illicit goods and services, which are also highly lucrative: e.g., human trafficking, prostitution, endangered species, narcotics, organ transplants, small arms, etc. Finally, the course will explore cultural globalization and the rise of a global 'pop culture.' The course will include a comparative analysis of the impacts of globalization in all of its manifestations on social groups (e.g., men and women, ethnic and racial minorities, young and old, classes), countries, and regions.

***POL SCI 2800 21st Century International Relations: 3 semester hours***

This course will provide a foundation for an informed discourse on theoretical perspectives that shape rapidly changing relations among nations in the 21st century. Students will utilize international political theory to examine methodologies of conflict resolution, peacekeeping, diplomacy, foreign policymaking, international security, global trade and immigration, and also consider current and future impacts of digital technology and cyber security.

***POL SCI 2820 United States Foreign Policy: 3 semester hours***

Prerequisites: POL SCI 1100 or POL SCI 1500, or consent of Instructor. Examination of the factors influencing the formation and the execution of American foreign policy, with a focus on specific contemporary foreign policy issues.

***POL SCI 2850 Gender, Power and International Politics: 3 semester hours***

This course provides an overview of key topics on the intersection of gender and international politics, including the emergence of international norms, and laws associated with gendered rights, sexuality, masculinity, and intersectionality. In particular, the course examines: 1) the influence of global social media activism and transnational migrations on international policy-making; 2) transnational advocacy movements and the emergence of new international laws guaranteeing a spectrum of gender rights.

***POL SCI 2860 Understanding Terrorism in the 21st Century: 3 semester hours***

Same as MVS 2860. This course seeks to provide insight into the use of terrorism, as a means to achieve a political end, in our current globalized environment. It will review various facets of terrorism including societal disturbances that allow terrorist organizations to flourish, various types of domestic and international non-state actors that use terrorism, terrorism as the next generation of warfare, and the global response to the threat of terrorism. Students will exit the course with a more complete understanding of the multi-faceted threat terrorism poses to our increasingly globalized society.

***POL SCI 2900 Studies in Political Science: 1-6 semester hours***

Selected topics in political science.

***POL SCI 3000 Political Analysis: 3 semester hours***

Prerequisites: MATH 1020 or higher. This course provides an introduction to political analysis, emphasizing both the logic of inquiry and practical methods. Students will learn about the construction and evaluation of theories that relate to real-world politics. Students will also have an opportunity for hands-on experience with qualitative and quantitative methods including graphics, descriptive statistics, cross-tabular and correlational analysis, hypothesis testing, and computer applications.

***POL SCI 3200 Constitutional Law: 3 semester hours***

Prerequisites: POL SCI 1100 or POL SCI 1200 or consent of the instructor. This course examines major U.S. Supreme Court cases on the constitutional structure of American government. Topics covered may include judicial review, separation of powers, federal-state relations commerce clause, and economic liberties. The course explores how the Supreme Court has interpreted these constitutional conflicts in light of changing times and emerging issues.

***POL SCI 3210 Civil Liberties: 3 semester hours***

Prerequisites: POL SCI 1100 or POL SCI 1200 or consent of instructor. This course examines major U.S. Supreme Court cases in the areas of civil liberties and civil rights. Topics covered may include the incorporation of the Bill of Rights into the Fourteenth Amendment, freedom of religion, freedom of speech, freedom of the press, freedom of association, the right to protest, discrimination in the contexts of race, gender and sexual orientation, and the right to privacy. The course explores how the Supreme Court has interpreted these fundamental rights in light of changing times and emerging issues.

***POL SCI 3220 Labor and Employment Law: 3 semester hours***

This course examines the primary labor and employment laws that govern employment relationships in the United States. Topics may include laws that govern private-sector employment relationships, including the National Labor Relations Act, the Fair Labor Standards Act, the Family, and Medical Leave Act, and parallel issues found in state and other federal laws.

***POL SCI 3260 The Supreme Court: 3 semester hours***

Prerequisites: POL SCI 1100, or POL SCI 1200 or consent of the instructor. An examination of the role, function and assertion of power by the U.S. Supreme Court in our constitutional democracy. Topics include an historical overview of the Supreme court, the process of selecting Supreme Court Justices, life in the Court, Supreme Court decision making, Supreme Court policymaking, implementation and impact of Court decisions and the role of the Supreme Court as a national policymaker.

***POL SCI 3330 Public Opinion and Political Participation: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. This course links Americans' political attitudes to their political participation (defined broadly) and explores how governmental institutions, the media, and social group affiliations affect political behavior. It also connects trends in public opinion and participation to the state of American democracy.

***POL SCI 3350 Political Parties and Elections: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. Development, organization, functions, activities of major and minor political parties, pressure groups, election administration, especially in the United States.

***POL SCI 3390 Studies in American Politics: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. Selected topics in American politics. May be repeated.

***POL SCI 3420 Public and NonProfit Personnel Management: 3 semester hours***

Prerequisite: POL SCI 1100, POL SCI 2400 or consent of instructor. A study of personnel practices in the public and nonprofit sectors, including recruitment, job development, labor relations, and administration of equal employment/ affirmative action programs.

***POL SCI 3430 Labor and Community Leadership: 3 semester hours***

This course examines leadership development principles through the lens of labor and social action leadership. Topics may include a variety of leadership theories as well as the intersection of race, gender, and multiculturalism with leadership and the resultant challenges and opportunities within social organizations and labor unions.

***POL SCI 3440 Public and NonProfit Budgeting: 3 semester hours***

Prerequisite: POL SCI 1100, POL SCI 2400; or consent of instructor. Budgeting is the study of 'who gets what' and who pays for it. This course examines the administration and politics of federal, state, and local government budgets. Students gain experience in interpreting budget documents and making budget choices, using electronic and other resources.

***POL SCI 3450 Urban Administration: 3 semester hours***

Prerequisites: POL SCI 1100 or consent of instructor. Study of administrative machinery and practices of metropolitan government, how metropolitan areas organize themselves to provide services, how urban policies are made and implemented, how budgeting and personnel recruitment processes operate, and how these relate to urban policies.

***POL SCI 3455 Metropolitan Planning: 3 semester hours***

Prerequisites: POL SCI 1100, POL SCI 2400, or consent of instructor. Why do metropolitan areas look the way they do? How much of this was 'planned?' Can/should metropolitan development be planned? Who should decide, and how? This course will examine the political processes in metropolitan areas as they relate to planning. We will look at a series of urban plans and see what they have (and have not) accomplished, and look at a range of alternative views of how planning might be done.

**POL SCI 3460 The Politics of Poverty and Welfare: 3 semester hours**

Prerequisite: POL SCI 1100 or consent of instructor. An examination of the structure of income inequality in the U.S. and public policies designed to redistribute wealth and to treat poverty. The history of welfare programs, the growth of the welfare state, and attempts to cut social spending are closely examined.

**POL SCI 3470 Negotiation, Collective Bargaining, and Dispute Resolution: 3 semester hours**

This course explores the process of collective bargaining (contract negotiations). Topics include the origins of the laws that govern the process, terminology, and basic strategies. In this course, students will take a close look at the legal constraints on the process, the economic factors influencing the power dynamics, the strategies and techniques of bargaining, and the dispute resolution processes.

**POL SCI 3480 Environmental Policy: 3 semester hours**

Prerequisites: POL SCI 1100 or consent of instructor. This course examines the process of environmental policy-making and key environmental issues. Topics include national and international policies toward land, air, and water pollution; energy use; solid and toxic waste disposal; climate change; population; biodiversity; conservation; and sustainability.

**POL SCI 3500 The Politics of the Middle East: International and National Dynamics: 3 semester hours**

Prerequisite: POL SCI 1100, POL SCI 1500 or consent of instructor. Survey of political movements, governments, and international conflicts in the Middle East. Islam, nationalism, ideologies and economic systems will be studied. The effect of oil and the military will also be considered. This course fulfills the cultural diversity requirement.

**POL SCI 3595 Studies in Comparative Politics: 3 semester hours**

Prerequisites: POL SCI 1500 or consent of instructor. Selected topics in comparative politics. May be repeated.

**POL SCI 3700 NonProfit Organizations and Public Policy: 3 semester hours**

Prerequisites: POL SCI 1100; Recommended: POL SCI 2420. This course explores the roles of nonprofit organizations in public policy issues through citizen advocacy and political participation. The course begins with an overview of the scope of the nonprofit sector and then examines its political and legal foundations in the U.S. Theories about civic engagement and the rights of association are considered. Students will gain practical knowledge about direct and grassroots lobbying by nonprofit organizations. Discussion and analysis of actual advocacy campaigns carried out through nonprofit effort will be included. The course also investigates the formation of nonprofit political action committees (PACs) and other so-called 527 organizations, as well as ethical abuses of the nonprofit form for political purposes.

**POL SCI 3710 NonProfits, Civil Society and Volunteerism: 3 semester hours**

Prerequisites: POL SCI 1100 and junior standing. This course introduces basic concepts about the role of voluntary action in democratic society, especially in the context of organizations in the nonprofit sector. Theories of civil society and social capital are explored. Selected approaches to leadership are considered, in addition to the variety of motivations for giving time and resources to the pursuit of social and political change. Students will gain practical skill development in the recruitment, training and utilization of volunteers. Through study of recent case examples, students will develop an appreciation for the characteristics of effective leadership and strategic use of volunteers. In addition, the course includes an overview of new technologies that are being used by voluntary organizations to enlist participation and strengthen commitment of supporters.

**POL SCI 3800 Media, Film, and International Politics: 3 semester hours**

Prerequisites: Junior level standing or consent of instructor. This course engages students in critical analysis of the role of media, film, and popular culture in shaping international public opinion and policy. Using digital media, film, and interdisciplinary texts, students will analyze how international politics is an integral part of popular culture in shaping norms of wars of intervention, digital violence, and global migration. This course fulfills the cultural diversity requirement.

**POL SCI 3830 International Political Economy: 3 semester hours**

Prerequisite: POL SCI 1100 or POL SCI 1500, or consent of instructor. This course provides an introduction to international political economy. In particular, it will focus on the politics of international trade, finance, and investment. It will analyze the relationships between developed and developing countries and it will assess the relative usefulness of alternative frameworks for studying international political economy.

**POL SCI 3850 International Organizations and Global Problem-Solving: 3 semester hours**

Prerequisites: POL SCI 1100, POL SCI 1200; or consent of the instructor. An introduction to the study of international organizations, this course focuses on relationships between nation-states and 'nonstate' actors in world politics, including global intergovernmental organizations such as the United Nations and non-governmental organizations such as multinational corporations. Students examine the roles of international institutions in economic development, resource management, and control of violence across national boundaries.

**POL SCI 3860 Studies in War and Peace: 3 semester hours**

Prerequisite: POL SCI 1100, POL SCI 1500, or consent of instructor. Exploration, development, and testing of theories about the causes and consequences of war, peace, and conflict among nations. A broad range of literature on war and peace will be reviewed, and applied to crisis situations in the international system.

**POL SCI 3880 Diaspora Politics, Transnational Remittances, and Global Citizenship: 3 semester hours**

Prerequisites: Instructor consent. This course examines how new and old global diaspora(s) from Europe, Asia, Africa and Latin America shape international relations and global commerce and will examine the impact of evolving international laws dealing with immigration, global remittances, trans-border commerce and citizenship.

**POL SCI 3890 Studies in International Relations: 3 semester hours**

Prerequisite: POL SCI 1100, POL SCI 1500, or consent of instructor. Selected topics in international relations. May be repeated.



**POL SCI 3900 Special Readings: 1-10 semester hours**

Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences. May be repeated.

**POL SCI 3940 Public Affairs Internship: 1-6 semester hours**

Prerequisite: Junior standing and consent of instructor. Independent study involving work with an appropriate public or private agency. A maximum of six credit hours may be earned.

**POL SCI 4040 Survey Research Practicum in Political Science: 3 semester hours**

Prerequisite: Junior standing and consent of the instructor. The execution of a sample survey, including establishing study objectives, sampling, questionnaire construction, interviewing, coding, data analysis, and presentation of results.

**POL SCI 4060 Theory of Decisions and Games: 3 semester hours**

Same as PHIL 4465. Prerequisites: Six hours of Philosophy and junior standing, or POL SCI 6401 (or the equivalent, or consent of the instructor). A study of rational decision-making, including games against nature, zero-sum games, and social choices. Topics will include the following: expected utility maximization, the Prisoner's Dilemma, Nash equilibria, and Arrow's theorem on the impossibility of a social welfare function. Parts of the course are technical in nature; a prior course in mathematics (e.g., finite mathematics, calculus, statistics or an economics course with a mathematical component), symbolic logic, or some other course with comparable mathematical content.

**POL SCI 4090 American Government for the Secondary Classroom: 3 semester hours**

Same as: SEC ED 4090. Prerequisites: Admission to the Teacher Education Program. TCH ED 3310 or the consent of the instructor. Adapts the themes and subject matter of American Government to the secondary classroom and trains teachers in techniques particularly designed to maximize the use of primary sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting methods of inquiry for use in an interactive classroom. Can be counted towards the Political Science major requirement, but not the American Politics subgroup. Counts towards Social Studies certification. Not available for graduate credit.

**POL SCI 4345 War Crimes, Genocide, and Justice in the 20th and 21st Centuries: 3 semester hours**

Same as SOC 4345, CRIMIN 4345, and MVS 4345. Prerequisite: ENGL 3100. This course provides advanced undergraduate and Master's level students a comprehensive overview of the subject of war crimes, crimes against humanity, genocide and legal responses to these crimes in the modern era. The goal of this course is to engage students in sustained, critical thought about these issues and to foster a deeper understanding of both the causes and consequences—legal, social and human—of these egregious crimes.

**POL SCI 4520 Mega-Cities and Diasporas: Understanding Global Migration: 3 semester hours**

Prerequisites: POL SCI 1500 or consent of instructor. This course examines the causes, dynamics and effects of mega-city development and migrating diasporas in a variety of national settings. Case studies include cities based in Europe, South America, China, India, Turkey, and parts of Africa, fostering global awareness, as well as an understanding of the 'interconnectedness' of politics, economics and climate change across the planet. This course fulfills the cultural diversity requirement.

**POL SCI 4850 International Law: 3 semester hours**

Prerequisite: POL SCI 1100, POL SCI 1500, or consent of instructor. Study of the international legal system, including the content and operation of the laws of war and peace, how law is created and enforced with regard to the oceans and other parts of the globe, and the relationship between international law and international politics.

**POL SCI 4900 Topics in Political Science: 3 semester hours**

Prerequisites: POL SCI 1100 or consent of instructor. Selected topics in Political Science.

**POL SCI 4901 Designing Surveys to Study Human Behavior and Attitudes: 1-3 semester hours**

Prerequisites: POL SCI 3000 or POL SCI 6401 or P P ADM 6010 or consent of instructor. The course allows students to apply research methods to designing a survey to study people's attitudes and behaviors with a focus on developing online surveys. The course may count toward an elective in the Policy Research and Analysis, Local Government Management, Non-Profit Management and Leadership, or Individualized Emphasis Areas for a Master of Public Policy Administration.

**POL SCI 4950 Senior Seminar in Political Science: 3 semester hours**

Prerequisites: POL SCI 3000 and senior standing. This course provides the integrative capstone experience required of all political science majors in their last year of coursework. The course emphasizes student-faculty interaction in a seminar format designed to engage upper-level students in a critical examination of a broad theme in political science, leading to the production of a major research paper. The course may be repeated for credit so long as the topic varies. This course is not available for graduate student credit.

**POL SCI 6300 Leadership and Management in NonProfit Organizations: 3 semester hours**

Same as P P ADM 6300 and SOC WK 6300. Prerequisites: Graduate standing required. Addresses the role and scope of the independent sector in the United States, as well as the leadership and management of nonprofit organizations within that sector. Topics include the economic and political scope of the independent sector, the role of volunteerism in a democratic society, and the role and scope of philanthropy. Topics in voluntary organization management and leadership include the dynamics, functions and membership structure of NPOs, especially staff-board and other volunteer relations; governance and management of NPOs; resource mobilization; and program development management and evaluation.

**POL SCI 6401 Introduction to Policy Research: 3 semester hours**

Procedures for testing explanations, including research design, principles of measurement, probability sampling, methods of data collection, and techniques for analyzing data.

**POL SCI 6402 Intermediate Techniques in Policy Research: 3 semester hours**

Prerequisite: Graduate standing and POL SCI 6401. Elementary distribution theory, statistical inference, and introduction to multiple regression. Emphasis on practical applications.

**POL SCI 6403 Advanced Techniques in Policy Research: 3 semester hours**

Prerequisite: Graduate standing and POL SCI 6402. Selected topics in policy research emphasizing forecasting, modeling and estimation.



**POL SCI 6404 Multi-Method Research Design: 3 semester hours**

Prerequisite: POL SCI 6403 or consent of instructor. Develops policy research skills that combine qualitative and quantitative social science tools and applies an appropriate mix of these tools to specific policy problems. Topics include alternative approaches to causal analysis, levels of analysis, triangulation from a variety of qualitative and quantitative research techniques, building contextual effects into multiple research projects, techniques for assessing alternative program theories and clarifying implicit assumptions, and meta-analysis of secondary data sources.

**POL SCI 6405 Directed Readings in Research Methods: 1-10 semester hours**

Independent study through readings, reports, research projects, and conferences.

**POL SCI 6410 Introduction to Policy Analysis: 3 semester hours**

Same as P P ADM 6000. Systematic development of a critical/analytic base for dealing with public policy.

**POL SCI 6415 Directed Readings and Research in Public Policy: 1-10 semester hours**

Same as P P ADM 6150. Prerequisite: Consent of instructor. Independent study through readings, reports, research projects, and conferences. May be repeated for credit, provided the subject matter is different.

**POL SCI 6418 Social and Economic Development Policy: 3 semester hours**

Same as SOC WK 6250. Prerequisites: SOC WK 5200 or equivalent, or consent of instructor. This course examines the economic and political urban processes that planners, policy makers, service organizations and advocates seek to influence. In this course students will develop skills in policy analysis and development. The course provides an introduction to three models of modern political economy, then seeks to deepen these broad analytic approaches by examining more recent policy developments in cities like St. Louis. This course also focuses on recent strategies to address issues such as employment, wages, housing, education, taxes and social services.

**POL SCI 6420 Proseminar in Public Law: 3 semester hours**

Study of judicial systems and processes (judges, courts, litigants, and juries) and evaluation of legal policies (Compliance, impact and deterrence).

**POL SCI 6422 Law, Courts and Public Policy: 3 semester hours**

Same as CRIMIN 6422. Prerequisites: Graduate standing. An analysis of the role of courts as policymaking institutions and the law as policy. We will explore the role of judges as policymakers, consider the attributes of courts, (both trial and appellate) that make them appropriate yet limited targets for advocates of reform, and the implementation and impact of court decisions. We will consider recent examples of judicial involvement in state and national policymaking. In addition, we will examine the role of lawyers and interest groups in selecting litigation rather than alternative political processes for policy change.

**POL SCI 6425 Directed Readings and Research in Public Law: 1-10 semester hours**

Independent study through readings, reports, research projects, and conferences.

**POL SCI 6430 Proseminar in American Politics: 3 semester hours**

Study of individual and group political behavior including socialization, participation, consensus formation, representation, legislative and judicial behavior.

**POL SCI 6431 Seminar in American Politics: 3 semester hours**

Research problems and design in American political process and behavior. May be repeated for credit when the subject matter is different.

**POL SCI 6435 Directed Readings and Research in American Politics: 1-10 semester hours**

Independent study through readings, reports, research projects, and conferences.

**POL SCI 6440 Public Administration: Theory & Practice: 3 semester hours**

Same as P P ADM 6400. The course examines major approaches to analyzing public policies and their administration with emphasis on the effects of administrative organization and procedures on policy decisions and their impact. Specific topics may include administrative accountability, inter-governmental relations, public private interaction, implementation processes, bureaucratic expertise, the legal environment of public administration, and public service and merit issue.

**POL SCI 6442 The Policy Process: 3 semester hours**

Prerequisite: Graduate standing. This course will examine how public policies are made in the United States. It will cover different theories of the policy process, including how political actors get the government to focus on certain problems, form coalitions to enact policies, and generate support for their implementation. Finally, the course will examine how well various policy models apply to different policy domains.

**POL SCI 6443 Health Care Policy: 3 semester hours**

Same as P P ADM 6430, GERON 6443, and SOC WK 6443.

Prerequisites: Graduate Standing or consent of instructor. Survey course examining current issues in health policy that face the nation. Policies are placed in a historical context to show how issues have been influenced by different political and economic conditions. Secondary consequences and limitations of current trends in health policy are explored.

**POL SCI 6444 Seminar in Public Policy and Aging: 3 semester hours**

Same as GERON 6444 and P P ADM 6444. Prerequisites: Consent of instructor. The study of specialized issues and methods related to federal, state, and local policies that affect the elderly. Potential policy areas to be covered include: housing, taxation, mental health, transportation, etc. May be repeated for credit, provided the subject matter is different.

**POL SCI 6445 Directed Readings and Research in Public Administration: 1-10 semester hours**

Independent study through readings, reports, research projects, and conferences.

**POL SCI 6448 Political Economy and Public Policy: 3 semester hours**

Prerequisite: Graduate standing. This course examines political economy in its contemporary manifestations as public choice and as the study of the ways in which institutional power shapes economic policies and performance. The course explores the origins and major concepts of political economy, the institutions of economic policymaking and economic policies in the U. S. It emphasizes the consequences of budget constraints inflation, unemployment and sectoral decline on the design and administration of public programs at all levels of government.

**POL SCI 6449 Human Resources in the Public Sector: 3 semester hours**

Same as SOC WK 6449 and P P ADM 6490. This course presents an overview of personnel and labor relations in the public sector. It places particular emphasis on issues which are unique to the public sector, such as the merit system, the questions of representative bureaucracy, and the constraints of personnel in the nonprofit sector. Course topics may include personnel reforms in the federal sector, equal employment and affirmative action policies, testing, selection, hiring, comparable worth, job evaluation and labor relations, including grievance arbitration and collective bargaining.

**POL SCI 6450 Proseminar in Comparative Politics: 3 semester hours**

Classification and typology of political systems; structural-functional analysis; political culture, ideology, affiliation and participation; decision-making processes; political roles; organization of authority.

**POL SCI 6451 Seminar in Comparative Politics: 3 semester hours**

Research problems and design in comparative politics. May be repeated for credit when the subject matter is different.

**POL SCI 6452 Public Policy of Conservation and Sustainable Development: 3 semester hours**

Same as BIOL 6250. Prerequisites: Graduate standing in Political Science or Biology and consent of instructor. Prior course in ecology is recommended. This course will introduce the student to concepts and techniques for formulating, implementing, and analyzing public policy with an emphasis on environmental concerns, conservation, and sustainable development. The course will be team taught by a political scientist and a biologist. Course materials will include case studies that demonstrate the special problems of environmental policymaking in developing and developed economies.

**POL SCI 6455 Directed Readings and Research in Comparative Politics: 1-10 semester hours**

Independent study through readings, reports, research projects, and conferences.

**POL SCI 6465 Directed Readings and Research in Political Theory: 1-10 semester hours**

Independent study through readings, reports, research projects, and conferences.

**POL SCI 6470 Proseminar in Urban Politics: 3 semester hours**

Same as: P P ADM 6470. Examination of the relationship between the social, economic and political systems of urban areas. Urban political structure, patterns of influence, political participation and communication and political change. Special attention to problems of access to and control of urban political systems.

**POL SCI 6471 Seminar in Urban Politics: 3 semester hours**

Research problems and design in urban and regional politics. May be repeated for credit when the subject matter is different.

**POL SCI 6475 Directed Readings and Research in Urban Politics: 1-10 semester hours**

Independent study through readings, reports and conferences.

**POL SCI 6480 Proseminar in International Relations: 3 semester hours**

Examination of various approaches to the study of international politics and foreign policy, focusing on studies of conflict, decision-making, international political economy, and related topics. Included are realist, idealist, and Marxist perspectives.

**POL SCI 6481 Seminar in International Relations: 3 semester hours**

Research problems and design in international politics. May be repeated for credit when the subject matter is different.

**POL SCI 6482 International Political Economy: 3 semester hours**

Prerequisite: Graduate standing. This course will examine the theoretical and policy issues of international political economy. In particular, it will focus on the politics of international trade, finance and investment. It will also analyze the themes of interdependence, hegemony, and dependency, as well as consider relations between developed and developing countries. Finally, the relative usefulness of liberal, Realist and Marxist approaches to the study of international political economy will be weighed.

**POL SCI 6485 Directed Readings and Research in International Relations: 1-10 semester hours**

Independent study through readings, reports, research projects, and conferences.

**POL SCI 6488 Studies in International Relations: 1-6 semester hours**

Prerequisites: Graduate standing or permission of instructor. Selected topics in international studies. May be repeated for credit provided the topic of the course is different each time.

**POL SCI 6490 Strategic and Program Planning for Nonprofit Organizations: 3 semester hours**

Same as P P ADM 6550 and SOC WK 6491. Prerequisites: Graduate standing or consent of instructor. Strategic and program planning enable an organization to concentrate on efforts and set priorities guided by a mission, a vision, and an understanding of its environment. Focus is on preparing a strategic plan and a program plan for a nonprofit organization and analyzing an organization's ability to deliver goods and/or services to its constituents in today's economic, social and political climate.

**POL SCI 6494 Thesis Research: 1-10 semester hours****POL SCI 6495 Internship: 1-6 semester hours**

Independent study involving work with an appropriate public or private agency.

**POL SCI 6499 Directed Dissertation Proposal Research: 3 semester hours**

Prerequisites: Consent of instructor. Supervised study through readings and research leading to the preparation of a dissertation proposal plan. Open to doctoral students who have completed at least 42 hours of course work. The proposal plan will indicate the following: statement of research question, importance of the problem, literature review and research design.

**POL SCI 7499 Dissertation Research: 1-10 semester hours****Public Policy Administration Courses****P P ADM 6000 Introduction to Policy Analysis: 3 semester hours**

Same as POL SCI 6410. Systematic development of a critical/analytic base for dealing with public policy.

**P P ADM 6010 Introduction to Policy Research: 3 semester hours**

Same as POL SCI 6401. Procedures for testing explanations, including research design, principles of measurement, probability sampling, methods of data collection, and techniques for analyzing data.

**P P ADM 6150 Directed Readings and Research in Public Policy: 1-10 semester hours**

Same as POL SCI 6415. Prerequisite: Consent of instructor. Independent study through readings, reports, research projects, and conferences. May be repeated for credit, provided the subject matter is different.

***P P ADM 6180 Governmental Budgeting and Financial Control: 3 semester hours***

Same as BUS AD 5450. Prerequisite: ACCTNG 5400. A study of municipal and federal financial control and budgeting procedures with emphasis on public policy. The impact of financial control on top management decisions and the effect of budget strategies on the allocations of public funds.

***P P ADM 6300 Leadership and Management in Nonprofit Organizations: 3 semester hours***

Same as POL SCI 6300 and SOC WK 6300. Prerequisites: Graduate standing required. Addresses the role and scope of the independent sector in the United States, as well as the leadership and management of nonprofit organizations within that sector. Topics include the economic and political scope of the independent sector, the role of volunteerism in a democratic society, and the role and scope of philanthropy. Topics in voluntary organization management and leadership include the dynamics, functions and membership structure of NPOs, especially staff-board and other volunteer relations; governance and management of NPOs; resource mobilization; and program development management and evaluation.

***P P ADM 6310 American Philanthropy and Nonprofit Resources Development: 3 semester hours***

Same as SOC WK 6310. Prerequisites: Graduate standing required. This course addresses the history, philosophy, roles and scope of philanthropy in the United States, including its role in the nonprofit, voluntary sector. It further examines the contemporary forces which impact philanthropy and charitable giving, both by institutions and individuals. The course examines the effective planning and management of development programs (e.g., annual giving), fundraising vehicles (e.g., mail solicitations) and the fund raising process, from planning through donor relations.

***P P ADM 6311 Staff Management Issues in Nonprofit Organizations: 1 semester hour***

Same as SOC WK 6311. Prerequisites: Graduate standing required. This course addresses issues involved in managing staff in nonprofit organizations. The course will cover the following topics: fundamentals of staff supervision; balancing supervisory processes with counseling and coaching; selecting, hiring, evaluating, and terminating staff; legal issues that affect these processes.

***P P ADM 6312 Legal Issues in Managing Nonprofit Organizations: 1 semester hour***

Same as SOC WK 6312. Prerequisites: Graduate standing required. This course addresses legal issues involved in managing and governing nonprofit organizations. The course will cover the following topics: The Board as steward of the organization; Director and officer liability; tax laws concerning charitable giving; legal issues in managing staff and volunteers (e.g., hiring, evaluating, and terminating employees); Missouri nonprofit law.

***P P ADM 6313 Financial Issues in Managing Nonprofit Organizations: 1 semester hour***

Same as SOC WK 6313. Prerequisite: Graduate standing required. This course addresses financial issues involved in governing and managing nonprofit organizations. The course will cover the following topics: Cash flow analysis; budgeting; fund accounting; cost accounting (determining costs for programs and services); understanding and using standard financial statements, including balance sheets, cash flow statements, statements of activity, and operating and capital budgets.

***P P ADM 6340 Seminar in City Administration: 3 semester hours***

This course provides an overview of the working environment of a city administrator and is jointly sponsored by the local city managers association. Professional city personnel make presentations to the students on six major topics: political structure, organizational structure, service delivery, finance, personnel policies and practices, and leadership. The course provides direct observation of city council meetings, visits to various city facilities, exposure to different philosophies and styles of city management, and provides students a chance to assemble facts, evaluate options, and present policy recommendations for real problems that local administrators face.

***P P ADM 6350 Issues in Urban Management: 3 semester hours***

Designed to evaluate management issues that confront managers in local government from a political perspective. The format will include an intense review and discussion of original case studies from actual local government situations. The specific focus of this course will vary. Course may be repeated.

***P P ADM 6400 Public Administration: Theory & Practice: 3 semester hours***

Same as POL SCI 6440. The course examines major approaches to analyzing public policies and their administration with emphasis on the effects of administrative organization and procedures on policy decisions and their impact. Specific topics may include administrative accountability, inter-governmental relations, public private interaction, implementation processes, bureaucratic expertise, the legal environment of public administration, and public service and merit issue.

***P P ADM 6430 Health Care Policy: 3 semester hours***

Same as GERON 6443, POL SCI 6443, and SOC WK 6443. Prerequisites: Graduate standing or consent of instructor. Survey course examining current issues in health policy that face the nation. Policies are placed in a historical context to show how issues have been influenced by different political and economic conditions. Secondary consequences and limitations of current trends in health policy are explored.

***P P ADM 6444 Seminar in Public Policy and Aging: 3 semester hours***

Same as GERON 6444 and POL SCI 6444. Prerequisites: Consent of instructor. The study of specialized issues and methods related to federal, state, and local policies that affect the elderly. Potential policy areas to be covered include housing, taxation, mental health, transportation, etc. May be repeated for credit, provided the subject matter is different.

***P P ADM 6470 Proseminar in Urban Politics: 3 semester hours***

Same as: POL SCI 6470. Examination of the relationship between the social, economic and political systems of urban areas. Urban political structure, patterns of influence, political participation and communication and political change. Special attention to problems of access to and control of urban political systems.

***P P ADM 6471 Seminar in Urban Politics: 3 semester hours***

Same as: POL SCI 6471. Research problems and design in urban and regional politics. May be repeated for credit when the subject matter is different.

**P P ADM 6490 Human Resources in the Public Sector: 3 semester hours**

Same as POL SCI 6449 and SOC WK 6449. This course presents an overview of personnel and labor relations in the public sector. It places particular emphasis on issues which are unique to the public sector, such as the merit system, the questions of representative bureaucracy, and the constraints of personnel in the nonprofit sector. Course topics may include personnel reforms in the federal sector, equal employment and affirmative action policies, testing, selection, hiring, comparable worth, job evaluation and labor relations, including grievance arbitration and collective bargaining.

**P P ADM 6500 Selected Topics in Public Policy Administration: 3 semester hours**

Prerequisites: Graduate Standing. Permission of instructor may be required. A seminar of selected issues and methods relating to public policy administration. May be repeated for credit, provided the subject matter is different.

**P P ADM 6501 Selected Topics in Nonprofit Management and Leadership: 3 semester hours**

Prerequisites: Graduate standing. Permission of instructor may be required. A seminar of selected issues and methods relating to nonprofit management and leadership. May be repeated for credit, provided the subject matter is different.

**P P ADM 6550 Strategic and Program Planning for Nonprofit Organizations: 3 semester hours**

Same as POL SCI 6490 and SOC WK 6491. Prerequisite: Graduate standing or consent of instructor. Strategic and program planning enable an organization to concentrate on efforts and set priorities guided by a mission, vision, and an understanding of its environment. Focus is on preparing a strategic plan and a program plan for a nonprofit organization and analyzing an organization's ability to deliver goods and/or services to its constituents in today's economic, social and political climate.

**P P ADM 6600 Managing People in Organizations: 3 semester hours**

Same as MGMT 5600. Prerequisites: Graduate standing or consent of instructor. The theoretical and research contribution of the behavioral sciences to management and administration are examined and applied to selected organizational situations. Areas to be considered from the standpoint of both individual and organizational performance are communication, motivation, conflict, decision-making, goal setting, leadership, organizational design, climate, development and control. Utilizing a systems perspective, the course attempts to develop in each student an ability to analyze and solve organizational problems.

**P P ADM 6750 Applied Research Design: 3 semester hours**

Prerequisites: At least one course in research design and statistics at the graduate level. The course offers a comparative study of research strategies with regard to data sources, data collection, and modes of analysis that are appropriate for program evaluation research. Attention is given to observational, survey, and quasi-experimental methodologies.

**P P ADM 6751 Applied Evaluation Project: 3 semester hours**

Prerequisites: P P ADM 6000, P P ADM 6010 or equivalents, P P ADM 6750 or equivalents. Independent study involving an evaluation project with an appropriate public or private or nonprofit agency.

**P P ADM 6800 Management Information Systems: 3 semester hours**

Same as INFSYS 5800. Prerequisites: Graduate standing. This course provides an overview of issues related to the management of information systems within organizations. Course topics may include the role of the Chief Information Officer, business value from emergent information technologies (IT), enterprise systems, the impact of IT on organizational competitiveness, managing IT-enabled projects, extracting business intelligence from big data, sourcing IT, cybersecurity, ethics, intellectual property rights, and societal impacts of IT.

**P P ADM 6850 E-Governance in the Public Sector: 1 semester hour**

Prerequisite: Graduate standing. This course addresses information technology in the public sector from a managerial perspective. Students will examine basic hardware, software, data, and information management issues from a managerial perspective. These topics may include web portal design, geographic information systems, database management, e-government, strategic design, and the use of information technology to address public policy questions.

**P P ADM 6900 Cases in Public Policy Administration: 3 semester hours**

Prerequisites: 24 hours of public policy administration courses, at least 15 of which are in core courses. This capstone course intensively analyzes public policy administration cases drawn from a variety of issues and settings.

**P P ADM 6950 Internship: 3 semester hours**

Independent study involving work with an appropriate public or private or nonprofit agency.

## Pre-professional Programs

Students at the University of Missouri-St. Louis may develop pre-professional study programs in either law or the health professions. With early and careful advising, students may develop an appropriate program to prepare for the intended professional study.

Students should seek pre-professional advisors in their interest area early in their academic careers to ensure development of sound, comprehensive study programs that fulfill the admission requirements of the professional program to which they wish to apply.

The following information on pre-professional study at UMSL is provided to give students minimal guidelines and assistance in planning a program.

For advisement and information, contact the Marcus Allen Advising Center in the College of Arts and Sciences, 303 Lucas Hall, 314-516-5501

### Pre-Law

Pre-law students at UMSL come from a variety of majors, including Art History, Criminal Justice, Economics, English, History, Philosophy, Political Science, and many more. Many of these majors offer pre-law tracks or minors, and you can identify yourself as a pre-law student at any time during your career at UMSL. The Pre-Law Committee of the American Bar Association (ABA) advises that a wide range of undergraduate majors can serve as a path to law school:

The ABA does not recommend any undergraduate majors or group of courses to prepare for a legal education. Students are admitted to law school from almost every academic discipline. You may choose to major in subjects that are considered to be traditional preparation for law school, such as history, English, philosophy, political science, economics or business, or you may focus your undergraduate studies in areas as diverse as art, music, science and



mathematics, computer science, engineering, nursing or education. Whatever major you select, you are encouraged to pursue an area of study that interests and challenges you, while taking advantage of opportunities to develop your research and writing skills. Taking a broad range of difficult courses from demanding instructors is excellent preparation for legal education. (Source: the American Bar Association ([http://www.americanbar.org/groups/legal\\_education/resources/pre\\_law.html](http://www.americanbar.org/groups/legal_education/resources/pre_law.html)))

After graduating from UMSL, students have gone on to attend law school locally at Saint Louis University, Washington University in St Louis, as well as at the University of Missouri-Columbia and University of Missouri-Kansas City. Graduates attend prestigious law schools outside the St Louis area as well.

There are hundreds of UMSL graduates who have gone to law school and now work as lawyers, judges, or in other careers in the legal profession. Many of them remain in the St Louis area, and the pre-law program at UMSL regularly brings them to campus to interact and share advice with students. By declaring yourself to be pre-law, you will receive updates about upcoming events and opportunities to meet and connect with alumni in the legal profession.

The pre-law advisor can assist you in selecting courses that will best meet your interests while also allowing you to develop the skills that are important for a successful law school application. For more information, please refer to the UMSL pre-law advising website.

## Pre-Health Sciences

The University of Missouri - St. Louis provides advising for students planning to continue their studies to become healthcare professionals. While there are no pre-health majors, the prerequisite classes necessary for entry into health professions schools are offered in both the Fall and Spring Semesters with some being offered in the Summer as well. This allows students to choose any major offered by UMSL to be completed while pursuing their desired pre-health track. While some professional programs might not require a baccalaureate degree, it is strongly recommended to complete one in order to be as competitive as possible when applying.

There are no requirements to declaring a pre-health track, but students that have attended UMSL for two semesters and whose GPA is below a 2.7 will no longer be considered on a pre-health track. Students are able to appeal to be reinstated on a pre-health track after one semester.

Programs that are covered by UMSL's pre-health advising include but are not limited to: medicine, dentistry, optometry, pharmacy, veterinary science, physician assistant, occupational therapy, physical therapy, chiropractic, and clinical lab science. For pre-health advising please contact 314-516-5501 for an appointment.

In addition to the courses listed below, students should actively seek out extracurricular opportunities. Such activities can include volunteering, shadowing, research, and organizational leadership. Students are encouraged to join some of the many on-campus organizations including one of the pre-health societies. Information about student organizations can be found at the Office of Student Life.

Since admission requirements may vary between schools, students should consult the catalogs<sup>1</sup> of the programs to which they intend to apply. Updated information may be found on the pre-health website: [www.umsl.edu/divisions/artscience/advising/prehealth/index.html](http://www.umsl.edu/divisions/artscience/advising/prehealth/index.html).

## Suggested Courses

Many health professions schools require or recommend the following undergraduate courses<sup>2</sup>:

### Biology

BIOL 1831	Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L)	5
BIOL 1821	Introductory Biology: Organisms and the Environment (MOTR BIOL 150L)	5
BIOL 2012	Genetics	3
BIOL 2482	Microbiology	3
BIOL 3622	Cell Biology	3
BIOL 1131	Human Physiology and Anatomy I	4
BIOL 1141	Human Physiology and Anatomy II	4

### Chemistry

CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
CHEM 1121	Introductory Chemistry II	5
CHEM 2612	Organic Chemistry I	3
CHEM 2622	Organic Chemistry II	3
CHEM 2633	Organic Chemistry Laboratory	2
CHEM 4712	Biochemistry	3

### Mathematics

Select courses at least through calculus, as appropriate for the major degree.<sup>2</sup>

MATH 1100 or MATH 1800	Basic Calculus Analytic Geometry and Calculus I	3-5
MATH 1320	Introduction to Probability and Statistics	3

### Physics

As appropriate for the degree chosen: <sup>2</sup>		8-10
PHYSICS 1011, PHYSICS 1011L, PHYSICS 1012 and PHYSICS 1012L		8
or		
PHYSICS 2111 & PHYSICS 2112	Physics: Mechanics and Heat and Physics: Electricity, Magnetism, and Optics	8

<sup>1</sup> The campus health professions advisor has copies of these catalogs. Call 314-516-5501 for an appointment.

<sup>2</sup> Consult with the health professions advisor to determine the appropriate course(s).

Since students are not confirmed for admission to professional schools until the science requirements for admission are fulfilled, students should meet the science requirements before the end of the junior year. To complete these requirements in time, BIOL 1831 and BIOL 1821, Introductory Biology I and II as well as CHEM 1111 and CHEM 1121, Introductory Chemistry I and II should be taken during their first three semesters.

Successful completion of these recommended courses also helps students prepare for required standardized exams.

Students should take the required national standardized examination early in their junior year as is appropriate for the exam: The Medical College Admission Test (MCAT) for Pre-Med students; the Dental Aptitude Test (DAT) for Pre-Dental students; the Optometry Admission Test (OAT) for Pre-Optometry students; and the Pharmacy College Admission Test (PCAT), (if required) for Pre-Pharmacy students; and the Graduate Record Exam (GRE) is generally sufficient for other professional healthcare school. (Students should consult with their intended professional school for appropriate test information.)

Each year the number of applicants to health profession schools exceeds the number of available places. Students should meet with Career Services and the various campus advising resources are available to students to explore alternative plans should they not be accepted.

## Pre-Optometry

The University of Missouri-St. Louis offers a four-year program of study leading to the Doctor of Optometry degree; this professional degree is administered by the College of Optometry. It is one of only 20 schools or colleges of optometry in the United States and the only one in the state of Missouri. This program, as a result, makes UMSL an ideal institution for Pre-Optometry education. Various programs are available for Pre-Optometry students as noted below.

Students may pursue a traditional 4 + 4 program, which is a bachelor's degree followed by the four-year graduate optometry program. In this case, students may pursue any bachelor's degree, as long as the pre-optometry requirements are met in biology, chemistry, math, physics, psychology and English.

Alternatively, the College of Arts & Sciences sponsors a 3+4 program in which the undergraduate degree is granted when the student satisfactorily completes the first semester of the professional program and has met all of the conditions for the specific undergraduate degree for which the student has applied. Most commonly, the degree awarded will be a Bachelors of Interdisciplinary Studies or a B.S. in Biology.

Students interested in this program must apply with the campus pre-health advisor and maintain a G.P.A. of 3.2. Some summer classes may be expected, and the student should be prepared to take the OAT by the end of their sophomore year.

For more information on admission requirements for the College of Optometry, please refer to the Optometry section of this Bulletin.

The recommend course schedule can be found below, any changes would need to be approved of by both the Pre-Health Advisor, and the College of Optometry:

Freshman					
Fall	Hours	Spring	Hours	Summer	Hours
ENGL 1100		3 CHEM 1111		5 BIOL 1131	4
MATH 1030		3 BIOL 1821		5 BIOL 1141	4
MATH 1035		2 MATH 1800		5	
PSYCH 1003		3			
General Education: Humanities		3			
INTDSC 1003		1			
	15		15		8
Sophomore					
Fall	Hours	Spring	Hours	Summer	Hours
PHYSICS 1011		3 PHYSICS 1012		3 Take the OAT	

PHYSICS 1011L	1	PHYSICS 1012L	1	Apply through OptomCAS	
BIOL 1831	5	CHEM 2612	3		
CHEM 1121	5	PSYCH 2201	4		
American History or Government Requirement	3	General Education: Cultural Diversity/ Humanities	3		
	17		14		0

Junior					
Fall	Hours	Spring	Hours	Summer	Hours
CHEM 2633		2 BIOL 4732		BIOL 3622	3
BIOL 2012		3 BIOL 2482		3 PHIL 2256	3
PSYCH 2211		3 BIOL 2483		2	
ENGL 3100 (Or Equivalent)		3 BIOL 4602 <sup>2</sup>		3	
PSYCH 3390 (Must be Neuroscience Related) <sup>1</sup>		3 General Education: Social and Behavioral Sciences		3	
	14			11	6

Senior	
Fall	Hours
OPTOM 8010	3
OPTOM 8020	4
OPTOM 8030	1
OPTOM 8040	4
OPTOM 8060	2
OPTOM 8090	1
OPTOM 8350	2
	17

Total Hours: 117

<sup>1</sup> May also be BIOL 4905 or CHEM 3905.

<sup>2</sup> May be any Biology 4000 level lecture.

## Psychological Sciences

### General Information

### Psychology Academic Advising Office

Undergraduate psychology majors and other students interested in majoring or minoring in Psychological Sciences should visit an Academic Advisor in the Psychology Academic Advising Office (Stadler 322) to receive specific information on degree requirements and course offerings, discuss questions about career options, and receive information about graduate work in Psychology. All students are encouraged to see a Psychology Academic Advisor regularly throughout their collegiate careers. It is especially important for all students who are within one calendar year of graduation to meet with a Psychology Academic Advisor. Students will minimize waiting time and will be assured one-to-one attention from an Academic Advisor by calling (314) 516-4561 to schedule an appointment. Office hours for Psychology Academic Advising can be obtained by e-mailing: psy\_advising@umsl.edu.

### Career Outlook

The undergraduate major in Psychological Sciences can provide the foundation for further training in psychology at the graduate level, the background necessary for graduate training in other fields such as the health professions, social work or counseling, or the liberal arts background necessary for entry level positions in many fields such as business, communication, and human services and mental health positions. To function specifically as a psychologist, a graduate degree is

required. For more career information please schedule an appointment with an Academic Advisor in the Psychology Academic Advising Office (Stadler 322; 314-516-4561; psy\_advising@umsl.edu). For additional information, visit the American Psychological Association website at www.apa.org.

## Facilities

The department has several animal and human experimental laboratories furnished with a wide range of psychophysiological equipment. The department also operates four facilities (Community Psychological Services (CPS), the Center for Trauma Recovery (CTR), the Center for Behavioral Health (CBH), and Children's Advocacy Services of Greater St. Louis (CASGSL)) which provide training opportunities for students in Psychology, as well as providing psychological treatment and assessment services for citizens of the region.

## Program Overview

The Psychological Sciences department offers a broad-based curricular plan leading to the Bachelor of Arts (B.A.) or the Bachelor of Science (B.S.) degree in Psychology as well as a minor in the field. The minor is available through online course work. There are several certificates that can be earned through the department including an undergraduate certificate in Workplace and Organizational Science (WOS) and an undergraduate and a graduate certificate in Trauma Studies. The department also participates in two interdisciplinary certificates with one in Neuroscience and a second in Child Advocacy Studies (CAST). The department also offers a terminal Master of Arts in Psychology, with a specialization in Behavioral Neuroscience. The department offers two options within its Ph.D. Program: Clinical Psychology or Behavioral Neuroscience.

## Graduate School Preparation

Students interested in applying to graduate school in Psychology are strongly encouraged to become involved in a research project with a Psychology faculty member by securing enrollment in PSYCH 3390, Directed Studies. These positions are available on a limited and competitive basis. No enrollments in PSYCH 3390 are possible without special Instructor permission. Those invited to participate must obtain a special consent form from the instructor in order to enroll. Contact the Psychology Academic Advising office for more information on such positions (psy\_advising@umsl.edu).

## Degrees

Psychology BA (p. 585)

Psychology BS (p. 587)

Psychology MA, Behavioral Neuroscience Emphasis (p. 589)

Psychology MA, Industrial/Organizational Emphasis (p. 588)

Psychology PhD, Behavioral Neuroscience Emphasis (p. 590)

Psychology PhD, Clinical Community Psychology Emphasis (p. 591)

Psychology PhD, Industrial and Organizational Psychology Emphasis (p. 591)

## Minors

Child Advocacy Studies Minor (p. 375)

Psychology Minor (p. 590)

## Certificates

Workplace and Organizational Science Undergraduate Certificate (p. 650)

Child Advocacy Studies Undergraduate Certificate (p. 375)

Psychology Clinical-Respecialization Graduate Certificate

## Psychology Courses

### ***PSYCH 1000 Choosing a Career in Psychology: 1 semester hour***

Prerequisite: Psychology Major or consent of instructor. This course is an orientation to the field of psychology for majors and for students who are considering declaring the major. This course is to be completed by native and transfer Psychology majors during their first semester of study at UMSL. Students will be engaged in activities that will help them to develop and identify their professional goals, learn about the various specialties and careers available within the field of psychology, understand the education and skills necessary for various careers, learn the requirements for a psychology major, become familiar with minors that are available at UMSL, think about a possible choice of minor or certificate, and become acquainted with the interest areas of UMSL faculty in Psychology and related fields. All Psychology majors must complete this course during the first semester at UMSL with a grade of C- or higher.

### ***PSYCH 1003 General Psychology (MOTR PSYC 100): 3 semester hours***

A survey of the basic concepts, theories, and pivotal findings over the past 100 years in the science of Psychology, with special emphasis on contemporary concepts and findings that focus on the relation of the brain to normal and pathological behaviors. All Psychology majors must complete this course with a grade of C- or higher.

### ***PSYCH 2040 Attraction: An Evolutionary Approach: 3 semester hours***

Prerequisites: PSYCH 1003. This course examines the topics of interpersonal and sexual attraction in a scientific context through the milieu of popular media outlets as well as published empirical literature from the fields of Psychology, Anthropology, Ecology, Economics, and Gender Studies. Specific topics include attraction cues, jealousy, monogamy, infidelity, the economics of sex, and the long-term and short-term mating strategies of men and women. We will also investigate the technological and media manipulation of sexual cues, as well as conflicts between the sexes, religion and sex, the peopling of the earth, the fundamentals of evolved psychological mechanisms, identifying adaptive problems and potential solutions, gender roles, parental investment, issues of kinship, and inter- and intra-sexual competition.

### ***PSYCH 2200 Drugs and Behavior: 3 semester hours***

Prerequisite: PSYCH 1003. The course is an introduction to psychopharmacology and the relationship among drugs, and how these impact the brain and behavior. The emphasis is on physiological mechanisms underlying the behavioral responses to psychotherapeutic substances, illicit psychoactive drugs, commonly used substances (alcohol, nicotine, caffeine), and drug-like substances produced naturally in the body.

**PSYCH 2201 Psychological Statistics: 4 semester hours**

Prerequisites: PSYCH 1003 and satisfaction of the University's mathematical skills requirement. (With Laboratory) This course serves as an introduction to statistical concepts and methods used in Psychological measurement and the analysis and interpretation of social sciences data. Topics include descriptive statistics, frequency distributions centrality, variability, and correlational measures; as well as an introduction to statistical inference, sampling fundamentals, significance testing and effect size, t-test, and analysis of variance. All Psychology majors must complete this course with a grade of C- or higher before registering for PSYCH 2219.

**PSYCH 2205 Human Sexuality: Psychological Perspectives: 3 semester hours**

Prerequisites: PSYCH 1003. This course is a comprehensive overview of human sexuality from the standpoint of the behavioral science of Psychology. This course includes a study of sexual anatomy and physiology, intersex classifications, sex and gender differences, sexual orientation, interpersonal and interpersonal aspects of human sexuality, classification and treatment of sexual dysfunction and sexual disorders, sexual victimization, and the methods employed for the scientific examination of human sexual behavior.

**PSYCH 2211 Introduction to Biological Psychology: 3 semester hours**

Prerequisites: PSYCH 1003 and 3 hours of BIOL chosen from either BIOL 1012, or BIOL 1102, or BIOL 1831. Students with career goals that include graduate study in Psychology are urged to complete the BIOL 1831 prerequisite for this course. This course introduces psychology students to behavioral neuroscience and neuropsychology. Course topics include basic neuroanatomy and neurophysiology, neurodevelopment, sensory and motor systems, and the integration of subcortical and cortical networks. All are covered with an emphasis on behavioral outcomes of normal and pathological functioning of the brain. All psychology majors must complete this course with a grade of C- or higher.

**PSYCH 2219 Research Methods in Psychological Science: 3 semester hours**

Prerequisites: PSYCH 2201 and ENGL 3100. This course is a comprehensive overview of research methods in the psychological sciences. Topics may include technical scientific writing in current APA format, critical evaluation of research literature, the application of statistical methods, and mastery of the ethical principles guiding psychological sciences research. Course and laboratory work involve designing and evaluating research questions, formulating research hypotheses, designing and conducting original research studies, and presenting research results. All psychology majors must complete this course with a grade of C- or higher.

**PSYCH 2230 Psychology of Gender: 3 semester hours**

Same as GS 2230. Prerequisite: PSYCH 1003. Evaluation of psychological theories and research regarding physiological, cognitive, and personality gender differences and similarities, gender related problems in adjustment, and gender specific clinical interventions.

**PSYCH 2245 Abnormal Psychology: 3 semester hours**

Prerequisite: PSYCH 1003. This course examines the historical views and current perspectives on the possible antecedents, symptoms, and treatments of major psychological disorders, including anxiety, dissociative, mood, somatoform, eating, schizophrenia and substance-related disorders. Major diagnostic categories and criteria, individual and social factors of maladaptive behavior, methods of clinical assessment, research strategies, and types of therapy will also be covered. All psychology majors must complete this course with a grade of C- or higher.

**PSYCH 2250 Social Psychological Science: 3 semester hours**

Prerequisite: PSYCH 1003. This course examines the scientific study of the way people think, feel, and behave in social situations. The content focuses on understanding how people influence, and are influenced by, real or imagined others. Specific topics may include the self, social judgments, attitudes and persuasion, helping behavior, prejudice, aggression, attraction, conformity and obedience, and group processes.

**PSYCH 2268 Lifespan Developmental Psychology (MOTR PSYC 200): 3 semester hours**

Prerequisites: PSYCH 1003. This survey course examines development over the lifespan with an emphasis on the developmental tasks and challenges of each age period.

**PSYCH 2270 Developmental Psychology: Infancy, Childhood and Adolescence: 3 semester hours**

Prerequisites: PSYCH 1003. This course systematically examines theories and research concerning the physical, social, emotional, and cognitive development of children from conception through adolescence. It will provide students with a basic knowledge of infant, child, and adolescent development; its subject matter; its approaches to gathering and evaluating evidence about the causes of behavior; and the ways in which our knowledge is applied to enhance the development and the quality of life of children. It is intended for Psychology majors and students with career interests in research, education, and/or the treatment of children. All Psychology majors taking this course instead of PSYCH 2160, must complete it with a grade of C- or higher.

**PSYCH 2285 American Culture and Minority Mental Health: 3 semester hours**

Prerequisites: PSYCH 1003. Provides an examination of the relationship between American culture and mental health. The focus is on the lives of American minority groups, with specific attention given to how racism, prejudice, and minority status currently reveal themselves within a mental health framework. An eclectic, multidisciplinary approach that draws from clinical and social psychology will be utilized.

**PSYCH 2299 Directed Readings in Psychology: 3 semester hours**

Prerequisites: PSYCH 1003 or SOC 1010, or consent of instructor. This course will provide an intellectual forum for discussing classic and contemporary theories and research in psychology on a selected topic. Students can retake the course as long as the topic is different.

**PSYCH 2500 Human Motivation: 3 semester hours**

Prerequisite: PSYCH 1003. This course approaches human motivation through a biopsychosocial perspective, including theories of motivation, individual motivation, and how motivation differs. Application will include real-life workplace and educational psychology contexts.

**PSYCH 3200 Sports Psychology: 3 semester hours**

Prerequisites: PSYCH 1003. This course examines psychological, biological, and social aspects of sport and human performance. Course topics may include performance enhancement, mental skills training, motivation, group dynamics, as well as physiological responses to stress and anxiety in sport.



**PSYCH 3205 Evolutionary Psychology: 3 semester hours**

Prerequisites: PSYCH 2211. Evolutionary Psychology refers to a fundamentally unique approach to studying and thinking about human and animal behavior through considerations of 1. The challenges and stressors encountered in ancestral environments, 2. The proximate physical, psychological, and anatomical methods that evolved to meet these adaptive problems, and 3. How adaptive or maladaptive these mechanisms are in current environments. Special emphasis will be placed on the evolution of brain structures, cognitive processes, and social behaviors. The content for this course is not new; Evolutionary Psychology involves looking at the science of Psychology through a unique lens, shaped by its tenets. Although appreciation for this approach to psychological research is increasing, it remains controversial in psychology circles. We will discuss the state of this aspect of Psychology as well.

**PSYCH 3232 Psychology of Trauma: 3 semester hours**

Same as GS 3232. Prerequisites: PSYCH 1003. This course examines responses to potentially traumatic events (e.g., child abuse and neglect, physical and sexual assault, intimate partner violence, community and gun violence, war, natural disasters). Trauma exposure, posttraumatic growth, the development of trauma-related difficulties including PTSD, assessment and intervention are examined with attention to gender, cultural, and lifespan issues.

**PSYCH 3280 Psychology of Death and Dying: 3 semester hours**

Same as GERON 3280. Prerequisite: PSYCH 1003 or consent of the instructor. An exploration of end-of-life issues integrating the scholarly, social, and individual dimensions of death and dying. This course provides a solid grounding in theory and research, as well as practical application to students' lives.

**PSYCH 3290 Traumatic Stress in Childhood and Adolescence: 3 semester hours**

Same as CAST 3290. Prerequisites: PSYCH 2270 (majors) or PSYCH 2268 or ED PSY 2212 or approval from the instructor. This course is an exploration of the biopsychosocial impact of community, family, and individual trauma and stressors experienced during infancy, childhood, and adolescence. It introduces students to relevant theoretical frameworks, cultural considerations, and advocacy strategies.

**PSYCH 3295 Selected Projects in Field Placement: 3 semester hours**

Prerequisites: 15 credit hours of psychology and consent of instructor. This course provides for selected options in field work placement experiences on campus or in various local agencies with training and supervision by faculty. It may be repeated once for credit.

**PSYCH 3318 Industrial and Organizational Psychology: 3 semester hours**

Same as MGMT 3623. Prerequisites: PSYCH 2201 or MATH 1105 (or equivalent). This course introduces students to psychological research and theories pertaining to human behavior in the work setting. Topics covered may include: selection, performance appraisal, training, leadership, motivation, job satisfaction, and organizational design.

**PSYCH 3340 Clinical Problems of Childhood: 3 semester hours**

Prerequisites: PSYCH 2245 or PSYCH 2270. This course will address the clinical disorders and difficulties of children, as well as the causes and the treatment of these disorders. Topics addressed may include autism, childhood schizophrenia, conduct disorders, learning disabilities, ADHD, mood disorders, health-related disorders, anxiety disorders, and child maltreatment. Treatments designed for specific use with children, including behavioral, drug and community mental health approaches will be addressed. This course is recommended for those going on to graduate work in psychology.

**PSYCH 3346 Introduction to Clinical Psychology: 3 semester hours**

Prerequisite: PSYCH 1003, PSYCH 2245; and three additional hours of Psychology. This course provides a conceptual framework for research, description and understanding of clinical phenomena. Assessment, interviewing, the clinical use of tests and psychological approaches to treatment are also addressed.

**PSYCH 3390 Directed Studies: 1-6 semester hours**

Prerequisite: Consent of instructor. Directed reading and research. May be repeated for a maximum total of ten hours.

**PSYCH 3500 Health Psychology: 3 semester hours**

Prerequisite: PSYCH 1003 and three additional hours of Psychology. Health Psychology involves the discipline and principles of psychology and behavior in understanding how the mind, body, and behavior interact in health and disease. Class topics include theoretical foundations of health and illness, health promotion and primary prevention of illness, health enhancing and health damaging behaviors, psychosomatic illness, stress and coping, pain management, and a variety of specific behavior-related medical illnesses (e.g., heart disease, eating disorders, cancer, AIDS).

**PSYCH 3820 Cross-Cultural Psychology: 3 semester hours**

Prerequisites: PSYCH 1003 and 9 hours of Psychology. The purpose of this course is to present students with a broad theoretical and applied overview of cross-cultural psychology. To this end, the course presents an orientation to the definitions, concepts, theories, and methodologies of crosscultural psychology. Included is an examination of cultural and ecological factors and their influences on perceptual and cognitive processes, personality, language, and other psychological variables.

**PSYCH 3995 Undergraduate Teaching Internship in Psychology: 1 semester hour**

Prerequisites: PSYCH 1003 and 6 additional credits in Psychological Sciences (9 credits minimum), and instructor consent. This course prepares students to work as learning assistants, tutors, or peer mentors for courses within the Department of Psychological Sciences. Students will develop general pedagogical skills. Specific teaching assistant duties will be determined by the instructor of record for the associated course. This course may be repeated for up to 3 total credit hours.

**PSYCH 4250 Stereotyping, Prejudice, and Discrimination: 3 semester hours**

Prerequisites: PSYCH 2219 and PSYCH 2250, or consent of instructor. This course will provide an intellectual forum for discussing classic and contemporary theories and methodologies focused on understanding stereotyping, prejudice, and discrimination. Using a social psychological framework, students will assess psychology's current understanding of why people use and apply stereotypes in their everyday thinking and behavior. Students will also explore such topics as social categorization, stereotype activation, contemporary forms of prejudice, the social context of prejudice, the consequences of prejudice and discrimination, the stigmatized target's perspective, coping with prejudice, and techniques for reducing prejudice and discrimination.

**PSYCH 4300 Introduction to Psychopharmacology: Drugs and Mental Illness: 3 semester hours**

Prerequisites: PSYCH 1003, PSYCH 2211 or PSYCH 2200; PSYCH 2245. The course is designed to provide an introduction to drugs used to treat anxiety disorders, major depression, schizophrenia, and other psychopathologies. The emphasis will be on understanding neural mechanisms related to psychological disorders and to the effectiveness of current drug treatments.

***PSYCH 4305 Developmental Psychology: Cognitive Development of Children: 3 semester hours***

Prerequisites: PSYCH 1003, PSYCH 2270, and Junior standing, or consent of instructor. Data and theory concerned with how children's thinking changes over time. Discussion will include domain-general versus domain-specific theories, social and cultural influences on cognition, gains in memory, attention, problem solving, and metacognition, conceptual development, children's naive theories, schooling, and various definitions and measures of intelligence.

***PSYCH 4311 Psychology of Nonverbal Behavior: 3 semester hours***

Prerequisites: PSYCH 2250 and ENGL 3100. This writing-intensive course examines the psychological perspective on the role of nonverbal behavior in social settings. Primary concerns of the course will include an analysis of the functions of nonverbal behavior (e.g., providing information, regulating interaction, expressing intimacy, exercising influence, and managing impressions), factors influencing nonverbal expression (e.g., culture, personality, relationships), and various theoretical views on nonverbal communication. Applications to various problems and settings in everyday life will also be pursued.

***PSYCH 4314 Behavioral Neuroscience: 3 semester hours***

Prerequisites: PSYCH 2211 or BIOL 1831 or consent of instructor. This neuroscience course focuses on behavioral outcomes of brain function and dysfunction. Course emphasis will be on modern research methods with animal models and humans. Topics discussed may include the classic findings in the field, but the emphasis will be on recent findings from human neuropsychology, neuroimaging, cognitive neuroscience, neuropharmacology, and neuroendocrinology.

***PSYCH 4316 Developmental Psychology: Social Development of Children and Adolescents: 3 semester hours***

Prerequisites: PSYCH 1003, PSYCH 2270, and junior standing, or consent of instructor. This course examines data and theory concerned with social behavior in infants, preschoolers, and school-aged children. Discussion will include emotional regulation; measurement and nature of temperament; the formation and maintenance of attachment relationships; sex-role development; and theories of aggression and the effects of socializing agents such as family, peers, media, and culture on development.

***PSYCH 4330 Hormones, The Brain and Behavior: 3 semester hours***

Prerequisites: 9 hours of psychology or biology, including at least one of the following: PSYCH 2200, PSYCH 2211, or PSYCH 4300 or consent of instructor. Historically, hormones have been studied for their role in reproduction, including reproductive physiology and sexual behaviors. It is now clear, however, that the endocrine system actively interacts with brain regions unrelated to reproduction with the result that sex hormones and neuropeptide hormones influence a wide range of behaviors including mood, anxiety, stress responses, cognition, memory, violence, attachment, aging, weight control and athletic prowess. Emphasis of the class is on hormonal contribution both to reproductive and non-reproductive behaviors with special attention paid to gender behavioral differences. This course may be taken for graduate credit with permission of the instructor.

***PSYCH 4340 Introduction to Human Neuroanatomy: 3 semester hours***

Prerequisites: Grade of B- or above in PSYCH 2211, and nine hours of psychology or biology or consent of instructor. This course is an intensive introduction to brain anatomy. It will explore the structure and function of the human nervous system with the goal of preparing students for advanced study in neuroscience-related fields. Topics will include a review of core concepts from cellular neuroscience, neuroimaging and neuroanatomical techniques, sensory and motor systems, and the anatomical basis of cognitive functions. Based on an understanding of typical brain structure and function, the anatomical and physiological basis of various neurological disorders is explored.

***PSYCH 4349 Human Learning and Memory: 3 semester hours***

Prerequisites: PSYCH 2211 and six additional hours of psychology; or consent of instructor. This course focuses on the basic forms of learning and memory such as habituation, sensitization, conditioning, and skill/procedural memory, as well as more complex forms of learning and memory such as semantic memory, episodic/autobiographical memory, short-term and working memory, and social learning. Students will learn about the neurobiological basis of learning and memory on both cellular and system levels. In addition, students will study how factors such as emotion and age affect learning and memory as well as the relevance of learning and memory for clinical and legal environments.

***PSYCH 4350 Emotions and the Brain: 3 semester hours***

Prerequisites: PSYCH 2211 and six additional hours of psychology; or consent of instructor. Emotions play an important role in everyday life. But what exactly is an emotion? And what happens in your body when you experience an emotion? More specifically, what happens in your brain? Doesn't the limbic system have something to do with emotions? What are the differences and similarities between emotions (such as anger) and motivations (such as hunger)? What happens in your body and brain when you fall in love? And how do emotions influence cognition, such as attention and memory? Conversely, does cognition influence our emotions as well? These are some of the questions that we will answer in this course. Given that many mental disorders involve emotional disturbances, this course is not only relevant for students who are interested in the fundamental knowledge of emotions, but also for students who are interested in clinical psychology.

***PSYCH 4356 Cognitive Processes: 3 semester hours***

Prerequisite: Nine hours of psychology or consent of instructor. This course is an overview of the major topics in cognitive psychology, including perception, visual imagery, attention, memory, knowledge representation and retrieval, language, problem solving, reasoning, judgment, decision making, and intelligence.

***PSYCH 4365 Psychological Testing and Assessment: 3 semester hours***

Prerequisites: Grade of C- or above in PSYCH 2201, or consent of instructor. This course covers the uses, construction, and evaluation of psychological tests and assessments. Students will learn about tests designed to measure personality, intelligence, and other individual differences, including issues related to test use in specific settings. Examination of professionally-developed tests and hands-on learning exercises will be key aspects of the course.

**PSYCH 4372 Introduction to Social Neuroscience: 3 semester hours**

Prerequisites: PSYCH 2250 and PSYCH 2211, or consent of instructor.

This course introduces current theory and research in social neuroscience with a focus on mechanisms underlying mind and behavior interactions using a multi-level integrative analysis. It examines how organismic processes are shaped, modulated, and modified by social factors and vice versa. This course may be taken for graduate credit with permission of the instructor.

**PSYCH 4374 Introduction to Clinical Neuropsychology: 3 semester hours**

Prerequisites: PSYCH 2211 and PSYCH 2245, or consent of instructor.

This course is an introduction to current theory and practice of clinical neuropsychology with a focus on neuropsychological findings concerning relationships between the brain and behavior. Particular attention is devoted to function, neuroanatomy, neurological syndromes, patterns of brain impairment associated with various medical diseases, and methods of neuropsychological assessment and intervention.

**PSYCH 4376 Mental Health and Aging: 3 semester hours**

Same as GERON 4376. Prerequisites: PSYCH 2245 or consent of instructor. This course provides a survey of theory and research in mental health issues for older populations, focusing on psychological and social aspects of mental health and functioning. The course details approaches to understanding healthy aging, along with the prevalence, etiology, assessment and treatment of psychological disorders in older adults. The course also provides an overview of health care and community-based delivery systems for behavioral health, and allows students to explore information about careers in aging.

**PSYCH 4392 Selected Topics in Psychology: 1-3 semester hours**

Prerequisite: Twelve hours of psychology and consent of instructor. A seminar of selected issues and methods in psychology. May be repeated once for credit.

**PSYCH 4398 Child Maltreatment: A Multidisciplinary Approach: 3 semester hours**

Same as SOC WK 4398 and CAST 4398. Prerequisites: CAST 3290 or PSYCH 3290 (may be taken concurrently), or consent of instructor. This course, with its interdisciplinary emphasis, focuses on the systemic response to the primary domains of child maltreatment by multidisciplinary teams and child advocacy centers. Risk factors, cultural considerations, and mandated reporting of child abuse and neglect are emphasized. Students will begin to develop professional skills pertaining to child maltreatment, using a variety of experiential learning modalities.

**PSYCH 4500 Physiology & Pharmacology of Aging: 3 semester hours**

Same as GERON 4500. Prerequisites: Junior/senior undergraduate or graduate standing, or consent of the instructor or program director. This course examines functional health in advancing age and the impacts of common disease processes on the aging body. Symptom presentations, diagnostic considerations, treatment and management issues are discussed. A special emphasis is placed on pharmacology, especially how the aging body responds to different medication types, risks for drug-drug interactions, and challenges associated with polypharmacy. The course emphasizes a "whole person" approach to health and well-being, and targets the learning needs of those wishing to work with older adults in health, social and community service settings.

**PSYCH 4999 Integrated Psychology: 2 semester hours**

Prerequisites: Consent of instructor. This capstone course serves as a review of the primary sub-fields of psychology. An advanced general psychology textbook will guide the class through important contemporary topics in behavioral neuroscience, learning and memory, cognition, psychopathologies and their treatments, and developmental and social psychology. The Major Field Aptitude Test in Psychology will serve as the final exam for the course. This course is restricted to Psychology majors and must be taken during majors' final semester of study. Students are expected to have already completed their application to graduate. All Psychology majors must complete this course with a grade of C- or higher.

**PSYCH 5001 Neuropsychological Assessment: 3 semester hours**

Prerequisites: Admission to Psychology graduate program, or consent of instructor. This graduate level course will review neuroanatomical systems that mediate primary cognitive networks and methods of assessments and interpretation of data. The course will also review common neurological and psychiatric conditions that result in neuropsychological compromise.

**PSYCH 5340 Human Neuroanatomy: 3 semester hours**

Prerequisites: Admission to graduate program in psychology or consent of instructor. This course provides an overview of brain anatomy for graduate students in psychology and related disciplines. It explores the structure and function of the human nervous system both in health and disease. The course will cover core concepts from cellular neuroscience, neuroimaging and neuroanatomical techniques, sensory and motor systems, and the anatomical basis of cognitive functions.

**PSYCH 5400 Seminar: Special Topics in Behavioral Neuroscience: 1 semester hour**

Prerequisites: Admission to the graduate program in behavioral neuroscience or consent of the instructor. A seminar of selected contemporary topics in behavioral neuroscience. The class will meet weekly to discuss a journal article in the field with special focus on the methodologies used in neuroscience research. May be repeated for a total of 3 credit hours, provided the subject matter is different.

**PSYCH 5407 Psychopharmacology: 3 semester hours**

Prerequisite: 12 units of graduate-level. An examination of the effects of drugs on the brain and on behavior. Primary emphasis is on those drugs used in the treatment of affective disorders, schizophrenia and anxiety.

**PSYCH 5465 Seminar: Behavioral Neuroscience: 3 semester hours**

Prerequisites: Graduate standing or permission of instructor. Behavioral neuroscience is the study of the relation of the brain to behavior. The field has emerged as the new face of psychology; there are few subfields in psychology that have not been influenced by findings from animal labs, and from human studies employing physiological recordings, neuroimaging and psychotherapeutic drugs. This course will serve as an introduction for graduate students in psychology of brain morphology and function with an emphasis on normal and pathological behaviors.

**PSYCH 5468 Seminar: Cognitive Processes: 3 semester hours**

Prerequisites: Admission to the Graduate Program in Psychology or consent of instructor. This course is an introduction to classic and contemporary theories, methodologies, and theoretical perspectives used in the field of cognitive psychology. The emphasis is on basic research in the field of cognitive psychology but some applications of these experiments are discussed as well. The class will read and discuss chapters from cognitive psychology textbooks as well as classic and contemporary empirical journal articles in cognitive Psychology.



**PSYCH 6410 Gender, Sexuality, and Mental Health: 3 semester hours**

Same as GS 6410. Prerequisites: Admission to the doctoral program in Clinical Psychology or consent of instructor. This course will focus on contemporary theory and research on gender and sexuality as they pertain to mental health issues. Gender differences and similarities in the presentation, etiology, and treatment of sexual health problems and other mental illnesses will be discussed.

**PSYCH 6415 Seminar in Health Psychology & Behavioral Medicine: 3 semester hours**

Prerequisites: Consent of instructor. This course analyzes research, theory, and clinical applications in the interrelationships of behavior, psychological states, physical health and disease. Discussion includes theoretical foundations of health and illness, biopsychosocial factors affecting health and illness, diagnostic issues, prevention, interdisciplinary treatment applications, health and public policy, and research issues. Critical evaluation of theory and empirical support for clinical applications will be discussed.

**PSYCH 6441 Aging and Health Behavior: 3 semester hours**

Same as GERON 6441. Prerequisite: Graduate standing. This course examines sociocultural influences on health care practices of older adults. The role of social support and other social resources in the health behavior of older adults is emphasized. Topics include self care decisions, formal service utilization, family caregiving, and planned interventions for older adults.

**PSYCH 6448 Multicultural Issues in Clinical Psychology: 3 semester hours**

Prerequisites: Admission to the doctoral program in Clinical Psychology or consent of instructor. A survey of theoretical perspectives utilized in the treatment of various cultural groups. Their relationship to and implications for the treatment of members of various cultural groups will be explored. Strategies and ethical concerns in diagnosis, test interpretation, and treatment are considered.

**PSYCH 6466 Seminar: Developmental Psychology: 1-3 semester hours**

Prerequisites: Admission to the doctoral program in Clinical Psychology or consent of instructor. A critical examination of contemporary problems in developmental psychology.

**PSYCH 7403 Psychopathology: 3 semester hours**

Prerequisite: Admission to clinical psychology program or permission of instructor. A critical examination of the clinical-experimental literature in psychopathology. Etiologies of cognitive/affective functions and dysfunctions are explored, and implications for therapeutic interventions are considered.

**PSYCH 7404 Introduction to Clinical Assessment I: 4 semester hours**

Prerequisites: Admission to Clinical Psychology program. Fundamentals of clinical assessment with emphasis on interviewing and the measurement of cognitive functioning. This course includes a laboratory.

**PSYCH 7406 Introduction to Clinical Assessment II: 4 semester hours**

Prerequisites: PSYCH 7404. This course addresses theory and techniques of personality assessment including clinical interviewing, objective and projective assessment, and integrative report writing.

**PSYCH 7412 Social Psychology: 3 semester hours**

Prerequisites: Admittance to psychology doctoral program or consent of instructor. A review of key areas in contemporary theory and research in social psychology.

**PSYCH 7421 Quantitative Methods I: 4 semester hours**

Prerequisites: Admission to the Graduate Program in Psychology or consent of instructor. A comprehensive study of univariate statistical concepts and analyses used in psychological research. Topics include descriptive statistics, normal distributions, z, t, F, chi-square statistics, and distributions. Correlation, simple and multiple regression, factorial and repeated measures analysis of variance, significance testing and effect size are also examined.

**PSYCH 7422 Quantitative Methods II: 4 semester hours**

Prerequisites: PSYCH 7421 and consent of instructor. (With laboratory) A comprehensive study of the use of multivariate statistics in data analysis. Topics include the general linear model, multiple regression, factor analysis, and multivariate analysis of variance.

**PSYCH 7423 Quantitative Methods III: 3 semester hours**

Prerequisites: PSYCH 7422 and PSYCH 7429 and consent of instructor. A selective study of the use of multivariate statistics in data analysis. Topics include structural equation modeling, multilevel modeling, and analysis of longitudinal data.

**PSYCH 7429 Psychometric Theory: 3 semester hours**

Prerequisites: PSYCH 7421, PSYCH 7422 and consent of instructor. A consideration of classical and modern theories of psychological testing. Topics include test reliability, validity and construction.

**PSYCH 7430 Introduction to Clinical Skills: 1 semester hour**

Prerequisites: Admission to doctoral program in clinical psychology. An introduction to processes and procedures involved in psychotherapy.

**PSYCH 7431 Clinical Supervision: 1-3 semester hours**

Prerequisite: Admission to Clinical Psychology Program. Supervised experience in clinical practice. May be repeated six times for credit.

**PSYCH 7432 Ethics and Professional Issues: 3 semester hours**

Prerequisites: Admission to Clinical Psychology program. A study of issues in professional development, clinical supervision, risk management, and ethical standards as they relate to teaching, research, and professional practice.

**PSYCH 7433 Clerkship in Clinical Psychology: 1 semester hour**

Prerequisites: Admission to the doctoral program in Clinical Psychology. Supervised training in an affiliated agency or organization following completion of two years of course work. (May be repeated 3 times).

**PSYCH 7434 Foundations of Clinical Interventions: 3 semester hours**

Prerequisites: Admittance to Clinical Psychology program. This course focuses on conceptual and methodological issues that are central to the development, evaluation and application of interventions in clinical psychology. Topics include efficacy and effectiveness research, introduction to theories of behavior change, and applications with specific populations.

**PSYCH 7439 Summer Supervision: 1 semester hour**

Prerequisites: PSYCH 7431. Supervised experience in clinical practice at all graduate year levels during the summer months. Can be repeated for credit.

**PSYCH 7442 Seminar: Cognitive and Behavioral Interventions: 3 semester hours**

Prerequisites: PSYCH 7434. This course focuses on the theory and practice of cognitive-behavioral interventions in the field of clinical psychology.



**PSYCH 7447 Trauma and Recovery: 3 semester hours**

Prerequisites: Graduate Trauma Studies Certificate. A comprehensive seminar on the psychological effects associated with exposure to potentially traumatic events. The course will include information on the history of trauma studies; definitions of stressful and traumatic events; common responses to these events; theoretical models for conceptualizing traumatic responses; information on specific types of traumatic events; and issues in treatment.

**PSYCH 7449 Research Methods and Project Development in Applied Psychology: 1-3 semester hours**

Prerequisite: Admission to the Graduate Program in Psychology or consent of instructor. This course focuses on the basics of conducting research in Industrial-Organizational Psychology. Topics include: philosophy of science; reliability and validity; experimental, quasi-experimental, and non-experimental designs; power; meta-analysis; survey/item analyses; and cross-cultural methods. In addition, the course includes group supervision of initial research that leads to thesis or dissertation proposals. Can be taken up to three times for a total of 6 credit hours.

**PSYCH 7450 Clinical Internship I: 1-9 semester hours**

Prerequisite: Consent of advisor. Formal, one year, full-time internship providing student with in-depth supervised training within a site approved by the American Psychological Association. This course is repeated in the fall and spring semesters of the internship year.

**PSYCH 7451 Clinical Internship II: 1-9 semester hours**

Prerequisite: PSYCH 7450 and consent of advisor. Formal, one-year, full-time internship providing student with in-depth supervised training within a site approved by the American Psychological Association. (Taken in the final summer of the internship).

**PSYCH 7454 Seminar: Personnel Psychology: 3 semester hours**

An analysis of theories and research in personnel and industrial psychology. Topics include testing, assessment centers, performance appraisal, and interviewing.

**PSYCH 7455 Seminar: Organizational Psychology: 3 semester hours**

An analysis of theories and research in organizational psychology. Topics include theories of motivation, leadership, job design, group process decision-making, organizational effectiveness, and the relation between organizations and their environment.

**PSYCH 7457 Seminar: Special Topics in Industrial Psychology: 3 semester hours**

A seminar of selected issues and methods in personnel psychology.

**PSYCH 7458 Seminar: Special Topics in Organizational Psychology: 3 semester hours**

A seminar of selected issues and methods in organizational psychology.

**PSYCH 7459 Practicum in Industrial/Organizational Psychology: 1-4 semester hours**

Supervised experience in personnel or human resource management.

**PSYCH 7461 Summer Research in I/O Psychology: 1 semester hour**

Prerequisites: Admission to I/O program. Supervised experience on research topics in I/O psychology at all graduate year levels during the summer months. Can be repeated for credit.

**PSYCH 7465 Applied Issues in Organizational Psychology: 3 semester hours**

Prerequisites: PSYCH 7455 or consent of instructor. Course focuses on the application of psychological theory and principles to organizational development consulting. While such consulting is ultimately intended to enhance organizational level functioning, applications of this approach begin with learning at the individual and small group levels. In this course, students work through real-world cases that address real organizational problems. In addition to this casework, the readings and class discussions will address the theoretical and practical links between individual/team learning and organizational development.

**PSYCH 7466 Seminar Series in Industrial/Organizational Psychology: 1 semester hour**

Prerequisites: Open only to students in the I/O Psychology Graduate Program. A seminar series involving speakers, presentations, and discussions focusing on applied and theoretical perspectives, techniques, and research in the field of Industrial/Organizational Psychology. May be taken up to 6 times for credit.

**PSYCH 7469 I/O Professional Issues and Ethics: 3 semester hours**

Prerequisite: Consent of Instructor. In this course students learn the ethical standards as they relate to teaching, research and professional practice in industrial organizational psychology. Other professional and career issues are also discussed.

**PSYCH 7472 Special Topics in Psychology: 1-3 semester hours**

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**PSYCH 7474 Clinical Research in Applied Settings: 3 semester hours**

Prerequisites: PSYCH 7421 and PSYCH 7422. This course provides information on the design and implementation of research in applied settings (e.g., human service agencies). Topics include program evaluation, consultation models, risk factor analysis, presentation and health promotion, and quality control.

**PSYCH 7476 Seminar in Developmental Psychopathology: 2 semester hours**

Prerequisites: Admission to the doctoral program in Clinical Psychology or consent of instructor. Introduction to principles, theory, and methods of study in the field of clinical child psychology. Emotional and behavioral dysfunctions are considered from developmental and socialization perspectives.

**PSYCH 7478 Directed Research in Industrial/Organizational Psychology: 1-4 semester hours**

Independent study of an issue in industrial/organizational psychology through the application of research techniques.

**PSYCH 7479 Directed Readings in Industrial/Organizational Psychology: 1-4 semester hours**

Independent literature review of a topic in industrial/organizational psychology.

**PSYCH 7483 Directed Research: 1-10 semester hours**

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**PSYCH 7484 Directed Readings: 1-10 semester hours**

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**PSYCH 7485 Seminar in Clinical Science: 1-3 semester hours**

Prerequisites: Graduate standing in Clinical Psychology. This course discusses professional identity as a clinical scientist and development of programmatic research. Readings include theories and methodologies within clinical psychology, with group supervision of proposals for program research milestones. May be repeated once for credit.

**PSYCH 7486 Research Team II: 2 semester hours**

Prerequisites: Completion of Independent Research Project or third year standing in doctoral program in clinical psychology. Group supervision of advanced research related to dissertation proposal and program's comprehensive examination required for doctoral candidacy.

**PSYCH 7487 Thesis Research Project: 1-6 semester hours**

Prerequisites: Admission to the doctoral program in clinical psychology. Supervised original research project of a clinically-related topic.

**PSYCH 7488 Specialty Examination Research: 1-6 semester hours**

Prerequisites: Admission to the doctoral program in Clinical Psychology. Supervised original review and analysis of a clinically related topic.

**PSYCH 7491 MA Thesis Research: 1-10 semester hours**

Prerequisite: Graduate standing and consent of instructor.

**PSYCH 7492 Ph D Thesis Research: 1-10 semester hours**

Prerequisite: Graduate standing and consent of instructor.

## Child Advocacy Studies Courses

**CAST 1000 Introduction to Child Advocacy Studies: 3 semester hours**

This survey course explores how child-serving systems have evolved, the functions they serve, and the roles they play in the lives of children and families. Key legislation, concepts, theories, and historical and contemporary approaches will be examined to highlight the types of advocacy relevant to children and the career paths associated with them. Students will examine skills needed for success as a child advocate, including collaboration and secondary traumatic stress prevention.

**CAST 2200 Policy and Global Issues in Child Advocacy: 3 semester hours**

Prerequisites: CAST 1000. This course reviews the history and implications of key national and international policies related to child advocacy. Students will explore the components of policy-making and strategies for effective policy advocacy. Students will also engage in advocacy efforts with policy-makers on behalf of children.

**CAST 2300 Ethics and Values in Child Advocacy: 3 semester hours**

Prerequisites: CAST 1000. This course explores the ethical, legal and professional issues related to child advocacy. Students will study the codes of ethics from a range of multidisciplinary perspectives and apply ethical decision making processes to case studies. The values inherent in a variety of child-serving sectors will be considered, as well as the conflict resolution practices aimed at resolving tensions between professionals.

**CAST 3290 Traumatic Stress in Childhood and Adolescence: 3 semester hours**

Same as PSYCH 3290. Prerequisites: PSYCH 2270 (majors) or PSYCH 2268 or ED PSY 2212 or approval from the instructor. This course is an exploration of the biopsychosocial impact of community, family, and individual trauma and stressors experienced during infancy, childhood, and adolescence. It introduces students to relevant theoretical frameworks, cultural considerations, and advocacy strategies.

**CAST 4398 Child Maltreatment: A Multidisciplinary Approach: 3 semester hours**

Same as PSYCH 4398 and SOC WK 4398. Prerequisites: CAST 3290 or PSYCH 3290 (may be taken concurrently), or consent of instructor. This course, with its interdisciplinary emphasis, focuses on the systemic response to the primary domains of child maltreatment by multidisciplinary teams and child advocacy centers. Risk factors, cultural considerations, and mandated reporting of child abuse and neglect are emphasized. Students will begin to develop professional skills pertaining to child maltreatment, using a variety of experiential learning modalities.

**CAST 4498 Forensic Investigation of Child Abuse: 3 semester hours**

Prerequisites: CAST 4398 or PSYCH 4398 or SOC WK 4398. This course is designed for students across multiple disciplines where knowledge of child abuse investigation and advocacy is necessary. It focuses on the investigative and prosecutorial responses of multidisciplinary team professionals involved with child abuse cases to expand the student's knowledge and skills about the most effective response to child abuse investigations. The course also includes critical thinking and competency-based skills training, such as conducting a cursory interview, participating in peer review, making case presentations, and producing investigative documentation.

**CAST 4598 Child Abuse Assessment and Intervention: 3 semester hours**

Prerequisites: CAST 4398 or PSYCH 4398 or SOC WK 4398. This course provides students from a variety of disciplines with knowledge and skills to intervene effectively and empathically with families who may experience child abuse and neglect. It uses experiential learning to develop critical thinking and skills in trauma-focused screening, assessment, and crisis intervention for vulnerable children and their families who are involved with child serving systems, such as law enforcement, child protective services, prosecution, and physical and mental health.

**CAST 4698 Internship in Child Advocacy Studies: 3 semester hours**

Prerequisites: CAST 4398 or PSYCH 4398 or SOC WK 4398, CAST 4498 (may be taken concurrently), CAST 4598 (may be taken concurrently), and approval of the CAST director. This course involves an internship in child or youth-serving setting and requires approval from the CAST director prior to enrolling. It must be taken concurrently with the CAST field education seminar (CAST 4700).

**CAST 4700 Field Education Seminar in Child Advocacy Studies: 1 semester hour**

Prerequisites: Consent of CAST director and concurrent enrollment in an approved CAST field education course. In this course, students will synthesize their learning from the Child Advocacy Studies (CAST) certificate courses with their field experiences.

## ROTC

**Web Site:** <https://rotc.wustl.edu/>

**Main Number:** 314-935-5521

## Background

The Military Science Program in the Department of Military and Veterans Studies is the academic home to Army Reserve Officers Training Corps (Army ROTC). [UMSL is partner institution in the Gateway Army ROTC Battalion – which is hosted at Washington University in St. Louis.](#) Completion of the Army ROTC program of instruction qualifies the student for a commission in the United States Army, Army National Guard, or United States Army Reserve. The curriculum does not provide technical training in a job specialty, nor does it emphasize vocational training; rather, it complements and provides a base for normal progression in the commissioned officers' educational program.

Leadership and management objectives are included in academic periods of instruction. Practical leadership experience is gained in a field training environment by attendance at a thirty-two-day summer camp, normally between the junior and senior years. Nursing students attend a nursing internship at Army hospitals following the normal summer camp. A leadership laboratory also provides experience in a range of leadership positions during the school year. The program offers both a four-year and a two-year program, each with its own special advantages. Students

are invited contact the Military Science Program to obtain additional information.

The program requires four years of military science courses, which consist of a two-year basic course and a two-year advanced course. Students can begin the four-year program as a freshman or as a sophomore.

There is also a two-year ROTC program for those students with only two years of college remaining. The two-year course is designed for junior college and other non-ROTC college transfer students, but may be utilized by students who did not enroll in the basic course outlined below. Graduate students may also qualify for enrollment in the two-year course. Additional information regarding eligibility requirements for the two-year program may be obtained by contacting the Department of Military Science.

## Basic Course

The basic course is normally taken as an elective subject by students in their freshman and sophomore years. The purpose of this instruction is to qualify students for entry into the advanced course by familiarizing them with the organization of the Army, military skills, basic leadership and time management, and military tradition. Students do not incur any military obligation as a result of enrolling in the basic course.

## Advanced Course

Instruction in the advanced course includes leadership and management, the exercise of command, military teaching methods, tactics, logistics, administration, history, and military justice. Leadership experience and command experience are provided by assigning advanced course students as cadet leaders. Participation in regularly scheduled physical training is a required part of the leadership training. Classroom instruction consists of two one and a quarter hour (seventy-five minutes) periods and a one and a half hour (ninety minutes) leadership laboratory period each week. Only students who have demonstrated a definite potential for becoming competent officers will be selected for the advanced course. Students entering this course must be selected in accordance with the prerequisites listed below.

- Pass a military physical examination
- Pass a background screening
- Pass the three-event physical fitness test
- Pass healthy body-fat standards

## Monetary Allowances

Cadets selected for admission into the advanced course qualify for a nontaxable monetary allowance of \$400–\$500 per month for up to twenty months. Cadets may also qualify for the simultaneous membership program with the United States Army Reserve or National Guard, which can provide over \$16,000 during the last two years of school. Both the United States Army Reserve and the National Guard offer additional monetary incentives for cadets who join their organizations.

## Army ROTC College Scholarship Program

Financial assistance is available in the form of two-, three-, or four-year ROTC academic scholarships for selected students. Under the Army ROTC Scholarship Program, the students/cadets receive reimbursement for their tuition and fees. Additionally, Army scholarship recipients receive a flat-rate allowance of \$1200 per year for textbooks and other expenses and a stipend for up to 10 months per year. There are also numerous

national and organizational scholarships that students may compete for as members of Army ROTC.

## Textbooks and Uniforms

All textbooks, uniforms, items of insignia, and equipment incident to membership in the Army ROTC Program are furnished by the Gateway Battalion.

## Leadership Laboratory

Leadership laboratory is open to students who are members of the Reserve Officer Training Corps or who are eligible to pursue a commission as determined by the professor of military science. Leadership laboratory is the formalized phase of leadership training conducted by the cadets. It is scheduled for one and one half hours (ninety minutes) each week for both the basic and advanced officer courses (non-contracted and contracted). All uniforms and equipment required for cadet activities are furnished.

## FAQs

### What is Army ROTC?

ROTC is the Reserve Officers Training Corps. It is the largest officer commissioning program for the U.S. Army. It is structured as a college class in which one learns valuable leadership skills.

### Do ROTC courses count for credit?

Yes! All MIL SCI courses at UMSL count as elective credit (towards your 120 requirement) and your grades are included in GPA calculations. In addition, MIL SCI 1101 and MIL SCI 1102 are core courses for the Military History / Military Logistics Minor.

### Am I joining the Army by signing up for ROTC?

NO, you are not joining the Army. Only if you are commissioned as a Second Lieutenant will you join the Army. If you are not receiving scholarship or stipend support, there is no military obligation whatsoever during the first two years of ROTC.

### Can I just take the ROTC class for the leadership education or for my minor?

YES. You can take any 1000 or 2000 level class without prerequisite or obligation. You can choose (or not choose) to participate in the extracurricular events like physical training, field training and other military skills. Before signing up for a 2000 level class, you should have a discussion with the UMSL ROTC advisor.

### How about Scholarships? Do you have any available?

The Army offers full tuition 2, 3, and 4 year scholarships for the best students (you must be medically, physically, academically qualified and pass a background check). These scholarships are merit and potential based. The number and type of scholarships available is different every year, but once awarded a scholarship is a financial commitment from the Army to you through your graduation.

**Web Site:** <http://parks.slu.edu/current-students/student-organizations/afrotc-207>

**Main Number:** 314-977-8227

## Background

The Aerospace Studies program in the Department of Military and Veterans Studies is the academic home to Air Force Reserve Officers Training Corps (Air Force ROTC). UMSL is partner institution in Detachment 207, Air Force ROTC – which is hosted at St. Louis University. This program provides pre-commissioning education for qualified students who desire to serve on active duty as commissioned officers in the United States Air Force.

The aerospace studies curriculum is divided into two phases: (1) the general military course; and (2) the professional officer course. The department offers a standard and condensed four-year commissioning programs. The four-year program provides coursework during the freshman through senior years. The condensed program compresses the general military course to one academic year beginning in the fall. To obtain specific information, please contact the Aerospace Studies Program directly.

## General Military Course

This program of instruction is open to any student and consists of the first- and second-year courses for students in the four-year Air Force Reserve Officer Training Corps (AFROTC) program. These courses deal with the Air Force structure and the development of air power. They strengthen interest in becoming a professional Air Force officer, develop knowledge of world military forces, and enable the student to understand how the United States Air Force supports national objectives and policies.

## Professional Officer Course

Aerospace studies courses offered during the third and fourth years must be completed by all students who seek a commission through AFROTC. Coursework continuity is designed to prepare college students to serve as active duty Air Force officers upon graduation and commissioning. The curriculum stresses national security in contemporary American society, leadership, management, and professionalism. Special emphasis is placed on developing the cadet's communication skills. Students entering this course must be selected in accordance with the prerequisites listed below. Students not currently enrolled in the AFROTC program must have permission of the department chairperson prior to enrolling in these courses.

- Pass a military physical examination
- Pass the four-event physical fitness test
- Pass height/weight standards
- Have a 2.5 cumulative GPA or higher for undergraduates or a 3.0 cumulative GPA or higher for graduate students.

Note: Call the Aerospace Studies Program at 314-977-8227 for specific requirements.

## Leadership Laboratory

Leadership laboratory is the formalized phase of leadership training conducted by the cadets. It is scheduled for up to two hours each week. All uniforms and equipment required for cadet activities are furnished. It is required for members of the Air Force Reserve Officer Training Corps, or students who are eligible to pursue a commission as determined by the chairman of the Department of Aerospace Studies.

## Monetary Allowances

Once the admission criteria have been met, the student may compete for the opportunity to contract for four years of active duty as a commissioned

officer upon graduation. Upon selection and acceptance, the student receives a monthly, tax-exempt stipend ranging from \$300.00–\$500.00. Tuition assistance is possible but not guaranteed. It is awarded on a competitive basis.

## Field Training

Cadets are required to attend a four-week field training course at Maxwell Air Force Base in Montgomery, AL before they may formally enroll in the professional officer course. Field training provides a better understanding of the United States Air Force mission, increases the cadets' proficiency in junior officer training areas, and stresses the importance of physical conditioning. Students attending these courses receive pay for the encampment plus travel allowances.

## FAQ

### How do I join AFROTC if I am already in college?

Once you are enrolled as a full time student, you can register for AERO 1001 in the fall or AERO 1002 in the spring. If you are a sophomore or only have 3 years left of your degree, you may still join but will need to contact the Unit Admissions Officers first.

### Do AFROTC courses count for credit?

Yes! All AERO courses at UMSL count as elective credit (towards your 120 requirement) and your grades are included in GPA calculations.

### What is the difference between AFROTC and enlisting in the Air Force?

AFROTC is one of three commissioning sources for the USAF. Upon completion of a bachelor's degree and AFROTC you will be commissioned as an officer, followed by specific training in a career field. Officers are trained to be the leaders and supervisors of enlisted personnel. Rank, pay, and career opportunities for officers are commensurate with their elevated level of responsibility. Enlisting in the Air Force is done through a local recruiter followed by basic training and prospective technical training. This avenue does not require a college degree.

### Will the Air Force pay for my school?

AFROTC offers many scholarship opportunities. Prospective AFROTC cadets can apply for a high school scholarship before entering into college. Once in college, AFROTC cadets can apply for an in-college scholarship. This process is handled by the host detachment.

## Air Science Courses

### *AERO 1001 Heritage and Values of the US Air Force I: 2 semester hours*

This course introduces students to contemporary military issues and overall Air Force structure. Contracting with AFROTC is not required for this course.

### *AERO 1002 Heritage and Values of the US Air Force II: 2 semester hours*

This course introduces students to military concepts such as strategic offensive and defense forces, general purpose forces, aerospace support forces, and the Air Force relationship with U.S. Army forces. Contracting with AFROTC is not required for this course.



**AERO 1500 Leadership Laboratory: 0 semester hours**

Prerequisites: Students must be enrolled in an AERO course. Instruction is conducted within the framework of an organized cadet corps with a progression of experiences designed to develop each student's leadership potential. Course work includes a study of Air Force customs and courtesies, drill and ceremonies, career opportunities in the Air Force, and the life and work of an Air Force junior officer. Students develop their leadership potential in a practical, supervised laboratory, which typically includes field trips to Air Force installations throughout the United States. This course is generally taught at St. Louis University. It is required for all AF ROTC students.

**AERO 2001 Team Leadership Fundamentals I: 2 semester hours**

This course lays the foundation for teams and leadership. The topics include skills that will allow cadets to improve their leadership on a personal level and within a team. The course will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset and to motivate sophomore students to transition from AFROTC cadet to AFROTC officer candidate.

**AERO 2002 Team Leadership Fundamentals II: 2 semester hours**

Prerequisites: AERO 2001 or consent of instructor. This course lays the foundation for Air Force leadership and prepares AFROTC students for their field training experience where they will be able to put the concepts learned into practice. Contracting with AFROTC is not required for this course.

**AERO 3001 Leading People & Effective Communications I: 3 semester hours**

Prerequisites: Membership in the AFROTC Program or consent of instructor. This course focuses on training students to be effective managers in Air Force context. Professional concepts that will be emphasized include the use of managerial processes involving decision-making and the use of analytic aids to support planning, organizing, and controlling systems in a changing environment.

**AERO 3002 Leading People & Effective Communications II: 3 semester hours**

Prerequisites: AERO 3001 and membership in the AFROTC Program, or consent of instructor. This course continues the management training from AERO 3001. Using actual Air Force cases, students focus on the management of forces in change and managerial strategy within the context of the military organization.

**AERO 4001 Air Force in National Security Affairs I: 3 semester hours**

Prerequisites: AERO 3002 and membership in the AFROTC Program, or consent of instructor. This course explores the role of the armed forces as an integral element of American society, including civil-military relations, defense policy, and Air Force responsibilities in national defense. It is part of the final educational experience for AF ROTC Cadets before commissioning.

**AERO 4002 Air Force in National Security Affairs II: 3 semester hours**

Prerequisites: AERO 4001 and membership in the AFROTC Program, or consent of instructor. This course explores the importance of maintaining adequate national security forces and teaches students how to effectively design and implement Air Force-focused national security policies. It is part of the final educational experience for AF ROTC Cadets before commissioning.

**Military Science Courses****MIL SCI 1101 Introduction to Leadership I: 3 semester hours**

Examine the challenges and competencies that are critical for effective leadership. You will learn how the personal development of life skills such as cultural understanding, goal setting, time management, mental/physical resiliency, and stress management relate to leadership, officership, and the Army profession. Enrollment in MIL SCI 1101 does not require a commitment to join the US Army, (FALL ONLY).

**MIL SCI 1102 Introduction to Leadership II: 3 semester hours**

Investigate leadership fundamentals such as problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. You will explore dimensions of leadership attributes and core leader competencies in the context of practical, hands-on, and interactive exercises. Learn fundamental military concepts and explore the Army's leadership philosophy. Enrollment in MIL SCI 1102 does not require a commitment to join the US Army. (SPRING ONLY).

**MIL SCI 1500 Leadership Laboratory: 0 semester hours**

Prerequisites: Must be currently enrolled in a MIL SCI course. Leadership Laboratory provides basic and advanced leadership experience in military courtesy, drill and ceremonies and practical application of classroom-taught subjects. Functions and responsibilities of leadership positions are developed through student-led staff planning actions and command positions. This course normally meets at Washington University. Note: All military science scholarship and advanced course students must register for MIL SCI 1500.

**MIL SCI 2201 Innovative Team Leadership: 3 semester hours**

Explore the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and leadership theories. The focus continues to build on developing knowledge of leadership attributes and core leader competencies through the understanding of Army rank, structure, and duties as well as broadening knowledge of land navigation and squad tactics. Enrollment in MIL SCI 2201 does not require a commitment to join the US Army. (FALL ONLY).

**MIL SCI 2202 Foundations of Tactical Leadership: 3 semester hours**

Develop greater self-awareness as you assess your own leadership styles and practice communication and team building skills. Examine the challenges of leading teams in the complex operational environment. Study dimensions of terrain analysis, patrolling, and operation orders. Explores the dynamics of adaptive leadership in the context of military operations. Enrollment in MIL SCI 2202 does not require a commitment to join the US Army. (SPRING ONLY).

**MIL SCI 3301 Adaptive Team Leadership: 3 semester hours**

Prerequisites: Successful completion of MIL SCI 1101 through 2202; OR attendance at the Leader's Training Course (LTC); OR member of US Army Reserve or National Guard Unit. This is an academically challenging course where you will study, practice, and apply the fundamentals of Army leadership, officership, Army values and ethics, and small unit tactics. At the conclusion of this course you will be capable of planning, coordinating, navigating, motivating and leading a team or squad in the execution of a tactical mission during a classroom practical exercise (PE), a leadership lab, or during a situational training exercise (STX) in a field environment. (FALL ONLY).

**MIL SCI 3302 Applied Team Leadership: 3 semester hours**

Prerequisites: MIL SCI 3301. Continue to learn and apply the fundamentals of Army leadership, officership, Army values and ethics as you hone your leadership abilities in a variety of tactical environments and the classroom. Successful completion of this course will help prepare you for success at the ROTC Leader Development and Assessment Course (LDAC) which you will attend the summer following this course at Fort Lewis, WA. You will receive systematic and specific feedback on your leadership attributes, values and core leader competencies from your instructors, other ROTC cadre, and senior cadets. (SPRING ONLY).

**MIL SCI 4401 Adaptive Leadership: 3 semester hours**

Prerequisites: Successful completion of the ROTC Leadership Development and Assessment Course (LDAC). This course focuses on practical application of adaptive leadership. Throughout the semester, students will attend weekly training meetings and fill the roles of Army staff officers. They will plan, execute and assess ROTC training and recruiting events. Study will also focus on the Army values, leader ethics and how they are applied in the Full Spectrum Operating Environment. The officer's role in the Uniform Code of Military Justice, counseling of subordinates, administrative actions and other aspects of everyday military life will also be discussed. (FALL ONLY).

**MIL SCI 4402 Leaders in a Complex World: 3 semester hours**

Prerequisites: MIL SCI 4401. Explore the dynamics of leading in the complex situation of current military operations in the contemporary operating environment. Examine differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. You will also explore aspects of interacting with non-government organizations, civilians on the battlefield and host nation support. Significant emphasis is placed on preparing you for your branch school and first unit of assignment. (SPRING ONLY).

**MIL SCI 4411 Advanced Military Science Studies I: 3 semester hours**

Prerequisites: MIL SCI 4401 or permission of instructor. An in-depth study of the role of the Army officer in today's Army.

**MIL SCI 4413 Military Medical Technologies Independent Study: 3 semester hours**

This course explores how medical advances have improved soldiers' chances of surviving battlefield injuries from the Civil War to the Iraq War. Also explores how soldiers are now surviving more catastrophic injuries and what the implications are on long term health care for these soldiers both physically and mentally.

**Military and Veterans Studies Courses****MVS 1100 Veterans Transition Seminar: 1 semester hour**

This course is designed for the student veteran who is new to UMSL but not eligible for the First Year Experience class. It will survey essential life skills (time management, financial management, physical fitness) and tools for academic success (note-taking, writing, research, oral presentation). It will familiarize students with the relationship between their education and their career and personal goals. It will also expose students to campus and veteran-specific support services. Maybe most importantly, this course will provide a venue for veterans to connect with other veterans who are facing a similar transition.

**MVS 2000 Selected Topics in Military or Veterans Studies: 1-3 semester hours**

Selected topics in military or veterans studies. The topics will vary each semester. May be taken more than once for credit as long as the topic differs.

**MVS 2021 War and Violence in Modern Times: 3 semester hours**

Same as HIST 2021. Prerequisites: Sophomore standing or consent of the instructor. This course examines the connections between warfare and resistance, gangs and poverty, and state and non-state officials as enactors of violence. It explores the effects of war and violence on the poor in Brazil and the United States, prisoners of war in Asia, and resistance fighters in Latin America and northern Africa. Students will watch films/short videos, read academic and newspaper articles, and listen to short podcasts to grapple with the issues underlying structures of violence.

**MVS 2025 U.S. Foreign Relations and Military History: 3 semester hours**

Same as HIST 2025. This course surveys the development of American land, sea, air, space, and cyber power from the start of the colonial era to the present, with an emphasis on the interrelationship between U.S. foreign and military policies and between diplomacy and force.

**MVS 2100 Veterans in American Society: 3 semester hours**

Same as SOC 2801. Prerequisite: ENGL 1100. This survey course will focus on the American veteran experience and explore basic concepts, ideas and research into veterans and veteran institutions. In a multidisciplinary manner, students will examine military culture, the unique status of veterans in our society, and veteran institutions. Students will also study the successes, challenges and obligations our society faces related to its veteran community.

**MVS 2130 Gender and the Military: 3 semester hours**

Same as SOC 2802 and GS 2130. This course investigates how the military treats gender difference, explores how military culture is defined, and how gender is a socially constructed concept. Topics may include military culture, gender construction, and how gender and sexuality issues affect military readiness and effectiveness.

**MVS 2200 Examining Cultural Experiences of Veterans: 3 semester hours**

Prerequisites: Consent of the instructor. This course is designed to explore the cultural experiences of veterans. Through discussion, reflection and writing, students will examine the service experience in another culture and then relate those limited interactions within the context of the culture as a whole. For non-western cultural experiences, this course meets UMSL Cultural Diversity [CD] requirement.

**MVS 2850 National Security Policy and Practice: 3 semester hours**

Same as POL SCI 2551. This simulation-driven course focuses on national security policies and the processes that put these policies into practice. It examines the elements that underpin national security policy and the processes employed by the US government for integrating and synchronizing those instruments in the pursuit of national security objectives.

**MVS 2860 Understanding Terrorism in the 21st Century: 3 semester hours**

Same as POL SCI 2860. This course seeks to provide insight into the use of terrorism, as a means to achieve a political end, in our current globalized environment. It will review various facets of terrorism including societal disturbances that allow terrorist organizations to flourish, various types of domestic and international non-state actors that use terrorism, terrorism as the next generation of warfare, and the global response to the threat of terrorism. Students will exit the course with a more complete understanding of the multi-faceted threat terrorism poses to our increasingly globalized society.

***MVS 3100 Current Issues in Military and Veterans Studies: 1-4 semester hours***

Selected topics in military or veterans affairs with emphasis on current issues and trends. May be repeated as long as the topic is different for a maximum of 6 credit hours.

***MVS 3201 Narratives from the Forever Wars: 3 semester hours***

Same as MEDIA ST 3201 and ENGL 3201. This course studies literature and film written by and about those who served in the wars in Iraq and Afghanistan, with particular interest in how veterans as individuals are represented in it.

***MVS 3300 Veteran Social Policy: 3 semester hours***

Same as SOC 3802. Prerequisite: SOC 1010. This course provides an overview of American public policy towards military veterans. Students will research, design, and propose policy changes using various written products and presentations.

***MVS 3500 Internship in Veterans Studies: 1-3 semester hours***

Prerequisites: Junior Standing and consent of the department chair. Independent study involving regular on-site work with an appropriate public or private agency serving the veteran community. A written report reflecting on the experience is required. Course may be repeated for a maximum of 6 credit hours.

***MVS 4100 Veterans Studies Capstone Seminar: 3 semester hours***

Prerequisites: MVS 2100 and senior standing. Mentored by a faculty member, students in this course will apply insights gained from previous coursework into a substantial Veterans Studies project. Students will work with the instructor and the class to develop a topic, establish a research or project plan, then prepare a project or paper suitable for presentation to the public. Students should expect that their work will be published or presented at an end-of-the-year symposium. This is not an independent study.

***MVS 4200 Independent Study in Military and Veterans Issues: 1-3 semester hours***

Prerequisite: Consent of instructor. Faculty mentored, independent study through readings, reports, or field research. No student may take more than a cumulative total of 6 hours of Independent Study.

***MVS 4300 Current Topics in Military or Veterans Studies: 1-3 semester hours***

Prerequisites: Junior standing. Selected topics in military or veterans studies with emphasis on current issues and trends. May be repeated as long as the topic is different for a maximum of 6 credit hours.

***MVS 4345 War Crimes, Genocide, and Justice in the 20th and 21st Centuries: 3 semester hours***

Same as SOC 4345, POL SCI 4345, and CRIMIN 4345. Prerequisite: ENGL 3100. This course provides advanced undergraduate and Master's level students a comprehensive overview of the subject of war crimes, crimes against humanity, genocide and legal responses to these crimes in the modern era. The goal of this course is to engage students in sustained, critical thought about these issues and to foster a deeper understanding of both the causes and consequences—legal, social and human—of these egregious crimes.

***MVS 6220 Social Policy and Military Veterans: 3 semester hours***

Same as SOC WK 6220. Prerequisites: SOC WK 5200 or its equivalent or consent of the instructor and graduate standing. This course provides an overview of public policy towards military veterans, with an emphasis on social work. The course focuses on political theory and public policy and reviews the various methodological approaches to studying public policy, the pertinent theories related to public policy analysis, an introduction to military culture and current issues facing veterans. The main focus of the course will be on understanding the current issues facing veterans and how public policy affects these issues.

## Sociology

Ask yourself, ***What is this all about?***

Sociology is the scientific study of human social relationships, social interactions, and institutions. Sociology's subject matter is diverse, ranging from crime to religion, from the family to the state, from the divisions of race and social class to the shared beliefs of a common culture, and from social stability to radical change in whole societies. It provides both quantitative and qualitative tools for understanding how and why our society functions, the impact of social intuitions on individual lives, and the challenges of social interaction between individuals and society.

Sociology will enable you to see the world in a new light. In a country like the United States where individualism is celebrated, it is very easy to forget that the way we behave and feel is socially produced. Whether they be friendships, families, church groups, socioeconomic classes, complex organizations, or nations, much of our lives are socially constructed. This is the basic premise of sociology.

### Degree with Distinction in Sociology

A degree with distinction in research, scholarship or creativity in the arts is an honor that recognizes a student for outstanding accomplishments in research and/or other creative endeavors. Students majoring in Sociology who meet the criteria may apply for candidacy for a Degree with Distinction during their final year before graduation. The criteria and guidelines for applying for a Sociology Degree with Distinction can be found on our website.

### Student Experience

Students receive training in a variety of social research methods, including questionnaire survey research, social statistical analysis, qualitative methods, and ethnographic fieldwork. They also have the opportunity to gain hands-on experience in urban community-based research.

Sociology students work with faculty who conduct research in Japan, the St. Louis area, and on the internet. They research topics such as urbanization and globalization, Japanese business and society, new media and the role of technology in society. We also encourage our Sociology students to take advantage of opportunities to study with faculty in the Gerontology and Gender Studies Programs exploring of the issues of aging and gender on both individual identity and the structure of the wider society.

The Sociology program is a leader of the University of Missouri system in innovative online education. Several courses offer the flexibility of attending an in-class lecture or accessing the lecture and course material online, according to the individual's schedule.

## Department Awards and Honors

The Ray Collins Alumni Award is given annually by the Sociology Alumni Association to the top graduating senior as selected by the faculty.

The Sociology Alumni Awards are awarded by faculty annually on the basis of merit. In addition, one outstanding senior, junior, and freshman are recognized annually based on merit. The Outstanding Sociology Minor Award is presented to the graduating student with the most outstanding minor GPA record.

Department Honors in Sociology are awarded to B.A. and B.S. degree candidates in sociology with an overall grade point average of 3.2 or better.

## Sociology Program Scholarship

The Sociology Program offers scholarships to majors in Sociology. Click the link below for more information.

[Sociology Major Scholarship](#)

Go to the Financial Aid page to [Apply for a Scholarship](#) and see more information on how to apply.

## Career Outlook

The Sociology Program teaches the transferable job skills that enable students to rationally analyze social issues and arrive at effective solutions. These skills are valuable for careers in health and social services; human resources; community planning; non-profit leadership; consumer marketing research and consulting; and jobs involving social research in corporate, non-profit, and government settings. Sociology also provides a solid foundation for graduate school in any of the social sciences, and for professional training in fields such as law, medicine, and social work.

## Degrees

Sociology BA (p. 627)

Sociology BS (p. 630)

Organizational Leadership BA

## Certificates

Gender Studies Undergraduate Certificate (p. 465)

Gender Studies Graduate Certificate (p. 464)

## Minors

Gerontology Minor (p. 465)

Gender Studies Minor (p. 464)

Sociology Minor (p. 633)

Urban Studies Minor (p. 649)

Veterans Studies Minor (p. 649)

## Courses

Courses offered by the department can be found at the links below:

[Sociology \(SOC\)](#)

[Gender Studies \(GS\)](#)

[Gerontology \(GERON\)](#)

[Military and Veterans Studies \(MVS\)](#)



# College of Business Administration

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College of Business Administration Home Page

## History

The University of Missouri-St. Louis College of Business Administration was established in 1967 and earned accreditation by the Association to Advance Collegiate Schools of Business (AACSB) six years later, the shortest time on record for any school. Nearly 50 years since the inception of our College, UMSL Business is proud to remain accredited in both business and accounting by AACSB, the only internationally recognized accrediting agency for business and accounting programs.

## Mission

The College of Business Administration's mission is to provide cutting edge research - and practice - based programs that prepare students to enter the workforce and succeed locally and globally across a wide range of business professions. In achieving this mission, we offer quality, value, access, and innovation to our student body. The College benefits from its location in Missouri's largest metropolitan area. The majority of our graduates continue to live and work in the St. Louis region, and our College plays a key role in educating the workforce of the region.

In conclusion, we are dedicated to strengthening the region by transforming the lives of our students and making an impact on our corporate and civic partners.

## Vision

The College will continue to be the leader in the pursuit of excellence in global oriented business education in order to provide the next generation of business leaders and entrepreneurs for the region. We will continue to provide quality, value, access, and innovation.

### Quality.

We are St. Louis' only public university. Faculty recruited from around the world balance meaningful research with excellent teaching and engaged service. We augment this core faculty with instructors equipped with practical business experience and strong teaching skills. Eight advisory boards ensure that our curriculum is up-to-date, addresses employers' needs, and keeps up with instructional technology. Our new business building encourages innovative learning in accessible, bright open spaces.

### Value.

We offer the best value in business education in the St. Louis region. We make quality faculty, programs, and instruction affordable to every St. Louisian. We are extremely focused on student success, offering frequent career-specific job and career fairs in addition to those offered by the campus. The campus mission distilled into the words "*we transform lives*" is ingrained into our culture. Faculty engage students in service learning opportunities to provide value and help transform lives in the surrounding communities. Increasingly, this orientation has made us attractive to students outside the St. Louis region, including international students attracted to our nationally ranked programs.

### Access.

We believe that the transformative power of education should be available to everyone who is willing and able to seek it out. Nearly 80% of our

graduates remain in the region, and throughout our 54-year history, we continue to provide business leaders for most organizations in the region. Fully one-third of all UMSL alumni are graduates of the College.

We schedule and price our programs to serve the widest population of college-bound and mid-career students, be they first generation college students, those who are returning to college, those who are place bound, or those who are remove and otherwise unable to pursue a college degree. We use innovative delivery modes - face-to-face, hybrid, and online - to enable students to tailor a program that fits their schedules. We coordinate progression to graduation. At the graduate level, we offer the same level of accessibility. We continue to offer a Fortune 20 company an MBA program on their campus. We also make doctoral level education accessible through our highly innovative DBA program which currently includes student from 10 states.

### Innovation.

Reflecting our region's strong emphasis on entrepreneurship as critical to our future economic growth, the College has made entrepreneurship and innovation a part of who we are. UMSL Accelerate, devoted to education, innovation, and collaboration is a driver for the curriculum and initiatives with the campus and the business community. Cybersecurity is being created in a unique way, emphasizing business problems, not just technical solutions. Analytics is being incorporated into each department's offerings and the UMSL NOW program is targeting adult learners. Each semester we have been growing inter-UM System collaboration.

Lastly, innovative faculty are bringing service learning projects into the class and using the latest instructional technology to increase student engagement. The pillars of the College of Business brand – global focus, technical competency, and innovation - remain our guideposts as we continue to enhance the quality of our programs, remain the value leader in the market, and improve access for our students.

## College of Business Administration Programs

### Undergraduate Degrees

- Bachelor of Science in Accounting (p. 307)
- Bachelor of Science in Business Administration (p. 341) (with emphasis areas available in)
  - Entrepreneurship (p. 342)
  - Finance (p. 343)
  - International Business (p. 345)
  - Management (p. 346)
  - Marketing (p. 348)
  - Supply Chain Management (p. 349)
- Bachelor of Science in Cybersecurity, Information Systems Emphasis (p. 407)
- Bachelor of Science in Information Systems and Technology (p. 475)

### Undergraduate Minors

- Accounting (p. 310)
- Cybersecurity (p. 409)
- Digital Marketing Communications (p. 414)
- Finance (p. 463)
- General Business (p. 364)
- Information Systems and Technology (p. 475)

- International Business (p. 481)
- Supply Chain Management (p. 643)
- Management (p. 489)
- Marketing (p. 490)
- Transportation Studies (p. 648)

## Undergraduate Certificates

- Cybersecurity Certificate (p. 412)
- Entrepreneurship Certificate (p. 460)
- Post-Baccalaureate Certificate in Accounting (p. 310)

## Graduate Degrees

- Master of Accounting (p. 309)
- Master of Business Administration (p. 352)
  - Accounting (p. 353)
  - Business Analytics
  - Cybersecurity (p. 354)
  - Finance (p. 356)
  - Information Systems (p. 357)
  - International Business (p. 358)
  - Supply Chain Management
  - Management (p. 360)
  - Marketing (p. 361)
- Master of Science in Cybersecurity, Information Systems Emphasis (p. 411)
- Master of Science in Information Systems (p. 478)
- Doctor of Business Administration (p. 414)
- Ph.D. in Business Administration
  - Logistics and Supply Chain Management (p. 364)

## Graduate Certificates

- Graduate Certificate in Accounting Data Analytics (p. 308)
- Graduate Certificate in Accounting Data Security (p. 308)
- Graduate Certificate in Auditing (p. 321)
- Graduate Certificate in Business Administration (p. 352)
- Graduate Certificate in Business Intelligence (p. 364)
- Graduate Certificate in Corporate Controllershship (p. 393)
- Graduate Certificate in Corporate Financial Reporting (p. 393)
- Graduate Certificate in Cybersecurity (p. 408)
- Graduate Certificate in Digital and Social Media Marketing (p. 413)
- Graduate Certificate in Entrepreneurship (p. 459)
- Graduate Certificate in Information Security Management and Auditing (p. 475)
- Graduate Certificate in Information Systems and Technology (p. 478)
- Graduate Certificate in Logistics and Supply Chain Management (p. 488)
- Graduate Certificate in Marketing Management (p. 489)
- Graduate Certificate in Talent Management (p. 644)
- Graduate Certificate in Taxation (p. 644)

## Admission Requirements

Students entering UMSL may declare themselves as Business majors in the College of Business Administration (COBA). They are advised by

Business and may take Business courses as long as they maintain “good standing” status (see General Degree Requirements listed below) and have satisfied the prerequisites for the courses they propose to take.

## Credit Hour Requirements

Student must complete a minimum number of hours in the following areas:

- 120 credit hours for the baccalaureate degree
- 48 credit hours of coursework offered by the College of Business
- 36 credit hours of upper-division coursework offered by the College of Business

## Credit Hour Requirements for Transfer Students

- Students must complete a minimum of 60 hours from four-year, baccalaureate degree granting colleges or universities.
- A minimum of 50% of all business course work must be completed at UMSL.
- Students must complete a minimum of 21 graded hours in business courses.
- Students must complete their last 30 hours in residence at UMSL.

## Credit for Lower Division Transfer Courses

Students seeking to use a lower division course to satisfy an upper division business requirement must validate the course being transferred. If successfully validated, the transfer course will waive the need to take the upper division equivalent course at UMSL, but the course transferred will be counted as lower division; it will not count toward the 36 upper division hours required in business.

## GPA Requirements

Student must carry a minimum 2.3 GPA in the following areas in order to graduate. Grade modification may be used.

- Campus GPA
- College of Business Coursework GPA
- Major GPA
- Emphasis Area GPA

## Grade Requirements

A minimum grade of C- is required for each course in the business core (except MGMT 4219); for each course which serves as a prerequisite for another course; and for each course in an emphasis area and/or major.

## Satisfactory/Unsatisfactory Option

Majors may take no more than 9 satisfactory/unsatisfactory hours in the College. Unsatisfactory/Unsatisfactory grading is restricted to elective coursework.

## Prerequisite Requirements

Business course prerequisites are enforced by the College of Business Administration and include a minimum campus grade point average of 2.0 as a condition for taking any upper division business course.

## Good Standing

Students are allowed to take a maximum of 9 hours of upper-division Business classes before a “good standing” evaluation is applied to their

academic records. In order to remain in good standing and continue to enroll in upper division Business courses, students must maintain a 2.3 campus and Business grade point average and must have completed the following cluster of courses (with a grade of C- or higher):

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
INFSYS 2800	Information Systems Concepts and Applications	3
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1100	Basic Calculus	3
MATH 1105	Basic Probability and Statistics	3

## Additional Emphasis Areas

Emphasis areas may be added for up to two years following degree completion. Each additional degree from the College of Business Administration requires 15 unique hours taken at UMSL subsequent to completion of the prior business degree.

## Latin Honors

In accordance with the University's Latin Honors policy (p. 26), candidates graduating from the College of Business in the 2020-2021 Academic Year must meet the following GPA qualifications:

Summa Cum Laude	3.932
Magna Cum Laude	3.800
Cum Laude	3.545

The College of Business Administration offers five graduate degrees: the Doctor of Business Administration (DBA), the Doctor of Philosophy in Business Administration (Ph.D.), the Master of Business Administration (MBA), the Master of Science in Information Systems (MS in IS), and the Master of Accounting (MAcc). All programs carry the prestigious accreditation of AACSB-International.

## Doctor of Philosophy in Business Administration (Ph.D.)

The Ph.D. program includes an emphasis in Logistics & Supply Chain Management (LSCM). This is the only LSCM emphasis in a doctoral business program offered in Missouri. Courses are taught by full-time, nationally known scholars who have been recognized as one of the most academically prolific faculties in America. The Ph.D. program is designed to prepare scholars who will excel in the national and international marketplace, especially in academic and research organizations, but graduates may also find opportunities in the growing private sector demand for advanced LSCM expertise.

## Doctor of Business Administration (DBA)

The Doctor of Business Administration program is a three-year, cohort-based program that offers a flexible format, with limited monthly visits to

campus. Over the course of the program, participants will make only three weekend trips to campus per term.

DBA students move through the program in a cohort and meet face-to-face one weekend a month, then engage and collaborate with faculty and students in the online learning platform for discussions. The first two years cover an array of cutting-edge business and management topics and the third year is spent focusing on the candidate's dissertation research.

The DBA is designed to train engaged management scholars in a learning community supported by select internationally renowned faculty with close ties to business and recognized for their research impact and expertise in graduate education.

## Master of Business Administration Program (MBA)

The MBA is available in three formats: the FlexMBA (formerly evening MBA), the Professional MBA (an accelerated Internet-enhanced weekend program), and the International MBA program. All programs are fully accredited by AACSB International – The Association to Advance Collegiate Schools of Business, the premier accrediting body in collegiate business education. The MBA programs are designed to prepare students for administrative and professional positions. They also provide an appropriate foundation for students contemplating doctoral work and eventual careers in college teaching and research. The programs admit students with bachelor's degrees from accredited institutions, including those with undergraduate backgrounds in the sciences, engineering, humanities, or arts as well as business. Graduate Business program information is available at the College of Business Administration website.

## The FlexMBA Program

The FlexMBA curriculum familiarizes participants with the fundamental areas of business administration. The core program is designed to generate a working knowledge of the concepts and interrelationships of four broad categories fundamental to management training:

- The external environment confronting business organizations and management's response to legal, economic, social, and political issues.
- The internal operation of various business organizations and management's role in channeling human behavior to satisfy both personal and organizational goals.
- Basic concepts, terminology, and interaction of the accounting, marketing, finance, information systems and operations management disciplines.
- Quantitative management decision-making models put to use in the context of current management principles.

Business concepts are integrated by a course in strategy formulation and implementation in the final semester of study. There is no thesis requirement; however, students interested in undertaking an individual research project may earn elective credit by enrolling in a supervised independent study course.

## Emphasis Areas

MBA students may obtain an emphasis in Accounting, Finance, Information Systems, International Business, Logistics and Supply Chain Management, Management, Marketing or Operations Management.

Depending on the student's undergraduate background, courses waived, and emphasis area chosen students might require additional coursework.

## Graduate Certificate Programs in Business Studies

The College of Business Administration offers five graduate certificates. To be admitted to a graduate certificate program, students must meet the same requirements as those needed for a graduate degree program in business (see Admission Requirements in the Graduate Studies in Business Administration section of this Bulletin).

Certificate programs allow qualified graduate students to pursue an intensive course of study in a specialized business topic without requiring completion of a full graduate business degree program. Certificate programs provide students with the opportunity to obtain the advanced knowledge available through a graduate course of study in a relatively brief period.

In order to successfully complete a certificate program, students must earn a 3.0 cumulative GPA in certificate classes. Unless otherwise specified, the coursework must be completed within six years. Students must also comply with all requirements related to matters such as prerequisites, academic probation, and other graduate business program policies.

## Courses

### ***BUS AD 1000 Introduction to Business: 3 semester hours***

Overview of the functional business disciplines, including, but not limited to principles of Accounting, Finance, Information Systems, Law, Logistics and Operations Management, Management, and Marketing.

### ***BUS AD 1900 Introduction to Personal Law: 3 semester hours***

This course introduces students to the American legal system and the basic issues every individual must deal with in our society. The course will be of interest to anyone seeking a job, leasing an apartment, buying a car or house, borrowing money, buying insurance, getting married or divorced, entering contracts, filing a law suit, writing a will, or accumulating wealth. May not be used for credit in any undergraduate business program.

### ***BUS AD 2000 Topics in Business Administration: 1-3 semester hours***

Prerequisites: Vary with topic; contact the School of Business Administration. Study of selected special problems in business and administration. May be repeated for credit with different topics.

### ***BUS AD 2900 Legal Environment of Business: 3 semester hours***

Prerequisites: Sophomore standing. An introduction to the nature and meaning of law, sources of law, legal process and institutions. The legal environment of business is defined as: the attitude of the government toward business, the historical development of this attitude; current trends of public control in taxation, regulation of commerce and competition; freedom of contract, antitrust legislation and its relationship to marketing, mergers and acquisitions; and labor management relations.

### ***BUS AD 3090 Internship in Business Administration: 1-3 semester hours***

Prerequisites: Minimum campus GPA of 2.0; one must have completed and/or be currently enrolled in at least 6 hours of Business Administration electives, have consent of supervising instructor and Associate Dean, and a College of Business GPA of at least 2.5. Students are employed in the field of Business Administration where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience are the primary goals. A Business Administration faculty member will monitor the student's program with the student providing a formal written report at the end of the project. BUS AD 3090 may not be counted toward the minimum credit hours for any emphasis area.

### ***BUS AD 3099 Independent Study In Business Administration: 1-3 semester hours***

Prerequisites: Minimum campus GPA of 2.0 and approval by the supervising professor and the Associate Dean. Special individual study in business under the supervision of a full-time faculty member.

### ***BUS AD 3990 Internship in Business Law: 1-3 semester hours***

Prerequisites: BUS AD 2900, 3 credit hours of Business Law electives, and a Business College 2.5 GPA. Must have completed and/or be currently enrolled in at least 3 credit hour of Business Law electives and have consent of supervising instructor and Area Coordinator. Students are employed in the field of Business Law where the knowledge and skills learned in the classroom are applied. Professional development and obtaining specialized work experience are primary goals. A Business Law faculty member will monitor the student's program with the student providing a formal written report at the end of the project.

### ***BUS AD 4001 Accelerate Capstone: 3 semester hours***

Same as ENT 4001. Prerequisites: ENT 1001, and either EDUC 2002 or ENT 3040, or consent of instructor. This course provides students with a capstone experience taking an idea from planning to 'launch.' This should be the last course taken in the certificate sequence and may involve elements of an instructional seminar and a practicum. May be taken in conjunction with other courses within the certificate, but it is highly suggested as the final course in the sequence.

### ***BUS AD 4198 Business Administration Senior Seminar: 1-10 semester hours***

Prerequisites: To be determined each time the course is offered and to include minimum 2.0 campus GPA. An intensive study of a specific area of business administration, of some specific business or economic phenomenon, or a specific problem or theory. Several different courses may be offered under this course number. May be repeated for credit as long as the topic differs.

### ***BUS AD 4325 Environmental Sustainability in Business Operations: 3 semester hours***

Same as SCMA 4325. Prerequisites: SCMA 3301 or consent of instructor. This course studies the environmental impacts of business operations, and it focuses especially on the principles and methods of 'lean and green' operations, i.e., ways in which organizations can reduce their costs and increase profits, while reducing their environmental impacts. Specific topics include energy efficiency, resource reduction, waste reduction, design for the environment, externalities and internal pricing mechanisms, environmental technologies, life-cycle assessment, recycling, re-use, and re-manufacturing, as well as national and global environmental issues.



**BUS AD 5000 Economics for Managers: 3 semester hours**

Prerequisite: Graduate standing. The concepts and tools of economic analysis are applied to the production and distribution functions of organizations. The last portion is devoted to the macroeconomic influence of capital markets, the influence of interest rates, inflation, and the business cycle.

**BUS AD 5001 Managerial Economic Analysis: 3 semester hours**

Prerequisites: BUS AD 5000 or ECON 1001 and ECON 1002. Microeconomic analysis of consumers, firms, and government. The concepts and mathematical tools of economic analysis are applied to the production and distribution functions of organizations.

**BUS AD 5002 Analysis Of National Economic Environment: 3 semester hours**

Prerequisites: BUS AD 5000 or ECON 1001 and ECON 1002. The character and functioning of the national economic system; analyzing and forecasting fluctuations in national income and product, employment, and prices; the influence of monetary and fiscal policies. Emphasis is on the acquisition of knowledge concerning forces affecting all business firms.

**BUS AD 5100 Managerial Communication: 3 semester hours**

An analysis of business writing and speaking, and the communication conventions common in organizations. Emphasis is placed on developing skills critical to career advancement and necessary for effective organizational functioning. A second goal is to prepare students for assignments in other business courses. This course must be taken within the first 12 credit hours of study, preferably in the student's first semester.

**BUS AD 5198 Seminar in Business Administration: 3 semester hours**

An intensive study of a specific area of business administration of some specific business or economic phenomenon, or a specific problem or theory. Several different courses may be offered under this course number.

**BUS AD 5299 Individual Research: 1-3 semester hours**

Prerequisite: Consent of instructor and graduate director. Special individual research topics under the guidance of a specific professor.

**BUS AD 5325 Environmental Analysis and Sustainability in Business Operations: 3 semester hours**

Same as SCMA 5325. Prerequisites: SCMA 5310 or consent of instructor. This course analyzes the environmental impacts of business operations, and it focuses especially on the principles and methods of 'lean and green' operations, i.e., ways in which organizations can reduce their costs and increase profit, while reducing their environmental impacts. Specific topics include energy efficiency, resource reduction, waste reduction, design for the environment, externalities and internal pricing mechanisms, environmental technologies, life-cycle assessment, recycling, re-use, and re-manufacturing, as well as national and global environmental issues.

**BUS AD 5450 Governmental Budgeting and Financial Control: 3 semester hours**

Prerequisite: ACCTNG 5400. A study of municipal and federal financial control and budgeting procedures with emphasis on public policy. The impact of financial control on top management decisions and the effect of budget strategies on the allocations of public funds.

**BUS AD 5900 Law, Ethics and Business: 3 semester hours**

Analysis of the relationship between law and business with emphasis on the ability of, and extent to which, governments regulate business activities. Topics covered include the employer-employee relationship, protection of consumers, antitrust regulation, and securities law. Also discussed are ethical issues confronting management of the modern business enterprises.

**BUS AD 6990 Strategy Formulation and Implementation: 3 semester hours**

Prerequisites: FINANCE 6500, MGMT 5600, MKTG 5700, SCMA 5320 and special consent. Graduate program capstone course examining concepts and methods that integrate functional areas of business. The perspective is that of general management charged with directing the total enterprise. Interactions between the environment, organization, strategy, policies and the implementation of plans are explored. Special emphasis is given to globalization of business and ethical perspectives. This course should be taken during the semester prior to graduation. In no case may it be taken sooner than two semesters prior to graduation.

**BUS AD 6991 Graduate Business Assessment Testing: 0 semester hours**

Prerequisites: Concurrent enrollment in BUS AD 6990 (or INTL BUS 5289 or MGMT 4614 if taken in lieu of BUS AD 6990). A one-time lab during which a major field exam in business is administered. Course graded on a satisfactory/ unsatisfactory basis. Satisfactory grade required for graduation.

**BUS AD 7001 Doctoral Research: 1-12 semester hours**

Prerequisite: Must have PhD Program Director or Area Coordinator approval. Investigation of an advanced nature culminating in preparation for comprehensive examinations and/or development of dissertation proposal. The course may be repeated for credit.

**BUS AD 7002 Dissertation Research: 1-12 semester hours**

Prerequisites: Must have Ph.D. Program Director or Area Coordinator approval. Investigation of an advanced nature culminating preparation of a doctoral dissertation. The course may be repeated.

**BUS AD 7100 Scientific Inquiry in Business: 1-3 semester hours**

Prerequisites: Consent of DBA program director and graduate standing. This course provides an overview of research methods for studying business problems including extraction of information from secondary sources, and primary data collection with surveys, interviews, participant observation, action research, field experiments, controlled experiments, case studies, design sciences and simulations. The course covers foundations of business research (substantive theories, formal theories, and frameworks). Students will learn the types of variables used to test theories and develop the skills required for reviewing the literature and conceptualizing research questions that are important for practice. Ethical issues related to conducting and publishing research will be discussed. Students will become nationally certified in protecting human research participants and in responsible research conduct.

**BUS AD 7101 Quantitative Research Methods I in Business Administration: 3 semester hours**

Prerequisites: Consent of DBA program director. This course provides an understanding of the application of quantitative analytical techniques to problems in the planning and management of business enterprises and service operations. The course provides experience in structuring analytical models and drawing inferences from their results. Topics include techniques for descriptive, predictive and diagnostic analytics, and may cover general linear statistical models, logistical regression, techniques for extrapolating time series, and statistical methods for testing conceptual models.

**BUS AD 7102 Qualitative Research Methods I in Business****Administration: 3 semester hours**

Prerequisites: Consent of DBA program director and graduate standing. Working in groups, students will design and execute a qualitative research project using interviews or direct observations. During the course, students will prepare a qualitative research proposal that includes well-formed research questions, clearly positions the research as a contribution to knowledge, critically reviews the academic literature relevant to the student's topic, develops qualitative research instruments (such as an interview guide), executes the research, analyzes the data and writes up the report. Students will learn how to abstract their findings into lessons for scholars and/or practitioners. One important output of this seminar is a completed research paper suitable for publication in a respected practitioner or academic outlet.

**BUS AD 7103 Quantitative Research Methods II in Business****Administration: 3 semester hours**

Prerequisites: Consent of DBA program director and graduate standing. This course provides an advanced understanding of quantitative research with special attention to prescriptive analytics. Emulating work in prior published studies, students identify and frame research questions, determine appropriate metrics, develop hypotheses, build and test quantitative models, and discuss the advantages and shortcomings of alternative quantitative approaches. One important output of this course is a completed research paper.

**BUS AD 7104 Qualitative Research Methods II in Business****Administration: 3 semester hours**

Prerequisites: Consent of DBA program director and graduate standing. Working in groups, students design and execute a qualitative research study using a case study method or action research. Students prepare a qualitative research proposal that includes well-formed research questions, clearly positions the research as a contribution to knowledge, and critically reviews the academic literature relevant to the topic. Students develop qualitative research instruments (or design an experimental intervention), execute the research, analyze the data and produce a report that presents lessons for scholars and/or practitioners. An important product of this seminar is a completed research paper suitable for publication in a respected practitioner or academic outlet.

**BUS AD 7105 Special Topics in Business Administration: 2 semester hours**

Prerequisites: Consent of DBA program director. Special topics examined from the business administration perspective. Topics may vary by semester.

**BUS AD 7106 Strategic Business Analysis: 2 semester hours**

Prerequisites: Consent of DBA program director. The objective of this capstone course is to synthesize theoretical and empirical research from the different business disciplines (and other non-management sciences and disciplines) to give new insight for public policy or managerial practice. Course projects may address contemporary challenges in the global economy, regulatory processes, taxation, management of innovation, management of risk and disruptive events, consequences of international agreements, environmental issues, sustainability of business practices and business alliances, corporate governance, cultural challenges in international business relations, and other contemporary problems specific to students' places of employment.

**BUS AD 7107 Capstone Project Research in Business****Administration: 6 semester hours**

Prerequisites: Consent of DBA program director. Students develop a formal proposal for their capstone research projects that includes a draft of all parts of the project that precede the data collection. This proposal includes research questions or hypotheses based on prior research, and the methodology to be employed for addressing the research questions or corroborating the hypotheses. This course will be coordinated by the Academic Director of the DBA Program, and attended by interested faculty, especially those serving as Chairs. By the conclusion of this course, each capstone project proposal is approved by a capstone project committee (consisting of the Chair of the capstone project committee and two other members).

**BUS AD 7109 Doctoral Foundations Seminar: 1-3 semester hours**

Prerequisites: Consent of DBA program director. This course will cover the foundation necessary to succeed in the DBA Program. This seminar will also provide the doctoral students with an understanding of the culture of research.

**BUS AD 7300 Management of Supply Chains: 2 semester hours**

Prerequisites: Consent of Program Director. This course provides a comprehensive overview of supply chain management, including procurement, sourcing, operations, production and logistics, with special attention to international issues. Topics include designing and operating multinational logistics systems; managerial issues and strategies for sourcing, transportation, and inventory management; legal and financial issues in import and export; risk identification and management; and the relationship of supply chain management to other activities. The course also provides students with an understanding of quantitative techniques used in the design and management of global supply chains.

**BUS AD 7301 Statistical Modeling: 1-3 semester hours**

Prerequisites: SCMA 5300; consent of DBA program director. Study of multivariate analytical techniques and their application to the analysis of business systems. Topics include the construction and adaptation of statistical models and extrapolative techniques to accommodate factor interactions, nonlinearities, and periodic effects. Methodologies include multiple regression, ANOVA, and general linear model, MANOVA, structural equation modeling, and time series modeling.

**BUS AD 7400 The Role of Accounting Information in Firms and Markets: 2 semester hours**

Prerequisites: Consent of DBA program director. This course provides insights into various accounting theories and practices, including financial analysis to identify opportunities, archival and behavioral inquiry in accounting, the role of accounting information in valuation, the role of accounting information in firm contracting, structural cost management, executional cost management, and governance and controls.

**BUS AD 7500 Finance Theory and Applications Seminar: 2 semester hours**

Prerequisites: Consent of DBA program director. This two-unit finance course addresses contemporary issues in corporate finance, investment, financial institutions and financial markets. Extensive reviews of the literature in different finance fields are conducted. Modigliani-Miller theorem, agency theory, capital asset pricing theory, and option pricing theory are discussed and applied in research analysis.

***BUS AD 7600 Managing Talent for Strategic Advantage: 2 semester hours***

Prerequisites: Consent of DBA program director. This course provides insight into research on topics that explore how organizational behavior and human resource management practices contribute to developing and sustaining effective and satisfying workplaces. Topics such as conflict management, change management, motivation, cultural intelligence, compensation strategies, selection and promotion decisions, performance management and legal issues in employment decision making, will be discussed.

***BUS AD 7700 Contemporary Marketing Intelligence and Decision Making: 2 semester hours***

Prerequisites: Consent of DBA program director. This course examines how firms generate valuable marketing intelligence for critical decisions in pursuit of marketing objectives. Marketing strategies and consumer behavior are studied through literature reviews and examination of case studies. Students challenge assumptions, frameworks, and findings and they discuss how marketing strategy is adapted in practice for various products and services. They also learn how data mining techniques are used in the development and execution of marketing strategies.

***BUS AD 7800 Management of Sustaining and Disruptive Information Technologies: 2 semester hours***

Prerequisites: Consent of DBA program director. This course provides insights into contemporary sustaining and disruptive information technologies and their strategic and supporting roles in organizations and society. This course provides the student with an understanding of the processes through which information systems are adopted and used by organizations, including their sourcing, design, development, implementation, and strategic management. The course will also examine best practices for managing new information technologies, such as social media, business intelligence, and the Internet of Things. Strategic opportunities, threats and processes for achieving cyber security will be considered as students discuss the impacts such technologies have on organizations, individuals, and society.

## Accounting

The mission of the UMSL Accounting Department is to foster excellence in accountability by providing a rigorous educational experience as a framework for lifelong learning. UMSL graduates earn positions at top CPA firms and corporations and rise to high-ranking positions such as "C-Suite" corporate executives, CPA firm partners, internal audit executives, information systems executives, lawyers, investment bankers, entrepreneurs, not-for-profit agency leaders, government entity leaders, and University professors. As you can see, a degree in Accounting opens many doors.

### Degree Programs

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Accounting MAcc (p. 309)  
Business Administration MBA, Accounting Emphasis (p. 353)

### Minor

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## Courses

***ACCTNG 2400 Fundamentals of Financial Accounting: 3 semester hours***

Prerequisites: MATH 1030 and completion of 27 credit hours. MATH 1030 may be taken concurrently. This is a one semester course in financial accounting theory and practice. The primary emphasis is on the corporate financial statements of income, financial position and cash flow-their content and interpretation; and the impact of financial transactions upon them.

***ACCTNG 2410 Managerial Accounting: 3 semester hours***

Prerequisites: MATH 1030 and ACCTNG 2400. This is an advanced course that goes beyond the scope of a second-semester course in fundamentals of accounting. The development, interpretation, and use of relevant cost behavior, control, and traceability concepts for management planning, controlling and decision making are emphasized. Topics include: an introduction to product costing, the contribution concept, direct costing, performance standards and variance analysis, responsibility accounting, segment profitability, alternative choice decisions, and capital budgeting.

***ACCTNG 2430 Accounting Ethics: 3 semester hours***

Same as PHIL 2249. Prerequisites: ACCTNG 2400 and ACCTNG 2410 (may be taken concurrently). This course examines moral problems as they relate to the profession of accounting and the professional Codes of Conduct that govern the accounting profession. Students will apply the requirements of the Codes of Conduct to cases where ethical dilemmas or violations of professional standards may be present.

***ACCTNG 3401 Financial Accounting and Reporting I: 3 semester hours***

Prerequisites: MATH 1030, ACCTNG 2410, minimum 2.0 campus GPA and 57 credit hours. Review of the foundations of financial accounting theory and of the financial statement preparation process. Accounting theory and practice related to current assets (except for investments in securities). The course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

***ACCTNG 3402 Financial Accounting and Reporting II: 3 semester hours***

Prerequisites: MATH 1030 and ACCTNG 3401, minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL and minimum campus GPA of 2.0. Accounting theory and practice related to topics such as investments in securities, operational assets, current and long-term liabilities, and leases. The course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

***ACCTNG 3411 Cost Accounting: 3 semester hours***

Prerequisites: MATH 1030, ACCTNG 3401 and a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. The study of the basic principles of cost determination for, and control of, manufacturing and distribution activities. Topics include job-order costing, process costing, cost allocations, and the development and use of standard costs within a system of absorption costing.

***ACCTNG 3421 Accounting Information Systems: 3 semester hours***

Prerequisites: MATH 1030, INFSYS 2800, ACCTNG 2410, ACCTNG 3401, and a minimum campus GPA of 2.0. Examines the fundamentals of accounting information systems, including hardware and software considerations, internal controls, and transaction processing cycles. Also focuses upon the development of efficient spreadsheets as applied to financial and managerial accounting concepts.

**ACCTNG 3441 Income Taxes: 3 semester hours**

Prerequisites: MATH 1030 and ACCTNG 3401 and a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. Fundamentals of Federal income taxation. Topics include taxable entities, income, deductions, tax accounting methods, tax basis, and property transactions at both the conceptual and operational levels.

**ACCTNG 3451 Accounting for Governmental and Not-For-Profit Entities: 3 semester hours**

Prerequisites: MATH 1030, ACCTNG 3402, a minimum 2.3 GPA in all accounting courses at the 3000-level and above taken at UMSL and a minimum 2.0 campus GPA. Principles of fund accounting and financial reporting for governmental and nonprofit entities. This course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

**ACCTNG 3490 Internship in Accounting: 1-3 semester hours**

Prerequisites: ACCTNG 3401, a minimum campus GPA of 2.0, a minimum GPA of 2.7 in all accounting courses at the 3000-level and above taken at UM-St. Louis, consent of supervising instructor and accounting internship coordinator. Students are employed in the field of Accounting where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience are primary goals. An accounting faculty member will monitor the student's program with the student providing a formal written report at the end of the project.

**ACCTNG 3495 Special Administration Problems - Accounting (VITA) Program: 1-3 semester hours**

Prerequisites: ACCTNG 2400, ACCTNG 2410 and ACCTNG 3401; minimum campus GPA of 2.0, minimum GPA of 2.2 in all accounting courses at the 2000-level and above taken at UMSL; completion of nine semester hours of accounting. Enrollment in the course is restricted to Volunteer Income Tax Assistance (VITA) program student participants. The class offers practical tax experience, networking opportunities, potential managerial experience, and personal satisfaction derived from community service. It is taken on a satisfactory/unsatisfactory basis. The course offers one to three hours of undergraduate business elective credit and may be repeated for up to 3 hours credit.

**ACCTNG 3499 Independent Study in Accounting: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0, a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL and approval by the supervising professor and the department chair. Special individual study in accounting under the supervision of a full-time accounting faculty member.

**ACCTNG 4401 Financial Accounting and Reporting III: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 3402; a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. Accounting theory and practice related to topics such as income taxes, pensions, owners' equity, earnings per share, and the statement of cash flows. The course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

**ACCTNG 4402 Financial Accounting and Reporting IV: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 3402; a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. Accounting theory and practice related to topics such as business combinations, consolidated financial statements, multinational operations, foreign exchange transactions, and governmental and nonprofit organizations. The course includes an emphasis on unstructured problem solving skills, communication skills, and interpersonal skills.

**ACCTNG 4405 Professional Accounting Research: 3 semester hours**

Prerequisites: ACCTNG 4401, a minimum campus GPA of 2.0 and minimum GPA of 2.2 in all accounting courses at the 3000-level and above taken at UM-St. Louis. Discussion of the research tools and methods available to resolve questions concerning accounting standards and practices. Critical analysis of topics of current interest and importance in accounting practice is the focal point of the course.

**ACCTNG 4435 Auditing: 3 semester hours**

Prerequisites: MATH 1105; ACCTNG 3402; ACCTNG 3421 or INFSYS 3810; a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. An introduction to auditing practice. Includes the social role of auditing and the services offered by auditors in internal, governmental, and public accounting practice. Emphasis is on the financial auditing process, including professional ethics, audit risk assessment, study and evaluation of internal control, gathering and evaluating audit evidence, and audit reporting decisions.

**ACCTNG 4441 Advanced Federal Income Tax: Business Taxation: 3 semester hours**

Prerequisites: ACCTNG 3441 with a grade of B- or above; a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. Focuses on federal income taxation of corporations, S corporations, partnerships, LLCs and their owners.

**ACCTNG 4450 Prescriptive Analytics and Optimization: 3 semester hours**

Same as SCMA 4350. Prerequisites: MATH 1105 and a minimum campus GPA of 2.0. This course covers the construction and application of prescriptive analytical models for optimizing business decisions in a wide range of areas such as manufacturing, service, supply chains, logistics and finance. Topics include performance metrics, linear programming, integer programming, network optimization, simulation, and implementation using Excel.

**ACCTNG 5400 Financial and Managerial Accounting: 3 semester hours**

This course provides an introduction to accounting, with emphasis on preparation of financial statements for external parties (financial accounting) and accumulation of cost information to aid internal planning and control (managerial accounting). Topics covered include measurement of assets and liabilities, revenues and expenses, the accounting cycle, financial statements, cost terminology, cost behavior, product costing, and relevant costs for decision making. This course provides the necessary background for ACCTNG 5401.



**ACCTNG 5401 Financial Reporting and Analysis: 3 semester hours**

Prerequisites: ACCTNG 5400 or the equivalent. This course builds on the foundations covered in ACCTNG 5400, emphasizing in-depth analysis of published financial statements. The course begins with discussion of the role of financial accounting information in capital markets and contracting, and continues with examination of a number of specific accounting issues. Students are encouraged to look behind the numbers to better understand the economics of the underlying transactions, and properly interpret what the reported numbers mean about a firm's future prospects.

**ACCTNG 5402 Professional Accounting Research: 3 semester hours**

Prerequisites: ACCTNG 4401; a minimum campus GPA of 2.0; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. Discussion of the research tools and methods available to resolve questions concerning accounting standards and practices. Critical analysis of topics of current interest and importance in accounting practice.

**ACCTNG 5403 Graduate Topics in Financial Accounting: 3 semester hours**

Prerequisites: ACCTNG 4401; a minimum campus GPA of 2.0; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. A study of current financial reporting issues. Analysis of current problems and approaches pertaining to the communication of corporate financial information to the U.S. and international investment communities.

**ACCTNG 5404 Professional Accountancy I: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 2410; a minimum 2.0 campus GPA; graduate standing. This is the first professional-level course in financial reporting. The course includes a study of the conceptual framework underlying Generally Accepted Accounting Principles (GAAP) and issues pertaining to accounting for current assets and liabilities.

**ACCTNG 5405 Professional Accountancy II: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 3401; a minimum campus GPA of 2.0; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL; graduate standing. This is the second professional-level course in financial reporting. The course includes an in-depth study of issues pertaining to accounting for operational assets, liabilities and owners equity.

**ACCTNG 5406 Research and Professional Writing in Accounting: 3 semester hours**

Prerequisites: ACCTNG 4401 and enrollment in Master of Accounting Program. This course employs the professional accounting literature and authoritative databases to analyze contemporary issues in accounting. Students will refine their communication skills in preparation for leadership roles in the accounting profession.

**ACCTNG 5408 Fraud Examination: 3 semester hours**

Prerequisites: ACCTNG 3402 or ACCTNG 5405; a minimum campus GPA of 2.0; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. This course is designed for graduate students who are interested in fraud and its effects. Students will be introduced to theoretical concepts of fraud and practical responses to it. Course coverage includes an overview of the fraud problem; prevention and detection of fraud; elements of fraud investigation, interview techniques, fraud types, and laws governing the prosecution of fraud cases.

**ACCTNG 5411 Cost Systems Analysis: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 3401; a minimum campus GPA of 2.0; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL; graduate standing. The development, interpretation, and use of accounting reports and supplementary information for management planning, control and decision making. Emphasizes the application of relevant cost behavior, control and traceability concepts in the preparation of internal accounting reports, with a secondary emphasis upon product costing techniques as appropriate to financial accounting needs. Topics include break-even analysis, operational budgeting, direct costing, absorption costing, standard costs and variance analysis, business segment analysis, responsibility accounting distribution cost accounting, and gross profit analysis.

**ACCTNG 5412 Graduate Topics in Management Accounting: Controllorship: 3 semester hours**

Prerequisite: ACCTNG 3411 or ACCTNG 5411; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. A study of advanced managerial accounting techniques useful in facilitating the planning and control process in the modern organization. Emphasis on the implementation and administration of these techniques, their integration with management information systems, and the organizational role of the corporate accountant.

**ACCTNG 5421 Information Systems in Accounting: 3 semester hours**

Prerequisites: MATH 1030; INFSYS 1800; ACCTNG 2410; ACCTNG 3401; a minimum campus GPA of 2.0; graduate standing. This is a professional-level course in accounting information systems. The course includes examination of transaction cycles, structured analysis and design of accounting information systems, and internal controls.

**ACCTNG 5435 Graduate Topics in Auditing: 3 semester hours**

Prerequisite: ACCTNG 4435; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. A study of advanced auditing and attestation issues, with an emphasis on operational auditing. Topics include professional ethics, risk analysis, internal control, fraud detection, analytical procedures, determining and assessing operational objectives, and reporting and implementing audit findings.

**ACCTNG 5436 Systems Auditing: 3 semester hours**

Prerequisite: ACCTNG 5400, INFSYS 6800 or consent of instructor. Study of techniques involved in the control and audit of computer-based systems. Emphasis on the review of internal controls at operational and administrative levels and on computer-assisted audit techniques.

**ACCTNG 5441 Tax Research: 3 semester hours**

Prerequisite: ACCTNG 3441; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL; or consent of instructor. Application of the research tools and methods available to resolve questions pertaining to the tax laws. Addresses techniques for locating and evaluating relevant authority. Students will be expected to complete written tax research memos. A basic understanding of federal income tax law is presumed.

**ACCTNG 5443 Decision Support Systems for Business Intelligence: 3 semester hours**

Same as INFSYS 6833. Prerequisites: SCMA 5300. This course examines the applications of data and analytics (models) to support the needs of decision makers. Descriptive, predictive and prescriptive analytics tools are coupled with big data and well-designed user interfaces to provide the necessary tools. Topics such as how to construct the data warehouse, how to clean and store data in the appropriate form, how to construct and implement a useful visualization of data, and how to construct and support decision makers are included. DSS component design in response to decision making and business intelligence needs are discussed. Credit cannot be granted for both INFSYS 3843 and INFSYS 6833.

**ACCTNG 5444 Business Analytics and Data Mining: 3 semester hours**

Same as SCMA 6345. Prerequisites: SCMA 5300 and INFSYS 5800. This course concentrates on methods for converting data into business intelligence. It provides knowledge of the principles and techniques for business analytics and data mining. Topics include clustering, pattern recognition, visualization of relationships, predictive modeling, optimization techniques and simulation.

**ACCTNG 5446 Advanced Topics in Taxation: 3 semester hours**

Prerequisites: ACCTNG 3441. Address advanced topics in taxation selected by the instructor.

**ACCTNG 5447 Taxation of Individuals and Businesses: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 3401 or both ACCTNG 5400 and FINANCE 6590 with the topic 'Practice of Personal Financial Planning' with grades of B or better in both; graduate standing. This is the first professional-level course in taxation. The course includes a general introduction to the concepts of taxation. It will enable students to understand the role of taxes in evaluating decisions typically confronted by individual taxpayers and businesses.

**ACCTNG 5451 Accounting and Auditing in Governmental and Not-for-Profit Entities: 3 semester hours**

Prerequisite: ACCTNG 3402 and graduate standing; a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. A study of accounting for use in the public sector and in not-for-profit organizations. Principles of fund accounting and financial reporting for governmental and not-for-profit entities, as well as auditing in the public sector.

**ACCTNG 5465 Principles of Information Security: 3 semester hours**

Prerequisites: INFSYS 5800 (may be taken concurrently) or permission of instructor. This course is a survey of the vast field of Information Security (InfoSec). It intersects both management and technical aspects of security as relevant to organizations, governments, individuals, and society. Topics covered include fundamental principles of InfoSec and cyber defense, the threat environment, management of InfoSec in organizations, technologies and tools in InfoSec, cryptology/cryptography, web application security, vulnerability management, and current issues. Hands-on labs expose students to basics of penetration testing, applications of cryptography, and vulnerability management. A graduate research paper is required. This course is open to all majors. Credit can only be granted for one of INFSYS 3848, INFSYS 6828, and ACCTNG 5465.

**ACCTNG 5466 Management of Accounting Networks and Security: 3 semester hours**

Prerequisites: INFSYS 5800 (may be taken concurrently) or permission of instructor. This course focuses on the 'big-picture' implications and challenges of data networking and network security within contemporary Information Technology environments. It covers fundamentals of networking and security implications of data networks with hands-on exercises. Topics include networking layers and standardization of functionality across layers, wired and wireless Local Area Networks (LANs) along with switching and physical layer technologies, Internetworking, supporting and supervisory protocols, application layer protocols, network design and management, and fundamentals of network security. Students will also learn about network protocol analyzers such as Wireshark, virtualization, networking in virtual environments, and how some common networked applications operate by utilizing the network infrastructure. Credit can only be granted for one of INFSYS 3842, INFSYS 6836, and ACCTNG 5466.

**ACCTNG 5467 Advanced Data Security Concepts: 3 semester hours**

Prerequisites: ACCTNG 5465 or INFSYS 6828. This course provides an in-depth examination of advanced principles of cybersecurity. A broad range of topics are covered, including penetration testing, formal verification of systems, formal models of information flow and protection, distributed system authentication, protocol design and attack, computer viruses and malware, as well as intrusion and anomaly detection models. Multi-level security architecture, active defenses, investigation and forensics, network firewalls, virtualization, anonymity and identity, mobile security, and database security models and mechanisms are also studied. The course content is largely influenced by the latest research in the field. Credit can only be granted for one of INFSYS 3858, INFSYS 6858, and ACCTNG 5467.

**ACCTNG 5468 Accounting Software Assurance: 3 semester hours**

Prerequisites: INFSYS 6805 or INFSYS 6806 or permission of instructor. This course provides an overview of the vast field of software assurance. The goal is to make students aware of the fundamentals of the secure software lifecycle enabling them to apply principles of secure software development and management. The course also provides practical applications that allow the learners to experience the secure software lifecycle process by developing concrete artifacts. Credit can only be granted for one of INFSYS 3868, INFSYS 6868, and ACCTNG 5468.

**ACCTNG 5469 Management of Accounting Data Security: 3 semester hours**

Prerequisites: ACCTNG 5465 or INFSYS 6828. This course provides students the necessary background knowledge and skills to develop and run a systematic information security management program that is in line with organization strategy, structure, processes, and culture. Specifically, the course introduces governance, strategy, policies, implementation, operation, evaluation, and improvement of an organization's information security to achieve business objectives and be resilient to information security threats. Credit can only be granted for one of INFSYS 3878, INFSYS 6878, and ACCTNG 5469.

**ACCTNG 5490 Graduate Internship in Accounting: 1-3 semester hours**

Prerequisites: ACCTNG 3401 or ACCTNG 5404; a minimum graduate GPA of 3.0; a minimum GPA of 3.0 in all accounting courses at the 3000-level and above taken at UMSL; consent of supervising instructor and accounting internship coordinator. The student works in an accounting internship that contains sufficient content and rigor to merit graduate credit. The student's program will be monitored by a member of the Graduate Faculty in Accounting. The course requires several meetings with the faculty advisor and a graduate-level written assignment. The course will be graded on a Satisfactory/Unsatisfactory basis. A student who has previously taken ACCTNG 3490 may not take ACCTNG 5490.

**ACCTNG 5498 Graduate Seminar in Accounting: 3 semester hours**

Prerequisites: To be determined each time the course is offered and to include a minimum 2.0 overall GPA and a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. Study of selected special problems in accounting. May be repeated for credit with different topics.

**ACCTNG 5499 Individual Research in Accounting: 1-3 semester hours**

Prerequisites: Consent of instructor, department chair and graduate director; a minimum 3.0 graduate GPA; a minimum GPA of 3.0 in all accounting courses at the 3000-level and above taken at UMSL. Special individual research topics in Accounting under the guidance of a specific professor.

**ACCTNG 6441 Graduate Topics in Taxation: 3 semester hours**

Prerequisites: At least a B in ACCTNG 3441 or ACCTNG 5447; enrollment in Masters of Accountancy program; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. This course examines the role taxes play in evaluating decisions confronted by individuals. Students will apply basic tools learned in accounting and finance to settings impacted by tax laws with the goal of not minimizing taxes but maximizing the present value of a taxpayer's wealth.

**ACCTNG 6460 Advanced Data Integration: 3 semester hours**

Same as INFSYS 6860. Prerequisites: Graduate standing. This course discusses the theories and techniques for blending unstructured and structured data including big data and social media streams with relational databases, data warehouses, spreadsheets, and other sources of data. It provides hands-on experience in integrating data from diverse sources, screening and cleaning it, and producing descriptive and visual summaries in tables, graphs, maps, and text for business intelligence. Students will be introduced to tools that integrate data from different sources and provide input to dashboards for rich visualization and advanced analytics. Students may not receive credit for both INFSYS 3860 and INFSYS 6860.

## Finance and Legal Studies

Finance and Legal Studies is a multi-disciplinary field that combines various concepts from management, economics and accounting with financial techniques to make sound business decisions and solve problems. There are many business situations in both large and small companies that require knowledge of the latest financial practices and tools. Generally, these applications involve investing (using funds) or financing (raising funds). As a result, the field is comprised of a number of areas including corporate finance, investments, financial institutions and services (banking, insurance, real estate) and personal financial planning.

Over the last two decades, the field of finance has become increasingly technical and specialized. Employers recruiting for financial positions not only require candidates to have an undergraduate or graduate degree in

finance, but they also want new employees to exhibit skills and experience beyond those typically found in a traditional academic environment.

As a result, professional licensing or certification has become one of the most widely recognized means of demonstrating core competency. Consequently, the finance program at the University of Missouri - Saint Louis carefully integrates finance tracks into the curriculum to enable students to complete their academic degrees while at the same time providing the in-depth knowledge necessary for taking professional certification exams. Our program is designed to accelerate professional development and provide students with superior credentials to qualify them for skilled positions in a highly competitive job market.

The Department of Finance and Legal Studies offers six track certifications in addition to General Finance Emphasis for undergraduate students. These tracks include Corporate Finance, Financial Institutions and Services, Investment and Portfolio, Financial Planning, Insurance, and the newest track, Fintech (or Financial Technology). Fintech is one of the most fast-moving industries. The applications of Fintech go over different areas in investments and financial institutions. The Fintech track gives students an opportunity to view finance from a technological perspective. The track introduces students to major areas of Fintech which include Blockchain, Cryptocurrencies, FinTech Credit, Big Data, Machine Learning, Neural Network, Robo Advisers, Algorithmic Trading, etc. These new financial technology and applications will give students an opportunity to understand the interaction among finance, technology, and regulation in the financial industry.

The BS in Actuarial Science degree at UMSL is an interdisciplinary program offered by the Department of Mathematics and Computer Science, the Department of Economics, and the Department of Finance and Legal Studies. Actuaries use the tools of math, economics and finance to evaluate and price risk. Actuaries work in the fields of insurance and finance. This major is among the highest-paying of all undergraduate majors.

The department also supports Flex MBA degree with Emphasis in Finance and the newly launched DBA program.

### Practical Experiences and Enrichment Opportunities for Students

The department also contains many rewarding opportunities for students such as the Student Investment Trust, the Finance Club, and the Finance Career Conference. The Student Investment Trust offers students a great opportunity to learn investments and portfolio management by investing real money in the securities markets. Students manage a portfolio worth \$350,000 and learn to apply tools and techniques learned in the classroom. Students also have the opportunity to participate in the CFA Case Competition and Industrial Issues Competition by the Society of Financial Service Professionals, guided by faculty in the department.

The Finance Club contributes with multiple resources for students that are interested in a career in the financial industry through workshops, job fairs, and finance career mentoring events.

The Finance Advisory Board brings business leaders from local companies, banks, insurance companies, and securities firms to campus. They are actively engaged in student enrichment, curriculum development and student mentoring program.

The department, the Finance Club and the Finance Advisory Board host a Finance Career Conference every year in which students will learn about building a career in the financial field. The conference includes keynote speakers, live panel discussions and multiple professional workshops. More importantly, students have the opportunity to network



with companies from all over the St. Louis region to discuss internships, placement opportunities, and career development.

## Scholarship Opportunities

The department offers a variety of scholarship opportunities, including Boeing Company Scholars Program in Business, Mindy Griffin Finance Scholarship (\$2000), James and Mary Lou Krueger SIT (\$2000), Kenneth Locke SIT (\$2000) and NISA Investment Advisors Scholarship, in addition to general business scholarships.

## Job and Internship Opportunities

New graduates with bachelor's degrees in finance from UMSL have a wide selection of career opportunities to choose from. At the corporate level, companies such as Boeing, Bayer, and Ameren hire our graduates for positions in budget analysis, project management, working capital management, and mergers and acquisitions. Local and national investment firms such as Edward Jones, Moneta Group, Ameritrade hire many of our students to serve as stockbrokers, financial analysts, wealth managers, financial planners, and portfolio managers. In banking, new graduates are employed in management positions in commercial and consumer lending, trust services, operations and branch banking. The insurance and real estate industries also have a strong presence in St. Louis (e.g., Northwestern Mutual, Cushman and Wakefield) hire graduates for various sales and administrative positions.

Students have many internship opportunities in their junior and senior years, facilitated by the internship offices at the College of Business Administration. Internships not only provide valuable real-world experience to complement academic learning, but enhances student marketability at graduation. Over 95 percent undergraduate students have jobs or are pursuing a graduate degree within 6 months of graduation.

## Faculty

The Department of Finance and Legal Studies contains a very prestigious faculty group that holds Ph.D.'s from many major U.S. universities and has extensive industrial experience to share in the classroom. They hold many highly respected certifications such as the CFA, FRM, and CFP and have won a range of college, campus and UM system awards for excellence in research and teaching.

As active researchers, they are on the cutting edge of new developments in the field which are carefully integrated into coursework. The Finance area recently was ranked in the top 12% of all finance faculties nationwide, based on academic productivity. All of the law faculty hold J.D. degrees from major U.S. universities and have many years of experience in private law practice both national and international.

## Degrees

Business Administration BS, Finance Emphasis (p. 343)

Business Administration MBA, Finance Emphasis (p. 356)

## Minor

Finance Minor (p. 463)

## Affiliated Interdisciplinary Programs

Actuarial Science BS (p. 311)

Actuarial Studies Undergraduate Certificate (p. 313)

## Courses

### ***FINANCE 1590 Personal Finance for Nonbusiness Majors: 3 semester hours***

For future professionals who want to learn more about personal finance and how to better manage their resources. The topics include purchasing/leasing cars, home acquisitions, investing in stocks and bonds, mutual funds, retirement planning and health and life insurance. Special emphasis will be on the nontechnical aspects of these issues. Cannot be used for credit in BSBA program.

### ***FINANCE 3500 Financial Management: 3 semester hours***

Prerequisites: ECON 1002, MATH 1105, ACCTNG 2400, INFSYS 2800, and a minimum overall GPA of 2.0. The study of a firm's need for funds; the institutions, instruments and markets concerned with raising funds; and the techniques of analysis used to determine how effectively these funds, once raised, are invested within the firm.

### ***FINANCE 3501 Financial Policies: 3 semester hours***

Prerequisite: FINANCE 3500 and a 2.0 overall GPA. The intensification and application of the concepts developed in FINANCE 3500. Special emphasis is given to the development of top management policies and their application toward complex problems of finance. Techniques for identifying and dealing with these problems before they become acute will be investigated. Cases will be integrated with appropriate outside reading.

### ***FINANCE 3503 Computer Applications in Finance: 3 semester hours***

Prerequisite: INFSYS 1800, FINANCE 3500, one 3000-level finance course and a 2.0 overall GPA. Financial problem solving and applications on the micro-computer. A project oriented course with an emphasis on micro based finance projects: Present value/IRR analysis, duration, immunization, portfolio optimization, leasing, capital budgeting, financial forecasting, options and futures.

### ***FINANCE 3520 Investments: 3 semester hours***

Prerequisite: FINANCE 3500 and a 2.0 overall GPA. Financial analysis of debt and equity instruments available on organized exchanges and in less tangible 'over the counter' markets. Techniques of such analysis being presented in context with economic and management circumstances within the company, industry and economy.

### ***FINANCE 3521 Financial Engineering: Applying Derivatives: 3 semester hours***

Prerequisites: FINANCE 3500. Students engage in a comprehensive investigation of advanced risk management techniques. Futures, forwards, options and synthetic securities are explored to determine their effectiveness in generating the desired risk exposure. A comprehensive study of speculative market conditions and characteristics are assessed in conjunction with a variety of financial innovations. Valuation techniques and hedging theories are combined with mathematical models to determine their effectiveness in practical situations. Special topics are introduced as market conditions dictate. It is recommended that students take Investments (FINANCE 3520) prior to enrolling in FINANCE 3521.

### ***FINANCE 3523 Fixed Income Analysis: 3 semester hours***

Prerequisites: FINANCE 3500. This course explores key issues in fixed income securities. The topics include pricing of bonds, measuring bond yields, bond price volatility, factors affecting yields and the term structure of interest rates, treasury securities, corporate debt instruments, residential mortgage loans, collateralized mortgage/debt obligation, and analysis of bonds with embedded options. The course prepares students for the CFA exams of Level 1 in the area of fixed income analysis.



**FINANCE 3524 Advanced Investment Management: 3 semester hours**

Prerequisites: FINANCE 3520 or consent of the instructor. This course reviews various advanced topics in investment management. The topics include (1) portfolio management, (2) fixed income analysis, (3) equity analysis, (4) economics in a global context, (5) derivatives, (6) alternative investments, and (7) Ethical and Professional Standards. The course provides students with theoretical and practical knowledge in portfolio management techniques and advanced investment strategies. The course materials are related to the CFA (Chartered Financial Analyst) Level I Exam curriculum.

**FINANCE 3525 Practicum in Investments: 1 semester hour**

Prerequisites: FINANCE 3500 and a 2.0 campus GPA. Students will apply their knowledge of stocks and bonds by managing a real dollar portfolio of securities. This course requires that students perform technical and fundamental analysis, prepare research reports, present proposals and participate in group investment decisions. The University's Student Investment Trust provides the money for students to invest. Course may be repeated for credit up to a maximum of 3 credit hours.

**FINANCE 3540 Introduction to Financial Institutions and Financial Markets: 3 semester hours**

Prerequisite: FINANCE 3500 and a 2.0 overall GPA. The course surveys financial institutions and financial markets and addresses the interplay between institutions and markets. State and federal regulation of institutions and markets is explored. A portion of the course addresses current events, managerial policy issues, and regulatory issues in financial services and markets. Focus is primarily U.S. institutions and markets, but the evolving impact of globalization and importance of the Foreign Exchange Market on U. S. financial institutions are developed.

**FINANCE 3541 Commercial Bank Management: 3 semester hours**

Prerequisites: ECON 1002, FINANCE 3500 and a 2.0 overall GPA. Corporate finance and microeconomics are applied to matters of importance to commercial bankers. Among the subjects treated are bank-asset portfolio construction, lending policies, liabilities management, bank capital structure, short-run cash management, financial market rates and flows, and quantitative models for bank management. Commercial bank management is analyzed from an internal viewpoint in terms of what bank managers should look for in asset management and why; what market conditions they should be aware of; and what techniques they can use to meet changing economic and financial conditions.

**FINANCE 3542 Principles of Real Estate: 3 semester hours**

Prerequisites: FINANCE 3500 and a 2.0 campus GPA. As an introduction to the real estate industry, the course broadly explores all phases of acquisition, development and disposal of real property. Topics include legal requirements of contracts, property rights, valuation and appraisal techniques, marketing, brokerage operations and practices, mortgage financing, leasing and property management.

**FINANCE 3545 Seminar in Venture Capital and Private Equity: 3 semester hours**

Prerequisites: FINANCE 3500 and another finance elective. This course examines venture capital and private equity firms as an important category of financial institutions. The main focus of the course is on financial, economic, and legal issues that develop between venture capital firms and their limited partners and between private equity firms and the firms in which they invest. More specifically, the course will explore the following processes: (1) how private equity and venture capital firms raise capital; (2) how they deal with firms in which they invest; and (3) how they exit investments. The course also discusses technology development process including protection through patents before they are licensed or used to establish as startup companies.

**FINANCE 3560 Practice of Personal Financial Planning: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0; FINANCE 3500 or consent of instructor and Area Coordinator. Professional financial planning requires broad knowledge of investments, insurance, income taxation, retirement planning, and estate planning, as well as certification requirements and legal/ethical issues. This course introduces students to the field of financial planning, and provides an integrated overview of the topics listed above. Students interested in the Financial Planning track are encouraged to complete this course prior to taking other courses in the track.

**FINANCE 3561 Principles of Insurance: 3 semester hours**

Prerequisites: FINANCE 3500 and a 2.0 campus GPA. This is a survey course intended to introduce students to the basic concepts of insurance. Topics include the nature of risks, types of insurance carriers and markets, insurance contracts and policies, property and casualty coverages, life and health insurance, and government regulations. The functions of underwriting, setting premiums, risk analysis, loss prevention, and financial administration of carriers are emphasized.

**FINANCE 3562 Life Insurance and Employee Benefits: 3 semester hours**

Prerequisites: FINANCE 3500 or equivalent and a minimum campus GPA of 2.0. This course explores the life insurance business from the perspective of both the consumer and provider. Coverage will include an analysis of the various types of life insurance products, aspects of life insurance evaluation, reinsurance, underwriting, and uses of life insurance in financial planning. Also included is an examination of the tax, legal, and ethical requirements.

**FINANCE 3563 Retirement Planning and Employee Benefits: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0; FINANCE 3500 or consent of instructor and Area Coordinator. The course is designed to give students an understanding of the retirement planning process. Students will gain an appreciation of the usefulness (and shortcomings) of employee benefits and develop an ability to counsel others on important retirement and employee benefit decisions. Corporate pension and profit sharing plans, self-employed Keough plans, IRA's, annuities, health insurance, and social security will be discussed.

**FINANCE 3564 Estate Planning and Trusts: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0; FINANCE 3500 or consent of instructor and Area Coordinator. This course will focus on the responsibility of a financial planner in the formulation and implementation of an estate plan. Topics include wills, lifetime transfers, trusts, gifts, estate reduction techniques, tax implications in estate planning, business and inter-family transfers, dealing with incompetency, postmortem techniques, and the role of fiduciaries. Lectures, cases, and guest speakers will be used to stimulate analysis and discussion.

**FINANCE 3565 Seminar in Financial Planning: 3 semester hours**

Prerequisites: ACCTNG 3441, FINANCE 3520, FINANCE 3560, FINANCE 3561, FINANCE 3563, and FINANCE 3564; a minimum campus GPA of 2.0; or consent of instructor. This course serves as the capstone in the registered Financial Planning curriculum. Students will prepare and present comprehensive, professional-level personal financial plans. This course is required by the Certified Financial Planner Board of Standards for those who wish to sit for the Certified Financial Planner examination.

**FINANCE 3570 Essentials of Fintech: 3 semester hours**

Prerequisites: FINANCE 3500 or consent of the instructor. This is an introductory course to provide students an overview of Fintech (Financial Technology). The course may include the following topics: Blockchain, Cryptocurrencies, FinTech Credit, Artificial Intelligence and Big Data, Robo Advisers, FinTech Regulation and RegTech, and Algorithmic Trading. This course provides students with the foundations for the interaction of finance, technology, and regulation in the financial industry.

**FINANCE 3572 Financial Data Programming: 3 semester hours**

Prerequisites: FINANCE 3500 and a minimum campus GPA of 2.0. Students will learn the fundamentals of financial data programming with Python and R using structured data (tabular data such as spreadsheets) and unstructured data (text data such as social media) for application in finance fields.

**FINANCE 3574 Artificial Intelligence Applications in Finance: 3 semester hours**

Prerequisites: FINANCE 3572 or consent of instructor. This course introduces students to topics in artificial intelligence (AI) and its applications in finance fields. The course discusses the history of AI and machine learning (ML) and its general methodology of development of data models. The course presents AI and ML applications and real life examples in financial services industries, such as portfolio management, algorithmic trading, and credit scoring.

**FINANCE 3576 Blockchain in Business: 3 semester hours**

Prerequisites: FINANCE 3500 or consent of the instructor. The course is designed to provide students with an understanding of key concepts, developments and major applications of the blockchain, a peer-to-peer exchange mechanism without an intermediary. It covers the technical foundations of the blockchain, why it is needed, and how it works. It also explores a series of applications including but not limited to those in business entities. Credit cannot be granted for both FINANCE 3576 and FINANCE 6576.

**FINANCE 3580 International Corporate Finance: 3 semester hours**

Same as INTL BUS 3580. Prerequisites: FINANCE 3500 and a 2.0 campus GPA. This course explores corporate finance in the context of a global environment. Financial managers for an international firm must deal with all the normal problems faced by domestic corporations plus additional foreign exchange and political risks. Class discussions will focus on applying financial techniques to decision making in foreign operations. Students are required to work in a group to undertake a project related to international finance.

**FINANCE 3582 International Investments: 3 semester hours**

Same as INTL BUS 3582. Prerequisites: FINANCE 3500. This course explores the concepts of investing and hedging risk management, portfolio diversification, currency risk, asset pricing, and alternative portfolio strategies. Techniques for using derivatives are discussed in the context of hedging exchange rate risk. Reading foreign exchange quotes and understanding the functioning of global markets is central to the course. A prior course in investments is recommended but not required.

**FINANCE 3583 The Law of International Business Transactions: 3 semester hours**

Same as INTL BUS 3280. Prerequisites: BUS AD 2900 or consent of instructor. This course studies of the role and function of International Law and national laws in the regulation of international business transactions. The impact of various legal regimes on import/export transactions, foreign investments, and the operations of multinational enterprises will be included. The role of national governments, supra-national governmental organizations, and non-governmental organizations in forming and administering the international legal environment will be studied.

**FINANCE 3585 Business in China: 3 semester hours**

Same as INTL BUS 3281. Prerequisites: A minimum campus GPA of 2.0 and junior standing. This course introduces students to the practices of doing business in China. Students will be introduced to the Chinese economic and business environment. Issues related to trade and foreign direct investment in China will be discussed. The course adopts an innovative approach, utilizing lectures, case analysis, projects, and student presentations.

**FINANCE 3590 Internship in Finance: 1-3 semester hours**

Prerequisite: a minimum campus GPA of 2.0; one must have completed and/or be currently enrolled in at least 6 credit hours of finance electives and have consent of supervising instructor and Area Coordinator. A Business College GPA of at least 2.5 is also required. Students are employed in the field of finance where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience in a Track area are the primary goals. The student's program will be monitored by a finance faculty member with the student providing a formal written report at the end of the project. FINANCE 3590 may not be counted toward the minimum 15 credit hours of finance electives for a finance emphasis.

**FINANCE 3595 Special Administration Problems - Finance: 1-10 semester hours**

Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 overall GPA. Study of selected special problems in business and administration. May be repeated for credit with different topics.

**FINANCE 3598 Seminar in Finance: 1-3 semester hours**

Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 overall GPA. This course is a selected special topic in the field of finance. May be repeated for credit with different topics.

**FINANCE 3599 Independent Study in Finance: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0 and approval by the supervising professor and the Area Coordinator. Special individual study in finance under the supervision of a full-time finance faculty member.

**FINANCE 5599 Individual Research in Finance: 1-3 semester hours**

Prerequisites: Consent of instructor and graduate director. Special individual research topics in Finance under the guidance of a specific professor.

**FINANCE 6500 Financial Management: 3 semester hours**

Prerequisites: ACCTNG 5400 or ACCTNG 2400, SCMA 5300 or SCMA 3300, and BUS AD 5000 or ECON 1001 and ECON 1002. This course provides an in-depth analysis of corporate finance including asset pricing, risk and return, short- and long-term investment decisions, capital structure choices, dividend policy, derivatives, mergers and acquisitions, and a host of other current topics. The material is taught through lectures and problem solving.

**FINANCE 6501 Advanced Financial Management: 3 semester hours**

Prerequisite: FINANCE 6500 and SCMA 5300. Exposure to recent financial management theory through selected readings. Financial management problems are considered by the use of cases and simulation models. An original research project under the supervision of instructor is required.

**FINANCE 6503 Computer Applications in Finance: 3 semester hours**

Prerequisites: FINANCE 6500 and 3.0 overall GPA. This course focuses on modeling and data analytics in finance. Hands-on projects include applications in loan amortization, buy or lease decisions, financial statement analysis and forecasting, capital budgeting, bond and stock valuation, risk analysis, capital structure, and portfolio analysis. Students will learn basic and sophisticated Excel tools and how to build executive dashboards, interfaces, and other monitoring tools used in day-to-day business. They will also gain exposure to statistical inference, time series modeling, event study analysis, and machine learning techniques for forecasting and working with financial data.

**FINANCE 6520 Security Analysis: 3 semester hours**

Prerequisite: FINANCE 6500 and SCMA 5300. An in-depth study of techniques used in evaluating various financial assets as investment opportunities. Financial assets studied include common stock, preferred stock, and fixed income securities. Other related topics such as sources of investment information and current market trends are discussed.

**FINANCE 6521 Financial Forensics: The Science of Derivatives: 3 semester hours**

Prerequisites: FINANCE 6500. Students engage in a comprehensive investigation of advanced risk management techniques. Futures, forwards, options and synthetic securities are explored to determine their effectiveness in generating the desired risk exposure. A comprehensive study of speculative market conditions and characteristics are assessed in conjunction with a variety of financial innovations. Valuation techniques and hedging theories are combined with mathematical models to determine their effectiveness in practical situations. Special topics are introduced as market conditions dictate. It is recommended that students take Investments (FINANCE 6520) prior to enrolling in FINANCE 6521.

**FINANCE 6523 Fixed Income Analysis: 3 semester hours**

Prerequisites: FINANCE 6500. This course explores key issues in fixed income securities. The topics include pricing of bonds, measuring bond yields, bond price volatility, factors affecting yields and the term structure of interest rates, treasury securities, corporate debt instruments, residential mortgage loans, collateralized mortgage/debt obligation, and analysis of bonds with embedded options. The course prepares students for the CFA exams of Levels I and (part of) II in the area of fixed income analysis.

**FINANCE 6524 Portfolio Analysis and Management: 3 semester hours**

Prerequisites: FINANCE 6500. This course reviews various advanced topics in investment management. The topics include portfolio management, fixed income analysis, equity analysis, economics in a global context, derivatives, alternative investments, ethical and professional standards, and applications of technology in financial services such as machine learning. The course provides students with theoretical and practical knowledge in portfolio management techniques and advanced investment strategies. The course materials are related to the CFA (Chartered Financial Analyst) Level I Exam curriculum.

**FINANCE 6540 Financial Institutions and Financial Markets: 3 semester hours**

Prerequisite: Graduate standing and FINANCE 6500. By lecture and casework, the course surveys markets (Money Market, Capital Markets, Foreign Exchange) and various forms of financial institutions. Historical and evolving business models of financial institutions are explored in the context of regulation, economics, and competition. Interplay between institutions and markets is addressed. Structure and purpose of regulation is examined. A portion of the course involves current events and managerial policy issues in financial services. A major U.S. financial institution is selected and case analyzed by the class. Focus is U.S. institutions and markets, but impact of globalization is discussed.

**FINANCE 6541 Commercial Bank Management: 3 semester hours**

Prerequisite: FINANCE 6500. This course explores the various bank management techniques required to manage a modern commercial bank in a rapidly changing environment. Topics include asset and liability management, capital adequacy, bank holding companies, profitability, and bank market structure and regulation.

**FINANCE 6542 Real Estate: 3 semester hours**

Prerequisite: FINANCE 6500. This course provides a broad introduction to real estate with a focus on legal issues, market analysis, valuation, financing, leasing and investment decisions. Classes are conducted in a standard lecture format with discussion on current topics. No prior knowledge of the industry is required.

**FINANCE 6545 Venture Capital and Private Equity: 3 semester hours**

Prerequisites: FINANCE 6500. This course examines venture capital and private equity firms as an important category of financial institutions. The main focus of the course is on financial, economic, and legal issues that develop between venture capital firms and their limited partners and between private equity firms and the firms in which they invest. More specifically, the course will explore the following processes: (1) how private equity and venture capital firms raise capital; (2) how they deal with firms in which they invest; and (3) how they exit investments. Before discussing the main issues of the course, and as a way of introducing the subject, we begin with a brief discussion of the significance of venture capital funding in the technology transfer process and a simple example of venture capital funding from the perspective of an entrepreneur. As most new technologies are proprietary, the course also discusses technology development process including protection through patents before they are licensed or used to establish as startup companies.

**FINANCE 6570 Introduction to Fintech: 3 semester hours**

Prerequisites: FINANCE 6500. This course introduces students to the major topics of fintech (financial technology), including blockchain, cryptocurrencies, fintech credit, big data, machine learning, neural network, robo advisers, and algorithmic trading, as they relate to investments and financial institutions.

**FINANCE 6572 Financial Data Analytics: 3 semester hours**

Prerequisites: Graduate standing. This course covers fundamentals of Python and R programming with hands-on projects and specific applications in finance. Students will learn to acquire, clean, analyze and visualize both structured (tabular data such as spreadsheets) and unstructured data (text data such as social media). Both data programming languages are used in data analytics, machine learning, and artificial intelligence in modern financial services industry including banks, brokerage houses, hedge funds, and mutual funds.

**FINANCE 6574 Artificial Intelligence and Machine Learning in Finance: 3 semester hours**

Prerequisites: FINANCE 6572 or consent of the instructor. This course introduces students to artificial intelligence (AI) and machine learning (ML) and the applications in finance. The course covers the historical development of fundamental ideas in AI and ML, and its general methodology of the development of data models. The course provides a sampling of successful applications of AI and ML in different areas of finance, including portfolio management, algorithmic trading, fraud analytics, and credit scoring. Each of these topics are presented with real world examples and programming applications in languages like Python and R.

**FINANCE 6576 Blockchain: Applications in Finance: 3 semester hours**

Prerequisite: FINANCE 6500. This course introduces blockchain technology, a system of exchange among various parties without the need for an intermediary, and covers the evolution of blockchain with discussion of its applications in the financial services industry. Credit cannot be granted for both FINANCE 3576 and FINANCE 6576.

**FINANCE 6580 International Financial Management: 3 semester hours**

Same as INTL BUS 6580. Prerequisite: FINANCE 6500. The objective of this course is to introduce students to financial issues for multinational firms. Besides covering basic tools and techniques, the class stresses the role of the financial manager in analysis and decision-making. Topics include the impact of international accounting and tax issues, capital budgeting in a foreign environment, transfer pricing, and global funding. Conceptual skills for lifelong learning experiences are emphasized. This course employs a lecture and case format with group discussions.

**FINANCE 6581 Seminar in International Investments: 3 semester hours**

Same as INTL BUS 6581. Prerequisite: FINANCE 6500. This course covers topics related to the determination of exchange rates, international parity relations and portfolio diversification. In addition, methods for using foreign exchange derivatives are explored in their use for hedging exchange rate risk. Learning to read foreign exchange quotes and understanding the functioning of global markets is an integral part of the course material. Each student is assigned a foreign country to study throughout the semester with the comprehensive project report. A prior investments course is recommended but not required.

**FINANCE 6582 International Bank Management: 3 semester hours**

Prerequisites: FINANCE 6500. The objective of this course is to introduce students to many challenging issues in international bank management. This is a specialized finance course dealing explicitly with global bank decision-makings of a multinational bank that uses a variety of financial tools and skills. The course will discuss the rapidly blurring distinctions between commercial and investment bankers. Conceptual skills for life-learning (evolving) experiences relevant to the global banking sector are emphasized.

**FINANCE 6590 Seminar in Finance: 3 semester hours**

Prerequisites: FINANCE 6500. This course incorporates a wide range of advanced topics in finance including, but not limited to, an evaluation of various financial assets as investment opportunities, trends in capital markets, derivatives and management of financial and non-financial firms.

**FINANCE 6591 Finance Internship: 1-3 semester hours**

Prerequisites: Students must have completed and/or be enrolled in at least 6 credit hours of finance electives and have consent of supervising faculty member and Area Coordinator. Students work in the field of finance where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience are the primary goals. The student's program will be monitored by a finance faculty member with the student providing a formal written report at the end of the project.

## Global Leadership and Management

The GLAM Area is the College of Business Administration's focal point for research, academic course work, non-credit instruction, consulting, and community service in the areas of general management, strategic

management, human resource management, international management, and small business management.

The Global Leadership and Management Department is committed to:

- Providing students with a first-rate business education at the undergraduate and graduate levels.
- Conducting and disseminating basic and applied research that advances our understanding of issues relevant to the effective management of organizations.
- Creating educational value by delivering an innovative, cutting-edge management curriculum, using both traditional and nontraditional delivery methods.
- Serving the University, the St. Louis business and not-for-profit communities, the citizens of Missouri, and society at large.

GLAM faculty are widely recognized for their excellence in teaching, research, and service by their various constituencies (e.g., students, local business leaders, community organizations, faculty at other universities). During the course of their careers, GLAM faculty have won campus teaching awards, served as editors of professional journals, authored leading textbooks, chaired professional societies, consulted with major corporations, been awarded federal grants, served on community boards and provided thousands of hours of non-compensated community service. We believe that what we learn from our research and our consulting work shapes what we teach in our classes, producing an educational experience that is grounded in what goes on today in business with an eye to business in the future.

GLAM faculty are quite active in interacting with students. For example, numerous students have participated in management-oriented internships under faculty direction. Other students have worked closely with faculty on special projects of mutual interest. Still other students have benefited from working with faculty on projects that were carried out in conjunction with trips to other countries.

### Degrees

Business Administration BS, Entrepreneurship Emphasis (p. 342)

Business Administration BS, International Business Emphasis (p. 345)

Business Administration BS, Management Emphasis (p. 346)

Business Administration MBA, International Program (p. 359)

Business Administration MBA, International Business Emphasis (p. 358)

Business Administration MBA, Management Emphasis (p. 346)

### Minors

International Business Minor (p. 481)

Management Minor (p. 489)

### Certificates

Human Resources Management Graduate Certificate

### Courses

Courses offered by the department can be found at the links below:



International Business (INTL BUS)

Management (MGMT)

## Information Systems and Technology

Information Systems and Technology (IST) students complement coursework in information technology (IT) with coursework in Business Administration to gain a solid foundation in the social and technical design, development, implementation, and management of information systems. Their strength lies in the ability to apply their knowledge of IT and Business to help organizations streamline their business processes and gain strategic advantage by enabling alignment of IT plans with business plans.

UMSL's IST students are thus well-versed in varied technology landscapes as well as in sustaining and disruptive information technologies through specialized coursework in Business Intelligence, Cybersecurity, Financial Technology, IT Auditing and Legacy Systems. With strong business and communication skills, they make an immediate impact on the organizations they join after graduating from UMSL. Job roles they are employed in include application developer, business analyst, business process designer, chief information officer, cybersecurity analyst, database designer, helpdesk manager, IT manager, network administrator, pen tester, systems administrator, and web designer, among others.

To reinforce understanding of successful practices in the use and management of IT, the IST faculty constantly challenge and engage students through opportunities such as hackathons, game jams, immersion days, conferences, competitions, and student clubs.

Choosing IST as a major or a minor is a smart move for any student's career. For more information, please visit the department's website: <http://ist.umsl.edu> or contact the department chair, Dr. Dinesh Mirchandani at [mirchandani@umsl.edu](mailto:mirchandani@umsl.edu) or 314-516-7354.

### Undergraduate Degrees

Cybersecurity BS, Information Systems Emphasis (p. 407)

Information Systems and Technology BS (p. 475)

### Graduate Degrees

Cybersecurity MS, Information Systems Emphasis (p. 411)

Information Systems and Technology MS (p. 478)

Business Administration MBA, Information Systems Emphasis (p. 357)

### Minors

Cybersecurity Minor (p. 409)

Information Systems and Technology Minor (p. 478)

### Certificates

Business Intelligence Graduate Certificate (p. 364)

Enterprise Systems Development Graduate Certificate (p. 459)

### Affiliated Interdisciplinary Programs

Cybersecurity Undergraduate Certificate (p. 412)

Cybersecurity Graduate Certificate (p. 408)

## Courses

### ***INFSYS 1800 Computers and Information Systems: 3 semester hours***

This course develops skills in technology awareness, computer fluency, computing devices, ethical use of the Internet, and business applications for problem solving, communicating, and making informed decisions, including word processors, presentation software, electronic spreadsheets, and database management systems. Students will gain skills in developing business applications and web pages. Credit cannot be granted for both CMP SCI 1010 and INFSYS 1800.

### ***INFSYS 2800 Information Systems Concepts and Applications: 3 semester hours***

Prerequisites: INFSYS 1800 or satisfactory performance on proficiency exam. This course provides an overview of the field of information systems including concepts of systems analysis and design, ethics in information systems usage, electronic business, database management, enterprise systems, information security, and JavaScript programming concepts. Business cases will be utilized to illustrate how information systems improve decision-making. Students will also gain valuable strategies for career development and networking.

### ***INFSYS 3806 Managerial Applications of Object-Oriented Programming I: 3 semester hours***

Prerequisites: INFSYS 2800 or CMP SCI 1250, and a minimum campus GPA of 2.0. This course provides an introduction to object-oriented programming. Topics include object-oriented design principles and choices, encapsulation, inheritance, and event-driven programming. Hands-on labs during class sessions and assignments help students develop applied programming skills. Students may not receive credit for both INFSYS 3806 and INFSYS 6806.

### ***INFSYS 3807 Legacy Systems: 3 semester hours***

Prerequisites: A minimum campus GPA of 2.0. This course covers structured programming techniques for legacy business applications. Students will learn COBOL syntax, structure, design and best programming practices to create, maintain, debug, compile and execute COBOL programs.

### ***INFSYS 3810 Information Systems Analysis: 3 semester hours***

Prerequisites: A minimum campus GPA of 2.0 and INFSYS 3806 or permission of instructor. In this course, students will learn how to identify, evaluate, and document business systems using traditional and agile methodologies. This includes how to study systems' ability to meet the business needs and information requirements of an organization, and defend alternatives that better meet needs. Students will conduct a systems analysis of an actual organization in project teams, including the identification of and defense of alternatives.

### ***INFSYS 3815 Object-Oriented Applications in Business: 3 semester hours***

Prerequisites: INFSYS 3806 and a minimum campus GPA of 2.0. This course provides a study of web application development using Java and JavaScript. Students will learn about Java Collections Framework, Spring, Hibernate, design patterns, software testing, and front-end web technologies. Credit cannot be granted for both INFSYS 3815 and INFSYS 6815.

**INFSYS 3816 Managerial Application of Object-Oriented Programming II: 3 semester hours**

Prerequisites: INFSYS 3806 and a minimum campus GPA of 2.0. This course builds on skills learned in INFSYS 3806 and focuses on contemporary client-server development environments and tools. Topics include database integration, web applications, and web services. Students will be provided hands-on application development experiences during class and in assignments.

**INFSYS 3817 Advanced Legacy Systems: 3 semester hours**

Prerequisites: INFSYS 3807 or consent of instructor. This course will build upon Contemporary z/OS COBOL 1. Topics may include JCL, file management, utilities/tools (like SORTING, File-Aid, IEB's, JCLCheck), file access (VSAM, DB2, and Sequential), scheduling, debugging, testing, and mainframe-server communication protocols. Students will be prepared for leadership roles in managing IT landscapes consisting of both legacy and modern systems. Credit cannot be granted for both INFSYS 3817 and INFSYS 6817.

**INFSYS 3818 Management of Software Testing: 3 semester hours**

Prerequisites: INFSYS 3806 or INFSYS 3844 or consent of instructor. This course provides the core concepts of the lifecycle of Software Assurance, Quality Control and Testing. It will emphasize the importance of testing strategies, methodologies, planning, design, staging, reporting and managing defects, test environment management and Test Driven Development. Credit cannot be granted for both INFSYS 3818 and INFSYS 6818.

**INFSYS 3820 Introduction to Systems Administration: 3 semester hours**

Prerequisites: INFSYS 2800 or CMP SCI 1250 or permission of Information Systems department chair. This course provides an overview of modern Information Technology (IT) infrastructure components and focuses on systems administration in Linux and Windows server environments. Students will learn to install, configure, operate, maintain, and secure servers. Topics include user management and policies, file systems, backup and recovery, network configuration, and host security among others. Virtualization and cloud environments are introduced. Basic foundations of automation and configuration management using shells and other contemporary tools are provided. Credit cannot be granted for both INFSYS 3820 and INFSYS 6820.

**INFSYS 3830 Data Programming: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0 or consent of instructor. In this course, students will learn the fundamentals of data programming with R and Python using structured (tabular data such as spreadsheets) and unstructured data (text data such as social media) for application in Business and Cyber Analytics, Machine Learning, and Artificial Intelligence. Credit cannot be granted for both INFSYS 3830 and INFSYS 6830.

**INFSYS 3841 Enterprise Information Systems: 3 semester hours**

Prerequisites: INFSYS 2800 and a minimum campus GPA of 2.0. This course provides students the skills and knowledge needed for roles as ERP business analysts, ERP configuration specialists, and consultants. Students will be introduced to integrated business processes through the application of SAP modules supporting Sales and Distribution (SD), Materials Management (MM), Financial Accounting (FI), Production Planning (PP), and Controlling (CO) as components of the SAP integrated business solution. Students will complete exercises to construct a functioning company operating in an integrated SAP R/3 environment.

**INFSYS 3842 Data Networks and Security: 3 semester hours**

Same as INTL BUS 3882. Prerequisites: INFSYS 2800 and a minimum campus GPA of 2.0; or consent of instructor. This is a foundational course in data networking and network security. It covers the fundamentals of networking and security implications of data networks with hands-on exercises. Topics include networking layers and standardization of functionality across layers, wired and wireless Local Area Networks (LANs) along with switching and physical layer technologies, Internetworking, supporting and supervisory protocols; application layer protocols such as HTTP, and fundamentals of network security. Students will also learn about network protocol analyzers such as Wireshark, virtualization, and networking in virtual environments. Credit cannot be granted for both INFSYS 3842 and INFSYS 6836. Course satisfies/fulfills the College of Business Global Awareness requirement.

**INFSYS 3843 Decision Support Systems for Business Intelligence: 3 semester hours**

Prerequisites: SCMA 3300 and a minimum campus GPA of 2.0. This class examines the applications of data and analytics (models) to support the needs of decision makers. Descriptive, predictive and prescriptive analytics tools are coupled with Big Data and well-designed user interfaces to provide the necessary tools. Topics such as how to construct the data warehouse, how to clean and store data in the appropriate form, how to construct and implement a useful visualization of data, and how to construct and support decision makers are included. DSS component design in response to decision making and business intelligence needs are discussed.

**INFSYS 3844 Developing Business Applications in .NET: 3 semester hours**

Prerequisites: INFSYS 2800 or CMP SCI 2250, and a minimum campus GPA of 2.0. This course will enable students to design, implement, and debug object-oriented and data driven business applications in C#.NET. Students will learn application design choices, object-oriented design principles, event-driven programming, user interface programming, user interface controls, data binding and database access, exception handling, debugging and effective ways of working with C#.NET.

**INFSYS 3845 Database Management Systems: 3 semester hours**

Prerequisites: INFSYS 2800, INFSYS 3816, ACCTNG 2400, and a minimum campus GPA of 2.0. This course provides an introduction to the design and use of databases in meeting business information needs. Topics include database planning, conceptual design, and data administration. The concepts are studied with projects involving the use of a current database management system.

**INFSYS 3847 Web Design: 3 semester hours**

Prerequisites: INFSYS 2800 and a minimum campus GPA of 2.0. This course focuses on website planning, design, and construction. Topics include site structure, navigation, content management, markup languages, CSS, scripting languages, and important tools, libraries and frameworks.

**INFSYS 3848 Introduction to Information Security: 3 semester hours**

Prerequisites: INFSYS 2800 or CMP SCI 2250 or consent of instructor and a minimum campus GPA of 2.0. This course provides an introductory survey of the vast field of Information Security (InfoSec). It intersects both management and technical aspects of security as relevant to organizations, governments, individuals, and society. Topics include fundamental principles of InfoSec and cyber defense, the threat environment, management of InfoSec in organizations, technologies and tools in InfoSec, cryptology/cryptography, web application security, and current issues. Hands-on labs expose students to basics of penetration testing, applications of cryptography, and vulnerability management. Course is open to all majors. Credit cannot be granted for both INFSYS 3848 and INFSYS 6828. Course satisfies/fulfills the College of Business Global Awareness requirement.

**INFSYS 3858 Advanced Security and Information Systems: 3 semester hours**

Prerequisites: INFSYS 3848 or Permission of Department Chair. This course builds upon the principles of information security. It covers topics ranging from networking, penetration testing, formal verification of systems, formal models of information flow and protection, distributed system authentication, protocol design and attack, computer viruses and malware, as well as intrusion and anomaly detection models. Students are exposed to virtualization, defensive security, offensive security, and other forms of cybersecurity. Credit cannot be granted for both INFSYS 3858 and INFSYS 6858.

**INFSYS 3860 Data Integration: 3 semester hours**

Prerequisites: INFSYS 2800 or consent of instructor. This course discusses the theories and techniques for blending unstructured and structured data including big data and social media streams with relational databases, data warehouses, spreadsheets, and other sources of data. It provides hands-on experience in integrating data from diverse sources, screening and cleaning it, and producing descriptive and visual summaries in tables, graphs, maps, and text for business intelligence. Students will be introduced to tools that integrate data from different sources and provide input to dashboards for rich visualization and advanced analytics. Students may not receive credit for both INFSYS 3860 and INFSYS 6860.

**INFSYS 3862 Artificial Intelligence Applications for Business: 3 semester hours**

Prerequisites: INFSYS 3830 or consent of instructor. This course introduces students to topics in Artificial Intelligence (AI) and its applications in Business and Cybersecurity. The course discusses the history of AI and delves into Machine Learning (ML) and its general methodology of development of data models. The course provides a sampling of successful applications of AI and ML in different areas of Business such as portfolio management, algorithmic trading, fraud analytics, and credit scoring. Credit cannot be granted for both INFSYS 3862 and INFSYS 6862.

**INFSYS 3864 Applied Cryptography for Business: 3 semester hours**

Prerequisites: INFSYS 3806 and INFSYS 3848, or consent of instructor. This course provides an overview of the building blocks of contemporary cryptographic solutions to address information security needs in organizations. The focus will be on understanding cryptographic primitives and applying them to assure confidentiality, integrity, authentication, and non-repudiation among other information security goals. Using best practices, students will work on projects aimed at evaluating, selecting, and implementing an appropriate mix of cryptographic solutions given particular application domains. Application areas in traditional as well as cloud-based information technology environments will be considered. Credit cannot be granted for both INFSYS 3864 and INFSYS 6864.

**INFSYS 3866 Cloud Security for Business: 3 semester hours**

Prerequisites: INFSYS 3843 or INFSYS 3848 or consent of instructor. This course covers the fundamentals of cloud security in public cloud computing environments with a focus on business applications. Topics include identity and access management, secure configuration of cloud services, and various security focused cloud services. Data collection and analysis of cloud-based data logging services to aid in security auditing and compliance is covered. Emerging topics, such as use of artificial intelligence-based services and tools in cloud security are also discussed. Student may not receive credit for both INFSYS 3866 and INFSYS 6866.

**INFSYS 3868 Secure Software Development: 3 semester hours**

Prerequisites: A first course in programming such as INFSYS 3806 or CMP SCI 2250 or consent of instructor. This course covers the concepts of software assurance and the fundamentals of the secure software lifecycle as it relates to software development. Students will experience the secure software lifecycle process by developing concrete artifacts and practicing in a lab environment. Credit cannot be granted for both INFSYS 3868 and INFSYS 6868.

**INFSYS 3878 Information Security Risk Management and Business Continuity: 3 semester hours**

Prerequisites: INFSYS 3848 or consent of Instructor. This course provides students the tools and concepts necessary to plan for, prevent, and when needed successfully respond to disruptions in business operations. Topics covered include security policies, frameworks, information and materials management, risk management, and regulatory compliance. Credit cannot be granted for both INFSYS 3878 and INFSYS 6878.

**INFSYS 3890 Internship in Information Systems: 1-3 semester hours**

Prerequisites: Minimum business GPA of 2.5, minimum campus GPA of 2.0, completed and/or currently enrolled in at least 6 credit hours of information systems electives at the 3000 level or above, consent of supervising instructor, and consent of department chair. Students are employed in the field of information systems where they apply the knowledge and skills learned in the classroom. Professional development obtaining specialized work experience are primary goals. An information systems faculty member will monitor the student's program with the student providing a formal written report at the end of the project.

**INFSYS 3898 Seminar in Information Systems: 1-3 semester hours**

Prerequisites: To be determined each time course is offered and to include a minimum 2.0 overall GPA. This course is a selected special topic in the field of information systems. May be repeated for credit with different topics.

**INFSYS 3899 Independent Study in Information Systems: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0 and approval by the supervising professor and the Area Coordinator. Special individual study in information systems under the supervision of a full-time information systems faculty member.

**INFSYS 4800 IT Leadership: 3 semester hours**

Prerequisite: INFSYS 2800. This course seeks to prepare students for IT leadership roles using business cases as exemplars. Credit cannot be granted for both INFSYS 4800 and INFSYS 5800.



**INFSYS 4847 IT Project Management: 3 semester hours**

Prerequisites: INFSYS 2800 or consent of instructor. Effective project management ensures that a project is completed on time, within budget, and includes the necessary scope. This course explores the project management processes shared by all projects: project selection, planning, control, and closing. Traditional and Agile project management techniques will be explored in the contexts of Information Technology and Supply Chain Management. Credit cannot be granted for both INFSYS 4847 and INFSYS 6847.

**INFSYS 4850 Information Systems Design: 3 semester hours**

Prerequisites: INFSYS 3810, INFSYS 3816, INFSYS 3845 and a minimum campus GPA of 2.0. This course builds on the skills learned in INFSYS 3810. System design, implementation, and methods of systems installation and operation are presented. A system development project is required.

**INFSYS 5800 Management Information Systems: 3 semester hours**

Same as P P ADM 6800. Prerequisites: Graduate standing. This course provides an overview of issues related to the management of information systems within organizations. Course topics may include the role of the Chief Information Officer, business value from emergent information technologies (IT), enterprise systems, the impact of IT on organizational competitiveness, managing IT-enabled projects, extracting business intelligence from big data, sourcing IT, cybersecurity, ethics, intellectual property rights, and societal impacts of IT.

**INFSYS 5890 Graduate Internship in Information Systems: 1-6 semester hours**

Prerequisites: INFSYS 6840 or permission of instructor. The internship will be a supervised field experience in a US-based business/organization or a US-based international business/organization. Students will be employed off-campus for a 10-16 week period on projects directed by host organization supervisors in consultation with a UM-St. Louis faculty member. The project requires students to apply IS concepts to a real-world problem. The project does not duplicate, but builds upon material in the IS curriculum. A professional written report will be required.

**INFSYS 5899 Individual Research in Information Systems: 1-3 semester hours**

Prerequisites: Consent of instructor and graduate director. Special individual research topics in Information Systems under the guidance of a specific professor.

**INFSYS 6805 Applications of Programming for Business Solutions: 3 semester hours**

Prerequisite: Graduate standing. This course will enable students to design, implement, and debug object-oriented and data driven business applications in C#.NET. Students will learn application design choices, object-oriented design principles, event-driven programming, user interface programming, user interface controls, data binding and database access, exception handling, debugging and effective ways of working with C#.NET.

**INFSYS 6806 Managerial Applications of Object-Oriented Technologies: 3 semester hours**

Prerequisites: Graduate Standing. This course provides an introduction to object-oriented programming. Topics include object-oriented design principles and choices, encapsulation, inheritance, and event-driven programming. Hands-on labs during class sessions and assignments help students develop applied programming skills. Students may not receive credit for both INFSYS 3806 and INFSYS 6806.

**INFSYS 6807 Contemporary z/OS COBOL: 3 semester hours**

Prerequisites: Graduate standing. This course covers structured programming techniques for legacy business applications. Students will learn COBOL syntax, structure, design and best programming practices to create, maintain, debug, compile and execute COBOL programs.

**INFSYS 6808 Advanced Object-Oriented Programming for Business: 3 semester hours**

Prerequisite: INFSYS 6806. This course builds on skills learned in INFSYS 6806 and focuses on contemporary client-server development environments and tools. Topics include database integration, web applications, and web services. Students will be provided hands-on application development experiences during class and in assignments.

**INFSYS 6814 Web Applications for Business: 3 semester hours**

Prerequisites: Graduate standing. This course focuses on website planning, design, and construction. Topics include site structure, navigation, content management, markup languages, CSS, scripting languages, and important tools, libraries and frameworks.

**INFSYS 6815 Advanced Web Applications for Business: 3 semester hours**

Prerequisites: INFSYS 6806 and INFSYS 6814 or consent of instructor. This course provides a study of web application development using Java and JavaScript. Students will learn about frameworks, design patterns, software testing, and front-end web technologies. Students may not receive credit for both INFSYS 3815 and INFSYS 6815.

**INFSYS 6817 Advanced COBOL and Modern z/OS System Tools: 3 semester hours**

Prerequisites: INFSYS 6807 or consent of instructor. This course will build upon Contemporary z/OS COBOL 1. Topics will include JCL, file management, utilities/tools (like SORTING, File-Aid, IEB's, JCLCheck), file access (VSAM, DB2, and Sequential), scheduling, debugging, testing, and mainframe-server communication protocols.

**INFSYS 6818 Management of Software Testing: 3 semester hours**

Prerequisites: INFSYS 6805 or INFSYS 6806 or consent of instructor. This course provides the core concepts of the lifecycle of Software Assurance, Quality Control and Testing. It will emphasize the importance of testing strategies, methodologies, planning, design, staging, reporting and managing defects, test environment management and Test Driven Development.

**INFSYS 6820 Systems and IT Infrastructure: 3 semester hours**

Prerequisites: Graduate standing. This course establishes the critical role of Linux and Windows server environments in contemporary Information Technology (IT) infrastructure management. Students will explore both the technical and management aspects of server infrastructure. Technical aspects include installation, operation, maintenance, virtualization, and systems security. Management aspects include server lifecycles and management of server environments at scale using automation and configuration management tools within the context of application development, security operations, and IT operations. Credit cannot be granted for both INFSYS 3820 and INFSYS 6820.



**INFSYS 6828 Principles of Information Security: 3 semester hours**

Prerequisites: Graduate standing. This course is a survey of the vast field of Information Security (InfoSec). It intersects both management and technical aspects of security as relevant to organizations, governments, individuals, and society. Topics covered include fundamental principles of InfoSec and cyber defense, the threat environment, management of InfoSec in organizations, technologies and tools in InfoSec, cryptology/cryptography, web application security, vulnerability management, and current issues. Hands-on labs expose students to basics of penetration testing, applications of cryptography, and vulnerability management. A graduate research paper is required. This course is open to all majors. Credit cannot be granted for both INFSYS 6828 and INFSYS 3848.

**INFSYS 6830 Data Programming for Business Intelligence: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. This course introduces students to the fundamentals of data programming with R and Python using structured (tabular data such as spreadsheets) and unstructured data (text data such as social media) for application in business and cyber analytics, machine learning, and artificial intelligence. Students may not receive credit both INFSYS 3830 and INFSYS 6830.

**INFSYS 6832 Information Systems Strategy: 3 semester hours**

Prerequisites: Graduate Standing. This course presents the management of computer-based information resources in the context of business organizations. Issues may include: management strategies and policies for improving organizational productivity, measurement, evaluation and acquisition of management information services, office automation, end-user computing, computer use in international environments, social and organizational perspectives and ethical implications. The course will be taught using cases.

**INFSYS 6833 Decision Support Systems for Business Intelligence: 3 semester hours**

Same as ACCTNG 5443. Prerequisites: SCMA 5300. This course examines the applications of data and analytics (models) to support the needs of decision makers. Descriptive, predictive and prescriptive analytics tools are coupled with big data and well-designed user interfaces to provide the necessary tools. Topics such as how to construct the data warehouse, how to clean and store data in the appropriate form, how to construct and implement a useful visualization of data, and how to construct and support decision makers are included. DSS component design in response to decision making and business intelligence needs are discussed. Credit cannot be granted for both INFSYS 3843 and INFSYS 6833.

**INFSYS 6836 Management of Data Networks and Security: 3 semester hours**

Prerequisites: INFSYS 5800 (may be taken concurrently) or Consent of Instructor. This course focuses on the big-picture implications and challenges of data networking and network security within contemporary Information Technology environments. It covers fundamentals of networking and security implications of data networks with hands-on exercises. Topics include networking layers and standardization of functionality across layers, wired and wireless Local Area Networks (LANs) along with switching and physical layer technologies, Internetworking, supporting and supervisory protocols, application layer protocols, network design and management, and fundamentals of network security. Students will also learn about network protocol analyzers such as Wireshark, virtualization, networking in virtual environments; and how some common networked applications operate by utilizing the networking infrastructure. Credit cannot be granted for both INFSYS 6836 and INFSYS 3842.

**INFSYS 6838 Business Processes: Design, Management and Integration: 3 semester hours**

Prerequisite: INFSYS 5800. Business design methodologies are used to create new, or improve existing processes. Examples of business processes include: call centers, order-flow processing in financial services, manufacturing, hospital emergency services, and more. Special attention is paid to the role of information technology during the design process. Specific business process design methods we will cover are: SIPOC (supplier-input-process-output-customer), Process Flow Mapping, Simulation Modeling, Performance Scorecards, Quality Functional Deployment, Failure Mode and Effects Analysis, and Theory of Constraints. Case studies are used to illustrate the concepts and guest speakers will discuss their applications of the latest business process design methods and software.

**INFSYS 6840 Information Systems Analysis: 3 semester hours**

Prerequisite: INFSYS 6805 or INFSYS 6806. In this course, students will learn how to identify, evaluate, and document business systems using traditional and agile methodologies. This includes how to study systems' ability to meet the business needs and information requirements of an organization, and defend alternatives that better meet needs. Students will conduct a systems analysis of an actual organization in project teams, including the identification of and defense of alternatives.

**INFSYS 6845 Database Management Systems: 3 semester hours**

Prerequisites: INFSYS 5800 and either INFSYS 6805 or INFSYS 6806. This course provides an introduction to the design and use of databases in meeting business information needs. Topics include database architecture, design, administration, and implementation. The concepts are studied with projects involving the use of a current database management system.

**INFSYS 6847 Project Management: 3 semester hours**

Prerequisite: INFSYS 5800. Effective project management ensures that a project is completed on time, within budget, and has high quality. The purpose of this class is to examine the task of project resource management with a focus on IT and services. It will cover conventional aspects of project management, such as the project evaluation, planning, roles, responsibilities, scheduling, and tracking. In addition, this class will examine risk management, change management, critical chain management, build vs. buy analysis, package vs. custom solutions, vendor qualification and selection, and the roles of certification in the process. The class will also cover the management of programs or a portfolio of IT projects.

**INFSYS 6848 Knowledge Management and Business Intelligence: 3 semester hours**

Prerequisite: INFSYS 5800. Knowledge management (KM) is the process of creating, and drawing value from, an organization's intellectual assets. It deals with how to best leverage the organization's knowledge internally as well as externally. The emphasis on knowledge management within business organizations has risen dramatically in the last few years, to some extent as a result of the rapid progress in information technology capabilities. The course covers the following topics: KM tools, technologies, and systems, including knowledge repositories, knowledge portals, and expert seeker systems, creating and sustaining a knowledge sharing culture, managing and measuring intellectual capital, managing knowledge in networked organizations, including interorganizational alliances and supply chains, aligning knowledge with business strategy, risks of knowledge loss and knowledge leakage, business intelligence, and social aspects of knowledge management.

**INFSYS 6849 Data Warehouse Design and Implementation: 3 semester hours**

Prerequisites: INFSYS 6845 or consent of instructor. Course will cover different design configurations for structuring and organizing data in a data warehouse. Formal methodologies for the development of data warehouses will also be discussed and implemented.

**INFSYS 6850 Information Systems Design: 3 semester hours**

Prerequisites: INFSYS 6840 and INFSYS 6845. This course builds upon the analysis techniques presented in INFSYS 6840. It requires the student, usually working in a group to design and implement a system in a real-world environment. Advanced design concepts are presented to support the students in their project work.

**INFSYS 6851 Practicum in Business Intelligence: 3 semester hours**

Prerequisites: INFSYS 6833. This course will provide the context for students to integrate, synthesize and apply their Business Intelligence skills in an actual business organization. Project work will be jointly supervised and coordinated by a faculty member and a supervisor in the relevant business organization.

**INFSYS 6858 Advanced Cybersecurity Concepts: 3 semester hours**

Prerequisites: INFSYS 6828. This course provides an in-depth examination of advanced principles of cybersecurity. A broad range of topics are covered, including penetration testing, formal verification of systems, formal models of information flow and protection, distributed system authentication, protocol design and attack, computer viruses and malware, as well as intrusion and anomaly detection models. Multi-level security architecture, active defenses, investigation and forensics, network firewalls, virtualization, anonymity and identity, mobile security, and database security models and mechanisms are also studied. The course content is largely influenced by the latest research in the field. Credit cannot be granted for both INFSYS 6858 and INFSYS 3858.

**INFSYS 6860 Advanced Data Integration: 3 semester hours**

Same as ACCTNG 6460. Prerequisites: Graduate standing. This course discusses the theories and techniques for blending unstructured and structured data including big data and social media streams with relational databases, data warehouses, spreadsheets, and other sources of data. It provides hands-on experience in integrating data from diverse sources, screening and cleaning it, and producing descriptive and visual summaries in tables, graphs, maps, and text for business intelligence. Students will be introduced to tools that integrate data from different sources and provide input to dashboards for rich visualization and advanced analytics. Students may not receive credit for both INFSYS 3860 and INFSYS 6860.

**INFSYS 6862 Artificial Intelligence Applications for Business and Cybersecurity: 3 semester hours**

Prerequisite: Graduate standing. This course introduces students to topics in artificial intelligence (AI) and its applications in business and cybersecurity. The course starts with a historical development of fundamental ideas in AI and their relationship to the state of the art. The course then introduces one of the most successful branches of AI—machine learning (ML), and its general methodology of the development of data models. The course provides a sampling of successful applications of AI and ML in different areas of business such as portfolio management, algorithmic trading, fraud analytics, and credit scoring. Credit cannot be granted for both INFSYS 3862 and INFSYS 6862.

**INFSYS 6864 Applied Cryptography for Business Applications: 3 semester hours**

Prerequisites: INFSYS 6805 or INFSYS 6806, and INFSYS 6828, or consent of instructor. This course provides an overview of the building blocks of contemporary cryptographic solutions to address information security needs in organizations. The focus will be on understanding cryptographic primitives and applying them to assure confidentiality, integrity, authentication, and non-repudiation, among other security goals. Students will work on projects aimed at evaluating, selecting, and implementing an appropriate mix of cryptographic solutions, based on best practices, given particular application domains. Application areas in traditional as well as cloud-based Information Technology (IT) environments will be considered. Students will also learn about important considerations and pitfalls in managing cryptographic solutions at scale in modern IT environments. Students may not receive credit for both INFSYS 3864 and INFSYS 6864.

**INFSYS 6866 Cloud Security Management: 3 semester hours**

Prerequisites: INFSYS 6828 or INFSYS 6833 or consent of instructor. This course covers the fundamentals of cloud security in public cloud computing environments with a focus on business applications. Topics include identity and access management, secure configuration of cloud services, and security focused cloud services such as the analysis of cloud-based data logging to aid in security auditing and compliance, and new artificial intelligence-based tools. Students may not receive credit for both INFSYS 3866 and INFSYS 6866.

**INFSYS 6868 Software Assurance: 3 semester hours**

Prerequisites: INFSYS 6805 or INFSYS 6806 or consent of Instructor. This course provides an overview of the vast field of software assurance. The goal is to make students aware of the fundamentals of the secure software lifecycle enabling them to apply principles of secure software development and management. The course also provides practical applications that allow the learners to experience the secure software lifecycle process by developing concrete artifacts. Credit cannot be granted for both INFSYS 6868 and INFSYS 3868.

**INFSYS 6878 Management of Information Security: 3 semester hours**

Prerequisites: INFSYS 6828. This course provides students the necessary background knowledge and skills to develop and run a systematic information security management program that is in line with organizational strategy, structure, processes, and culture. Specifically, the course introduces governance, strategy, policies, implementation, operation, evaluation, and improvement of an organization's information security to achieve business objectives and be resilient to information security threats. Credit cannot be granted for both INFSYS 6878 and INFSYS 3878.

**INFSYS 6888 Capstone in Information Security: 3 semester hours**

Prerequisites: INFSYS 6828 and one of either INFSYS 6858 or CMP SCI 5782. This course provides students an opportunity to participate in the full information security lifecycle in an applied setting using a project-based approach. Students from technical and non-technical backgrounds will work together in teams. Major tasks may include creating an information security management plan, conducting risk assessments, implementing technical and administrative controls to mitigate information security risks, and managing security operations with a focus on incident detection and response. Students may work on projects through an actual organization and demonstrate application of knowledge gained through all prior courses in the degree program. This course must be taken the last semester prior to graduation. Cannot receive credit for INFSYS 6888 and CMP SCI 5888.

**INFSYS 6891 Seminar in Information Systems: 3 semester hours**

Prerequisites: INFSYS 5800. Topics of current interest in management information systems. Topics may include international information systems, electronic commerce, decision support systems, information systems strategy, telecommunications, and information systems management.

## Marketing

The mission of the Marketing Department is to deliver an excellent marketing program that prepares our students for successful careers and leadership roles in business and society. We are committed to provide a program that develops a rich understanding of marketing concepts and improves managerial abilities in the most exciting areas of marketing. We provide high quality, high value education to advance the professional aims of our students in the competitive and dynamic local, national and international environments. Our faculty conducts research on cutting edge issues and real-world problems. We integrate into our curricula the latest and most relevant marketing theories and industry practices. And we partner with the St. Louis community to promote the economic development of the whole region and the State of Missouri.

COBA's Marketing Department offers the Bachelor of Science in Business Administration (BSBA) and the Master of Business Administration (MBA) degrees. Students can also earn a minor in Marketing, a Minor in Transportation Studies, and a Graduate Certificate in Digital and Social Media Marketing. In response to the market's evolving needs, starting this year, the Department offers a distinct Tracks in Digital and Social Media Marketing. Marketing faculty will also play important roles in the new Doctor of Business Administration (DBA) program, teaching required courses and supervising theses.

As part of the College, the Department is accredited by the top accrediting body for higher education business programs: the Association to Advance College Schools of Business (AACSB).

### Degrees

Business Administration BS, Marketing Emphasis (p. 348)

Business Administration MBA, Marketing Emphasis (p. 361)

### Minors

Digital Marketing Communications Minor (p. 414)

Marketing Minor (p. 490)

### Certificates

Entrepreneurship Undergraduate Certificate (p. 460)

Digital and Social Media Marketing Graduate Certificate (p. 413)

Marketing Management Graduate Certificate (p. 489)

### Affiliated Interdisciplinary Programs

Transportation Studies Minor (p. 648)

### Courses

Courses offered by the department can be found at the links below:

Entrepreneurship (ENT)

Marketing (MKTG)

## Supply Chain and Analytics

The Supply Chain & Analytics Department is responsible for a broad range of topics in the areas of supply chain management and business analytics. The department faculty are recognized as supply chain and analytics thought leaders who are most connected to the region's businesses.

**Supply Chain Management (SCM)** is the cornerstone of modern economies and includes all of the activities needed to get the right product to the right place in the right quantity at the right time. This requires effective procurement and sourcing, transportation and logistics, manufacturing and service delivery, inventory and warehousing, distribution, sales and customer service, as well as the associated information and financial management. SCM professionals are involved in every facet of an organization as they work to create a sustainable competitive advantage. **Business Analytics** includes a wide range of techniques, skills, statistical methods, and modeling to develop better understanding and new insights for data-driven decision making. Departmental programs cover descriptive, predictive and prescriptive analytics, including optimization and simulation, as well as effective communication of results from analytics projects. Graduates in Supply Chain & Analytics are in high demand in all types of service, manufacturing and government organizations.

Supply Chain & Analytics faculty and students are involved in a wide range of theoretical and applied research activities in collaboration with academic colleagues and industry partners, especially through the College's Center for Transportation Studies and the Center for Business and Industrial Studies. The department is supported by a very active and engaged departmental Advisory Board of leading companies and organizations in the St. Louis region.

### Degrees

Business Administration BS, Supply Chain Management Emphasis (p. 349)

Business Administration MBA, Logistics and Supply Chain Management Emphasis (p. 364)

Business Administration MBA, Operations Management Emphasis (p. 354)

Business PhD, Logistics and Supply Chain Management Emphasis (p. 364)

### Minors

Supply Chain Management Minor (p. 643)

Transportation Studies Minor (p. 648)

### Certificates

Business Intelligence Graduate Certificate (p. 364)

Logistics and Supply Chain Management Graduate Certificate (p. 488)

## Courses

### **SCMA 3300 Business Analytics and Statistics: 3 semester hours**

Prerequisites: MATH 1105, INFSYS 1800 and a 2.0 campus GPA. This course covers basic statistical analysis (descriptive and predictive analytics) for business management. Tools include matched sample tests, chi-square tests, rank sum tests, simple linear regression and correlation, multiple linear regression, and extrapolative techniques such as moving averages and exponential smoothing. Emphasis is placed on problem definition, construction of statistical models, analysis of data, and interpretation of results.

### **SCMA 3301 Introduction to Supply Chain Management: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0. This course provides an understanding of fundamental concepts of supply chain management. All functional areas of supply chain management are explored in an integrated view of procurement, manufacturing and operations management, transportation and logistics, inventory and warehousing, demand planning, scheduling, network design, collaboration and performance measurement. Topics also cover supply chain financial metrics, strategy and change management for demand driven value networks.

### **SCMA 3320 Advanced Supply Chain and Operations Management: 3 semester hours**

Prerequisites: SCMA 3301 or MATH 1320 and a 2.0 campus GPA. This course covers supply chain management with special focus on understanding manufacturing and service operations. Emphasis is on the application of quantitative methods to the solution of strategic, tactical and operational problems. Topics include demand planning, capacity, new product design and launch, process selection, facility layout, production planning, scheduling, inventory, process control, waiting lines, lean production, etc.

### **SCMA 3321 Procurement: 3 semester hours**

Prerequisites: SCMA 3301 and a 2.0 campus GPA. This course covers procurement processes and supplier management, with emphasis on managing a supplier base for both products and services. Topics include the strategic role of procurement in supply chains, sourcing options, identification and evaluation of requirements, the role of product design, make-versus-buy decisions, and supplier selection and evaluation.

### **SCMA 3345 Predictive Analytics and Data Mining: 3 semester hours**

Prerequisites: SCMA 3300 and a minimum campus GPA of 2.0. This course focuses on predictive analytics in business settings. Topics may include applications of multivariate analyses to problems in marketing, finance, transportation and logistics. The course covers use of decision trees, regression and logistic regression to explain phenomena and predict future outcomes. Students acquire experience in the use of modern tools for data mining.

### **SCMA 3370 Introduction to Transportation: 3 semester hours**

Same as MKTG 3770. Prerequisites: A minimum campus GPA of 2.0. This course provides an overview of the transportation sector, including history, providers, users, government regulation, and the central role of transportation in supply chain management. The course covers the importance of domestic and global transportation, the operational aspects of the various transportation modes (rail, water, motor, air, and pipeline), the role of transportation intermediaries, the demand and supply of transportation, and the managerial aspects of transport in both the commercial and urban environment.

### **SCMA 3371 Traffic and Transportation Management: 3 semester hours**

Same as MKTG 3771. Prerequisites: SCMA 3370 or MKTG 3770, and a minimum campus GPA of 2.0. This course focuses on transportation management as a function of a firm's logistics and supply chain strategy. The course covers the management of the various transportation modes (rail, motor, air, water, and pipeline), strategic use of transportation intermediaries such as 3PL's, and linkages between transportation and warehousing. This course is designed to provide a basic understanding of the issues and work performed by transportation managers, including costing and pricing, transportation procurement, transportation technology, and cross border trade management.

### **SCMA 3376 Transportation Security and Risk: 3 semester hours**

Same as MKTG 3776. Prerequisites: SCMA 3370 or MKTG 3770 and a minimum campus GPA of 2.0. This course emphasizes risk and security issues related to transportation systems and supply chains, including highway, aviation, pipeline, waterway, transit, and rail networks, as well as port facilities. This course also provides an overview of transportation safety issues including passenger and employee safety, and hazardous materials. It addresses transportation and supply chain risk management and continuity strategies to prepare for, and respond to, disruptions as from terrorism events or natural disasters.

### **SCMA 3390 Internship in Supply Chain and Analytics: 1-3 semester hours**

Prerequisites: Minimum business GPA of 2.5, minimum campus GPA of 2.0, completed and/or currently enrolled in at least 6 credit hours of departmental electives, consent of supervising instructor, and consent of department chair. Students are employed in the field where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience are the primary goals. A departmental faculty member will monitor the student's program with the student providing a formal written report at the end of the project. Students cannot receive credit towards the emphasis for both SCMA 3390 and SCMA 4389. Repeatable for a maximum of 9 credit hours.

### **SCMA 3398 Seminar in Supply Chain Management and Analytics: 1-3 semester hours**

Prerequisites: To be determined each time the course is offered and to include a minimum 2.0 campus GPA. This course is a selected special topic in the fields of supply chain management and analytics. May be repeated for credit with different topics.

### **SCMA 3399 Independent Study in Supply Chain and Analytics: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0 and approval by the supervising professor and the department chair. Special individual study in supply chain and analytics under the supervision of a full-time faculty member of the department.

### **SCMA 4322 Lean Production in Manufacturing and Service Operations: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0 or graduate standing; also SCMA 3320. Study of Lean Production philosophy and techniques in manufacturing and service operations. Topics include process analysis and continuous improvement techniques, quick set-ups, total productive maintenance, kanban scheduling, cellular production, team organization of workers, supplier relations, quality management, and the environmental aspects of production.



**SCMA 4325 Environmental Sustainability in Business Operations: 3 semester hours**

Same as BUS AD 4325. Prerequisites: SCMA 3301 or permission of instructor. This course studies the environmental impacts of business operations, and it focuses especially on the principles and methods of 'lean and green' operations, i.e., ways in which organizations can reduce their costs and increase profits, while reducing their environmental impacts. Specific topics include energy efficiency, resource reduction, waste reduction, design for the environment, externalities and internal pricing mechanisms, environmental technologies, life-cycle assessment, recycling, re-use, and re-manufacturing, as well as national and global environmental issues.

**SCMA 4330 Business Logistics: 3 semester hours**

Prerequisites: SCMA 3320 and a minimum campus GPA of 2.0. This course addresses the analysis of business logistics systems, their design, and operation in light of cost and service tradeoffs. Topics include performance measures and management, logistics and supply chain network design, facility location, transportation, vehicle routing, storage and handling, capacity planning, inventory management, customer service and the role of technology.

**SCMA 4331 Applied Supply Chain Modeling: 3 semester hours**

Prerequisites: SCMA 3320 and a 2.0 minimum campus GPA. This course introduces applied models and technology for supply chain management through hands-on experience using state-of-the-art software and tools for the design and operation of supply chains. The course covers the economic tradeoffs involved in such decisions, data requirements, operating parameters, application of software packages and performance management and analytics.

**SCMA 4347 Introduction to Project Management: 3 semester hours**

Prerequisites: SCMA 3301 and a minimum campus GPA of 2.0. This course introduces the concepts and practices of Project Management with a focus on supply chain and analytics related projects. It covers conventional aspects of project management, such as the project evaluation, planning, roles, responsibilities, scheduling, and tracking. In addition, this class introduces agile project management as applicable to projects where there is not the specificity of goals or solutions to be applicable to traditional project management.

**SCMA 4350 Prescriptive Analytics and Optimization: 3 semester hours**

Same as ACCTNG 4450. Prerequisites: MATH 1105 and a minimum campus GPA of 2.0. This course covers the construction and application of prescriptive analytical models for optimizing business decisions in a wide range of areas such as manufacturing, service, supply chains, logistics and finance. Topics include performance metrics, linear programming, integer programming, network optimization, simulation, and implementation using Excel.

**SCMA 4381 Global Supply Chain Management: 3 semester hours**

Same as INTL BUS 4381. Prerequisites: SCMA 3301 and a minimum campus GPA of 2.0. This course covers business logistics and supply chain strategies involving shipments across national boundaries. Topics may include the effects of international agreements and regional trading blocks on supply chain strategies, the design of global logistics networks, managerial processes and systems for international production and distribution, and risk management for international logistics.

**SCMA 4389 Supply Chain Management Practicum: 3 semester hours**

Prerequisites: SCMA 3320. This course engages students with local organizations to provide practical experience in critical thinking, analysis, and communication in a supply chain context. This allows students to integrate, synthesize and apply supply chain management knowledge and skills in a real business/organization through projects jointly supervised by a faculty member and a supervisor from the organization. Students cannot receive credit towards the emphasis for both SCMA 3390 and SCMA 4389.

**SCMA 4398 Advanced Topics in Supply Chain and Analytics: 1-3 semester hours**

Prerequisites: SCMA 3301 or permission of the instructor and a minimum 2.0 campus GPA. An intensive study of a specific aspect, problem or technique in the areas of supply chain management, analytics, logistics, or operations management. Different topics may be offered under this course number, so the course (with different topics) can be repeated for credit.

**SCMA 5300 Statistical Analysis for Management Decisions: 3 semester hours**

Prerequisites: MATH 1030 and spreadsheet modeling or equivalent competency. Probability and probability distributions are studied as a basis of statistical inference. An introduction to multivariate analysis is provided, which includes analysis of variance and regression methods.

**SCMA 5310 Supply Chain Strategies: 3 semester hours**

Prerequisites: Graduate standing. This course addresses supply chain management and its implications, with a focus on what firms can do to maintain competitiveness in the quickly changing business landscape. Topics may include fundamentals of supply chain management, value chain analyses, supply chain analytics, procurement, production, logistics, inventory management, and marketing business-to-business.

**SCMA 5320 Production and Operations Management: 3 semester hours**

Prerequisites: SCMA 5300. This course discusses issues related to the creation and delivery of goods and services. Topics include the design of production processes, the layout and location of facilities, forecasting, scheduling, inventory control, queuing, materials planning, and quality control. Analytical techniques such as linear programming are used in studying these problems.

**SCMA 5322 Lean Production: 3 semester hours**

Prerequisites: SCMA 5310. This course covers the study of Lean Production philosophy and techniques in manufacturing and service operations. Topics include process analysis and continuous improvement, set-up reduction, total productive maintenance, kanban scheduling, cellular production, work teams, supplier relations, quality management, and the environmental aspects of production. Cases and a course project will be used to integrate and apply the course material.

**SCMA 5325 Environmental Analysis and Sustainability in Business Operations: 3 semester hours**

Same as BUS AD 5325. Prerequisites: SCMA 5310 or consent of instructor. This course analyzes the environmental impacts of business operations, and it focuses especially on the principles and methods of 'lean and green' operations, i.e., ways in which organizations can reduce their costs and increase profit, while reducing their environmental impacts. Specific topics include energy efficiency, resource reduction, waste reduction, design for the environment, externalities and internal pricing mechanisms, environmental technologies, life-cycle assessment, recycling, re-use, and re-manufacturing, as well as national and global environmental issues.

**SCMA 5334 Internship in Logistics and Supply Chain Management: 1 semester hour**

Prerequisite: Consent of instructor. Students receive practical experience in the area of logistics or supply chain management. The internship is supervised by a professional in the host organization in consultation with a faculty member.

**SCMA 5354 Simulation for Managerial Decision Making: 3 semester hours**

Prerequisites: SCMA 5300. This course is an introduction to simulation as a managerial decision-making aid. The applications of simulations to a number of management science-oriented problems are covered using a simulation language.

**SCMA 5381 Global Supply Chain Management: 3 semester hours**

Same as INTL BUS 5381. Prerequisites: SCMA 5310 (may be taken concurrently). This course covers global supply chain management strategy, planning and operations. Topics include issues in global trade, global network design and facility location strategies, international logistics, import-export operations, and global supply chain risk management.

**SCMA 5389 Supply Chain Management Practicum: 3 semester hours**

Prerequisites: SCMA 5300 or equivalent; SCMA 5310 or equivalent (may be taken concurrently). This course engages students with local organizations to provide practical experience in critical thinking, analysis, and communication in a supply chain context. This allows students to integrate, synthesize and apply supply chain management knowledge and skills in a real business/organization through projects jointly supervised by a faculty member and a supervisor from the organization. Students may not count both SCMA 5398 and an internship toward the SCMA emphasis.

**SCMA 5399 Individual Research in Logistics and Operations Management: 1-3 semester hours**

Prerequisites: Consent of instructor and graduate director. Special individual research topics in Logistics and Operations Management under the guidance of a specific professor.

**SCMA 6321 Strategic Sourcing: 3 semester hours**

Prerequisites: SCMA 5310 (may be taken concurrently). This course provides a strategic focus on the acquisition of goods and services and management of suppliers in business-to-business transactions. The course covers the strategic sourcing process, including categorizing the buy, conducting a market analysis, developing a supply strategy, analyzing prices and cost, developing bids, selecting suppliers, negotiating, and managing the supply base.

**SCMA 6330 Business Logistics Systems: 3 semester hours**

Prerequisites: SCMA 5310 (may be taken concurrently). This course focuses on analysis of business logistics systems and their role in supply chain management. It covers design and operation of logistics systems and their components. Topics include network design, facility location, transportation, vehicle routing, inventory management, customer service, sustainability, and reverse logistics.

**SCMA 6331 Supply Chain Modeling: 3 semester hours**

Prerequisites: SCMA 5310 (may be taken concurrently). This course introduces model-building techniques for data-driven decision-making in supply chains. It covers math programming (linear and integer programming), network optimization, and constraint programming, with their applications in production planning, MRP, transportation, network design and configuration. It provides hands-on experience by using state-of-the-art optimization tools and commercial software.

**SCMA 6338 Business Processes: Design, Management and Integration: 3 semester hours**

Prerequisites: SCMA 5310. This course presents the concepts and state of the art, and state of the practice of business process design and business process management. Issues related to characteristics, goals, benefits and costs of enterprise-wide design and to the role of information technology during the design process are discussed. Topics include the history and development of process focused businesses and the impacts on processes caused by just-in-time and total quality management philosophies, organizational learning, strategy mapping, the exploitation of core competencies, and changing business scenarios such as globalization and electronic-commerce.

**SCMA 6345 Business Analytics and Data Mining: 3 semester hours**

Same as ACCTNG 5444. Prerequisites: SCMA 5300 and INFSYS 5800. This course concentrates on methods for converting data into business intelligence. It provides knowledge of the principles and techniques for business analytics and data mining. Topics include clustering, pattern recognition, visualization of relationships, predictive modeling, optimization techniques and simulation.

**SCMA 6347 LOM Project Management: 3 semester hours**

Prerequisites: SCMA 5320. This course addresses the concepts and processes of project management as applicable to Logistics and Operations Management. Students study organizational design, project specification, integrated project planning, risk management and project control; students will come to understand how globalization, environmental and sustainability issues, quality control (including industry standard initiatives such as the Continuing Integration Improvement Model and the International Standards Organization model), and cultural factors drive project management. NOTE: Credit may not be earned for both SCMA 6347 and INFSYS 6847.

**SCMA 6350 Management Science Methods: 3 semester hours**

Prerequisites: SCMA 5310. This course provides comprehensive coverage of management science and operations research methodologies. It introduces data-driven optimization approaches to solving business problems, construction of mathematical models, and sensitivity analysis for managerial decision-making. Topics include linear programming, integer programming, network optimization, and simulation.

**SCMA 6360 Supply Chain Integration: 3 semester hours**

Prerequisites: SCMA 5310 (may be taken concurrently). The course covers the connections between supply chain capabilities and corporate competitiveness, the management of business relationships with customers and suppliers, collaboration and coordination approaches, the role of technology, and the link between supply chain performance and overall financial measures. Students will learn how to leverage the competitiveness of a firm by integrating and coordinating strategies, business relationships and key supply chain processes across the network of suppliers and customers in the supply chain and among the various departments within a firm.

**SCMA 6395 Seminar in Logistics and Operations Management: 3 semester hours**

Prerequisites: SCMA 5310. This course covers topics of current interest in logistics and operations management. Topics may include just-in-time and lean production, quality management, manufacturing and service systems, transportation and logistics, quantitative management tools, etc.

***SCMA 7381 International Supply Chain Management: 3 semester hours***

Prerequisites: SCMA 5320. Admittance into the Ph.D. Program. A comprehensive examination of international logistics and supply chain management strategies, planning and operations from the firm's perspective. Topics may include multinational logistics and supply chain issues and management strategies, multinational sourcing and network design, transportation issues in international supply chains, multinational distribution and operations, legal and financial issues in import and export, risk identification and management in international supply chains, and the relationship of supply chain management to other activities of international firms.

***SCMA 7390 Research Seminar in LSCM: 3 semester hours***

Prerequisites: SCMA 6330. Admittance into the Ph.D. Program. Analysis of research approaches, and findings in Logistics and Supply Chain Management. May be repeated for credit when the subject matter is different.

***SCMA 7393 Special Topics in LSCM: 3 semester hours***

Prerequisites: Consent of instructor. Admittance into the Ph.D. Program. In-depth analysis of special topics in Logistics and Supply Chain Management research. May be repeated for credit when the subject matter is different.

# College of Education

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## College of Education Home Page

### About the College

The College of Education offers a variety of programs at all levels that lead to exciting and rewarding career opportunities. It takes many types of education professionals to prepare our children, youth and adults for an ever-changing world. The College's faculty, staff, and community partners are committed to providing experiences to build the knowledge and skills needed for individuals to be successful in multiple educational settings and occupations. These careers include teachers, principals, and superintendents for K-12 districts, schools, and classrooms; teachers and administrators for informal education organizations like museums, zoos, and nature centers; counselors and mental health professionals for schools, hospitals, corporate employee assistance programs, clinics and private settings; and postsecondary leaders and instructors for community colleges, career technical schools, and four-year colleges and universities.

The College has 50 full-time faculty, of which 10 are endowed professors, as well as a UM System Curator's Distinguished Research Professor and a Curator's Distinguished Teaching Professor. Additionally, the College has more than 200 part-time clinical faculty who have years of direct classroom experience. The College offers six undergraduate degrees, 32 undergraduate and post-baccalaureate teaching certificates, seven Master's degrees, many graduate certificate programs, two Educational Specialist degrees, and two Doctoral degrees. By reaching out and partnering with a vast array of educational, business and community resources, our College can provide opportunities for faculty and students to develop professional connections which will improve their careers as well as their communities.

### Support Services

Student support is provided through the **Office of Advising and Student Services (OASIS)**, 116 South Campus Classroom Building. This office contains a staff of professional undergraduate and graduate academic advisors who provide both undergraduate and M.Ed. students with the academic support they need to satisfy the requirements for state teacher certification as well as undergraduate and M.Ed. degree program requirements.

The **Office of Clinical Experiences and School Partnerships**, 203 South Computer Building, houses professional staff who coordinate teacher education clinical experiences.

### Accreditation

The College of Education is fully accredited by the Council for the Accreditation of Educator Preparation, and the Department of Elementary and Secondary Education for the preparation of early childhood, elementary, middle, secondary, physical, and special educators and the preparation of administrators, counselors, and school psychologists. Additionally, the Council for Accreditation of Counseling and Related Educational Programs accredits our Counseling programs and the National Association for School Psychology accredits our School Psychology program.

### Centers and Initiatives

The College hosts many centers and initiatives that enhance the experience of students in our programs. Among these are: the Center

for Character and Citizenship; The Center for the Research and Study of Disability, Education, and Culture; the E. Desmond Lee Technology and Learning Center; the Gateway Writing Project; the Richard Burnett Literacy Clinic; the Counseling and Social Advocacy Center; and the University Child Development Center. We also sponsor eight charter schools.

### Course Designations in the College of Education

The following abbreviations are used to indicate instructional areas in the course listings and descriptions in the College of Education.

Adult Education (**ADULT ED**)  
 Counselor Education Courses (**CNS ED**)  
 Early Childhood Education Courses (**ECH ED**)  
 Educational Administration Courses (**ED ADM**)  
 Educational Foundations Courses (**ED FND**)  
 Educational Psychology Courses (**ED PSY**)  
 Educational Research and Evaluation Methods Courses (**ED REM**)  
 Educational Technology Courses (**ED TECH**)  
 Elementary Education Courses (**ELE ED**)  
 Middle Education Courses (**MID ED**)  
 Higher Education Courses (**HIGHERED**)  
 Health and Physical Education Courses (**HLTH PE**)  
 Physical Education (**PHY ED**)  
 College#Wide Education Courses (**EDUC**)  
 Secondary Education Courses (**SEC ED**)  
 Special Education Courses (**SPEC ED**)  
 Sports Management (**SPTMGT**)  
 Teacher Education Courses (**TCH ED**)

## Teacher Education

### Degrees and Areas of Concentration

Students may earn teacher certification in the fields of elementary education/special education, elementary education/TESOL endorsement, elementary education/special education/TESOL endorsement, early childhood education/early childhood special education, middle school, music education, physical education, art education, as well as the secondary education areas of biology, chemistry, English, foreign languages (French, Spanish), mathematics, physics, and social studies.

Students with a Bachelor's degree can combine educator preparation and Master's-level work in selected areas. Graduate programs leading to certification are also offered in counseling, reading, school administration (elementary and secondary principal, school superintendent), and special education.

The following certification programs are designed to provide the following learning outcomes. Upon successful completion of the programs, education candidates will:

- Understand the central concepts, tools of inquiry and structures of the discipline(s) within the context of a global society and create learning experiences that make these aspects of subject matter meaningful for students.
- Understand how students learn and develop, and provide learning opportunities that support the intellectual, social, and personal development of all students.
- Understand how students differ in their approaches to learning and create instructional opportunities that are adapted to diverse learners.
- Recognize the importance of long-range planning curriculum development and develop, implement and evaluate curriculum based upon student, district, and state performance standards.



- Use a variety of instructional strategies to encourage students' development of critical thinking, problem solving, and performance skills.
- Use an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.
- Model effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.
- Understand and use formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of the learner.
- Develop skills to become a reflective practitioner who continually assesses the effects of choices and actions on others. This reflective practitioner actively seeks out opportunities to grow professionally and utilizes the assessment and professional growth to generate more learning for more students.
- Foster relationships with school colleagues, parents, and educational partners in the larger community to support student learning and well-being.
- Understand theories and applications of technology in educational settings and have adequate technological skills to create meaningful learning opportunities for all students.
- Also, education candidates upon successful completion of their program, master DESE professional standards.

## General Education Requirements

Students in the College of Education must meet university and departmental general education requirements (p. 51) specified for their degree programs.

## Academic Residence

Students must be in residence for 30 of the last 30 semester hours of credit. Courses graded on a satisfactory/ unsatisfactory basis are not accepted within these last 30 semester credit hours. This residency requirement applies to students seeking a degree or teacher certification.

## Education Majors

Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C (2.0).

The Cumulative, Content Area, and Professional Education grade point averages required for admission to the Teacher Education Program at UMSL are subject to changes in grade point average requirements promulgated by the Department of Elementary and Secondary Education.

## Admission to the College of Education

Any students who designate education degree programs as their intended degree paths will have Education as their assigned academic unit. Students admitted to the College of Education and seeking teacher certification must also be admitted to the Teacher Education Program.

## Application and Admission to the Teacher Education Program

The application can be found at <http://coe.umsl.edu/portal>

All students seeking teacher certification must be admitted to the Teacher Education Program. Applications to the Teacher Education Program are

processed through the Office of Advising and Student Services (OASIS). Eligibility is based upon fulfillment of the following requirements:

- Submission of qualifying scores on a qualifying exam approved by the Missouri Department of Elementary and Secondary Education in areas of English, writing, mathematics, science and social studies. Students should consult OASIS for test descriptions, cost, required scores, dates of administration, retest policies, etc. (Students who have an earned bachelor's degree are not required to pass the qualifying exam).
- Completion of 60 hours of college or university courses (at UMSL or another accredited school).
- A grade point average of 2.75 or higher.
- Approved results of the Family Care Safety Registry.
- A clear TB test or chest x-ray, if appropriate.

## General Information

It is important that students meet with an academic advisor in the Office of Advising and Student Services once each semester. Students should contact the office at 314-516-5937 to schedule an advising appointment.

## Application to Practica

The application can be found at <http://coe.umsl.edu/portal>. Deadlines for the Formal Application are May 31 for January Practicum I candidates, December 31 for August Practicum I candidates and August 1 for Teach in 12 certification candidates who are approved to enroll in classes in August.

Upon receipt, formal applications for both pre- and post-degree (Teach in 12) students are checked to ensure they have met the following requirements:

- Admission to the teacher education program for both pre- and post degree (Teach in 12) students.
- A cumulative grade point average of at least 2.75 or above by the semester prior to the semester in which students plan to student teach. A 2.75 grade point average must be attained in order to graduate with a B.S. in education degree and/or be certified to teach in the state of Missouri. A 3.0 grade point average must be attained in professional education courses.
- Grade point average of 3.0 in the teaching field (secondary education students only).
- A grade of C or higher in all professional education courses. Lists of these courses are available in the OASIS office and from advisors.
- Completion of TB screening, Missouri Family Care Safety Registry check, FBI check and Missouri substitute certificate.
- Undergraduate students are required to have passed all sections of the qualifying exam designated by the Missouri Department of Elementary and Secondary Education.

The Practicum II experience in art, music, and physical education provides opportunities in a variety of settings. Students will be expected to student teach on a full-day basis for 15 weeks during an entire semester. Practicum II must be completed in residence.

For further information regarding requirements and certification, contact the Office of Advising and Student Services, 314-516-5937, 116 SCCB or consult the College of Education Advising Home Page.

## Application for Degree and/or Certificate

### Bachelor of Science in Education (B.S. Ed.)

Candidates for the B.S.Ed. degree must complete the graduation application; and undergraduate music and art students, as well as candidates interested in master's-level teacher certification must complete a certification application form in the Office of Advising and Student Services when they apply for admission to Practicum or during the semester before the one in which they expect to complete degree requirements. See information below on the state-required exit examination.

### Bachelor of Educational Studies (B.E.S.)

Candidates should consult with the Office of Advising and Student Services or call (314) 516- 5397 for more information. This degree offers four areas of study. **It does not qualify students for Missouri Teacher Certification.** Visit the Education Sciences and Professional Programs Department home page for more information.

### Certification

In cooperation with the Missouri State Department of Elementary and Secondary Education (DESE), the College of Education is responsible for recommending all qualified students for state teacher certification. The curriculum usually meets all requirements for the Missouri Department of Elementary and Secondary Education (DESE) Teacher Certification.

DESE requirements, however, are subject to change and additional courses beyond degree requirements may be needed to obtain certification.

All teacher education candidates must pass the appropriate Missouri Content Assessment(s) in order to satisfy the degree requirements to earn the Bachelor of Science in Education degree. This exam must be taken during Practicum I.

### Latin Honors Requirements

In accordance with the University's Latin Honors policy (p. 26), candidates graduating from the College of Education in the 2020-2021 Academic Year must meet the following GPA qualifications:

Summa Cum Laude	4.000
Magna Cum Laude	3.980
Cum Laude	3.911

### Degrees and Areas of Emphasis

The College of Education offers Master of Education (M.Ed.), Educational Specialist (Ed.S.), and doctoral degrees at the graduate level. The M.Ed. degrees and the emphasis areas are:

#### Adult and Higher Education

- Adult Education (p. 313) (The College of Education is no longer accepting applications for this emphasis area)
- Higher Education (p. 314)

#### Counseling

- Clinical and Mental Health Counseling (p. 394)
- Elementary School Counseling (p. 395)
- Secondary School Counseling (p. 397)

#### Educational Administration

- Community Education (p. 429) (The College of Education is not accepting applications for this emphasis area)
- School Administration (p. 430)

#### Elementary Education

- General (p. 446)
- Reading (p. 454)

#### Secondary Education

- Curriculum and Instruction (p. 621)
- General (p. 617)
- Reading (p. 621)
- Teaching English to Speakers of Other Languages (p. 622)

#### Special Education

- Autism and Development Disabilities (p. 634)
- Cross Categorical Disabilities (p. 635)
- Early Childhood/Special Education (p. 451)

#### Ed.S. Programs

Ed.S. degree programs are available in school psychology (p. 604) and educational administration (p. 423).

#### Doctoral Programs

Programs leading to the Ph.D. degree are offered in the areas of Counseling (p. 425), Educational Psychology (p. 427), Teaching-Learning Processes (p. 428), and Educational Leadership and Policy Studies (p. 426). The Ed.D in Educational Practice admits students to the thematic learning communities announced in December for study commencing the following fall.

### Master of Education Degree

The Master of Education Degree programs are designed for graduates to attain the following learning outcomes:

- Understand the major theories in the discipline of study.
- Attain a solid foundation in the overall field of education in general, including areas of social justice, educational leadership and advocacy, educational psychology and research.
- Attain a depth of knowledge in the primary discipline.
- Think critically.
- Develop skills as a reflective practitioner to be able to create and sustain change.
- Conduct teacher research.

### Admission and General Requirements

The College of Education follows Graduate School policies relating to admissions, academic standards, residency, transfer credit, time limitations, and thesis options (see Graduate Study in this Bulletin). In addition to meeting the general requirements of the Graduate School, applicants for counseling and educational administration must complete a separate application (see graduate studies in the Counseling Department and the Educational Leadership and Policy Studies Department pages in this Bulletin). The minimum number of hours required for the M.Ed. degree is 33 except that the elementary and secondary counseling emphases require 48 hours and the mental health emphasis requires 60 hours.

The school has adopted a flexible policy on exit requirements, which are determined departmentally.

## Advisement and Program Planning

Upon acceptance, each student is assigned a faculty advisor but should make an advising appointment for their first semester only with an OASIS advisor. A faculty advisor counsels the student in registration and program planning thereafter. A program plan for the master's degree must be completed during the first semester that the student's academic program commences. This form includes all coursework required for the academic program and the exit requirement.

Students working toward teacher certification as graduate students should complete state certification forms in the OASIS one year before those requirements will be completed.

## Faculty Advisor Assignment Information

All M.Ed. students will be assigned an advisor by OASIS, the advising office for the College of Education, located in 116 SCCB.

Both Ph.D. and Ed.D. students will be assigned an advisor by the Doctoral Program Director, located in 201 EAB.

If any student determines that an advisor assignment has not been documented in MyView, please contact OASIS at 516-5937 or the Doctoral Program Director at 516-5107.

If a student would like to change their faculty advisor assignment for any master's degree program, please contact OASIS to complete an Advisor Assignment Form. The faculty advisor information will subsequently be updated in MyView.

Doctoral students should contact the Doctoral Program Director to discuss the possibility of changing their doctoral advisor or dissertation chair.

## Educational Specialist Degree

The Ed.S. degree is intended for school personnel preparing for a specific role, either that of a school psychologist or that of a school building or district administrator. The programs require 60 hours of postbaccalaureate course work designed to meet the respective Missouri certification requirements. The Ed.S. in School Psychology degree program requires three years of intensive, full-time training but students may be able to complete up to half of the curriculum as a part-time student. The Ed.S. in Educational Administration can be pursued on a part-time or a full-time basis and can include credits taken in an M.Ed. in Educational Administration program.

The Educational Specialist Degree program is designed for graduates to attain the following learning outcomes:

- Expand their knowledge of the major theories in their area of specialty.
- Attain a solid foundation in the field of education in general and a depth of knowledge in the specialty.
- Think critically.
- Develop skills to become a reflective practitioner.
- Mentor teachers and other practitioners as a specialist in a specific area.
- Understand research methods in education.
- Conduct research.
- Demonstrate leadership skills and attributes.

## Admission and General Requirements

The College of Education follows Graduate School policies (p. 38) relating to admissions, academic standards, residency, transfer credit, time limitations, and exit requirements. Specific materials required for application vary by program, but generally applicants should submit an application to The Graduate School, transcripts of previous college work, and letters of recommendation.

## Advisement and Program Planning

For advising and program planning, school psychology students should contact the Department of Education Sciences and Professional Programs, 469 Marillac Hall, 314-516-5944. Educational administration students should contact the Office of Advising & Student Services (OASIS), 116 South Campus Classroom Building, at 314-516-5937.

## Doctor of Philosophy Degree

The Ph.D. degree in Education is designed for educators who desire directed research experiences promoting scholarly inquiry in education. Four emphases are available:

- Teaching-learning processes
- Educational leadership and policy studies
- Educational psychology
- Counseling

The Ph.D. program is designed for graduates to attain the following learning outcomes:

- Understand the major theories in their primary and secondary disciplines;
- Attain a breadth of knowledge in education in general and a depth of knowledge in the primary discipline;
- Think critically;
- Locate literature in the primary and secondary disciplines;
- Understand research methods in education;
- Conduct research; and
- Demonstrate leadership skills and attributes

## Courses

### ***EDUC 2002 Social Entrepreneurship: 3 semester hours***

This course examines the mindsets, skills, and approaches that social entrepreneurs use to solve problems in society. Students explore the role of social entrepreneurs with an emphasis on how social entrepreneurs create change in people's lives and their impact on local to global scales. Students identify sustainable models for social innovation and formulate social entrepreneurship action plans. Previous experience as a social entrepreneur or the desire to become a social entrepreneur in the future is not required.

### ***EDUC 2204 Special Topics in Education: 1-3 semester hours***

Prerequisite: Completion of 75 hours and consent of instructor. Examination of a special area or topic within the field of education. Topics to be considered will be announced prior to registration and may vary. For elective credit only. This course may be repeated for different topics. Not to exceed a total of six hours credit.

**EDUC 2222 Interpretation: Connecting Audiences and Meaning: 3 semester hours**

Interpretation is a process for forming intellectual and emotional connections between the interests of an audience and the inherent meanings within a resource. This class covers interpretive methods for development and delivery of thematic, non-formal, presentations to various audiences. The class also introduces informal exhibit design, customer service and social media as they relate to interpretation.

**EDUC 2297 Independent Study: 1-3 semester hours**

Prerequisite: Completion of 75 hours and consent of instructor. Independent study through readings, research, reports and conferences designed to provide depth in areas of study previously introduced in education courses. For elective credit only. May be repeated. Not to exceed a total of three hours credit.

**EDUC 3170 Grant Proposal Writing for Educators: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent and junior standing. An introduction to grant proposal writing for educators and other professionals in community agencies, cultural institutions, and childcare centers. Students will practice writing the customary parts of a grant proposal as they learn essential concepts in fundraising, nonprofit management, and social entrepreneurship. Writing assignments include cover letters, problem statements, organizational profiles, project descriptions, budget narratives, and evaluation plans. Collaboration and peer review are required. Emphasis is on clarity, conciseness, format, style, tone, persuasiveness, and evidence basis.

**EDUC 4000 International Education Field Experience: 2-4 semester hours**

Prerequisites: ED PSY 2212, consent of instructor, minimum GPA of 2.5, current and clear background check, and current and clear TB screening. This field experience will be supervised by university faculty. Students will travel to a country to explore the culture and educational system. Prior to the field experience students will receive training that includes familiarization with the culture and educational system of the host country. Students will complete approximately 50 hours per credit hour in travel and cultural exploration as well as designed educational experiences. Course may not be repeated for more than 6 credit hours. This course will satisfy the cultural diversity requirement if the country is appropriate.

**EDUC 4989 Internship I: 3 semester hours**

Prerequisites: Junior standing, admission to the Bachelor of Educational Studies program, or consent of instructor. Supervised field experience in educational settings to prepare for planning, research, evaluation, and other professional activities in the student's emphasis area of concentration that will be carried out in EDUC 4990 and EDUC 4991.

**EDUC 4990 Internship II: 6 semester hours**

Prerequisites: B- or better in EDUC 4989, senior standing, or consent of instructor. Supervised field experience in an approved setting.

**EDUC 4991 Internship III: 6 semester hours**

Prerequisites: B- or better in EDUC 4990 (may be taken concurrently) or consent of instructor. Supervised field experience in an approved setting.

**EDUC 5006 Graduate Workshop: 1-10 semester hours**

Prerequisite: Consent of instructor.

**EDUC 5612 Intrapreneurial Leadership: 3 semester hours**

Prerequisite: Graduate standing. This course helps graduate students bring people and resources together to create value within existing organizations. Intrapreneurial leadership focuses on identifying and leveraging opportunities to enhance organizational responsiveness, growth, and vitality.

**EDUC 5616 Accelerate Intrapreneurial Experience: 3 semester hours**

Prerequisites: Graduate standing. This course equips graduate students to apply theories of leadership, entrepreneurship, innovation, and systems thinking within real-world organizational or business contexts. Students propose and implement a new program, product, or service model that builds organizational capacity and financial sustainability.

**EDUC 6142 The History and Practice of Community Education: 3 semester hours**

Prerequisites: Graduate standing. Students will explore the history of community-based education initiatives cultivating the insights, capacities and skill sets required to lead educational innovation, use information, media and technology effectively, strengthen cultural literacies, and engage in leadership and community development.

**EDUC 6308 Graduate Institute: 1-10 semester hours**

Prerequisite: Consent of instructor.

**EDUC 6404 Seminar: 1-10 semester hours**

Seminar on an educational topic or special issue not normally included in the regular curriculum.

**EDUC 6408 Graduate Seminar: 1-10 semester hours**

Prerequisites: Consent of instructor. Intensive study of selected issues in education.

**EDUC 6442 Leadership in Community Education: 3 semester hours**

Prerequisites: Graduate standing. Students will explore the leadership skills and capacities required for effective community-development efforts, including social innovation and entrepreneurship, adaptive management, cultural competence, and how to work with community collaborators to plan and implement inclusive projects.

**EDUC 6491 Staff Development and Professional Growth: 1-10 semester hours**

Designed in conjunction with an individual school district or educational agency and related to problems of education confronting that specific district or agency.

**EDUC 6998 Thesis Research: 1-10 semester hours**

Prerequisite: Consent of instructor.

**EDUC 7050 The Research Process I: Framing Research Questions in Education Research: 3 semester hours**

Prerequisites: Admission to the EdD or PhD in Education. This course is an overview of the essential elements of writing a research proposal including, identifying a problem statement and conceptualizing critical research questions. The course emphasizes exploring the research literature, framing research questions, and justifying them based on the literature.

**EDUC 7200 English Academic Support: 1-3 semester hours**

This course addresses the language needs of international doctoral students as they perform scholarly analysis and write at the doctoral level. The course contributes to the development of skills necessary for the successful completion of the dissertation. This course may be repeated for a maximum of 27 credit hours.

**EDUC 7205 Action Research for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D cohort or consent of instructor. Study of small-scale simulations that introduce students to the fundamentals of framing relevant questions, working in community, writing field notes, interviewing, technologies to support and help analyze data, and storytelling. Particular attention will be given to representing perspectives of various stakeholders including students, parents, administrators, and colleagues.



**EDUC 7210 Survey Design for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Application of relevant theories, research, and pedagogical practices in designing surveys for educational settings. Focus on instrument development and design, forming questions and scales, and sampling methods as well as analysis of results and presentation for various target audiences in educational organizations and settings.

**EDUC 7215 Data Analysis for Educational Practitioners: 3 semester hours**

Prerequisites: Admission to an EdD cohort or consent of instructor. This course provides an overview of the quantitative skills needed for research including using software for statistical data analysis. The course facilitates an understanding and application of statistical techniques used for survey research.

**EDUC 7220 Designing Research for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Guided workshop, applying the principles of research design, to design a study of the research issues selected by the learning community. Course covers how to develop research questions, choose among quantitative and qualitative methods, and consider the best, ethical practices.

**EDUC 7225 Ethnography for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. The study of ethnography as a methodology to engage in field research and provide the conceptual, theoretical, and empirical knowledge base for action research.

**EDUC 7230 Interviewing for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Provides opportunities for developing skills in interviewing individuals and groups to identify, describe, assess and compare educational programs, practices and policies. Emphasis on interviewing experts in the field and research participants in educational research field studies.

**EDUC 7295 Inquiry Seminar for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Seminar on a specified approach to inquiry in order to obtain or analyze information of interest to scholar-practitioners leading educational programs through continuous improvement cycles.

**EDUC 7305 Representing Data for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. learning community or permission of instructor. Methods for presenting and displaying various types of data to a range of target audiences. Means of assuring accurate representation and the advantages and disadvantages of various methods are reviewed. Displays include tables, graphs, and charts. Current software programs to aid representation are reviewed.

**EDUC 7310 Integrating Technology in Learning for Educational: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Appropriate technology tools for carrying out individual or group research and assessment projects will be identified and integrated. The appropriate tools will be learned and applied to present, analyze and complete projects.

**EDUC 7315 Project Management for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to the Ed.D. program or consent of instructor. Tools for and approaches to managing complex projects in educational organizations, including establishing goals, subdivision of work, formation of work groups, planning and scheduling, establishing and tracking time lines, deployment of resources to complete a project, and addressing constraints. Use of current software for charting and reporting projects.

**EDUC 7320 Financial and Budgeting Skills for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Examines budgeting and finance systems of educational institutions, both from the perspective of theory, research and policy development, and from the perspective of actual budgeting and practice. There will also be an emphasis on the impact of federal and state policy regarding the finance of educational institutions, as well as the processes by which budgets are developed and resources allocated.

**EDUC 7325 Grant Writing for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Provides hands-on help for current and would-be grant writers. Examines search tools to locate likely request for proposals, explores text and sub-text issues, develops a timeline for grant development and submission, provides practice on how a peer review system works, considers issues related to revision and follows the real processes engaged in by successful grant recipients.

**EDUC 7330 Human Relations Skills for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to Ed.D. program or consent of instructor. Exposure for educational practitioners in a variety of leadership roles to basic human relations skills, effective interventions which can be made with the individual worker, and assessment skills to enable the leader to determine if referral to a mental health professional is warranted. Effective ways of confronting employees because of impaired job performance, giving performance evaluations, providing career development and planning information, identifying work transitions in their employees, and identifying stress and stressors in the work environment, along with identifying substance abusing workers and deciding what to do about them.

**EDUC 7415 Topics in Education: 3 semester hours**

Prerequisite: Admission to the doctoral program. Intensive study of a topic in education.

**EDUC 7490 Directed Readings in the Education Research Literature: 1-6 semester hours**

Prerequisite: Doctoral standing. Independent study of the education research literature in an area defined in consultation with an advisor.

**EDUC 7495 Doctoral Research Tools: 1-6 semester hours**

Prerequisites: ED REM 6710. A structured individual or small group instructional or supervised investigative experience in and with a specific research skill and/or procedure that will be needed in the production of a doctoral dissertation. This course may not substitute for any existing graduate courses that cover the same research tool skills.

**EDUC 7600 Learning Community of Practice I: 1-6 semester hours**

Prerequisites: Admission to an EdD cohort. This course requires students in the Ed.D. learning communities to apply the scholarship of teaching and learning through asset mapping, inquiry formation, and selected readings. Students develop professional connections, explore their interests and beliefs, and reflect on a problem of practice.

**EDUC 7605 Scholarship of Teaching and Learning in Educational Practice: 2 semester hours**

Prerequisites: Admission to an Ed.D. cohort. Exploration of learning through practice and reflection within a community of scholars committed to situated best practice in education.

**EDUC 7610 Learning Community of Practice II: 1-6 semester hours**

Prerequisites: EDUC 7600. This course requires students to identify and examine research problems by developing skills of inquiry, integrating prior knowledge, and evaluating extant research.

**EDUC 7615 Evaluation of Educational Programs: 2 semester hours**

Prerequisites: Admission to an Ed.D. cohort. Assessment of programs for continuous improvement cycles within educational settings.

**EDUC 7620 Learning Community of Practice III: 1-6 semester hours**

Prerequisites: EDUC 7610. This course assists students in the selection and definition of a problem of practice addressed through research by the learning community members. This includes building relationships within and outside the learning community and designing structure to support inquiry into a problem of practice.

**EDUC 7625 Building Socially Just and Ethical Educational Communities: 3 semester hours**

Prerequisites: Admission to the EdD program. This course examines the role of culture, analyzes social justice components, and considers ethical and legal issues for learning communities.

**EDUC 7640 Learning Community of Practice V: 1-6 semester hours**

Prerequisites: EDUC 7630. This course requires students to prepare a dissertation proposal. This involves selection of research tools, establishment of study procedures at research sites, and adherence to high ethical standards for conducting research.

**EDUC 7642 Sociocultural Perspectives in Education: 3 semester hours**

Prerequisite: Doctoral standing and consent of instructor. Investigation of sociocultural theory with a focus on educational applications. Topics include the social formation of mind, language as cultural tool, methodological issues in social science research, and dialogic inquiry as pedagogy.

**EDUC 7650 Learning Community of Practice VI: 1-6 semester hours**

Prerequisites: EDUC 7640. This course is a continuation of EDUC 7640, which requires preparation of a dissertation proposal, selection of research tools, establishment of study procedures at research sites, and adherence to high ethical standards in research.

**EDUC 7660 Learning Community of Practice VII: 1-6 semester hours**

Prerequisites: EDUC 7650. This course requires preparation of a dissertation proposal, selection of research tools, establishment of study procedures at research sites, and adherence to high ethical standards in research.

**EDUC 7670 Learning Community of Practice VIII: 1-6 semester hours**

Prerequisites: EDUC 7660. This course requires students to prepare the final chapters of the dissertation, understand and perform data analysis, interpret the results for a problem of practice, provide recommendations for future research, and disseminate the results to applicable audiences.

**EDUC 7680 Learning Community of Practice IX: 1-6 semester hours**

Prerequisites: EDUC 7670. This course assists students to prepare the final chapters of the dissertation, understand and perform data analysis, interpret the results for a problem of practice, provide recommendations for future research, and disseminate the results to applicable audiences.

**EDUC 7690 Learning Community of Practice X: 1-6 semester hours**

Prerequisites: EDUC 7680. This course prepares students to defend the dissertation. This includes assistance with the dissertation manuscript and the oral defense.

**EDUC 7710 Research Methods and Design for Educational Practitioners: 3 semester hours**

Prerequisites: Students must be admitted to the EdD program in order to enroll in this course. This course prepares educational practitioners to identify and understand research questions and develop appropriate research designs to answer them. Students learn how to critically evaluate research reports.

**EDUC 7880 Research Internship I: 3 semester hours**

Prerequisites: Nine hours of research methods or statistics and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

**EDUC 7881 Research Internship II: 3 semester hours**

Prerequisites: EDUC 7880 and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

**EDUC 7882 Research Internship III: 3 semester hours**

Prerequisites: EDUC 7881 and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

**EDUC 7889 Laboratory of Practice: 1-6 semester hours**

Prerequisites: Admission to an Ed.D. cohort. Field experience that bridges theory and practice in solving complex, situated problems of practice.

**EDUC 7950 Preparation for Writing the Dissertation Proposal: 1 semester hour**

Prerequisites: Completion of research methods course requirements. This course provides an in-depth examination of the essential elements of a dissertation proposal. Particular emphasis is placed on examining the validity and reliability or the trustworthiness of the design of proposed research. Tools for identifying strengths and weaknesses are applied to proposals. Critique of proposals is employed. Also reviewed is the process of presenting and defending a proposal.

**EDUC 7998 Dissertation in Practice Research: 1-8 semester hours**

Prerequisite: Admission to pre-candidacy in the EdD program.

**EDUC 7999 Dissertation Research: 1-12 semester hours**

Prerequisite: Admission to pre-candidacy in the PhD in Education program.

## Education Sciences and Professional Programs

The College of Education at the University of Missouri-St. Louis is comprised of two departments: the Department of Educator Preparation and Leadership (EPL) and the Department of Education Sciences and Professional Programs (ESPP). Teacher educator and educational administrator preparation and certification occur in EPL, whereas ESPP supports these efforts via educational foundations, psychological development, educational technology, and research methods and evaluation courses and offers assorted undergraduate and professional graduate degrees that include Educational Studies, Sport Management, Adult and Higher Education, Educational Psychology, four Council for Accreditation of Counseling and Related Educational Programs-accredited (CACREP) Counseling programs, and a National Association of School Psychologists-approved (NASP) School Psychology Program.

The following degrees and programs are available through the Department of Education Sciences and Professional Programs:

**Bachelor of Educational Studies****Bachelor of Science in Sport Management****Master of Education:**

- Adult & Higher Education with an emphasis in Higher Education
- Clinical Mental Health Counseling (CACREP-accredited)
- Educational Psychology
- Elementary School Counseling (CACREP-accredited)
- Secondary School Counseling (CACREP-accredited)

**Educational Specialist:**

- School Psychology (NASP-approved)

**Doctor of Education**

- Assorted Learning Communities

**Doctor of Philosophy in Education with an Emphasis in:**

- Counseling (CACREP accredited)
- Educational Psychology

**Graduate Certificate and Certification Programs:**

- Character and Citizenship Education
- Community College Leadership
- Program Evaluation in Education
- Social Justice in Education
- Student Affairs Administration & Leadership

**Degrees**

## Educational Studies BES

- Early Childhood Emphasis (p. 432)
- Exercise Science and Wellness Emphasis (p. 433)
- Park and Museum Programs Emphasis (p. 434)
- Youth and Adult Development Emphasis (p. 435)
- Social Entrepreneurship Emphasis (p. 434)

## Sport Management BS (p. 637)

## Adult and Higher Education MEd

- Adult Education Emphasis (p. 313)
- Higher Education Emphasis (p. 314)

## Counseling MEd

- Clinical Mental Health Emphasis (p. 394)
- Elementary Emphasis (p. 395)
- Secondary Emphasis (p. 397)

## Educational Psychology MEd (p. 431)

## School Psychology EdS (p. 604)

**Certificates**

Character and Citizenship Education Graduate Certificate (p. 366)

Institutional Research Graduate Certificate (p. 480)

Community College Leadership Graduate Certificate (p. 387)

Institutional Research Graduate Certificate (p. 480)

Program Evaluation in Education Graduate Certificate (p. 585)

Social Justice in Education Graduate Certificate (p. 623)

Student Affairs Administration and Leadership Graduate Certificate (p. 638)

**Courses**

Courses offered by the department can be found at the links below:

Adult Education (ADULT ED)

Counselor Education (CNS ED)

Education (EDUC)

Educational Foundations (ED FND)

Educational Psychology (ED PSY)

Educational Research and Evaluation Methods (ED REM)

Higher Education (HIGHERED)

Sport Management (SPMGT)

**Educator Preparation and Leadership****General Information**

The Department of Educator Preparation & Leadership offers coursework leading to bachelor's degrees, master's degrees, graduate certificates, and doctoral degrees. Students may also choose to pursue the Bachelor of Arts (B.A.) degree in the College of Arts and Sciences and also complete the education courses that are required for teacher certification in high school English, mathematics, social studies, science, music, art, and physical education.

Through the integration of content in general, special, and second language learning, candidates gain knowledge and valued skills that make them highly qualified and marketable. Nationally-recognized research faculty teach undergraduate and graduate courses that prepare educators in curriculum, instruction, assessment, and educational technology with a strong foundation in working with diverse, urban populations.

The following Department of Educator Preparation & Leadership degrees are accredited by the Missouri Department of Elementary and Secondary Education (DESE):

**Undergraduate degrees:**

- Bachelor of Science in Education (B.S. Ed) in Early Childhood Education
- Bachelor of Science in Education (B.S. Ed) in Elementary Education
- Bachelor of Science in Education (B.S. Ed) in Physical Education
- Bachelor of Science in Education (B.S. Ed) in Secondary Education

**Master's degrees:**

- Master of Education (M.Ed.) in Elementary Education
- Master of Education (M.Ed.) in Secondary Education
- Master of Education (M.Ed.) in Special Education

#### Graduate Certificates:

- Applied Behavior Analysis
- Autism Studies
- Early Childhood Teaching
- Elementary School Teaching
- Elementary and Special Education Teaching
- Secondary School Teaching
- Teaching English to Speakers of Other Languages (TESOL)
- Teaching of Writing, Gateway Writing Project

#### Doctoral Degrees

- Teaching-Learning Processes
- Educational Leadership and Policy Studies

#### Minors

Athletic Coaching

#### Mission

Our mission is to advance scholarship and promote teaching and learning as a lifelong process for all.

#### Goals

Through undergraduate and graduate programs and faculty engagement, the Department of Educator Preparation & Leadership seeks to:

- Create new ideas about and knowledge of teaching and learning processes.
- Utilize general, content, and pedagogical knowledge to design curriculum and enact instruction.
- Reflect on and evaluate teaching practices and research to improve learning.
- Develop educators who model the dispositions necessary to teach all students in a diverse society.
- Integrate learning tools by adapting instruction to changing technologies.
- Apply current research on assessment in culturally responsive ways to document and facilitate learning.
- Engage with community members to promote justice and develop active democratic citizens in a global world.
- Foster learning communities through collaboration with partner families, peers, and communities.

#### Career Outlook

Undergraduate and graduate degrees in elementary secondary and special education are most directly applicable to teaching at the level appropriate to the program emphasis. Demand for career-ready educators who have significant clinical experience working with youngsters, and who demonstrate contemporary, best-practice knowledge, skills, and strategies continue to create school-based employment opportunities for UMSL graduates. As in the past, elementary education graduates are attractive candidates for employment in varied positions that require preparation and training in social and behavioral sciences. Positions that serve the general

public, such as sales, service, public relations, and general business, are common examples. Future expansions of opportunities in schools are tied to population growth, increased specialization of services, and reduction in ratios between professional staff and children served.

The employment outlook for special education teachers continues to be favorable, as they are in great demand among certain regions of the country. In addition to inclusion classroom teaching, graduates are typically employed as resource-room or self-contained classroom teachers, clinical diagnostic personnel, itinerant teachers, educational resource teachers, curriculum and/or behavior specialists, consultants, educational therapists, job coaches, supported employment and sheltered workshop evaluators, and in various supervisory and administrative positions among agencies and schools. In combination with related areas of expertise in systems supports, assessment, and educational psychology, for example, many occupations incorporate the skills, interventions knowledge, insights, and programmatic expertise learned in the UMSL Master's Degree of Special Education.

The employment outlook in the middle and high schools continues to be positive, especially in mathematics, sciences and modern languages. Recent placement years have yielded excellent employment opportunities to UMSL graduates. In addition to middle school, and high school teaching, more limited opportunities exist in athletic training, dance, research, sports management, and exercise leadership fields serving persons of all age categories.

#### Degrees

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- Special Education Emphasis (p. 417)

Elementary Education BSEd

- Middle School Education Emphasis (p. 439)
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Physical Education BSEd

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Secondary Education BSEd

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- Early Childhood Emphasis (p. 451)
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## Minors

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## Certificates

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Through the integration of content in general, special, and second language learning, candidates may earn certifications and endorsements with valued skills that make them highly qualified and marketable. Nationally-recognized research faculty teach undergraduate courses that prepare future educators in instruction and assessment with a strong foundation in working with diverse, urban populations.

Educator candidates actively engage in unique practicum experiences in the Studio School Model for clinical practice. The College partners with numerous public, private, and charter schools. As a College, we take great pride in preparing 'community educators' who are well-experienced to impact all students in a wide variety of settings, and with a much broader understanding of education's role in society. Our candidates make a collective impact as faculty members in the differentiated staffing model. Sought after by partner districts and agencies, many of our graduates are hired directly into the studio schools or districts where they complete their clinical preparation.

Educator preparation is both engaging and innovative. Our high quality undergraduate educator preparation programs are designed around research-based scholarship and practical community-based contexts. Early course-based experiences provide candidates with practical understanding of how youth learn subject matter in a variety of informal settings. Every future educator is guided through approximately 100 clock hours of volunteer academic instruction and support for a local partnering community youth-serving agency. The community-based experiences broadens candidates' understanding of their own identity as educators as

well as enhancing their ability to build relationships, extend their skills, and understand family/community dynamics and interactions.

For their final year-long practicum, teacher candidates are immersed in Studio Schools. These partnering K-12 schools participate in our innovative, collaborative approach to educator preparation. Drawing on their studies during carefully sequenced coursework, teacher candidates enter their final two-semester clinical experience as collaborative teams of 6-14 candidates and work in a Studio School. In Studio Schools, candidates work with experienced teachers to deepen learning and increase student achievement. Rather than being placed as individuals with one cooperating teacher, our candidates work with multiple teachers learning from each one. This process is supported and facilitated on-site by a specially trained UMSEL clinical educator who leads bi-monthly seminars, conducts observations, and provides candidates with regular feedback to guide their growth.

Teacher candidates inquire deeply into how their students are learning, and use data to inform their instruction. All participate in appropriate school and district professional development and school-wide activities, thereby becoming professionals who are part of the fabric of a school, not just a temporary teacher candidate. We believe that these community and school-based experiences create educators who understand learning in a broader context. In short, graduating educators have experienced an innovative education which prepares them for their future career as educational leaders in our region and beyond.

The following Department of Educator Preparation & Leadership degrees have been accredited by the Missouri Department of Elementary and Secondary Education (DESE):

#### Undergraduate degrees:

- Bachelor of Educational Studies (BES)
- Bachelor of Science in Education (B.S. Ed) in Early Childhood
- Bachelor of Science in Education (B.S. Ed) in Elementary Education
  - Special Education and TESOL emphasis
  - Special Education emphasis
  - TESOL emphasis
  - Middle School Certification for English
  - Middle School Certification for Mathematics
  - Middle School Certification for Science
  - Middle School Certification for Social Studies
- Bachelor of Science in Education (B.S. Ed) in Physical Education
- Bachelor of Science in Education (B.S. Ed) in Secondary Education
  - Biology concentration
  - Chemistry concentration
  - English concentration
  - Mathematics concentration
  - Modern Language, French K-12
  - Modern Language, Spanish K-12
  - Physics concentration
  - Social Studies concentration

#### Certifications:

- Teacher Certification in Music
- Teacher Certification in Art

## Graduate Studies

The Department of Educator Preparation & Leadership offers three Master's degrees, sixteen concentration areas, four Graduate Certificate programs, and joins with the College of Education Faculty to offer two Doctoral degrees.

### Master of Education (M.Ed): A minimum of 30 credit hours is required.

Become a distinguished educator. Whether you are a PreK-12 classroom teacher, a school administrator, or an educator/trainer in a museum, business or youth serving organization, these concentration areas provide a broad spectrum of interests that gives a path to expertise.

The Masters of Education Degree programs and Graduate Certificate programs are designed for graduates to attain the following learning outcomes:

- Understand the major theories in the discipline of study.
- Attain a solid foundation in the overall field of education in general, including areas of social justice, educational leadership and advocacy, educational psychology and research.
- Attain a depth of knowledge in the primary discipline.
- Think critically.
- Develop skills as a reflective practitioner to be able to create and sustain change.
- Conduct teacher research.

The Master's Degree consists of:

- 6 credit hours of foundations courses that examine history, the impact of community on our youth, issues of social justice, teacher leadership and student advocacy;
- 18 hours that provide the core of expertise in the areas you choose and give you the depth and expertise in areas that match the needs of your students;
- and a 6 credit hour capstone where you become a researcher in your own organization or classroom to fully understand how to ask the right questions, collect meaningful data, and analyze and present it in a way that informs others.

A minimum of 30 credit hours is required.

The non-degree option is suited for those who have a Master's Degree or are not quite ready, and simply want to gain more in-depth knowledge about a particular area listed in the concentrations below.

#### Elementary Education

The M.Ed. program in elementary education has a General program option, an emphasis in Reading option, an emphasis in Teaching English to Speakers of Other Languages (TESOL), and an Early Childhood education option (18 credit hours) as well as focused concentrations in a variety of interest areas listed below. Additional hours may be necessary for reading specialist certification.

#### Secondary Education

The M.Ed. program in Secondary Education has several areas of specialization: General, Curriculum and Instruction, Middle Level Education, Reading, and Teaching English to Speakers of Other Languages (TESOL). Additionally, students may seek initial teacher certification while also studying for the M.Ed. A set of prescribed courses

needed for certification fill the emphasis area. A minimum of 30 credit hours is required.

#### Special Education

The M.Ed. Program in Special Education includes a representation of the important core knowledge in Special Education. The primary goal is to empower professionals to be thoughtful teachers who use best practice when working with students with disabilities. Research and data-based decision making are emphasized throughout the program. Graduate students will translate research into practice in their courses, and learn to analyze multiple types of assessment data. The M.Ed. Program in Special Education consists of an initial required core of courses, an opportunity to develop an area of specialization, and a capstone or exit course.

### Graduate Certificate Programs: A minimum of 18 credit hours is required.

Graduate Certificate programs are specialized programs of study that are not degree programs but are shown on the academic transcript so that readers are aware of the concentrated program of study. Graduate Certificates are unrelated to teaching certificates.

Graduate Certificate Areas are: Autism Studies Certificate; History Education Certificate; Teaching English to Speakers of Other Languages (TESOL) Certificate; and Teaching of Writing Certificate.

## Doctoral Program

### Doctor of Education (Ed.D) Program: BRIDGE THEORY AND PRACTICE WITH SCHOLARSHIP

The Doctor of Education in Educational Practice is a doctoral degree intended for practitioners. Areas of study available are the themes around which learning communities are formed. Members of the learning communities advance through the program as a cohort in three to three-and-one-half years. The degree program requires 80 credit hours, and the Master's degree is recognized and applied toward the 80 credit hour requirement. A Dissertation in Practice is the capstone. The program applies an *Inquiry as Practice* model of scholarship. Graduates gain the ability to use data to inform decision-making and enhance their practice by gathering, organizing, judging, aggregating, and analyzing situations, literature, and data. The Doctor of Education degree program places emphasis on preparing scholarly practitioners for their professional work rather than emphasizing research for the purposes of building theory and preparation for the professoriate in higher education.

The curriculum of the Doctor of Education degree is intended to prepare practicing professionals to transform both their practice and the field by working *in community*, just as practitioners collaborate with key stakeholders to address complex problems of practice. Students are admitted to the degree program and simultaneously to a learning community of practice formed around a theme such as Language, Literacy, and Culture, Curriculum and Instruction, STEM, Higher Education Student Services, Global Learning, Social Justice or Heritage Leadership. The learning community and a mentor team of faculty and practitioners work together throughout the program using the learning community seminar, which is required every semester, as a mechanism by which to cultivate community and build the unique skills needed for education practitioners. The skills to work collaboratively to develop, test, and advance innovative solutions to high-leverage problems of practice are fostered throughout the program.

In addition to the thematic learning community of practice format, the curriculum features Laboratories of Practice and a Dissertation in Practice as culminating activities. The Laboratories of Practice take the doctoral studies away from the University campus and to a context where theory, inquiry, and practice can intersect and the implementation of practice can be measured. The Dissertation in Practice allows the learning community to address a high leverage problem of practice through collaborative and connected work beyond what a single individual could do alone. Individuals contribute work that feeds into group work. The Dissertation of Practice is characterized by generative impact.

The University of Missouri-St. Louis College of Education is a member of the Carnegie Project on the Education Doctorate, a national group of over 100 universities that are re-designing and re-orienting the Doctor of Education degree as a program that is distinct from Doctor of Philosophy in Education degree programs. Our program reflects our commitment to the work of the Carnegie Project and its working principles.

### Doctor of Philosophy of Education (Ph.D.)

The Ph.D. degree in Education, offered in cooperation with the School of Education at the University of Missouri-Kansas City and the College of Education at the University of Missouri-Columbia, is designed for educators who desire directed research experience promoting scholarly inquiry in education.

The Ph.D. program is designed for graduates to attain the following learning outcomes:

- Understand the major theories in their primary and secondary disciplines.
- Attain a breadth of knowledge in education in general and a depth of knowledge in the primary discipline.
- Think critically.
- Locate literature in the primary and secondary disciplines.
- Understand research methods in education.
- Conduct research.
- Demonstrate leadership skills and attributes.

Categories of coursework and credits Required are: 1. Research Methods (15-18 hrs.); 2. Disciplinary Specialization (24-26 hrs., 16 in residence as Ph.D. student); 3. Foundations Courses (10-14 hrs.); 4. Proposal Writing (EDUC 7950; 1 hr.); 5. Comprehensive Examination; and 6. Dissertation Research (6 hrs.).

The minimum total credit hour requirement to complete the Ph.D. in Education degree is 90 credit hours of post-baccalaureate coursework. Up to 44 credit hours of graduate coursework, typically the Master's degree and post-Master's credit hours, can be applied to the foundations, research methods, and disciplinary specialization categories as appropriate.

The Master's degree work can usually be applied without regard to the age of the degree, but post-Master's coursework should be recent (4 to 6 years old). There is an 8-year time limit for completing the Ph.D. in Education.

The final program configuration, including how previous coursework is applied to the degree requirements, is determined at a meeting of the student, the student's advisor, and two additional faculty members in the area of study, where applicable. This meeting typically takes place 2 to 3 semesters after program entry.

## Courses

Courses offered by the department can be found at the links below:

Early Childhood Education (ECH ED)

Educational Administration (ED ADM)

Educational Technology (ED TECH)

Elementary Education (ELE ED)

Health and Physical Education (HLTH PE)

Middle Education (MID ED)

Physical Education (PHY ED)

Secondary Education (SEC ED)

Special Education (SPEC ED)

Teacher Education (TCH ED)

# College of Nursing

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## General Information

The College of Nursing offers academic nursing programs at the undergraduate and graduate levels. Knowledge and skills needed to complete the professional licensure examination to become a registered nurse are available through the traditional baccalaureate option. A part-time, evening and weekend scheduling option is available, as is an accelerated option for students with degrees in other fields or who meet the admission criteria for this intensive option. Nurses who have obtained their basic nursing education through an associate degree or a diploma nursing program may fulfill the requirements for the BSN completion option without repetition of previous nursing education classes through the RN to BSN option. The Doctor of Philosophy in Nursing (Ph.D.) program prepares nurse scientists. Admission to the Ph.D. program is available at the post BSN and MSN levels. The Doctor of Nursing Practice (DNP) program prepares students for the highest level of advanced clinical nursing practice. Admission to the DNP program is available at the post BSN and MSN levels.

*\*Completion of the nursing program does not guarantee eligibility to take the licensure examination, per section 335.066 RSMo of the Missouri Nursing Practice Act.*

## International Students

Students with international status are required to take the English for Academic Purposes (EAP) assessment at the University. Based upon the assessment, students may be required to complete recommended EAP courses prior to enrolling in nursing courses.

All students with international coursework (whether they are classified as an international student or as a citizen or permanent resident of the United States) must submit official transcripts from the international school(s), as well as official course descriptions (in English) for every course taken at a foreign institution.

## Professional Organizations

### Sigma Theta Tau International Honor Society for Nursing

The Nu Chi Chapter of Sigma Theta Tau was officially established in April 1984. Membership is offered by invitation to those students graduating in the upper third of their class and to those recognized as outstanding community nursing leaders. Professional presentations are held twice each year and feature leaders in the nursing profession.

### Student Nurses' Association

The College of Nursing is a constituent of the National Student Nurses' Association (SNA). The purpose of this organization is to provide nursing students in the basic baccalaureate program the opportunity to connect with the nursing profession prior to licensure. SNA provides students with volunteer, donation, and networking opportunities to increase their involvement in the nursing community. The organization is open to all nursing majors.

### Minority Student Nurses' Association

The Minority Student Nurses' Association (MSNA) was developed to function as an academic support and networking group. The focus of MSNA is to provide service, knowledge, and sense of awareness through

community and university service, and to create a bond between minority nursing students. MSNA is all about support, academics, and community outreach. Membership is open to all students from the CON regardless of race, culture, religion, or ethnic background.

## Undergraduate Studies

The College of Nursing provides coursework leading to the Bachelor of Science in Nursing (BSN). The undergraduate program offers two means for achieving the bachelor's degree in nursing: studies that are preparatory for completion of the professional nurse licensure examination (pre-licensure program) and advanced placement for the professional registered nurse without repetition of fundamental nursing and clinical courses (RN to BSN program). An accelerated pre-licensure option is available for qualified individuals who hold earned degrees in non-nursing fields, or outstanding students who have completed all prescribed general education and science course work. The traditional pre-licensure option can be completed on a full-time basis or through a part-time evening/weekend program.

Students must meet university and College of Nursing requirements. Baccalaureate students meeting admission criteria may participate in the Pierre Laclède Honors College. **Students who have been dismissed from another nursing program are not eligible for admission to the pre-licensure BSN program.**

Faculty maintain the right to make appropriate curriculum changes to comply with standards for accreditation and approval as stipulated by the Commission on Collegiate Nursing Education and the Missouri State Board of Nursing's minimum standards. For that reason, students receive exceptional advising support from college advisors.

## Degree Requirements for BSN

The Bachelor of Science in Nursing degree requires comprehensive course work in general education and nursing. Basic undergraduate nursing course work includes theory, on-campus laboratory and clinical activities. Clinical experiences require weekday, evening, and/or weekend commitments.

- Full-time study in the traditional BSN pre-licensure option can be completed in four academic years (2.0 years of nursing course work following the completion of 2.0 years of general education coursework).
- Part-time study in the traditional BSN pre-licensure option is available with nursing classes in the evenings and clinical hours predominantly on the weekends. The nursing clinical curriculum can be completed in 10 semesters following completion of general education courses.
- The accelerated BSN pre-licensure option requires full-time study and can be completed in 15 months (following the completion of general education courses).
- The RN to BSN program is offered 100% online, blended on the UMSL campus, or blended at select off-campus locations throughout the metro area. Clinical activities in the RN to BSN program are community-based and may be completed in the student's home community.

Courses that require clinical hours will require a student to pass a criminal background check and drug screening prior to entry into the program.

Additional requirements and/or disclosures may become necessary throughout the courses of the program. Specific current immunizations, certifications, and examinations will also be required prior to the academic year. Students who fail to upload all health documents into the health



compliance tracker “CastleBranch” by the determined designated date will not be allowed to attend the clinical portion of their course. It is the responsibility of the student to obtain the information necessary for them to become knowledgeable about these requirements and plan their plan of study accordingly.

## Advanced Nursing Education

The College of Nursing provides coursework leading to the Doctor of Nursing Practice (DNP) or Doctor of Philosophy in Nursing (Ph.D.). The DNP program prepares graduates for the highest level of clinical practice, including clinical and translational analysis for improved practice outcomes. The Ph.D. program prepares nurses to pursue theoretical inquiry and conduct original research for the purpose of extending knowledge in the field. Post-Graduate Certificate Programs (PGC) are offered to allow students to take the examinations for advanced practice nursing certification in any of our population of foci areas.

Students must meet university and College of Nursing requirements.

Faculty maintain the right to make appropriate curriculum changes to comply with standards for accreditation and approval as stipulated by the Commission on Collegiate Nursing Education. For that reason, students receive exceptional advising support from the graduate academic advisors.

The UMSL College of Nursing is proud to be fully accredited/approved by the following bodies:

- The Post-Graduate Certificate and DNP programs at UMSL are accredited by the Commission on Collegiate Nursing Education (CCNE), 655 K Street, NW, Suite 750, Washington, DC 20001, 202-887-6791.
- *The University of Missouri- St. Louis* is accredited by the Higher Learning Commission ([hlcommission.org](http://hlcommission.org)), a regional accreditation agency recognized by the U.S. Department of Education.

Courses that require clinical hours will require a student to pass a criminal background check and drug screening prior to entry into the program.

Additional requirements and/or disclosures may become necessary throughout the courses of the program. Specific current immunizations, certifications, and examinations will also be required prior to or within the first semester of the program and prior to any semester requiring a residency experience. Students who fail to upload all health documents into the health compliance tracker ‘CastleBranch’ by the determined designated date will not be allowed to attend the residency portion of their course. It is the responsibility of the student to obtain the information necessary for them to become knowledgeable about these requirements and plan their plan of study accordingly.

## DNP

The DNP program is an online program with intensive on-campus experiences that focus on the preparation of leaders in clinical nursing who can improve quality of care for individuals and populations through advanced practice and through improving systems of care. The curriculum is based on national standards for DNP education.

Courses are designed to support nursing science, clinical research, leadership and a specialty area. Concepts woven throughout the courses include methodologies for translating research into practice, using culturally competent leadership techniques with diverse and underserved populations, advanced nursing science and clinical scholarship, clinical prevention, advanced nursing practice and clinical decision

making, understanding organizational systems and change, and policy development. The DNP program is available for nurses who have completed an accredited MSN or BSN academic degree.

The UMSL College of Nursing is committed to admitting a diverse group of students who will become nurse leaders responsive to the specific needs of the communities and populations we serve. We value diversity, intellectual discourse and rigor, caring, professionalism, mutual respect and support, innovation, collaboration, and transparency. Applicants will be selected using inclusive and balanced admission criteria that measure their potential in nursing practice, education, research, and scholarship. We measure our success by graduates who become lifelong learners and leaders in their communities and in the profession of nursing.

## Ph.D.

The Doctor of Philosophy in Nursing (Ph.D.) program at the University of Missouri–St. Louis (UMSL) affords students with academic, clinical, and research resources of the University of Missouri system through a cooperative arrangement with the schools of nursing at UMSL. Upon completion of all degree requirements, the Ph.D. degree is awarded by the UMSL Graduate School. The Ph.D. degree is an online program with synchronous and asynchronous classes. Some courses are shared with the University of Missouri-Columbia and the University of Missouri-Kansas City.

The Ph.D. in nursing curriculum is divided into these general categories:

- Nursing Science and Theory
- Nursing Research Methods and Statistics
- Cognates
- Dissertation

The Ph.D. program is designed for graduates to attain the following program outcomes:

- Develop expertise and knowledge to establish a program of research and scholarship.
- Translate nursing research into practice and policy to improve health and healthcare systems.
- Provide leadership to effect change in healthcare practice, policy, and education issues by collaboration and partnerships.
- Collaborate effectively with interdisciplinary teams.
- Improve the healthcare quality of life, individuals/families/communities regionally, nationally and internationally.

## Post-Graduate Certificates

Students with nursing graduate degrees who wish to become eligible for a nurse practitioner certification may complete one of the post-graduate certificates (PGC). The length of the program and the specific plan of study for each student will vary. The average part-time student can complete the certificate in one to two years.

PGC population of foci available for study include:

- Adult-Geriatric Nurse Practitioner - Primary Care
- Family Nurse Practitioner - Primary Care
- Pediatric Nurse Practitioner - Acute Care
- Pediatric Nurse Practitioner - Primary Care
- Psychiatric-Mental Health Nurse Practitioner - Primary Care
- Women’s Health Nurse Practitioner - Primary Care

## Courses

### ***NURSE 1000 Cultural Diversity in Healthcare: 3 semester hours***

This course introduces cultural congruence across the lifespan. Transcultural nursing concepts will be examined, as well as theories & practices in relationship to human caring. Application and analysis of health care practices within selected cultural contexts are explored.

### ***NURSE 1050 Communication for the Healthcare Professional: 3 semester hours***

This course focuses on the development of communication skills utilized in professional nursing. The individual's relationship with self, individuals, communities, and populations are discussed. Communication and collaboration concepts in nursing are introduced to develop effective human caring relationships with diverse populations.

### ***NURSE 2000 Nutrition in Health: 3 semester hours***

This course examines nutritional needs across the illness and wellness continuum with emphasis on nutritional principles related to health promotion and protection. Content includes assimilation, digestion and absorption of nutrients, and cultural and economic influences on dietary practices across the lifespan.

### ***NURSE 2050 Pathophysiology: 3 semester hours***

Prerequisites: BIOL 1141 and BIOL 1162. This course focuses on the normal processes and mechanisms operating within the human body. Explores the nature of disease, its causes and the bodily changes that accompany. The course includes general principles of disease, diseases specific to internal organs, and the clinical implications.

### ***NURSE 2101 Introduction to Nursing: 2 semester hours***

This course introduces the historical and theoretical development of nursing as a discipline. Nursing is examined as a dynamic practice profession. Variables that influence nursing and health care are discussed. Concepts and skills introduced in this course guide the student's educational experience within the nursing major.

### ***NURSE 2103 Nutrition and Health: 3 semester hours***

This course examines nutritional needs throughout the life span with emphasis on nutritional principles related to health promotion and protection. Content includes assimilation, digestion and absorption of nutrients and cultural and economic influences on dietary practices.

### ***NURSE 2105 Communication in the Nursing Profession: 3 semester hours***

This course focuses on the development of communication abilities utilized in professional nursing. The individual's relationship with self, others and groups is discussed. Students learn verbal and non-verbal communication skills, self-awareness, and sensitivity to others. Interpersonal skills are introduced to enable the student to develop effective human caring relationships with a diverse population of clients and colleagues.

### ***NURSE 3000 Health Promotion and Disease Prevention Concepts Across the Lifespan: 3 semester hours***

Prerequisites: Admission to nursing clinical major. This course focuses on the role of the nurse in promoting health and reducing risk behaviors of individuals and families across the lifespan. Concepts of nutrition, physical activity, coping and stress management skills, social determinants of health, and health disparities will be examined with an emphasis on the impact of genetics, values, lifestyles and cultural influences. Patient education for health promotion, risk reduction, and disease prevention across the lifespan will be explored.

### ***NURSE 3005 Introduction to Professional Nursing: 3 semester hours***

Prerequisites: Admission to the Accelerated BSN program. This course introduces students to the role of the professional nurse. Health promotion and disease prevention across the life span are examined. Ethics, legal standards, and healthcare policy concepts are also explored.

### ***NURSE 3010 Foundations of Professional Practice: 3 semester hours***

Prerequisites: Admission to the nursing clinical major. An introductory course to the discipline of professional nursing. Concepts of nursing process and clinical reasoning are introduced and explored within the context of the domain of nursing (person, environment, health, nursing).

### ***NURSE 3015 Professional Nursing Concepts and Practice: 6 semester hours***

Prerequisites: Admission to the Accelerated BSN Program. Introduction to the structure of the discipline of nursing, selected theoretical and conceptual models, and their application to nursing process, clinical reasoning, and education as a foundation for socialization into professional nursing practice. Includes didactic, laboratory, and clinical components.

### ***NURSE 3020 Fundamental Concepts of Nursing Care: 3 semester hours***

Prerequisites: Admission to nursing clinical major. Introduces fundamental evidence based nursing concept, skills, and standard of care that underpin the implementation phase of the nursing process. Course allows for students to acquire and practice the skills in a lab setting with the application of skills with patients in an assigned clinical setting.

### ***NURSE 3030 Health Assessment Concepts: 3 semester hours***

Prerequisites: Admission to nursing clinical major. This course integrates concepts related to theoretical knowledge and interpersonal skills in the assessment of clients, focusing on differentiating normal from abnormal findings. It emphasizes the use of problem solving, critical thinking, and cultural competency in identifying and documenting multidimensional health variations across the lifespan. The course includes a classroom component and laboratory experiences, including practice of psychomotor skills.

### ***NURSE 3035 Health Assessment and Promotion: 3 semester hours***

Prerequisites: Admission to the Accelerated BSN Program. Health promotion, client education, and physical assessment skills across the lifespan are developed using the nursing process framework. Didactic and laboratory components are included.

### ***NURSE 3040 Concepts of Evidence-Based Practice: 3 semester hours***

Prerequisites: Admission to nursing clinical major. This course focuses on utilizing evidence-based practice to promote health and wellness, illness, and prevent injury among individuals, families, communities, and populations. Emphasis is placed on education, collaboration, utilizing evidence in practice for quality improvement, and resource utilization. This course builds on content presented in previous coursework and increases the complexity of students' mastery of focus concepts.

### ***NURSE 3050 Concepts of Pharmacology: 3 semester hours***

Prerequisites: Admission to nursing clinical major. Building upon knowledge of illness and wellness concepts developed in previous coursework, students will learn to apply this knowledge to the pharmacotherapeutic component of caring for patients across the lifespan.

***NURSE 3055 Foundations of Nursing Pharmacotherapeutic Concepts: 3 semester hours***

Prerequisites: NURSE 3005, NURSE 3015. This course covers concepts and principles of pharmacology across the lifespan with an emphasis on pharmacotherapeutics and an evidence-based, comprehensive approach to the clinical application of drug therapy. Cultural considerations, individual needs, and patient education related to pharmacology are examined.

***NURSE 3060 Behavioral Health Concepts: 5 semester hours***

Prerequisites: NURSE 3000, NURSE 3010, NURSE 3020, and NURSE 3030. This course focuses on mental health and illness across the lifespan for individuals experiencing emotional distress, crisis, and severe, persistent mental illness. Students will increase basic skills in interpersonal communication, decision-making, and professional behavior as they utilize theory concepts and research from nursing, psychology, pharmacology, and other disciplines in the provision of care to individuals, families, groups, and vulnerable populations. The course includes basic theory and clinical experiences in hospital and community settings. Students will complete 90 clinical hours.

***NURSE 3065 Professional Nursing Adult and Elder Care I: 5 semester hours***

Prerequisites: NURSE 3005, NURSE 3015, NURSE 3035. This course covers nursing care of adult and elder patients including healthy aging and maintenance of functional capacity. Its content addresses common physiologic and social changes, challenges, and adaptations affecting adult and elder populations. Strategies for health promotion and disease management are addressed in the care of adult and elder patients experiencing fluid and electrolyte imbalances, cardiovascular, integumentary, immunologic, pulmonary, and hematologic alterations. Pathophysiologic processes of organ systems are explored. Didactic and clinical components are included.

***NURSE 3070 Concepts of Caring for Adults I: 5 semester hours***

Prerequisites: NURSE 3000, NURSE 3010, NURSE 3020 and NURSE 3030. This course focuses on the nursing care of the adult patient experiencing selected pathophysiological processes affecting body regulatory mechanisms. These mechanisms are related to multiple concepts across the illness and wellness continuum. Emphasis is placed on health restoration, maintenance and support of chronic illness as well as the continued development of critical thinking processes, and evidence-based nursing practice. This course includes lecture and active learning within the classroom, as well as a clinical component. Students will complete 90 clinical hours.

***NURSE 3075 Professional Nursing Mental Health: 5 semester hours***

Prerequisites: NURSE 3015, NURSE 3055. This course covers theoretical knowledge and skill to promote the mental health of patients across the lifespan. Common and complex mental health disorders affecting individuals, families, and communities are examined. Students will learn and apply therapeutic communication techniques with patients experiencing mental health disorders. Ethical, moral, and legal issues in mental health nursing practice are addressed. Didactic and clinical components are included.

***NURSE 3101 Nursing and Health: 6 semester hours***

Prerequisites: BIOL 1131; BIOL 1141; CHEM 1052; NURSE 1010, NURSE 3106; NURSE 3110; NURSE 3111. An introduction to the discipline of nursing, the historical and theoretical development of nursing is explored with an emphasis on critical thinking, the teaching/learning process, and foundational practice concepts. Through modular laboratory experiences, the student acquires psychomotor skills to provide safe and effective nursing care to clients promoting health and wellness. Includes classroom, laboratory and clinical experiences.

***NURSE 3106 Assessment of Clients in Health and Illness: 4 semester hours***

Prerequisites: BIOL 1131; BIOL 1141; BIOL 1162; CHEM 1052; PSYCH 1268; NURSE 1010. This course integrates theoretical knowledge and interpersonal skills in the assessment of clients, focusing on differentiating normal from abnormal findings. It emphasizes the use of problem solving, critical thinking and cultural competency in identifying multidimensional health variations across the life span. The course includes classroom and laboratory experiences.

***NURSE 3110 Pathophysiological Bases of Nursing Practice: 3 semester hours***

Prerequisites: BIOL 1131, BIOL 1141, BIOL 1162, CHEM 1052 (or equivalent); NURSE 1010. This course focuses on the nature of disease, its causes and the bodily changes that accompany it. The course includes a study of general principles of disease, specific diseases of individual organs and systems and the clinical implications.

***NURSE 3111 Pharmacotherapeutics in Nursing Practice: 3 semester hours***

Prerequisites: BIOL 1141, BIOL 1162, CHEM 1052, NURSE 1010; pre/co requisite: NURSE 3110. This course introduces key terminology, legal foundations, general principles and clinical applications of pharmacology.

***NURSE 3120 Foundations of Nursing: 7 semester hours***

Prerequisites: All general education requirements and accelerated nursing option prerequisite non-nursing courses. This course introduces the student to the theoretical concepts and foundations of professional nursing practice. Utilizing an integrated approach, health promotion and protection throughout the lifespan are explored and supported using theories of nursing practice, health assessment of well individuals, and general principles and concepts of pharmacology and critical thinking.

***NURSE 3121 Clinical Foundations of Nursing: 3 semester hours***

Prerequisites: NURSE 3120. This course assists in the development and application of clinical reasoning in the lab, clinical agency, and simulation environments. Through clinical learning experiences, the student acquires basic psychomotor, communication, and medication administration skills. The student applies these skills in the provision of safe and effective nursing care to clients while promoting health, wellness, and clinical reasoning.

***NURSE 3205 Adult Health Nursing I: 5 semester hours***

Prerequisites: All 3100 level nursing courses and PSYCH 1268. This course focuses on the nursing care of the adult experiencing selected pathophysiological processes affecting body regulatory mechanisms. These mechanisms are related to immune responses, problems of oxygenation: ventilation, transport and perfusion: kidney function; regulatory mechanisms and digestion absorption and elimination. Emphasis is placed on health restoration, maintenance and support as well as the continued development of the nurse-client relationship, critical thinking processes, and research-based nursing practice. This course includes classroom and clinical activities in a variety of settings.

***NURSE 3206 Adult Health Nursing II: 5 semester hours***

Prerequisites: All 3100 level nursing courses, NURSE 3205, and PSYCH 1268. This course focuses on the nursing care of the adult experiencing selected pathophysiological processes affecting body regulatory mechanisms. These mechanisms are related to endocrine, sensory-perceptual, gynecological, and genitourinary functions. Emphasis is placed on health restoration, maintenance and support as well as the continued development of the nurse-client relationship, critical thinking processes, and research-based nursing practice. This course includes classroom and clinical activities in a variety of settings.



**NURSE 3214 Psychiatric Mental Health Nursing: 4 semester hours**

Prerequisites: All 3100-level nursing courses; PSYCH 1268. This course focuses on health and illness across the lifespan of clients who have acute and chronic emotional and psychosocial difficulties and psychiatric illnesses. The course emphasizes development of students' decisional capabilities, self-awareness and professional behaviors as they utilize theory and research from nursing, psychology and related disciplines for the provision of nursing care to individuals, families, & groups. Clinical experiences in community and acute care settings are designed for students to engage in individual and group strategies that promote and maintain mental health. Course includes classroom and clinical activities in a variety of settings.

**NURSE 3215 Nursing of Women and Childbearing Families: 4 semester hours**

Prerequisites: All 3100 level nursing courses, PSYCH 1268. Focuses on the childbearing family and women's reproductive health, including family dynamics and growth and development. Health promotion, protection, maintenance and restoration are covered in experiences that include hospital and community settings. Health care policy and systems as relevant to these populations are included. Course includes classroom and clinical activities in a variety of settings.

**NURSE 3216 Child and Family Health Nursing: 4 semester hours**

Prerequisites: All 3100 level nursing courses, PSYCH 1268. This course focuses on pediatric health and illness with emphasis on family dynamics, growth and development and communication with children and their families. Health promotion, protection, restoration, maintenance and support concepts are covered in experiences that include hospital and community settings. Health care policy and systems are studied as relevant to this population. Course includes classroom and clinical activities in a variety of settings.

**NURSE 3330 Nursing of Adults I: 5 semester hours**

Prerequisites: NURSE 3120, NURSE 3121. This course focuses on the nursing care of the adult experiencing health problems affecting body regulatory mechanisms. These mechanisms are related to perioperative processes, immune processes, problems of oxygenation, cardiovascular alterations, fluid and electrolyte/acid-base imbalances, integumentary problems, abnormalities of the reproductive system and genetics, oncology and hematology problems. This course also incorporates relevant concepts of pharmacology and pathophysiology related to these conditions. Emphasis is placed on health promotion and restoration, maintenance and support as well as the continued development of the nurse-client relationship, clinical reasoning, and evidence-based nursing practice across the adult life span.

**NURSE 3331 Clinical Nursing of Adults I: 3 semester hours**

Prerequisites: NURSE 3330. This course focuses on the nursing care of adults in the lab, clinical agency, and simulation environments. Utilizing an integrated approach, advanced nursing skills and assessment techniques for adult clients are mastered in perioperative processes, immune processes, problems of oxygenation, hematology, cardiovascular alterations, fluid and electrolyte/acid-base imbalances, integumentary problems, abnormalities of the reproductive system, genetics and oncology problems. Clinical reasoning is developed and applied in order to provide safe and effective nursing care to adult clients across the health/illness continuum.

**NURSE 3340 Behavioral Health Nursing: 2.5 semester hours**

Prerequisites: All 3100 level nursing courses and PSYCH 1268. This course focuses on health and illness across the lifespan of clients who have acute and chronic psychosocial and behavioral health issues and specific psychiatric illnesses. An emphasis is placed on the nurse/client relationship in behavioral health promotion, restoration, maintenance and support.

**NURSE 3341 Clinical Behavioral Health Nursing: 1.5 semester hour**

Prerequisites: NURSE 3340. In this course students utilize theory and evidence from nursing and related disciplines in the provision of nursing care to individuals, families, and groups with psychiatric and behavioral health problems. Clinical experiences in community and acute care settings are designed so that students can engage in individual and group strategies that promote and maintain mental health.

**NURSE 3350 Nursing of Adults II: 5 semester hours**

Prerequisites: NURSE 3120, NURSE 3121. This course focuses on the nursing care of the adult experiencing complex pathophysiologic processes affecting body regulatory mechanisms. These mechanisms are related to endocrine, neurological, musculoskeletal, gastrointestinal, sensory-perceptual, male reproductive and genitourinary problems. This course also incorporates relevant concepts of pathophysiology and pharmacology related to these conditions. Emphasis is placed on health promotion and restoration, maintenance and support, as well as the continued development of the nurse-client relationship, critical thinking and evidence-based nursing practice across the adult life span. NURSE 3350 and NURSE 3351 are co-requisites to be taken together in an 8-week period.

**NURSE 3351 Clinical Nursing of Adults II: 3 semester hours**

Prerequisites: Co-requisite with NURSE 3350. This course focuses on the nursing care of adults in the lab, clinical agency and simulation environments. Utilizing an integrated approach, complex psychomotor skills and assessment techniques for adult clients are mastered in patients with musculoskeletal problems, endocrine alterations, renal/genitourinary problems, sensory-perceptual problems, and liver problems. Clinical reasoning is developed and applied in order to provide safe and effective nursing care to adult clients with complex problems across the health/illness continuum. NURSE 3350 and NURSE 3351 are co-requisites to be taken together in an 8-week period.

**NURSE 3360 Maternal-Child Nursing: 5 semester hours**

Prerequisites: PSYCH 1268, NURSE 3120, NURSE 3121. This course focuses on women's reproductive health, childbearing and child-rearing families, as well as the health and illness of children from conception through adolescence. There is an emphasis on family dynamics, growth and development, and communication with children and their families. Health care policy and systems are incorporated as they relate to diverse populations. NURSE 3360 and NURSE 3361 are co-requisites to be taken together in an 8-week period.

**NURSE 3361 Clinical Maternal-Child Nursing: 3 semester hours**

Prerequisites: Co-requisite with NURSE 3360. Health promotion, protection, restoration, and maintenance for the mother-child and family care are addressed in experiences that include nursing skills lab, hospital agency and a variety of community settings. NURSE 3360 and NURSE 3361 are co-requisites to be taken together in an 8-week period.

**NURSE 3799 Statistics for Population Health: 3 semester hours**

Prerequisite: Admission to the College of Nursing's RN to BSN Program. This course provides students with an introduction to the use and interpretation of basic statistics, statistical databases, and data analysis. Basic statistical techniques will be introduced and utilized to identify and support evidence-based clinical decisions related to health and society.



***NURSE 3804 Ethical and Legal Dimensions of Nursing Practice: 3 semester hours***

Prerequisites: Philosophy (3 credits). This course explores the ethical and legal dimensions of nursing practice. The relationship between ethical and legal issues is examined within nursing situations. The student participates in dialogue addressing ethical-legal issues in professional nursing practice to explore personal values, increase sensitivity to others and to develop ethical reasoning abilities.

***NURSE 3807 Research and Evidence-Based Nursing Practice: 3 semester hours***

Prerequisites: NURSE 3799 (or equivalent) and NURSE 3817. This course prepares nurses to provide evidence-based care to patients among the rapid advances in the science and technology of healthcare. This course provides a basic understanding of how evidence is developed, including the research process, clinical judgment, interprofessional perspectives, and patient preference as applied to nursing practice. Students will learn a systematic method to evaluate and apply research findings and other evidence in designing and implementing nursing care that is multidimensional, high quality, and cost-effective.

***NURSE 3808 Management And Leadership In Nursing: 2-3 semester hours***

Prerequisites: All 3000 level nursing courses; ECON 1000 or (equivalent) This course prepares the nurse to coordinate and manage client care in diverse health care settings. Emphasis is placed on leadership and management theory and related skills, collaboration, delegation, coordination, and evaluation of multi-disciplinary work and the application of outcome-based nursing practice.

***NURSE 3817 Introduction to Health and Nursing Informatics: 3 semester hours***

This online laboratory course establishes competency in fundamental information management and computer technology skills. It enables students to use existing information systems and available information to manage nursing practice. Students critically evaluate technology, information, and its sources; use decision support systems designed for clinical decision making; and focus on the representation of nursing data, information, and knowledge.

***NURSE 3820 Introduction to Evidence-Based Nursing Practice and Informatics: 5 semester hours***

Prerequisites: NURSE 3799 or equivalent statistics course. This course will focus on current review of qualitative and quantitative nursing literature and research utilization through evidence-based practice and establish competency in fundamental information management and technology. Students will examine the research and evidence-based process through analysis and critique of nursing literature; critically evaluate technology, information, and its sources; use decision support systems designed for clinical and ethical decision making; and focus on the presentation of nursing data, information, and knowledge.

***NURSE 3873 Guided Study in Nursing: 1-3 semester hours***

This course is an in-depth independent study of selected topics in nursing under the guidance of a specific instructor. No more than six hours may be taken under this option.

***NURSE 3900 Role of the Baccalaureate-Prepared Nurse: 3 semester hours***

Prerequisite: Admission to the College of Nursing's RN to BSN Program. This course provides an overview of the expanded expectations of the baccalaureate-prepared nurse in today's changing healthcare climate. The role of the baccalaureate prepared nurse in influencing healthcare delivery, healthcare systems, and health outcomes of individuals, families, and communities will be explored.

***NURSE 3910 Nursing Theory for Population Health: 3 semester hours***

Prerequisites: Admission to the College of Nursing's RN to BSN Program. This course provides the opportunity to examine evidence-based practice nursing interventions, select theories, models, assessment strategies, and tools that can be used to promote health for populations. The roles and responsibilities of the professional nurse in population-based health systems will be explored.

***NURSE 3920 Health Assessment for the Professional Nurse: 3 semester hours***

Prerequisite: Admission to the College of Nursing's RN to BSN Program. This course will incorporate a holistic, multidimensional approach that culminates in the ability to perform a comprehensive health assessment. The course will emphasize the use of clinical reasoning to determine areas in which health promotion activities should be implemented. The impact of social determinants of health, genomics, lifestyle, environmental factors, literacy, and culture will be explored.

***NURSE 3930 Nursing Research and Evidence-Based Practice for the Professional Nurse: 3 semester hours***

Prerequisite: Admission to the College of Nursing's RN to BSN Program. This course prepares nurses to provide evidence-based nursing care to patients among the rapid advances in the science and technology of healthcare. This course provides a basic understanding of how evidence is developed, including the research process, clinical judgment, interprofessional perspectives, and patient preference as applied to nursing practice. Students will learn a systematic method to evaluate and apply research findings and other evidence in designing and implementing nursing care that is multidimensional, high quality, and cost-effective.

***NURSE 3940 Leadership and Management for Professional Nursing: 3 semester hours***

Prerequisites: Admission to the College of Nursing's RN to BSN Program. This course prepares the nurse to coordinate and manage client care in diverse health care settings. The use of information systems and data to guide management decisions will be emphasized. Leadership and management concepts, issues, and functions as applied to the role of the professional nurse in delivering culturally competent, safe, and quality care will be examined.

***NURSE 4010 Concepts of Caring for Adults II: 5 semester hours***

Prerequisites: NURSE 3050 and NURSE 3070. This course focuses on the application of nursing care of the adult patient experiencing selected pathophysiological processes affecting body regulatory mechanisms across the illness and wellness continuum. Emphasis is placed on health restoration, maintenance and support of acute illness as well as the continued development of the nurse-client relationship, critical thinking processes, research-based nursing practice and use of technology. A focus on care collaboration, communication, quality of care, health care ethics and legal implications is provided. This course includes lecture and active learning, in addition to a clinical portion. Completion of 90 clinical hours.

***NURSE 4015 Professional Nursing Adult & Elder Care II: 5 semester hours***

Prerequisites: NURSE 3065. This course covers nursing care of adult and elder patients including healthy aging and maintenance of functional capacity. Content addresses common physiologic, psychological, and social changes, challenges, and adaptations affecting adult and elder populations. Strategies for health promotion and disease management are addressed in the care of adult and elder patients experiencing genitourinary, gastrointestinal, neurological, endocrine, musculoskeletal, health restoration, and/or sensory-perceptual alterations. Pathophysiologic processes of organ systems are explored. Didactic and clinical components are included.

***NURSE 4020 Concepts of Caring for Women and the Childbearing Family: 3 semester hours***

Prerequisites: NURSE 3000, NURSE 3010, NURSE 3020, NURSE 3030, and NURSE 3050. This course focuses on the application of health and illness continuum concepts related to the care of the woman, gravid mother, newborn, and growing family. This course builds on knowledge developed in previous coursework. Concurrent enrollment in NURSE 4025 and NURSE 4030 is required.

***NURSE 4025 Care of Women and Children Clinical: 2 semester hours***

Prerequisites: Concurrent enrollment in NURSE 4020 and NURSE 4030. This clinical course focuses on the application of health and illness continuum concepts of the gravid woman, newborn, family, and child in relation to nursing care, in addition to women across the lifespan. This course builds on knowledge developed in previous coursework. Students will complete a pediatric-focused clinical of 45 hours and a maternal-focused clinical of 45 hours. Concurrent enrollment in NURSE 4020 and NURSE 4030 is required.

***NURSE 4030 Concepts of Caring for Children and Families: 3 semester hours***

Prerequisites: NURSE 3000, NURSE 3010, NURSE 3020, NURSE 3030, and NURSE 3050. This course focuses on the pediatric health and illness continuum with an emphasis on family dynamics, growth and development, and communication with children and their families. Nursing concepts include safety, community, cultural congruence, education, collaboration, environmental health, and ethics. Concurrent enrollment in NURSE 4020 and NURSE 4025 is required.

***NURSE 4035 Nursing Care of Children: Infancy to Adolescence: 4 semester hours***

Prerequisites: NURSE 3035, NURSE 3055. This course covers pediatric health promotion and disease management with an emphasis on integration of the concepts of communication and growth and development to provide primary, secondary, and tertiary levels of prevention for children and their families. Nursing care of pediatric patients experiencing acute and chronic illness are examined. Didactic and clinical components are included.

***NURSE 4045 Nursing Care of the Childbearing Patient-Family System: 4 semester hours***

Prerequisites: NURSE 3035, NURSE 3055. This course covers theoretical basis and clinical skills necessary to provide quality care to patient/family systems during the childbearing/child-rearing stages of life with an emphasis on family and system theories. Didactic and clinical components are included.

***NURSE 4050 Concepts of Community Focused Care: 5 semester hours***

Prerequisites: NURSE 3070, NURSE 4010, NURSE 4020, and NURSE 4030. This course includes a variety of experiences to prepare the student to assess the health care needs in diverse community settings and develop interventions to meet those needs. Student will complete 90 clinical hours. Concurrent enrollment in NURSE 4060 and NURSE 4065 is required.

***NURSE 4060 Synthesis of Concepts in Professional Nursing: 4 semester hours***

Prerequisites: NURSE 3070, NURSE 4010, NURSE 4020, and NURSE 4030. This course will focus on the synthesis of previous nursing concepts and general education courses with the goal of preparing the student for entry into professional nursing practice. Areas of study are selected from across the lifespan, including diverse populations in a variety of healthcare systems. This course builds upon knowledge developed in previous coursework. Concurrent enrollment in NURSE 4050 and NURSE 4065 is required.

***NURSE 4065 Synthesis of Professional Practice Immersion Clinical: 4 semester hours***

Prerequisites: Concurrent enrollment in NURSE 4050 and NURSE 4060. This clinical course includes a variety of experiences to prepare the student nurse to lead, coordinate, and manage client care in diverse health care settings. This course includes evidence-based strategies. Areas of practice are selected from across the lifespan, including diverse populations in a variety of health care systems. Students will complete 180 clinical hours. Concurrent enrollment in NURSE 4050 and NURSE 4060 is required.

***NURSE 4075 Global Health Immersion: 3 semester hours***

Prerequisite: Consent of instructor. This is an international healthcare trip that will include a full immersion experience into a foreign culture with emphasis on the analysis of healthcare systems and social determinants of health. Core coursework may include basic foreign language skills, a review of historical and cultural concepts relevant to the country, and application of medical/nursing treatment options. This course may be taken twice for credit.

***NURSE 4105 Professional Nursing Leadership and Synthesis: 8 semester hours***

Prerequisites: NURSE 3065, NURSE 3075, NURSE 4015, NURSE 4035, NURSE 4045. This course is a leadership practicum experience which reflects synthesis of cognitive and affective skills acquired in the Accelerated BSN program. Areas of study are selected from across the lifespan, including diverse populations in a variety of healthcare systems. Didactic and clinical components are included.

***NURSE 4125 Community Nursing and Public Health: 5 semester hours***

Prerequisites: NURSE 3065, NURSE 3075, NURSE 4015, NURSE 4035, NURSE 4045. This course is a synthesis of community and public health nursing that prepares students to apply, promote, and protect the health of patients, families, communities, and populations. Global perspectives on health equity, policy, and diversity are explored. Didactic and clinical components are included.

***NURSE 4135 Evidence-Based Practice: Integration of Research in Professional Nursing: 2 semester hours***

Prerequisites: Admission to the Accelerated BSN Program. This course is designed to provide a foundational theoretical review of evidence-based practice in the nursing profession. Students synthesize knowledge and skill from the natural and behavioral sciences, humanities, and nursing in order to understand the research process and its relevance in guiding nursing practice and improving patient care. Emphasis is placed on identifying and using research evidence in clinical decision making.

**NURSE 4300 Community Health Nursing: 4 semester hours**

Prerequisites: All 3000 level nursing courses. This course provides a conceptual foundation for nursing that recognizes the community as client in society. The course examines socioeconomic, environmental, epidemiological, and legislative influences, ethical/legal issues, and the impact of health beliefs and practices on health promotion and protection in communities and society. The student applies various theories and concepts when encountering families, groups and communities with diverse value systems and cultural backgrounds. Course includes classroom and clinical activities in a variety of settings.

**NURSE 4310 Senior Synthesis: 6 semester hours**

Prerequisites: All 3000 level nursing courses; NURSE 4300 and NURSE 3808 may be taken concurrently. This course integrates theory and practice from previous nursing and general education courses with the goal of preparing the student for entry into professional nursing practice. Within a seminar context, students explore a variety of clinical and professional nursing topics. The course includes research-based strategies utilized for health promotion and protection, health restoration, maintenance and support. Areas of study are selected from across the lifespan, including diverse populations in a variety of health care systems. Course includes classroom and clinical experiences in a variety of settings. Not for graduate credit.

**NURSE 4520 Population Focused Nursing: 2 semester hours**

Prerequisites: All 3300 level nursing courses, NURSE 3804, NURSE 3820. This course provides a conceptual foundation for nursing that recognizes populations in society. The course examines the effect of socioeconomic and environmental, epidemiological factors, and the impact of health beliefs and practices on health promotion and protection in populations. This course also focuses on epidemiological factors and legislative influences in diverse populations.

**NURSE 4521 Clinical Population Focused Nursing: 2 semester hours**

Prerequisites: NURSE 4520. This clinical course focuses on the nursing care of populations in various settings. The student applies population-based theories and concepts when encountering individuals, families, groups and populations with diverse value systems and cultural backgrounds.

**NURSE 4530 Leadership Development and Professional Nursing Practice: 4 semester hours**

Prerequisites: All 3300 level nursing courses, NURSE 3804, NURSE 3820. This course integrates theory and practice from previous nursing and general education courses with the goal of preparing the student for entry into professional nursing practice. Areas of study are selected from across the lifespan, including diverse populations in a variety of health care systems. Topics will include leadership, management theory and related skills, collaboration, delegation, coordination, and evaluation of outcome based interdisciplinary nursing practice.

**NURSE 4531 Clinical Leadership Development and Professional Nursing Practice: 4 semester hours**

Prerequisites: NURSE 4530. This clinical course includes a variety of experiences to prepare the student nurse to lead, coordinate, and manage client care in diverse health care settings. This course includes research-based strategies utilized for health promotion and protection, health restoration, maintenance, and support. Areas of study are selected from across the lifespan, including diverse populations in a variety of health care systems.

**NURSE 4720 Perioperative Nursing: 3 semester hours**

Prerequisite: Consent of the instructor. Provides experiences in preoperative, intraoperative, and postoperative settings. Includes a clinical component.

**NURSE 4730 Nursing Care at the End of Life: 3 semester hours**

Prerequisites for Nursing Students NURSE 3205 and NURSE 3214. All others by consent of instructor. This course focuses on the nursing care of terminally ill patients and their families. Topics explored will include the impact of personal values and beliefs about death, physiology of end stage disease processes, symptom assessment and management, psychosocial and spiritual support, consideration in special patient populations, societal issues and trends in end of life care, ethical considerations in caring for the dying patient, grief and bereavement processes, and the role nursing in end of life care across settings.

**NURSE 4741 Advanced Nursing Assessment and Management of Clients with Cardiac Dysrhythmias: 3 semester hours**

Prerequisite: Senior status. Focuses on advanced nursing assessment and management of clients with cardiac rhythm problems and conduction disturbances. Includes a clinical component.

**NURSE 4900 Ethics and Values in Population Health: 3 semester hours**

Prerequisites: Admission to the College of Nursing's RN to BSN program. This course provides an introduction to the impact of values and ethical issues on professional nursing practice and population health. Emphasis is on values clarification, ethical theories and principles, ethical decision-making, and professional ethical standards. Ethical issues affecting nursing practice and the delivery of care will be explored.

**NURSE 4902 Ethics, Values, and Policy in Population Health: 6 semester hours**

Prerequisites: Admission to the College of Nursing's RN to BSN Program and all 3000-level RN to BSN courses. This course provides an introduction to the impact of values, ethical issues and health policy on professional nursing practice and population health. Students will have the opportunity to analyze public policy's influence on shaping healthcare. Ethical issues affecting nursing practice and patient care will be explored. The opportunity to identify vulnerable populations locally, nationally, and globally will be provided. Epidemiological, demographic, economic, and environmental health factors will be explored to identify community oriented strategies aimed to promote population health.

**NURSE 4905 Values in Professional Nursing: 3 semester hours**

Prerequisites: All 3000 level RN/BSN nursing courses or consent of instructor. Explores values and beliefs as they shape professional nursing practice and influence clinical decision making and interventions in the evolving health care system. Attention is given to the impact of sociocultural factors and health/illness beliefs and practices of the diverse populations served by the professional nurse. Students examine their own understanding of the moral nature of professional nursing within the context of a diverse society.

**NURSE 4910 Health Policy for the Professional Nurse: 3 semester hours**

Prerequisites: Admission to the College of Nursing's RN to BSN Program. This course familiarizes the professional nurse with health care policy and how it impacts the delivery of health care. The role of the nurse in influencing health outcomes and improving health care for populations through the policy process will be explored.

***NURSE 4911 Community and Population Health Synthesis: 6 semester hours***

Prerequisites: Admission to the College of Nursing's RN to BSN Program and RN Licensure. This practicum course focuses on community-based application and synthesis of professional nursing roles and responsibilities across a continuum of health care settings, with selected populations determined to be at risk for a variety of health-related problems. Students integrate and apply curricular concepts such as health policy, epidemiology, health promotion strategies, and evidence-based practice in planning care for a select population. This is taken during the last semester of RN to BSN courses. This course consists of 4 semester hours of didactic and 2 semester hours of clinical.

***NURSE 6075 Advanced Global Health Immersion: 3 semester hours***

Prerequisites: Consent of the instructor and graduate standing. This is an international healthcare trip that will include a full immersion experience into a foreign culture with emphasis on the analysis of healthcare systems and social determinants of health. Core coursework may include basic foreign language skills, a review of historical and cultural concepts relevant to the country, and application of medical/nursing treatment options. This course may be taken twice for credit.

***NURSE 6111 Healthcare Systems: 3 semester hours***

Prerequisites: Graduate standing. This course introduces the historical development, current structure, and projected transformation of the U.S. healthcare system and provides the student with an understanding of the complex nature of the healthcare sector.

***NURSE 6130 Research, Interventions and Evidence-Based Practice: 3 semester hours***

Prerequisites: Consent of Program Director. This course provides opportunities to examine the processes and evaluation components of evidence-based practice, including the identification of significant clinical problems, evaluation of evidence underlying competing interventions, effectiveness of interventions, and implementation and evaluation of health promotion and therapeutic interventions that improve the quality of care or health outcomes for individuals, groups, and populations. Students will have opportunities to develop skills needed to critically analyze scientific literature foundational to implementing evidence-based practice projects.

***NURSE 6320 Learning and Curriculum Development in Nursing: 3 semester hours***

Prerequisites: NURSE 6309. This course examines theoretical foundations, principles, and issues in curriculum design. Explores systematic evaluation of curriculum at all levels.

***NURSE 6321 Instructional Strategies in Nursing: 3 semester hours***

Prerequisites: NURSE 6309 or consent of instructor; must be taken concurrently with NURSE 6320. This course focuses on the development and analysis of teaching and learning strategies in nursing education. Adult learning principles of teaching and learning will be incorporated into the innovative strategies developed within this course. Integration of new technology in instructional design and delivery will be highlighted. Evaluation methods of both teacher and learner will be explored.

***NURSE 6322 Evaluation Strategies in Nursing: 3 semester hours***

Prerequisites: NURSE 6309. This course provides students the opportunity to learn evaluation concepts, including testing and measurement in nursing education at the didactic, clinical and programmatic levels. Content includes strategies to assess and evaluate learning in the cognitive, psychomotor and affective domains. Quality improvements, as well as legal and ethical considerations are explored. Key concepts include criterion and norm referenced theory and technique; reliability, validity, and the associated descriptive statistics; preparation of instrumental objectives for use in developing classroom tests and clinical nursing performance evaluations.

***NURSE 6418 Organizational Behavior and Human Resource Management in Healthcare: 3 semester hours***

Prerequisites: Graduate standing. This course applies theory and concepts from organizational behavior and human resources to the healthcare system as a framework for improving an organization's performance.

***NURSE 6420 Healthcare Law and Regulation: 3 semester hours***

Prerequisites: Consent of Program Director. This course introduces and examines a wide range of topics in the area of health law and regulation, and discusses how laws and regulations can promote or impede health and well-being. Students will explore concepts that inform healthcare policy, potential legal problems in various health care settings, issues and rights that are implicated, and the role of law in healthcare and policy. Students will identify issues and propose solutions or plans of action. The emphasis will be on formulating analyses of federal, state, and local law related to healthcare and public health. Specific topics will include the role that policy and law have played in areas such as tobacco regulation, managed care, healthcare reform, and laws utilized for emergency use of drugs and during public health emergencies.

***NURSE 6424 Social Determinants of Health for Underserved Populations: 3 semester hours***

Prerequisites: Graduate standing. This course examines the health and well-being of underserved populations through the lens of the social determinants of health. The course will explore responses to social factors that adversely influence vulnerability and health behaviors.

***NURSE 6509 Role of the Clinical Nurse Specialist/Nurse Practitioner: 2 semester hours***

Prerequisites: Admission to the Master's Program in the College of Nursing or consent of instructor. This course will focus on issues affecting the emerging roles of the nurse practitioner and clinical nurse specialist. It is designed to facilitate the role development of nurses who desire to function as primary care providers and/or as specialists within a specific clinical area of advanced nursing practice. Emphasis include sub-roles of advanced practice (leader, consultant, expert, researcher, educator), legal and professional issues, change theories, and standards of practice.

***NURSE 6518 Pathophysiology for Advanced Nursing Practice: 3 semester hours***

Prerequisites: Consent of Program Director. This course prepares the student to interpret changes in physiology that result in symptoms indicative of illness by a systematic examination of disease processes. The graduate student will compare and contrast differential diagnosis within physiological systems of sub-cellular and cellular origin, biochemical, and anatomical changes across the life span.



***NURSE 6520 Pharmacology for Advanced Nursing Practice: 3 semester hours***

Prerequisites: NURSE 6518 or consent of Program Director. This is a course in clinical pharmacotherapeutics that builds on prior knowledge of drug classifications, actions, interactions, and adverse drug reactions. The major focus of the course is the pharmacotherapeutic use of medications for primary healthcare management by advanced practice nurses. Emphasis is placed on clinical critical thinking processes used to prescribe drugs in the management of specific illnesses. The laws and regulations for advanced practice nurse prescriptive authority will be addressed. Emphases include pharmacodynamics, pharmacokinetics, pharmacotherapeutics, health-related information, medication compliance, and issues that pertain to the prescribing of medications in advanced nursing practice.

***NURSE 6521 Healthcare Finance: 3 semester hours***

Prerequisites: Graduate Admission. This course analyzes various financial sectors of the healthcare system. Analyses of the financial and economic structures for providers, health insurance organizations, pharmaceutical industries, not-for-profit, and federally-funded clinics will occur.

***NURSE 6524 Health Assessment for Advanced Nursing Practice: 3 semester hours***

Prerequisite: NURSE 6518 or consent of Program Director. This course provides a systematic approach to advanced physical assessment as well as psychological, sociocultural, developmental, and spiritual assessment of individuals across the life span. This course builds upon basic health assessment knowledge and skills, laboratory work interpretation, validation, documentation, and analysis of assessment findings. This course includes mandatory didactic and clinical experiences.

***NURSE 6527 Patient Safety, Performance Improvement, and Compliance: 3 semester hours***

Prerequisites: Graduate standing. This course covers the key principles of patient safety, performance improvement, and compliance. The epidemiology of healthcare error, distinguishing safety from quality, and understanding the policy environment for patient safety will be examined. Strategies to enhance patient safety, evaluation of performance improvement activities, and the management for the risk of error will be addressed.

***NURSE 6530 Clinical Diagnostics for Advanced Nursing Practice: 3 semester hours***

Prerequisites: Consent of Program Director. This course provides an introduction to the interpretation and appropriate use of diagnostic measures for advanced practice nurses in primary care settings. Special attention is paid to laboratory, radiographic and diagnostic testing. In addition, clinical opportunities will be provided to gain clinical interventional skills for advanced practice nursing.

***NURSE 6660 Introduction to Health Systems Management, and Policy for Underserved: 3 semester hours***

Prerequisites: Consent of Program Director. This course provides a comprehensive survey of the U.S. health care system, healthcare policy, integrative care practice models, and management principles useful in primary care settings dedicated to underserved populations. Selected topics include health behaviors, health maintenance and the management of primary healthcare in underserved populations, access to mental health care and substance abuse treatment, the U.S. healthcare system (both public and private sectors), the legal and ethical bases for caring for the underserved, the public policy-making process, and management principles of strategic planning, marketing, and project management in clinics serving the underserved. The analysis of community health indicators, health disparities, and healthcare trends impacting underserved populations will be incorporated into a community based experience.

***NURSE 6721 Foundations of Psychiatric Mental Health: 3 semester hours***

Prerequisites: NURSE 6518, NURSE 6520, NURSE 6524. This course provides a foundation for students to assume advanced practice nursing roles in health promotion, disease prevention, diagnosis, and management of psychiatric health and mental illness across the lifespan and within the family context. A foundation for an integrative practice, including psychiatric interviewing, psychotherapy, neurobiology, and psychopharmacology for the management of psychiatric conditions will be developed.

***NURSE 6722 Foundations of Adolescent and Geriatric Health: 3 semester hours***

Prerequisites: NURSE 6518, NURSE 6520, NURSE 6524. This course provides a foundation for students to assume an advanced practice nursing role in the care of adolescent and geriatric populations. Therapeutic strategies to address adolescent and geriatric health promotion, preventative care and the most common health conditions managed in these populations in primary care practice will be developed.

***NURSE 6723 Foundations of Pediatric Health: 3 semester hours***

Prerequisites: NURSE 6518, NURSE 6520, NURSE 6524. This course provides a foundation for students to assume advanced practice nursing roles in health promotion, disease prevention, diagnosis and management of health and illness in newborn, infant, child and adolescent populations within the family context. Therapeutic strategies about pediatric preventive care, behavioral health, common pediatric office-based procedures, pediatric prescribing practices, and the most common health problems managed in pediatric primary care will be developed.

***NURSE 6724 Foundations of Women's Health: 3 semester hours***

Prerequisites: NURSE 6518, NURSE 6520, NURSE 6524. This course provides a foundation for students to assume an advanced practice nursing role in health promotion, disease prevention, health maintenance, and the diagnosis and management of common conditions affecting women across the lifespan. Emphasis is placed on clinical assessment and decision making related to primary care management of reproductive growth and development, common acute and chronic primary health conditions, and behavioral health in gender-related populations.

***NURSE 6730 Nursing Administrative Leadership in Healthcare I: 3 semester hours***

Prerequisites: NURSE 6418, NURSE 6526, NURSE 6527. This course focuses on enhancing administrative practice skills through analysis of concepts appropriate to a variety of nursing and health care delivery systems. The focus will be on developing skills needed for nursing and health care administrative leadership practice in complex health care systems in the core domain of knowledge of the healthcare environment.

***NURSE 6731 Nursing Administrative Leadership in Healthcare II: 3 semester hours***

Prerequisites: NURSE 6418, NURSE 6526, NURSE 6527. This course focuses on enhancing administrative practice skills through analysis of concepts appropriate to a variety of nursing and health care delivery systems. The focus will be on developing skills needed for nursing and health care administrative leadership practice in complex health care systems in the core domains of communication and relationship building, leadership, professionalism, and business skills and principles for healthcare.

**NURSE 6737 Psychiatric Mental Health I: 4 semester hours**

Prerequisites: NURSE 6721. This course develops the advanced practice nursing role in caring for individuals with a mental health disorder, across the lifespan and within the family context. Strategies for the assessment, diagnosis and holistic management of common mental health disorders will be developed.

**NURSE 6738 Psychiatric Mental Health II: 4 semester hours**

Prerequisites: NURSE 6737. This course investigates the role of the psychiatric health mental nurse practitioner in the restoration and promotion of mental health. Strategies into the assessment, diagnosis and holistic management of individuals with complex mental health needs, including the application of advanced prescribing practices, psychotherapeutic care, and maintenance of overall healthcare needs will be developed.

**NURSE 6739 Adult Health I: 4 semester hours**

Prerequisites: NURSE 6722 or NURSE 6723. This course prepares students to assume an advanced practice nursing role when caring for adults across the lifespan within a family context. Strategies for the assessment, diagnosis, and holistic management of common acute, chronic, and behavioral health conditions addressed in a primary care setting for adults will be developed.

**NURSE 6740 Adult Health II: 4 semester hours**

Prerequisites: NURSE 6739. This course prepares students to assume an advanced practice nursing role in caring for adults across the lifespan within a family context. Strategies for the assessment, diagnosis, and holistic management of common acute, chronic, and reproductive health conditions addressed in a primary care setting will be developed.

**NURSE 6741 Family Health I: Diagnosis and Management of Advanced Practice Nursing: 4-5 semester hours**

Prerequisites: NURSE 6518, NURSE 6520, NURSE 6524 or consent of the Program Director. This course builds upon the advanced practice foundational courses of pathophysiology, pharmacology and advanced physical assessment to prepare students to assume roles in the advanced nursing care of individuals and families across the lifespan. Emphasis is placed on clinical assessment and decision-making in the provision of direct patient care within a defined scope of practice. Students will synthesize prior learning and apply primary prevention strategies into the diagnosis and holistic management of common acute, chronic and mental health problems in this population.

**NURSE 6742 Family Health II: Diagnosis and Management in Advanced Practice Nursing: 4-5 semester hours**

Prerequisites: NURSE 6741 or consent of Program Director. This course builds upon the advanced practice foundational courses of pathophysiology, pharmacology and advanced physical assessment to prepare students to assume roles in the advanced nursing care of individuals and families across the lifespan. Emphasis is placed on clinical assessment and decision-making in the provision of direct patient care within a defined scope of practice. Students will synthesize prior learning and apply primary prevention strategies into the diagnosis and holistic management of common acute, chronic and mental health problems in this population.

**NURSE 6743 Pediatric Health I: Acute and Chronic Care: 4 semester hours**

Prerequisites: NURSE 6723. This course prepares students for the advanced practice nursing role when caring for infants, children, and the adolescent populations within the family context. Strategies for the assessment, diagnosis and holistic management of common episodic complaints and chronic condition management in the pediatric primary and acute care settings will be developed.

**NURSE 6744 Pediatric Health II: Comprehensive Primary Care: 4 semester hours**

Prerequisites: NURSE 6743. This course prepares students for the role of the advanced practice nurse in the pediatric primary care setting and in the promotion of child health. Strategies for the assessment, diagnosis and holistic management of children with complex health needs in providing effective health promotion and health care services will be developed.

**NURSE 6745 Pediatric Health II: Complex Acute Care: 4 semester hours**

Prerequisites: NURSE 6743. This course prepares students for the role of the pediatric nurse practitioner in restoring a child's health when complex illness or injury occurs in the acute care setting. Strategies into the assessment, diagnosis and holistic management of children with complex health needs will be developed.

**NURSE 6746 Women's Health I: 4 semester hours**

Prerequisites: NURSE 6724. This course prepares students to assume roles in the advanced nursing care of women considering related gender issues across the lifespan with an emphasis on common acute and chronic gynecologic conditions. Strategies for the diagnosis and holistic management of common acute and chronic gynecologic health problems in gender-related populations will be developed.

**NURSE 6747 Women's Health II: 4 semester hours**

Prerequisites: NURSE 6746. This course prepares students to assume roles in the advanced nursing care of women with an emphasis on reproductive healthcare. Strategies for the diagnosis and holistic management of complex reproductive health conditions including preconception, obstetrical, and postpartum care as well as family planning and infertility will be developed.

**NURSE 6748 Neonatal Nursing I: 3 semester hours**

Prerequisites: NURSE 6525, NURSE 6528, NURSE 6517, or consent of instructor; NURSE 6749 may be taken concurrently. The first of two courses that integrate the physiologic, pharmacologic, and assessment skills and principles in determining appropriate care of the ill neonate. Current research and evidenced-based practices are used as the course framework. The effects of critical conditions on the growth and development of the neonate, including subsequent chronic health problems as well as the short and long term consequences to the child's family are emphasized. Disorders of the central nervous, pulmonary, and cardiovascular systems will be discussed. The use of specific interventions and diagnostic procedures are demonstrated and applied in laboratory/clinical settings during forty hours of required clinical activities.

**NURSE 6750 Acute Child Health I: Diagnosis and Management in Advanced Practice Nursing: 4 semester hours**

Prerequisites: NURSE 6529 or consent of the Program Director. This is the first of two courses in which the management of complex acute, critical, and chronically ill patients for urgent and emergent conditions is explored. The focus is on alterations in pathophysiology, advanced assessment, diagnosis, and collaborative management of infants, children and adolescents with selected episodic/chronic health problems in acute/critical care.

**NURSE 6751 Acute Child Health II: Diagnosis and Management in Advanced Practice Nursing: 4 semester hours**

Prerequisites: NURSE 6750. This is the second of two courses which builds upon prior acute care pediatric content and focuses on critical complex and end of life care. The emphasis is on evidenced based strategies to stabilize the patient's condition, assess the risk for and prevent complications, and restore maximum health and/or provide palliative care in the context of the patient's developmental, physical and psychosocial environment.

***NURSE 6870 Special Topics in Advanced Practice Nursing: 1-4 semester hours***

Prerequisites: Consent of instructor. Explore special topics for the advanced practice nurse in the areas of research, theory, education and administration. No more than three hours shall be applied toward the degree. This course is for graduate MSN or PhD levels.

***NURSE 6875 Special Study in Graduate Nursing: 1-3 semester hours***

Prerequisites: Admission to MSN program or consent of instructor. In-depth study of selected topics in nursing under the guidance of a specific instructor. No more than three hours may be applied to the master's program of study.

***NURSE 6934 Leadership in Population Health and Healthcare Systems Residency I: 2-4 semester hours***

Prerequisites: Consent of the instructor and graduate standing. This clinical course is designed to provide a theoretical and practical base for leadership development in population health and community health and organizational management. Emphasis is placed on clinical assessment and decision-making in the populations and community-level interventions to change health outcomes. The student is expected to clinically apply the concepts and theories discussed in class that address health disparities in underserved populations, infectious diseases, and community-level responses to chronic conditions. Clinical experiences are designed to enhance assessment and technical skills.

***NURSE 6935 Leadership in Population Health and Healthcare Systems Residency II: 2-4 semester hours***

Prerequisites: Consent of the instructor and graduate standing. This clinical course provides continued precepted experiences that allow students to develop the nurse practitioner role and clinical competencies within their specific emphasis area. Students integrate theory and clinical competencies to provide preventative care, health promotion, health education, health systems leadership, policy and evidence-based care populations.

***NURSE 6951 Advanced Intensive Clinical for the Nurse Educator: 2 semester hours***

Prerequisites: NURSE 6520, NURSE 6524, NURSE 6309. This course provides a concentrated opportunity to function in an advanced nursing role as a nurse educator incorporating an intensive clinical experience focusing on the student's chosen population.

***NURSE 6952 Synthesis Practicum: 3 semester hours***

Prerequisites: All required courses in the Nurse Educator or Nursing Leadership of Health Systems option or consent of instructor. This clinical course is a concentrated opportunity to function in an advanced nursing role as a nurse administrator, integrating clinical and functional role activities within a chosen setting. Emphasis includes educator or administrator nursing practice, functional role responsibilities, and activities with emphasis on their relationship to client outcomes.

***NURSE 6954 Advanced Practice Nursing: Residency I: 2-4 semester hours***

Prerequisites: NURSE 6738, NURSE 6740, NURSE 6742, NURSE 6744 or NURSE 6747. This clinical course provides precepted experiences that allow students to continue to develop the nurse practitioner role and clinical competencies within their specific emphasis area. Students integrate theory and clinical competencies to provide preventative care, health promotion, health education and evidence-based care for acute, chronic and mental health conditions for individuals and families.

***NURSE 6955 Advanced Practice Nursing: Residency II: 2-4 semester hours***

Prerequisites: NURSE 6954. This clinical course provides a continuation of precepted experiences that allow students to develop the nurse practitioner role and clinical competencies within their specific emphasis area. Students integrate theory and clinical competencies to provide preventative care, health promotion, health education and evidence-based care for acute, chronic and mental health conditions for individuals and families.

***NURSE 7200 State of the Science in Nursing Research and Practice: 3 semester hours***

Prerequisites: Consent of Program Director. This course examines the state of scientific knowledge in nursing research and practice. Gaps in the nursing research and practice are identified. Interrelationships between nursing science and scientific developments in other disciplines from the perspectives of health outcomes, population health indices, and policy implications of scientific progress are analyzed. Advances in biophysiological, psychosocial, sociocultural, health systems, and health economics research and the implications for translation to improve nursing science and practice are analyzed.

***NURSE 7209 Advanced Nursing Roles and the Role of the DNP: 3 semester hours***

Prerequisites: Consent of Program Director. This course provides students with the opportunity to synthesize and analyze knowledge of the advanced nursing role and the DNP role within a specified population focus and role. The overview of selected theories and frameworks that can be used to guide advanced practice nurses and nursing leaders in facilitating the use of evidence-based practice, understanding cultural aspects of care, and framing situational awareness. Emphasis includes sub-roles of the doctorally-prepared nurse including Advance Practice Registered Nurse (APRN), leader, consultant, expert, researcher, and educator.

***NURSE 7211 Biostatistics I: 3 semester hours***

Prerequisites: Consent of Program Director. This course provides a foundational understanding of the use of biostatistics in conducting research. Types of data, data description, logic of sampling and test statistics, hypothesis testing, type 1 and type 2 errors, covariates and confounding variables, and clinical versus statistical significance are included. Opportunities will be provided to gain skills conducting statistical analysis using SPSS, interpreting the results of analytic processes, and applying the results to common health and illness examples encountered in research publications.

***NURSE 7212 Biostatistics II: 3 semester hours***

Prerequisites: NURSE 7211 or permission of the instructor. This course emphasizes applications of inferential statistics including analysis of variance, simple and multiple linear and logistic regression models, tests of mediation and moderation, and repeated measures and an introduction to longitudinal analyses. The analytic methods and applications will be framed within the health science research field with emphases placed on designing and conducting studies and appropriate analyses using the techniques described above.

**NURSE 7213 Biostatistics III - Structural Equation Modeling: 3 semester hours**

Prerequisites: NURSE 7211 Biostatistics I (or its equivalent), NURSE 7212 Biostatistics II (or its equivalent). This course serves as an introduction to structural equation modeling (SEM). The overall objective is to develop a solid conceptual and theoretical understanding and ability to use SEM and its extensions correctly and effectively in independent research. Topics include factor analysis, path analysis, and basic principles of model building. Applications and extensions of SEM, such as scale construction and validation, mediation and moderation, multi-group analyses, and latent growth modeling are also included. Students will have the opportunity to work on projects tailored to their research interests and needs.

**NURSE 7215 Evidence-Based Practice For the DNP: 3 semester hours**

Prerequisites: NURSE 6130. This course examines the state of clinical inquiry and the implementation of evidence into practice. The relationship between clinical questions and the critical appraisal and synthesis of research and literature is explored. Models for implementing and sustaining change based on the evidence are examined.

**NURSE 7220 Leadership in Practice: 3 semester hours**

Prerequisites: Consent of Program Director. This course provides students with the opportunity to develop and refine critical leadership skills by focusing on improving the health of individuals and populations. The course uses a combination of didactic lectures, case-based learning and experiential exercises to explore leadership competencies including change management, strategy implementation, quality improvement, effective communication, team dynamics, and systems thinking. Emphasis is on using models and theories that facilitate inter-professional collaboration to achieve optimal health outcomes. The focus is effective communication and leadership methods necessary to establish successful inter-professional teams. Students will enhance skills in verbal, written and electronic communication; team leadership; and creating and sustaining health related initiatives. Through advanced understanding of the inter-professional dimension of healthcare, students will facilitate collaboration and remove barriers to providing safe, timely, effective, efficient, equitable and patient centered care in healthcare systems.

**NURSE 7230 Epidemiology: 3 semester hours**

Prerequisite: NURSE 7211 or Consent of Program Director. This course covers epidemiology, logistic modeling, and public health surveillance in primary healthcare. It provides an introduction into investigation of outbreaks. The course will enable the healthcare professional to develop a knowledge base to address issues of health and illness of a population.

**NURSE 7240 Health Informatics: 3 semester hours**

Prerequisites: Consent of the Program Director. This course explores information systems and computer technologies that can improve the health of individuals, families, communities, and populations by optimizing information management and communication. Focus areas include the electronic medical record, technologies to improve patient safety, standards for privacy and security, tele-health systems to improve healthcare access to underserved populations, use of web-enhanced technologies for research translation, and strategies to provide data for decision making and evidence-based databases. Emphasis is placed on developing competence in technology use for the purpose of program evaluation, establishing healthcare quality, and improving healthcare delivery to diverse populations in complex healthcare settings.

**NURSE 7251 Healthcare Economics: 3 semester hours**

Prerequisites: Consent of Program Director. This course introduces the student to the basic economic concepts and analytical methods used to understand, analyze, and evaluate economic aspects across various sectors of the healthcare system including clinics, underserved and rural populations, the role of government in the delivery of healthcare services, and the economic aspects of healthcare reform. The course applies tools of analysis to the behavior of households, healthcare providers, health insurance organizations, pharmaceutical industries, and not-for-profit and federally-funded clinics.

**NURSE 7260 Program Evaluation and Quality Management in Healthcare: 3 semester hours**

Prerequisite: None. This course introduces students to the principles and procedures for assessing the quality and effectiveness of programs, projects, and materials related to planned interventions and systems changes in health settings. An overview is provided of past and current strategies to define and assess the quality of healthcare delivery using tools required to examine, evaluate, and implement the key structures and processes of quality improvement programs in healthcare organizations. Practical applications that prepare the participants to use the theory and techniques of quality improvement in situations with complex clinical and managerial implications will be incorporated.

**NURSE 7291 DNP Capstone I: 2 semester hours**

Prerequisites: NURSE 7215. This course provides opportunities for development of practice expertise into a systems-level approach to create change in a targeted population within a healthcare or related environment. Students will develop their clinical scholarship project proposal.

**NURSE 7292 DNP Capstone II: 2 semester hours**

Prerequisites: NURSE 7291. This course provides opportunities to develop strategies to create change in a targeted population and complex healthcare environments. Students will implement evidence-based, clinical scholarship projects to improve health outcomes.

**NURSE 7293 DNP Capstone III: 2 semester hours**

Prerequisites: Consent of Program Director. This experience provides additional opportunities for the development of practice expertise to create change in a targeted population and complex healthcare environments. Students will develop skills to assess and diagnose healthcare systems and identify evidence-based strategies to improve health outcomes. This experience includes immersion in their population-focused scholarly project.

**NURSE 7299 DNP Seminar: 1-3 semester hours**

Prerequisites: All DNP required course work or Consent of Instructor. This seminar provides students with the opportunity to synthesize and analyze knowledge within the context of the emerging DNP role. Analysis of practice issues may include reflective practice, collaboration, health systems technology, ethics and policy.

**NURSE 7300 Prevention of Injury and Disability: 3 semester hours**

Prerequisites: Graduate status or consent of instructor. This course will examine trends in injury and disability nationally and internationally, relevant theories and conceptual models, the definition and measurement of key concepts, and analysis of interventions proposed for preventing injury and mitigating disability. The role of information and computer technologies in the management of disability will also be considered. Specific content will include age-related injury and disability, disability associated with cardiovascular and other chronic diseases, and the psychosocial contexts of disability, including traumatic stress and its outcomes.



***NURSE 7403 Development of the Nurse Scientist: 3 semester hours***

Prerequisite: Admission to doctoral study in nursing. This course addresses the role of the PhD-prepared nurse as scientist, leader, academician, and policy maker. Students will analyze strategies for lifelong learning and development as nurse scientists and will explore avenues for building their programs of scholarship, funding opportunities, and contributing to nursing science in policy and clinical practice. Students will examine ways to collaborate effectively in order to improve health care and health outcomes.

***NURSE 7443 Healthcare Policy and Economics: 3 semester hours***

Prerequisites: Graduate admission. This course introduces the student to economic and healthcare policy concepts using analytical methods to understand and evaluate the impact across various sectors of the healthcare system. The historical context of healthcare policy is explored.

***NURSE 7481 Development of Nursing Science and Theory: 3 semester hours***

Prerequisite: Admission to PhD Program. This course focuses on the discipline of nursing, including the evolution of the state of scientific inquiry and knowledge development in nursing. The course includes the aims of nursing science, the nature of nursing knowledge and scientific theories, and a discussion of relationships among theory, research, method, and practice. Students engage in constructive dialogue as they begin to conceptualize nursing phenomena in their area of interest.

***NURSE 7488 Introduction to Qualitative Research Methodologies and Methods: 3 semester hours***

Prerequisites: Admission to PhD program. This course introduces qualitative research methodologies and methods useful to healthcare and related sciences. Emphasis is placed on theoretical and philosophical perspectives, selection of appropriate methodologies, data collection and analysis methods, and critique. An overview of traditional and emerging designs, strengths and limitations of various methodologies, and ethical concerns will be addressed.

***NURSE 7490 Advanced Nursing Research Designs and Methods: 3 semester hours***

Prerequisite: Admission to the PhD program. This course focuses on development of the research plan including issues in sampling, design, and implementation nursing research. Students will evaluate research methods to answer research questions in their area of interest. Content includes design and analysis issues affecting validity, examination of measurement techniques for assessing validity, reliability, structure of data collection instruments, and criteria for instrument selection. A research proposal will be prepared.

***NURSE 7491 Advanced Nursing Theory Development and Validation: 3 semester hours***

Prerequisite: Admission to PhD program. This course focuses on a systematic study of contemporary nursing science and related theories in knowledge development, and the application of theory construction and validation strategies to specific nursing phenomena of interest. Students create and critically examine theoretical frameworks and models, with emphasis placed on constructing and testing theoretical statements.

***NURSE 7495 Mixed Methods Research in Health Care: 3 semester hours***

Prerequisites: NURSE 7490, NURSE 7488; or consent of the instructor. Emphasis will be on merging methods and addressing epistemological and paradigmatic issues. The value and use of the mixed methods approach, philosophical assumptions, types of designs, and approaches to designing and conducting mixed methods research in health care related disciplines will be emphasized.

***NURSE 7496 Seminar in Advanced Qualitative Research Methods: 3 semester hours***

Prerequisites: NURSE 7488 or consent of the instructor. This course is designed to engage nurse researchers in the applied collection and analysis of qualitative data and the dissemination of qualitative findings. This course explores congruent systematic analyses/interpretations based upon a variety of philosophical and/or theoretical stances, which could include phenomenology, hermeneutics, ethnography, grounded theory, case study, participatory action research, critical theory or other post-colonial and feminist approaches, textual analysis, aesthetic inquiry and others. Dissemination of findings will be emphasized as well as issues related to data management, rigor, and funding of qualitative proposals. Contemporary approaches to multiple methodology studies and innovative designs will be addressed. Students will be encouraged to practically engage in a methodology of choice in depth.

***NURSE 7497 Design, Implementation and Evaluation of Health Interventions: 3 semester hours***

Prerequisites: NURSE 7490 or consent of the instructor. This course focuses on developing skills in designing, delivering, and evaluating evidence-based health interventions that integrate relevant theoretical, research, social determinants, and biobehavioral variables with salient cultural variables for targeted groups. The course includes the application of research skills and empirical foundation for advanced research intervention design and evaluation related to a focal area of research interest.

***NURSE 7498 Doctoral Seminar: 1-12 semester hours***

Prerequisite: Consent of instructor. Presentation and discussion of pertinent methodological and clinical issues related to doctoral research.

***NURSE 7499 Dissertation Research: 1-12 semester hours***

Prerequisite: All required course work; successful completion of comprehensive examination. Investigation of an advanced nature culminating in successful defense of dissertation. Continuous registration is required.

***NURSE 7529 Special Topics in Qualitative Systematic Reviews: 3 semester hours***

Prerequisites: NURSE 7488 or equivalent. This course examines and carries out elements of qualitative systematic reviews, such as topic/problem identification, data collection, and analysis. Students will gain an understanding of how to limit threats to validity and maximize generalizability.

***NURSE 7530 Community Health and Infrastructure Assessment: 3 semester hours***

Prerequisites: Consent of the instructor and graduate standing. This course will introduce community health assessment and community infrastructure assessment. Participants will be introduced to the information and the resources available to secure and improve resilience in the community's healthcare and public health infrastructure. Participants will also be given an opportunity to work on a community-based health assessment project in conjunction with a community partner. Much of the experience will be practical and hands-on. Participants may be asked to work with a new project or join in an ongoing project.

***NURSE 7870 Special Topics in Scientific Foundations of Research: 1-3 semester hours***

Prerequisites: Consent of the instructor and graduate standing. Explore special topics related to PhD dissertation. This course can be a cognate, elective, or for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

***NURSE 7934 Leadership in Population Health and Healthcare Systems Residency III: 2-4 semester hours***

Prerequisites: Consent of the instructor and graduate standing. This clinical course provides continued precepted experiences that allow students to develop the leadership and population-focused role and clinical competencies within their specific emphasis area. Students integrate theory and clinical competencies to population preventative care, healthcare, health promotion, health education, health systems leadership, policy, and evidence-based care populations.

***NURSE 7954 Advanced Practice Nursing: Residency III: 2-4 semester hours***

Prerequisites: NURSE 6955; may be taken concurrently with DNP Capstone. This clinical course provides continued precepted experiences that allow students to develop the leadership and population-focused role and clinical competencies within their specific emphasis area. Students integrate theory and clinical competencies to population preventative care, healthcare, health promotion, health education, health systems leadership, policy, and evidence-based care populations.

***NURSE 7955 Research Topics in Nursing and Health: Psychometrics: 3 semester hours***

Prerequisites: Admission to the College of Nursing PhD Program. This course focuses on theoretical foundations of measurement, item construction, instrument design, item analysis, validity and reliability assessment. Basic methodologies and techniques for constructing, testing, and evaluating instruments will be discussed. This course is for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

***NURSE 7956 Participatory Approaches for Health and Health Systems: 3 semester hours***

Prerequisites: Admission to the College of Nursing PhD Program. This course will focus on the use of participatory approaches for the design of health and health-system interventions. This course is for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

***NURSE 7957 Research Topics in Nursing and Health: Hierarchical Linear Modeling: 3 semester hours***

Prerequisites: Admission to the College of Nursing PhD Program. This course is an extension of regression methods to situations where data has multiple layers of meaningful structure. It emphasizes ability to specify, evaluate, and estimate a multilevel model using SPSS and HLM. This course is for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

***NURSE 7958 Comparative Effectiveness Research: 3 semester hours***

Prerequisites: Admission to the College of Nursing PhD Program. This course provides evidence on the benefits and harms of treatment and prevention strategies, for which patients they work best, under which circumstances, and at what time. This advanced quantitative methods class presents a framework for analyzing observational studies and randomized trials for comparative effectiveness. This course is for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

***NURSE 7959 Research Topics in Nursing & Health: Structural Equation Modeling: 3 semester hours***

Prerequisites: Admission to the College of Nursing PhD Program. This course focuses on factor analysis, path analysis, basic principles of model building, as well as applications and extensions of SEM such as scale construction and validation, mediation and moderation, multi-group analyses, and latent growth modeling. This course is for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

# College of Optometry

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This section contains an abbreviated version of the College of Optometry Bulletin. Some information is omitted.

For the most complete and accurate information regarding the Optometry program at UMSL, please go to the College of Optometry Home Page.

## General Information

The UMSL College of Optometry enrolled its first class in 1980, graduating 32 students in May 1984. The College is located on the South Campus complex of the University of Missouri-St Louis at 7800 Natural Bridge Road. A five-story building houses the College's classrooms, laboratories, research facilities, administrative offices, and the Center for Eye Care campus facility (the University Eye Center).

The College of Optometry is a member of the Association of Schools and Colleges of Optometry (ASCO) and is accredited by the Accreditation Council on Optometry Education (ACOE).

## The Doctor of Optometry (O.D.) Degree

A student who satisfactorily completes all four years of the professional curriculum will be eligible to receive the Doctor of Optometry degree.

The training and clinical experience optometry students receive at UMSL qualifies graduates to practice optometry in any state in the nation.

## Center for Eye Care

The Center for Eye Care provides a patient care environment for upper level optometry students and postdoctoral residents. The Center for Eye Care includes three locations: the University Eye Center on the UMSL South Campus, the Lindell Eye Center in the Central West End of the city of St. Louis, and the East St. Louis Eye Center on the campus of East St. Louis Community College Center. These and other affiliated health centers in the St. Louis area provide an instructional setting where student interns are exposed to a wide variety of patients under the direct supervision of College of Optometry faculty. Equally important is that these Centers provide exemplary, comprehensive and state-of-the-art eye and vision care to their patients.

The Centers provide a full range of optometric services including adult primary eye care, contact lens, pediatrics, binocular vision, low vision, and eye health management. Specialized testing of color vision and electrophysiology are also available.

Situated in Missouri's largest metropolitan area, the College of Optometry enjoys the region's strong community and professional support. The urban setting offers many opportunities for outreach programs, expanding the scope of optometric education and making possible a highly diverse program of clinical training. Another asset of the College is its proximity to the national headquarters of the American Optometric Association, located just a few miles from campus.

The curriculum leading to the doctor of optometry degree is a four-year, full-time program of study. The first year of the professional curriculum emphasizes basic and biomedical sciences and introduces students to optics of the visual system. The second year pertains to vision science and instruction in clinical examination techniques. The third year emphasizes patient care and introduces the student to specialty areas within optometry, such as contact lenses, pediatrics and geriatric vision care, binocular vision and vision therapy, and low vision rehabilitation. The

second and third years also include course work and clinical instruction in ocular disease and pharmacology. The fourth year includes six rotations through the externship program, giving the student added experience in the management of eye diseases, as well as valuable experience in other optometric clinical specialties.

## Fourth-Year Externship Program

In addition to the patient care experiences available through the University Eye Center, Lindell Eye Center, the East St. Louis Center, the College of Optometry also has a diverse Externship Program. Students must receive approval from the faculty and Director of the 4th Year Clinical Experience for assignments to each Externship site. This program allows fourth-year students to spend a portion of their final year of training in a variety of patient care environments (i.e., military bases, Veterans Administration Hospitals, Indian Health Services Hospitals, various specialty practices and private practices).

These six (6), eight (8) week externships are selected and scheduled with consideration given to the individual student's interest, needs and future practice intentions. Externship Rotations are located throughout the United States and select international sites. In this program, students leave the academic environment and begin working with selected eye care professionals while continuing to be monitored by the faculty through bi-weekly reports of patient encounters, therapies, and activities. The externship rotations are designed to give students exposure in the following areas:

- Pediatric/Binocular Vision Patient Care
- Contact Lens Patient Care
- Low Vision Patient Care
- General (Primary Optometric) Patient Care
- Refractive Management Patient Care
- Eye Health Management Patient Care
- Geriatric Patient Care
- Sports Vision Patient Care
- Optometric Rehabilitation Patient Care

## Student Organizations & Activities

All optometry students enrolled in the University of Missouri-St. Louis College of Optometry are eligible for membership in the various student optometric associations, including The Missouri Optometric Student Association (MOSA) and The American Optometric Student Association (AOSA). Through these organizations, and many others, students become involved in local and national optometric activities. The organizations provide an environment for the cultivation of professional leadership skills, and members have organized and participated in a variety of community service activities, including community health screenings and vision care to residents of nursing homes, convalescent hospitals, and mental institutions. Furthermore, optometry students have formed local chapters of Student Volunteer Optometric Services to Humanity (SVOSH), an international organization of optometrists providing free vision care to people in impoverished nations, and the National Optometric Student Association (NOSA), which strives to recruit minority students into optometry and encourages retention of minority students.

In addition to the many activities through the College of Optometry, optometry students are able to take advantage of all the activities provided by the university to the entire university community. These include intramural sports, movies and cultural activities, a new and fully-equipped

fitness center, and access to many social and cultural opportunities in St. Louis at reduced cost.

## Pre-Optometry Programs

The University of Missouri-St. Louis offers a four-year program of study leading to the doctor of optometry degree; this professional degree is administered by the College of Optometry. It is one of only 23 accredited programs in the United States and the only one in the state of Missouri. This program, as a result, makes UMSL an ideal institution for pre-optometry education. Various programs are available for pre-optometry as noted below.

Students may pursue a traditional 4 + 4 program, which is a bachelor's degree followed by the four-year graduate optometry program. In this case, students may pursue any bachelor's degree, as long as the pre-optometry requirements are met in biology, chemistry, mathematics, physics, psychology and English.

Alternatively, the Department of Arts and Sciences, sponsors a 3+4 Programs for the UMSL College of Optometry, for which a student may be admitted to the College of Optometry after completing three years (90 semester hours) of study in their respective majors and successful completion of the Optometry Admission Test (OAT). For more information, please contact the Pre-Health Advisor in the Marcus Allen Advising Center in the College of Arts and Sciences via email: [artscience@umsl.edu](mailto:artscience@umsl.edu) or by phone: 314-516-5501 for specific requirements. You can also visit the Pre-Health Advising Website for additional information at: <http://www.umsl.edu/divisions/artscience/student-resources/prehealth/index.html>.

The Pierre Laclède Honors College and the College of Optometry also offer the Scholars Program, which allows a student to complete both the undergraduate and doctor of optometry degrees in seven years. To qualify for this program, a student must be a senior in high school; score a minimum composite of 27 on the ACT; and be accepted to the UMSL Pierre Laclède Honors College program. For more information about the Scholars Program, contact the Pierre Laclède Honors College, (314) 516-7769.

For the programs described above (Scholars or 3+4), the undergraduate degree is granted when the student satisfactorily completes the first year of the professional program and has met all of the conditions for the specific undergraduate degree for which the student has applied.

In exceptional circumstances, students with exemplary qualifications may be admitted to the optometry program without a degree.

### Admission Requirements

- Semester:
  - English - 2
  - Biology (including laboratory)<sup>1</sup> - 3
  - Physics (including laboratory) - 2
  - Chemistry<sup>2</sup>
    - General (including laboratory) - 2
    - Organic (including laboratory) - 1
  - Calculus - 1
  - Statistics - 1
  - Psychology - 1
  - Liberal Arts - 2
- Quarter :

- English - 3
- Biology (including laboratory)<sup>1</sup> - 4
- Physics (including laboratory) - 3
- Chemistry<sup>2</sup>
  - General (including laboratory) - 3
  - Organic (including laboratory) - 2
- Calculus - 1
- Statistics - 1
- Psychology - 1
- Liberal Arts - 2

<sup>1</sup> One semester (or one quarter) of Microbiology with laboratory is a requirement. One semester of Anatomy or Physiology is strongly recommended.

<sup>2</sup> One semester of Biochemistry, Cell Biology or Human/Comparative Physiology is strongly recommended.

The College of Optometry uses a rolling admissions process. All courses used to satisfy the admission requirements must have been taken at an institution fully accredited by one of the Department of Education regional accreditation bodies. Specific prerequisite courses must be taken for a letter grade; they cannot be taken as an audit or on a pass/fail or satisfactory/unsatisfactory basis. Applicants must have completed 90 semester or 135 quarter hours (the equivalent of three years of college education) before the start of classes. The applicant cannot apply more than 60 semester hours or 90 quarter hours which were earned at a two year institution toward the credit-hour requirement. Applicants holding a bachelor's degree will be given preference over applicants with similar academic credentials who do not have a degree. Applicants to the college come from a variety of undergraduate backgrounds, such as biological sciences, chemistry, psychology, education, and business.

### Advanced Placement Credit (AP) Policy (effective July 1, 2014)

A total of 10 hours of AP credit is acceptable if the applicant scored 4 or greater in the subject on the AP Exam. An official transcript is required.

For science courses, in addition to the 10 hour limit and a score of 4 or higher achieved on the exam, the applicant must score a 330 or higher in relevant subject areas of the OAT exam.

## Admission Test

Students should work with their undergraduate advisors as well as their academic advisor in optometry, to insure that all pre-requisite courses are taken prior to taking the Optometry Admission Test (OAT).

The Optometry Admission Test (OAT) is the preferred qualifying exam that determines an applicant's eligibility for an interview. Beginning with applicants applying July 1, 2019 the college will also consider test scores from the Dental Admissions Test (DAT), Medical College Admissions Test (MCAT), and the Pharmacy College Admissions test (PCAT). Please contact the College of Optometry's office of admissions for more information regarding the acceptance of these exams. Official test scores from qualifying exams are valid for up to three years from the testing date. Students should plan to take the OAT after completing courses that are tested on the exams. Typically students should plan to take the exam during the summer between the third and fourth year of their undergraduate program.



Applicants are encouraged to take the examination by June of the year of application to the College of Optometry. If applicants wish to enhance their scores, the examination may be repeated. For OAT information, contact:

## Optometry Admission Testing Program

211 East Chicago Ave.  
Suite 1846  
Chicago, IL 60611  
(312) 440-2693  
<http://www.opted.org>

To apply to take the OAT, please click on the OAT link on [www.opted.org](http://www.opted.org) (on right).

## Application Procedures

The OptomCAS application opens on July 1 for the class entering the following year. An applicant's file will be considered complete and ready for consideration by the Admission Committee when the following material has been received:

\*Asterisked items are processed by Centralized Application Service:

- \*Verified Centralized Application Service (OptomCAS) application
- Supplemental Application through UMSL including a \$50.00 non-refundable application fee
- \*Three letters of recommendation including one from a practicing optometrist processed through OptomCAS
- \*Official scores from qualifying examination (OAT)

Please send directly to OptomCAS:

- \*Official high school and college transcripts, followed by updated transcripts as they become available. (Exception: graduates of international programs see deadline requirement for all transcripts).

Official transcripts must be submitted to OptomCAS and must be mailed or electronically sent through a secure transcript processing service such as the National Clearinghouse, etc. Transcripts must be sent from every college attended regardless of whether courses appear on your current institution transcript. AP Scores should not be sent to OptomCAS.

Letters of recommendation must be submitted by the originator through a direct link provided by OptomCAS. It is the applicant's responsibility to ensure all application materials are received by the Centralized Application Service center by April 1 to be considered for admission to the class entering in August of the same year. Application material received after April 1 will not be evaluated for the class entering in August of the same year. To insure that all materials will be processed in time, we strongly encourage students to complete his/her OptomCAS application and insure all transcripts and letters of recommendation are received at OptomCAS at least four weeks prior to the April 1st deadline. To be considered for merit scholarships, there is an early application deadline. All materials must be received by January 15 in order to be considered for the early application deadline. Applications received after that time will still be considered for admission but not for additional awards, e.g. merit scholarships, state seat contracts.

## International Students

International students whose native language is not English and who have spent less than two of the last three years in an English-speaking

country are required to submit scores from an internationally accepted standardized examination before a decision is made on admission.

To complete their credential file, applicants are required to furnish original and official transcripts the year prior to admission from each school and college attended both in the U.S. and abroad. All international transcripts must be evaluated by The Educational Credentials Evaluators, Inc. or the World Education Services and these evaluations should be sent directly to the UMSL. International transcripts should not be sent to OptomCAS.

For information contact:

## Educational Credentials Evaluators, Inc.

Post Office Box 514070  
Milwaukee, WI 53203-3470  
(414) 289-3400  
Fax: (414) 289-3411  
Email: [eval@ece.org](mailto:eval@ece.org)  
Web site: <https://www.ece.org>

## World Education Services

P.O. Box 5087  
New York, N.Y. 10274-5087  
(212) 966-6311  
Fax: (212) 939-6100  
Email: [info@wes.org](mailto:info@wes.org)

The University of Missouri-St. Louis maintains an Office of International Student Services to assist applicants who have been offered admission. All new international students are required to attend a formal orientation program before matriculation. For more information, contact:

## University of Missouri-St. Louis

Office of International Student Services  
One University Blvd.  
St. Louis, MO 63121-4499  
(314) 516-5229  
Email: [iss@umsl.edu](mailto:iss@umsl.edu)

## Selection Procedures

Applications are reviewed beginning after July 1 of the year prior to matriculation with interviews starting in August. The college uses a 'rolling admissions' process that allows qualified applicants to be admitted on an ongoing basis until the class is filled. Therefore, applicants are encouraged to apply as early as possible to ensure full consideration for admission.

The Admissions Committee has the responsibility to review and evaluate all applicants and select the best qualified candidates. The committee considers: cumulative GPA, science GPA, and OAT scores. Candidates are also evaluated on less quantitative measures such as extracurricular activities and interests, related or unrelated work experience, essay, and letters of recommendation.

Those applicants whom the committee finds to be most competitive will be invited for an on-campus interview. The on-campus interview facilitates an assessment of the applicant's communication skills, interests, motivation, and personal characteristics. In addition, the on-campus interview allows the applicant to tour the facilities, meet with currently enrolled students, and learn more about the University of Missouri-St. Louis and the College of Optometry. From this group of interviewed applicants, the entering class of 46-48 students, plus any alternate positions, will be selected.

Once an offer of admission is made to an applicant, the applicant will be contacted by OptomCAS to complete a criminal background check. We encourage applicants to review the criteria for background check on the OptomCAS website. [www.optomcas.org](http://www.optomcas.org)

The policies of the University of Missouri-St. Louis and the College of Optometry comply with the provisions under those laws that forbid discrimination on the basis of race, color, religion, sex, sexual orientation, national origin, age, disability or veteran status.

## Admission Process

Notices of acceptance may be received as late as July of the year in which the students enter the program. Individuals on the alternate list may be contacted at a later date. If acceptance to the class is conditional, the terms of the condition must be completed prior to matriculation. Applicants who have indicated that degree requirements will be completed prior to matriculation, and who have been selected for admission, may receive a conditional offer of acceptance contingent upon completion of the degree and any outstanding prerequisites.

Students offered admission have 20 days from the date on the offer of admission letter to make a required \$500 seat deposit. The \$500 deposit will be credited toward tuition when the student matriculates. If the student withdraws from consideration prior to May 15th, \$250 will be refunded. After May 15th, no refunds will be given. There is a \$250 administrative fee.

A certain number of applicants are placed on an alternate list. If an applicant who has been offered admission declines the offer, their position will be allocated to the next individual on the alternate list.

Notification of denial is sent by mail and/or email. Applicants who do not receive an offer of admission may reapply the following year through OptomCAS.

## Financial Aid

The University of Missouri-St. Louis maintains an Office of Student Financial Aid to assist students with the cost of their education.

Financial assistance is available in the form of loans, scholarships, and work-study. Funds for these programs are available from federal, private, state, and institutional resources. To apply for financial aid, students must complete a Free Application for Federal Student Aid (FAFSA). Preference will be given to those students who have completed the FAFSA by March 1. Preference means that the Student Financial Aid Office will begin awarding FWS (Federal College Work-Study), and maximum government allowable funding under subsidized loans. A completed financial aid application means that the Financial Aid Office has received an official Student Aid Report from the Federal Processing Center. Information about Federal loan programs and FAFSA are available at [www.fafsa.ed.gov](http://www.fafsa.ed.gov)

To be considered for all university scholarships offered through the Financial Aid Office, a student must be accepted for admission.

Many state optometric associations and their auxiliaries offer scholarships and grants. Application is generally made directly to the state association or auxiliary and selection is generally made on the basis of state residence and other criteria. Information may be obtained by writing to the various state optometric associations and/or auxiliaries.

The College of Optometry provides additional information about scholarships via the Handbook of Loans, Scholarships, Grants, and

Awards once an offer for admission is accepted. Many of the scholarships are listed on the College Website.

## Fees

Detailed information regarding current fees and residency regulations is furnished on the UMSL Cashier's website.

The university reserves the right to change fees and other charges at any time without advance notice.

## Education Fees

All students enrolled in the University must pay educational fees based on either the schedule for Missouri residents or the schedule for non-residents. All optometry students will be required to pay the non-resident educational fee if they do not meet the University of Missouri residency requirements at the time of enrollment.

For current fees and costs, please check the fee section of the Cashier's Website and be certain to select appropriately optometry resident / nonresident.

A Summer Session is required following the second and third professional year.

## Other Required Fees

All students are required to pay the following fees each semester: Information Technology Fee; Student Facility, Activity, and Health Fee. In addition, the University Eye Center fee is applied to the fall and spring semesters. Please refer to the Fees Section of the Cashier's website for current fees and caps on fees.

## Student Health Insurance (optional)

An Accident and Sickness Insurance plan is available to students and their dependents. Information concerning premiums and coverage is available upon request from University Health Services or call (314) 516-5671.

## Nonresident Students

Optometry students who do not meet the residency requirements must pay the nonresident educational fee according to the schedule above. A definition of 'residency' is outlined in Tuition and Residency Rules, available in the cashier's office. (314-516-5151) Students are responsible for registering under the proper residence and paying the proper educational fees.

Twelve positions (average of three each year) are allocated by state reciprocal agreement with the State of Kansas for residents of Kansas. Individuals who are admitted under these agreements will pay reduced non-resident fees. To apply for this award, applicants must be certified as a bonafide Kansas resident and meet financial need (FAFSA). Additionally, Kansas residents accepting a seat are required to return to Kansas to practice following graduation or completion of a residency program. For additional information, contact:

## Kansas Board of Regents

Kansas Optometry Service Scholarship  
1000 S.W. Jackson St., Suite 520  
Topeka, KS 66612-1368  
(785) 296-3518.  
Kansas Board of Regents Website

## Four-Year Professional Degree (O.D.) Curriculum

### Curricular Outcomes

#### Entry Level Practice Standards

*Established 2001; Revised 2001, 2010, 2011, 2012, 2015 and 2016*

Doctors of Optometry must have an established knowledge of the basic and clinical sciences in order to provide quality eye and vision care to their patients. The academic foundation must be broad and include the biological, medical, vision and optical sciences, as well as a basic understanding of the health care delivery system. A doctor of Optometry must recognize the dynamic nature of knowledge and possess the commitment and skills needed to responsibly assess and apply new information and treatment strategies throughout their career.

**The UMSL College of Optometry shall ensure that before graduation each student will effectively utilize and demonstrate a working knowledge in patient care with each of the following areas:**

#### I. PATIENT HISTORY

1. the basic elements of a comprehensive patient history
2. the ability to obtain an efficient patient history necessary for a problem oriented examination
3. the proper standard of recording patient history in EHR
4. the ability to relate patient history to examination findings

#### II. OPTOMETRIC KNOWLEDGE

5. basic body systems, with special emphasis on the ocular and visual system and their interrelationships to the body as a whole;
6. the impact of genes and their interaction with behavior, diet and the environment on human health;
7. the various processes and causes that lead to dysfunction and disease and the effect that these processes can have on the body and its major organ systems, with special emphasis on the ocular and visual systems;
8. the mechanisms of actions of the various classes of pharmaceutical agents, including injectable agents, and their interactions;
9. the structures and processes contributing to the development of refractive error and other optical or perceptual abnormalities of the visual system;
10. the optics of the eye and ophthalmic lens systems - including spectacles, contact lenses, and low vision devices;
11. principles of the effects of radiant energy on the eye, including environmental lighting and ophthalmic lasers

#### III. PATIENT CARE

12. ophthalmic lens systems used to correct refractive, oculomotor and other vision disorders;
13. visual development and vision function with respect to deviation and enhancement of conditions such as, but not limited to, strabismus,

amblyopia, ocular motility, accommodation, vergence and visual perception;

14. vision therapy and other rehabilitative methods used for the management of common visual disorders;
15. the detection, diagnosis, treatment and management of ocular disease and ocular manifestations of systemic disease;
16. the safe and effective use of pharmaceutical agents for the treatment of disease and conditions affecting the eye and visual system, and recognize adverse reactions;
17. the strategies, interventions, and support system to best meet the unique needs of each patient regardless of age, taking into account co-existing medical conditions, medications, dietary needs, family issues, and social concerns
18. the utilization of injectable agents for the management of ocular and systemic diseases
19. the concepts of refractive surgery and its management;
20. basic life support skills for prevention and response to life-threatening emergencies;
21. the use of ophthalmic lasers in the management of refractive error and other anomalies of the eye;
22. the use of evidence from well designed and conducted research in healthcare decision-making

#### IV. CLINICAL SKILLS

23. the importance of performing necessary examination techniques competently and efficiently
24. the capacity to adapt the administration of clinical tests to meet the needs of the patient
25. the obligation to maintain clinical skills through practice and repetition

#### V. RECORD KEEPING

26. the significance of proper documentation in the electronic health record
27. the proper use of abbreviations
28. the appropriate notation of clinical observations

#### VI. INTERPERSONAL AND COMMUNICATION SKILLS

29. the critical elements of verbal and written communications with patients and other health care professionals;
30. the psychosocial dynamics of the doctor/patient relationship;
31. the need for clear, accurate and appropriate documentation of patient encounters;
32. the manner in which people of diverse cultures and belief systems perceive human health and illness and respond to various symptoms, diseases and treatments;

#### VII. INTRA/INTER PROFESSIONAL CONSULTATION/PRACTICE

33. when there is a requirement for intra/inter professional consultation

34. the process of coordination among professionals involved in a patient's care

#### VIII. PROFESSIONALISM

35. the need for a commitment to uphold the ethical obligations of the Optometric Oath;
36. the specific duties and responsibilities toward the individuals they serve and toward society as a whole;
37. the provisions to guarantee patient privacy and medical record security as expressed by HIPAA regulations;
38. inter-professional values, related ethics and relationships among the professions;

#### IX. SYSTEMS-BASED PRACTICE

39. the practice management structure and strategies as they pertain to different practice settings;
40. the broad-based, multidisciplinary nature of the health care delivery system;
41. the role of the optometrist as a primary health care provider;

#### X. PRACTICE-BASED LEARNING

42. the conscientious use of current best practices in patient care decision making;
43. the necessity for a commitment to lifelong learning;
44. the information management systems and technology used in the delivery of eye and health care.

## Grades

All courses taken for credit in the professional program must be passed with a 'C-' or better in order for a student to qualify for graduation. The College of Optometry does not recognize a "D" grade for courses taken for degree credit; and for a student enrolled in a patient care course. Therefore, any grades lower than a "C-" will be recorded as an "F" and have 0 grade points. Furthermore, in order to qualify for graduation, a student must be in good academic standing and the cumulative professional Grade Point Average (GPA) must be 2.50 or higher. Students must submit evidence to the Office of Student Services that they have taken the 3 part NBEO examinations prior to graduation. Such evidence may include a copy of the score report received from NBEO.

To assure graduating at the end of a specific semester, all work for that semester and any delayed grades from previous semesters must be completed with the grades sent to the Office of Student Services no later than the official date for submission of final semester grades.

## Time limitations

All of the required courses during the first six (6) semesters of first course enrollment and all required courses for the O.D. degree must be completed within six (6) years after the first course enrollment.

## Continuing Education

The College of Optometry offers continuing education programs for optometrists throughout the Midwest region as well as nationwide. Courses on nutrition, management of ocular diseases, ocular anomalies,

and visual skills are held on a frequent basis. In addition to College of Optometry faculty, optometric specialists, medical educators, and researchers have input into course development as well as participation in course presentations. All CE courses offered by the college are COPE approved and accepted by those states requiring continuing education credit for re-licensure.

Continuing Education course information may be obtained by contacting:

## University of Missouri-St. Louis College of Optometry

Educational Program Coordinator  
One University Blvd., 331 Marillac Hall  
St. Louis, MO 63121-4499  
(314) 516-5615

## Career Outlook

### Doctor of Optometry Degree

According to the American Optometric Association, Doctors of Optometry (OD's) are the independent primary health care professionals for the eye. Optometrists examine, diagnose, treat, and manage diseases, injuries, and disorders of the visual system, the eye, and associated structures as well as identify related systemic conditions affecting the eye.

- Doctors of Optometry prescribe medications, low vision rehabilitation, vision therapy, spectacle lenses, contact lenses, and perform certain surgical procedures.
- Optometrists counsel their patients regarding surgical and non-surgical options that meet their visual needs related to their occupations, avocations, and lifestyle.
- An optometrist has completed pre-professional undergraduate education in a college or university and four years of professional education at a college of optometry, leading to the doctor of optometry (O.D.) degree. Some optometrist's complete an optional residency in a specific area of practice.
- Optometrists are eye health care professionals state-licensed to diagnose and treat diseases and disorders of the eye and visual system.

--Approved by the AOA Board of Trustees, 2012

As primary eye care providers, Doctors of Optometry are an integral part of the health care team and an entry point into the health care system. They are skilled in the co-management of care that affects the eye health and vision of their patients and an excellent source of referral to other health care professionals.

The scope of optometric practice requires an understanding of the development and maintenance of vision from infancy through adulthood, and the therapeutic and rehabilitative methods required to care for eye and vision abnormalities that affect people of any age.

Optometry is the largest eye care profession and one of the largest independent health care professions in the United States. Currently, some 34,000 Doctors of Optometry practice in America. They are widely distributed across the nation, practicing in more than 7,100 different municipalities. In more than 4,300 of these communities, they are the only primary care provider. As such, Doctors of Optometry provide the major portion of primary eye care services in the United States.



Studies have indicated that a ratio of one practicing Doctor of Optometry to every 7,000 people (a ratio of 14.3 practicing doctors of optometry per 100,000 populations) is a reasonable average for the United States. Despite recent growth in the profession, few states meet this criterion.

As our society becomes more technically oriented, vision requirements become more exacting. The number of persons needing professional help for reading and other near-point visual tasks, and computer usage among all people including young children, is steadily growing. Increased demands for vision care result not only from population growth but also from increased understanding of how quality vision relates to industrial production, student achievement, adjustments to aging, and other areas crucial to modern society.

As a result the patients have more varied and challenging needs. On any given day, a Doctor of Optometry could be involved in restoring functional vision to a partially sighted patient; fitting glasses for a child whose vision problem is affecting academic achievement; treating an eye infection with antibiotics; improving the function of a patient's eyes through vision training; helping an elderly patient in a nursing home cope with changing vision through critical eye health education; co-managing eye or systemic health problems with a physician specialist; and performing comprehensive eye examinations for those who need glasses or contact lenses to correct astigmatism, nearsightedness, and numerous other vision problems.

The practice of optometry offers independence, flexibility, and diversity. Doctors of Optometry have a wide range of modes of practice. They may choose to practice in the inner cities, suburbs, and rural areas. Opportunities exist for solo practice, associateship, optometric or multidisciplinary group practice, government or military service, clinical or hospital practice, teaching, and research.

Optometry is a rewarding career, both economically and personally. Based on data from the Bureau of Labor Statistics and surveys by professional associations, optometry is one of the top 10 income-earning professions in the country.

## Courses

### ***OPTOM 8010 Anatomy, Physiology and Disease Processes I: 5 semester hours***

This course is the first in a two-semester course sequence that will detail the general anatomy of the human body along with the histology (microanatomy), physiology and disease processes of major organ systems. The course content will be presented in a modular format. Areas of discussion will include cardiovascular, respiratory, endocrine, digestive, reproductive, integumentary and peripheral and autonomic nervous systems. The laboratories will emphasize and augment important concepts introduced in the classroom environment.

### ***OPTOM 8020 Basic and Clinical Optics I: 4 semester hours***

Prerequisites: Consent of instructor. The principles of geometrical optics as applied to refracting and reflecting surfaces, thin lenses, thick lenses, and lens systems. The optics of various ophthalmic instruments and techniques will be examined.

### ***OPTOM 8030 Introduction to Optometry: 1 semester hour***

An introduction to the profession of optometry, including a consideration of the characteristics of a profession, the behaviors and attitudes of a professional, the history of optometry, the profession's legal basis, the major optometric organizations and sources and types of information available to optometrists. One hour of lecture per week.

### ***OPTOM 8040 Neuroanatomy: 4 semester hours***

Prerequisites: Consent of instructor. Detailed gross and microscopic anatomy of human central nervous system with a special emphasis on the cranial nerves, nuclei, and the visual system.

### ***OPTOM 8050 Basic and Applied Immunology: 2 semester hours***

This course will address the basic concepts of immunology including innate and adaptive immune responses. Mechanisms of hypersensitivity reactions and applications of immunology to ocular and systemic disease, transplantation, and treatment or prevention of cancer are included. Students must be concurrently enrolled in OPTOM 8010.

### ***OPTOM 8060 Biochemistry: 2 semester hours***

Basic concepts of general and cellular biochemistry. Study of nomenclature, structure, and reactions of organic molecules. Some emphasis on visual system - tears, intraocular fluids, lens, and photochemistry.

### ***OPTOM 8080 Clinical Optometry I: 2 semester hours***

Introduction to ocular assessment including case history and entrance examination procedures and theory.

### ***OPTOM 8090 Case Based Discovery for the Developing Clinician: 1 semester hour***

Students acquire curricular competencies appropriate for the professional year in which they are enrolled via in depth individual and group discovery via case based presentations. The experience will provide students the opportunity to assimilate and recognize the relationships among diverse topics emphasized within the optometric curriculum. Participants work in groups of no more than 10.

### ***OPTOM 8110 Anatomy, Physiology and Disease Processes II: 4 semester hours***

Prerequisites: OPTOM 8010, OPTOM 8060. Continuation of OPTOM 8010 Anatomy, Physiology and Disease Processes I.

### ***OPTOM 8120 Basic and Clinical Optics II: 5 semester hours***

Prerequisite: OPTOM 8020. Radiometry and photometry, polarization, scattering, emmetropia, myopia, hyperopia, astigmatism, models of experimental myopia, accommodation, diffraction, retinal image size, entoptic phenomena, aberrations, lasers and the eye, apertures, and optical instruments.

### ***OPTOM 8160 Anatomy and Physiology of the Eye: 5 semester hours***

Prerequisites: OPTOM 8040, OPTOM 8010 or consent of instructor. Vegetative anatomy and physiology of the eye, optic nerve, orbit, and adnexa will be discussed. This includes discussion of embryology and the dynamics of ocular fluids. Four lecture hours and a two-hour laboratory per week.

### ***OPTOM 8180 Clinical Optometry II: 5 semester hours***

Prerequisites: OPTOM 8080. Continuation of Clinical Optometry I. Patient care instruction including entrance examination procedures, refraction, ophthalmoscopy and biomicroscopy.

### ***OPTOM 8190 Introduction to Clinical Diagnostic Reasoning: 1 semester hour***

Prerequisite: OPTOM 8090. Introduction to clinical diagnostic reasoning by individual and group case-based learning. Scenarios give students an understanding of the relationship between basic and clinical sciences and provide an introduction to established best practices.

### ***OPTOM 8220 Ophthalmic Optics: 4 semester hours***

Prerequisites: OPTOM 8120. Ophthalmic materials, physical characteristics of lenses and frames, paraxial optics of ophthalmic lenses, ophthalmic prisms, lens specifications, special lenses, multifocal lenses, unique designs, aniseikonic lenses, aberration theory and its application to lens design, lenses for low vision, protective eyewear.

**OPTOM 8230 Interpersonal Communications: 1 semester hour**

Prerequisites: OPTOM 8030. This course covers the principles of human interpersonal relationships. The enhancement of listening and verbal skills will be provided. Emphasis will be on preparing the student to understand and manage the many human interpersonal relationships necessary in the practice of optometry.

**OPTOM 8240 Ocular Motility: 2 semester hours**

Prerequisites: OPTOM 8040 or consent of instructor. The anatomy, physiology, neurology, measurement, characteristic, and control of the intra- and extraocular system.

**OPTOM 8250 Monocular Sensory Processes: 5 semester hours**

Prerequisite: OPTOM 8160 or consent of instructor. Monocular sensory processes of vision: phototransduction, visual neurophysiology, spatial and temporal vision, acuity, light adaptation and discrimination, color, motion, objects and attention. Sensory processes are considered from both the psychophysical aspects and neurophysiological bases, including the changes during development, adulthood and aging. Four hours of lecture and two hours of laboratory per week.

**OPTOM 8260 General and Ocular Pharmacology: 4 semester hours**

Prerequisites: OPTOM 8110, OPTOM 8160, OPTOM 8080, OPTOM 8180. This course establishes an understanding of both systemic and ocular pharmacology focusing on mechanisms of action, drug interactions within the body, and drug interactions with other medications. Attention is given to clinical cases relevant to optometric practice and a broad overview of general and ocular pharmacology as a whole.

**OPTOM 8280 Clinical Optometry III: 4 semester hours**

Prerequisites: OPTOM 8080 and OPTOM 8180. Continuation of clinical optometry. Patient care in the areas of refraction, binocular integration, perimetry, and biomicroscopy.

**OPTOM 8320 Ophthalmic Dispensing: 1 semester hour**

Prerequisites: OPTOM 8220. Clinical experience in verification and dispensing of ophthalmic materials.

**OPTOM 8340 Binocular Vision and Space Perception: 4 semester hours**

Prerequisites: OPTOM 8240, OPTOM 8280 and OPTOM 8250 or consent of instructor. Binocular vision and space perception. Visual direction, theory of correspondence, fusion, rivalry, ocular dominance, and stereopsis. Developmental aspects and neurophysiological mechanisms.

**OPTOM 8370 Foundations of Ocular and Systemic Disease and Management I: 5 semester hours**

Prerequisite: OPTOM 8260. The first in the series of courses that address diseases of the eye, clinical diagnoses, and optometric and medical management of ocular and systemic disease. The laboratories emphasize diagnostic techniques and treatment skills, preparation for the initial clinic privileging examination and augment important concepts introduced in the classroom environment.

**OPTOM 8380 Clinical Optometry IV: 2 semester hours**

Prerequisites: OPTOM 8280. Continuation of Clinical Optometry III. Diagnosis, prognosis and management of visual problems. Emphasis on conducting comprehensive eye exams in preparation for the initial clinical privileging examination.

**OPTOM 8390 Specialty Clinic Laboratory: 1 semester hour**

Prerequisite: OPTOM 8280. Students acquire and practice skills for pediatric, binocular vision, low vision, and contact lens examinations. The course format is one 2-hour laboratory per week.

**OPTOM 8391 Clinical Topics in Contact Lenses: 1 semester hour**

Prerequisite: OPTOM 8280. This is the first in a series of 3 courses addressing contact lenses. The focus is on contact lens care and evaluation. The course format is one 50-minute lecture per week.

**OPTOM 8392 Clinical Topics in Binocular Vision and Pediatric Optometry: 1 semester hour**

Prerequisite: OPTOM 8240 and OPTOM 8280. This course presents clinical diagnostic and management skills for both pediatric patients and those with binocular vision anomalies. The course format is lecture.

**OPTOM 8393 Clinical Topics in Low Vision: 1 semester hour**

Prerequisite: OPTOM 8280. This course presents clinical diagnostic and management skills for patients with low vision. the course format is one 50-minute lecture per week.

**OPTOM 8400 Directed Readings: 1-3 semester hours**

Prerequisite: Consent of Instructor. Credit is given for independent literature review of a specific topic in any area of basic or clinical vision science guided by a full time faculty member with appropriate interests. Credit is awarded upon approval of a written paper regarding the selected topic. This elective may be repeated up to a total of 3 credit hours.

**OPTOM 8410 Directed Research: 1-3 semester hours**

Prerequisite: Consent of Instructor. Credit is given for independent research. Projects may be laboratory, library, or clinically based research in any area of vision science. Projects will be supervised by one or more full time faculty members. This elective may be repeated up to a total of 6 credit hours.

**OPTOM 8450 Introduction to Primary Care Clinic: 4 semester hours**

Prerequisites: OPTOM 8230, OPTOM 8320, OPTOM 8340, OPTOM 8370, OPTOM 8380, OPTOM 8390, OPTOM 8391, OPTOM 8392, OPTOM 8393, OPTOM 8560, and successful completion of the Clinical Proficiency Examination. The first in a series of adult primary care courses. Students perform comprehensive examinations, make diagnoses, and develop management plans with patient education under supervision of a faculty attending. Students participate in accompanying clinic seminar discussion groups.

**OPTOM 8460 Foundations of Ocular and Systemic Disease and Management III: 2 semester hours**

Prerequisites: OPTOM 8370. The third course in the foundation series that addresses ocular and systemic diseases and their management.

**OPTOM 8480 Pharmaceutical Management in Patient Care: 2 semester hours**

Prerequisites: OPTOM 8260; OPTOM 8370; OPTOM 8460. This course will discuss the clinician's responsibility in the treatment and management of ocular conditions and systemic complications of pharmaceutical use. Principles of ocular pharmacology in regards to specific management and treatment of ocular disease, trauma, and surgery by systemic, local, and topical therapy. In addition, simulated case studies are used to illustrate the basic and subtle clinical aspects of treating patients using pharmaceutical agents.

**OPTOM 8500 Primary Care Clinic I: 6 semester hours**

Prerequisites: OPTOM 8450. Continuation of Introduction to Primary Care Clinic. Weekly clinic seminar will supplement clinical experience with discussion of medical billing and coding, pharmacology, and patient case discussion and review.

**OPTOM 8520 Contact Lenses I: 3 semester hours**

Prerequisites: OPTOM 8380 and OPTOM 8391. Historical development of the contact lens and its use. Basic lens terminology, specifications, physiochemical characteristics, optics, fabrication, and verification. Preliminary patient evaluation, indications and contraindications for contact lenses. Basic fitting philosophies for all lens types. Lens care and patient education. Patient and practice management considerations.

**OPTOM 8540 Binocular Vision Anomalies: 4 semester hours**

Prerequisites: OPTOM 8340, OPTOM 8380 and OPTOM 8392 or consent of instructor. The etiology, epidemiology, symptoms, signs, and course sequelae of the obstacles to binocular vision-sensory, integrative, and motor. The detection, diagnosis, prognosis, and orthoptic treatment of such anomalies. Clinical care of aniseikonias.

**OPTOM 8550 Low Vision: 2 semester hours**

Prerequisite: OPTOM 8380 and OPTOM 8393. The etiology, epidemiology, symptoms, signs, course, and sequelae of low vision problems. Methods of testing, prognosis, selection of therapy, design of environmental and optical aids, problems of rehabilitation. Agencies, laws, public and social assistance for the partially sighted and blind. The course format is lecture and 1 two-hour laboratory per week.

**OPTOM 8560 Epidemiology and Public Health: 2 semester hours**

The essentials of epidemiological study procedures and a discussion of the epidemiology of vision disorders are discussed. The course reviews descriptive statistics, probability sampling, correlation, and prediction. The public health component includes a review of local, state, and federal organizations involved in health care, comprehensive health planning, new trends in health care delivery, and the assessment of the quality of health care delivery.

**OPTOM 8570 Advanced Topics in Ocular and Systemic Disease and Management: 6 semester hours**

Prerequisite: OPTOM 8370. The third semester of a comprehensive, systems based course sequence. Advanced topics in diagnoses as well as optometric and medical management of ocular and systemic disease will be discussed. The laboratories will emphasize and augment important concepts introduced in the classroom environment.

**OPTOM 8600 Primary Care Clinic II: 6 semester hours**

Prerequisites: OPTOM 8500, OPTOM 8520, OPTOM 8540, OPTOM 8550, OPTOM 8570, and OPTOM 8650. The final course in the adult primary care sequence. Students examine and care for patients under supervision of a faculty attending. Students are expected to function nearly independently in final preparation for the Externship Program.

**OPTOM 8620 Contact Lenses II: 2 semester hours**

Prerequisites: OPTOM 8520. Advanced contact lens fitting, theories, and clinical methods for astigmatic, presbyopic, keratoconic, and aphakic designs. Special considerations include the use of corneal topography, orthokeratology, disposable lenses, lenses for extended wear and lenses for color deficiencies. The course format is one lecture per week.

**OPTOM 8630 Practice Management I: 3 semester hours**

Prerequisites: OPTOM 8030 and OPTOM 8230. The development and management of an optometric practice from a patient and community service point of view - office design, office routine, patient care administration, personnel management, recall systems and the establishment, development and management of an optometric practice from a business point of view - legal developments, governmental regulations, legislation and the legislative process, malpractice, professional ethics, taxes, fee structures, insurance and accounting methods.

**OPTOM 8640 Pediatric Optometry: 2 semester hours**

Prerequisites: OPTOM 8380 and OPTOM 8540. Special examination and management considerations of the pediatric patient. Psychological, physiological, social, and demographic aspects of early visual development. Discussion of the optometric considerations of children with learning and reading disabilities. The course format is two lecture/discussions per week.

**OPTOM 8645 Neurologic Disorders of the Eye and Visual System: 2 semester hours**

Prerequisites: OPTOM 8570. Diagnosis, management and treatment of selected neurologic disorders of the eye and visual system. Emphasis is on diagnostic imaging of the visual system, diagnosis of central and peripheral disorders of eye movements, space occupying lesions, acquired brain injury, and optic nerve disease.

**OPTOM 8650 Geriatric Optometry: 2 semester hours**

Prerequisite: OPTOM 8380. Special examination and management considerations of the geriatric patient will be discussed. Psychological, physiological, social, and demographic aspects of aging, as well as ocular changes associated with the aging process will be taught.

**OPTOM 8660 Contact Lens Specialty Clinic: 1 semester hour**

Prerequisites: OPTOM 8391. The clinical examination and care of patients in the optometric specialty area of contact lenses.

**OPTOM 8670 Comprehensive Case Review and analysis: 1 semester hour**

Prerequisites: Enrollment in OPTOM 8500 or OPTOM 8600. Discussion of the diagnosis and management of common clinic patient encounters via Socratic teaching techniques. Interns are encouraged to present actual cases which have been particularly challenging for them. The course format is a weekly seminar.

**OPTOM 8680 Ophthalmic Lasers: 2 semester hours**

Prerequisites: OPTOM 8570. This course will review the principles and applications of lasers for the anterior segment. Topics will include the principles, physics, laser tissue interactions and safety concerns for ophthalmic lasers. The indications, contraindications and potential complications of lasers used for open angle glaucoma, closed angle glaucoma and posterior capsulotomy will be reviewed. In addition, the course will review epiluminescence microscopy, minor surgical procedures, suture techniques, office emergencies including anaphylaxis, chalazion management and radiofrequency surgery. An overview of the anatomy of eyelids, post-operative wound care, complications of surgical procedures, surgical instruments, asepsis and OSHA will be provided. The medicolegal aspects of anterior segment procedures will be discussed. Co-Management of patients who have corneal refractive surgery will also be covered.

**OPTOM 8690 Pediatric/Binocular Vision Specialty Clinic: 1 semester hour**

Prerequisites: OPTOM 8392. The clinical examination and care of patients in the optometric specialty areas of binocular vision and pediatric vision.

**OPTOM 8700 UM-St. Louis Pediatric/Binocular Vision Patient Care: 3 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of patients in pediatric/binocular vision clinic at the University of Missouri-St. Louis Center for Eyecare. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with OPTOM 8710 and OPTOM 8720.



**OPTOM 8710 UM-St. Louis Contact Lens Patient Care: 3 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework required Comprehensive clinical care in the contact lens clinic at the University of Missouri-St. Louis Center for Eyecare. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with OPTOM 8700 and OPTOM 8720.

**OPTOM 8720 UMSL Eye Health Management Patient Care: 1 semester hour**

Prerequisites: Successful completion of all first, second, and third year course work. Comprehensive clinical care in the eye health management clinic with ophthalmologists at the University of Missouri-St. Louis University Eye Center. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with OPTOM 8700 and OPTOM 8710.

**OPTOM 8730 Community Service Patient Care Rotation A: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of patients at St. Louis area community health centers. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8770 Community Service Patient Care Rotation C: 7 semester hours**

Prerequisites: Successful completion of all first, second, and third year coursework. Comprehensive clinical care of patients at St. Louis area community health centers. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8780 External Rotation in Institutional Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of primary care patients at external sites approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8790 External Rotation in Ocular Disease Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of patients with ocular disease at external sites approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8800 External Rotation in Pediatric/Binocular Vision Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of pediatric/binocular vision patients at an external site approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8810 External Rotation in Contact Lens Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of contact lens patients at an external site approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8811 External Rotation in Ophthalmic Surgical Patient Care: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care of Ophthalmic Surgical Patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8812 External Rotation in Geriatric Patient Care: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care of Geriatric Patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8813 External Rotation in Ophthalmic Sports Vision: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care of Sports Vision Patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8814 External Rotation in Primary Care: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care of Primary Care Patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8815 External Rotation in Pathology and Treatment: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care in pathology and treatment of patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8816 External Rotation in Ophthalmic Laser Treatment: 7 semester hours**

Prerequisites: Successful Completion of all second and third year coursework. Comprehensive clinical care in ophthalmic laser treatment of patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8817 External Rotation in Rehabilitative Patient Care: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care in Rehabilitative Patient Care at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8820 External Rotation in Low Vision Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of low vision patients at an external site approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8830 External Rotation in General Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second, and third year coursework. Comprehensive clinical care of a general population of optometric patients at external sites approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.



***OPTOM 8840 External Supplementary Rotation in General Patient Care: 7 semester hours***

Prerequisites: Successful completion of all first, second, and third year coursework. Comprehensive clinical care of general population of optometric patients at external site approved by the School of Optometry's Externship Council.

***OPTOM 8850 Supplementary Rotation in General Patient Care: 7 semester hours***

Prerequisites: Successful completion of all first, second, and third year coursework. Comprehensive clinical care of general population of optometric patients at the UM-St. Louis Center for Eye Care, UM-St. Louis Optometric Center, or the UM-St. Louis East St. Louis Eye Center.

***OPTOM 8870 Practice Management IV: 2 semester hours***

Prerequisites: Successful completion of all first, second and third year coursework. Further in-depth discussion in practice management.

***OPTOM 8880 Clinic Seminar: 1 semester hour***

Prerequisites: Successful completion of all first, second and third year coursework. Presentation and discussion of interesting clinical patients. Additional clinical testing techniques and concepts. Further discussion of patient data analysis-the process of determining diagnosis, prognosis, and therapy. Further discussions in the optometric specialties.

# The Graduate School

The Graduate School of the University of Missouri-St Louis promotes a culturally and intellectually diverse learning environment in which scholarship and creativity flourish. To fulfill the teaching and research goals of the university, the Graduate School provides leadership to graduate programs that inspire in students a passion for discoveries. Our programs reflect our mission as a public metropolitan research university. The scholarly and creative activity of our faculty and graduate students serves the local community and advances academic disciplines at the national and international level.

## Graduate Faculty

The regular Graduate Faculty (GF) shall consist of all tenured and tenure-track faculty. Visiting and part-time faculty will not normally be members of the Graduate Faculty. Exceptions may be made on a case-by-case basis per approval of the Graduate Council. All regular members of the Graduate Faculty may:

- (a) teach graduate courses
- (b) serve on and chair comprehensive examination and exit project committees
- (c) serve on and chair master's thesis committees and doctoral dissertation committees

**Term Appointments.** Upon recommendation by a college, qualified non-tenure track and adjunct faculty may be approved by the Graduate Council for term appointments to the Graduate Faculty for a period of 1 to 5 years. Term members of the Graduate Faculty may:

- (a) teach graduate courses
- (b) serve on, but not chair, Ph.D. comprehensive exam committees and exit project committees
- (c) serve on, but not chair, master's thesis committees and Ph.D. dissertation committees

Term graduate faculty who demonstrate scholarship in their discipline may serve on and chair comprehensive exam and capstone project committees for professional doctoral degrees. Upon recommendation of the unit and approval of the Graduate Dean, a term Graduate Faculty member who brings a particular expertise may chair a Ph.D. dissertation committee.

To request a term appointment, the appropriate unit Chair/Dean shall submit a nomination form and CV for the nominee to the Graduate Dean for review and approval by the Graduate Council. A terminal degree is normally required for appointment to the Graduate Faculty. For nominees without a terminal degree, other documented professional accreditation and/or licensure may be used to justify the appointment. Current graduate students at UMSL are not eligible for Graduate Faculty appointment, but under extraordinary circumstances, a current doctoral student may teach a graduate course upon approval of the Dean and the Graduate Council.

**Emeritus Appointments.** Upon request of the unit, members of the Graduate Faculty who retire or move to a new academic position may be given emeritus status (GFE). Emeritus faculty may continue to teach graduate courses and serve on comprehensive exam committees and dissertation/capstone committees. With the approval of the Academic Dean and the Dean of the Graduate School, faculty transitioning to GFE

status may continue to chair any existing doctoral committees, but may not be appointed to chair any new doctoral committees.

**Special Appointments.** External scholars with relevant specialized expertise may be appointed to replace a member of the graduate faculty on a qualifying exam, thesis, or dissertation committee. The appointment is limited to one committee and does not entitle the appointee to teach graduate courses. Special appointees may not chair a dissertation or qualifying exam committee. Although there is no strict limit on the number of special appointees serving on a committee, in all cases a voting majority of the committee must be members of the graduate faculty.

Each unit with a doctoral program must include in its 5-year review a summary of its policies and practices regarding the methods of assuring the quality of the dissertations in that unit as well as the outcomes of its quality assessment of the dissertations. The Graduate Dean will review the 5-year reviews and confer with the unit and its academic dean regarding the strengths or weaknesses noted.

The Graduate Dean will be the chairperson of the Graduate Faculty.

## Conflict of Interest Policy for Student Engagement in Faculty Enterprise

The Conflict of Interest (COI) Committee determines whether a faculty member has a conflict regarding student engagement in an enterprise in which the faculty member has an outside interest as defined in the University's Collected Rules and Regulations (CRR 330.015 B2). Given the diversity of faculty activities, and potential student engagement, the COI Committee may determine:

- a. the conflict is manageable
- b. the conflict is manageable only through a Student Monitoring Plan and appointment of a COI Student Monitor
- c. the conflict is not manageable and the faculty member may not engage the student

If a Student Monitoring Plan is implemented,

- a. A COI Student Monitor will be appointed by the Conflict of Interest Committee. Monitors should be disinterested parties relative to the faculty member's outside interest and preferably a faculty member at or above the rank of the faculty member with the conflict of interest. A director of graduate studies in the faculty member's unit or an associate dean are likely appointees.
- b. COI Student Monitors will have access to the faculty COI Management Plan that includes recommendations for student monitoring as well as information regarding the role of the student in the company.
- c. The COI Student Monitor will meet with assigned student upon student request, and must meet, at minimum, annually and upload or submit the COI Student Monitor Report to the COI office. These reports will be reviewed by the COI Committee to ensure the student's education/academic interest is upheld as "primary."
  - i. "Primary" indicates the student is making the expected progress on their degree, without being unduly compromised or biased by their industry affiliation/responsibilities, and can openly discuss and publish their work without retribution or unnecessary delay.

- ii. COI Student Monitor Report is available on the web site for COI Office.

Concerns regarding student academic progress/success identified by the Student Monitor and/or COI Committee will be addressed with the faculty member within 60 days and may result in removal of the student from the enterprise. Failure of the faculty member to remedy concerns expressed by the COI Committee to adequately protect the academic interest of students could lead to charges of faculty irresponsibility (CRR 300.010 L) and/or violations of standards of faculty conduct (CRR 330.110 D2) for failure to meet their responsibility as “teacher” as defined in CRR 300.010 C2a.

## Graduate Council

The Graduate Council is an elected faculty body that works closely with the Graduate Dean to:

- (a) approve all non-regular appointments to the Graduate Faculty
- (b) continuously review and amend Graduate School policies to improve procedures and maintain rigorous academic standards.
- (c) facilitate interdisciplinary communication and respond to innovations in teaching and research.
- (d) review and approve all curricular changes in graduate courses and degree programs.

After the Graduate Council approves a curricular proposal, the proposal goes to the Faculty Senate for review and approval. New programs also require approval of the University of Missouri System and the Missouri Coordinating Board for Higher Education.

A list of Graduate Programs can be found at <http://www.umsl.edu/gradschool/gradprograms/index.html>.

Graduate School Policies can be found at <http://bulletin.umsl.edu/graduatestudy/> (p. 38)

# Pierre LaCledde Honors College

At the Pierre LaCledde Honors College, we transform lives through engaged, individualized learning in and outside of the classroom. Our graduates are economically productive, ethically committed, thoughtfully engaged, active citizens who flourish within their culture and world.

Our vision is a community that empowers students to develop unique paths that allow them to pursue individual goals. Small classes (on average 13) allow students to learn by active questioning and conversation. Students develop strong communication and writing skills while exploring connections across areas of knowledge as they think critically within and beyond their majors. By exploring a wealth of beyond-the-classroom opportunities, Honors students develop the crucial foundation for future professional success.

The Honors College offers a certificate program that can be paired with any major without extending time to graduation. Classes in the Honors College are seminar-style, meaning that they are based in reading, writing, discussion, and critical thinking. This format fosters an intellectual climate centered around democracy, diversity, civility, and academic excellence.

Members of the Honors College are engaged with their peers in a close-knit community of scholars from all majors and backgrounds, creating an invaluable interdisciplinary educational experience.

The four year program is open to entering freshmen and extends over a student's entire undergraduate career.

The two year program is open to select third year students who are either continuing at or have transferred to the university, and a two-plus program is available for transferring sophomores.

## The Honors College Writing Program

Both two- and four-year programs include participation in the Honors College writing program, writing through the curriculum, which involves writing in most honors seminars, as well as formal courses in composition (including HONORS 1100, HONORS 3100, HONORS 3120, or HONORS 3160). In the final year, this culminates in the compilation of a personal Honors College writing portfolio (HONORS 4100).

## Independent Study Requirement

All Honors College students, whether in the four-year or the two-year program, must fulfill a 6-credit-hour independent study requirement. This can be met in several ways, including supervised research, guided reading, internships, and in many cases capstone courses in the major.

## Faculty Overview

Honors College instructors are drawn from university faculty in all academic divisions but mainly from the traditional disciplines of the Arts, Humanities, Social Sciences, and Sciences. These teachers share a desire to work closely with intellectually curious, high-achieving students. Faculty design courses directed toward such an audience and based on small discussion seminars. Thus the honors faculty grows each year as new faculty join the honors project. Their talents add to the Honors College's rich instructional pool of more than 100 regular and full-time faculty, many of whose teaching and scholarship have been singled out for special awards.

In addition, the Honors College has nine full-time academic faculty members whose responsibilities (besides instruction) include administration, admissions, student advising, and curricular design.

## Honors College Certificate

### Four Year Program (40 credit hours total):

Approximately one-third of the 120 hours honors students earn toward graduation are taken in the Honors College. Most of these credits are associated with a sequence of honors courses designed specifically for the college, the majority of which are taken during the first two years. During this period, these students fulfill virtually all of the university's general education requirements (p. 51), usually in innovative ways. In their junior and senior years, honors students also may earn honors credit for work done within their major fields, work which includes the possibility of internships, independent study projects, and advanced undergraduate research.

### First Year

Students take HONORS 1100, HONORS 1200, and HONORS 1201, and one course each from the Western Traditions and Non-Western Traditions seminar series. Students may take a seminar from the American Traditions series as an elective or in place of the Western Traditions seminar.

HONORS 1110	Western Traditions: Humanities	3
HONORS 1200	Freshman Symposium: Cultural Traditions I - Humanities	3
HONORS 1201	Freshman Symposium: Cultural Traditions II - Humanities	3
HONORS 1130	Western Traditions: Social and Behavioral Sciences	3
HONORS 1230	American Traditions: Social and Behavioral Sciences <sup>1</sup>	3
HONORS 1310	Non-Western Traditions Series Humanities	3
HONORS 1330	Non-Western Traditions Series-Social Sciences	3

<sup>1</sup> Elective as an alternate to Western Traditions.

### Second Year

Students take two of the following Honors classes:

HONORS 2010	Inquiries in The Humanities	3
HONORS 2020	Inquiries in the Fine and Performing Arts	3
HONORS 2030	Inquiries in the Social and Behavioral Sciences	3
HONORS 2050	Inquiries in the Natural Sciences	1-3
HONORS 2060	Inquiries in Business	3
HONORS 2070	Inquiries in Education	3
HONORS 2071		4
HONORS 2080	Inquiries in Nursing	3

During the first two years, honors students will take additional course work in other areas, such as mathematics, natural science, foreign language, and major prerequisite classes to satisfy various university, Honors College, and specific degree requirements.



## Third and Fourth Years

Honors students in the four-year program take at least four seminars (12 credit hours) from the Advanced Seminar (3000 level series) and/or Research Seminar (HONORS 3530 or HONORS 3535). They may take more where this is compatible with their major and/or minor requirements.

Honors students in the four year program who take HONORS 3100 ('Writing the City') or HONORS 3160 ('Writing in the Sciences') may present it for their honors certificate as one of their 3000-level seminars.

They may also, depending on their major, present it to meet their graduation requirement for Junior-level composition.

HONORS 3010	Advanced Honors Seminar in the Humanities	3
HONORS 3020	Advanced Honors Seminar in the Fine and Performing Arts	3
HONORS 3030	Advanced Honors Seminar in the Social and Behavioral Sciences	3
HONORS 3100	Honors Advanced Composition: Writing The City	3
HONORS 3160	Honors Writing in the Sciences	3
HONORS 3530		3
HONORS 3535		4

In addition, honors students do 6 credit hours in independent study projects, normally in or closely related to their major field. These independent study projects normally carry credit in the major, but can be done as Honors College independent study or research projects (HONORS 4900, HONORS 4910, HONORS 4915). During the final year, students also take HONORS 4100, a one-hour capstone for the Honors College writing program; HONORS 4100 may be taken for two hours.

## Two year Program (22 credit hours total):

Students in this program will take a combination of Honors College seminars and honors independent study credit (usually for work done in their major fields). The 22 credit hours must include 6 credits of independent study, as for the four-year program.

### Third Year

During the first year of the two-year program, students take three honors seminars, including HONORS 3100, Writing the City or HONORS 3160, Writing in the Sciences; one course from the Inquiries series (2000 level); one course from either the Advanced Seminar (3000 level) or Research Seminar (HONORS 3530 or HONORS 3535). In addition, 3 credit hours of independent study may be taken during this year, normally in or closely related to their major.

### Fourth Year

The final year of the two-year program involves three courses chosen from the 3000 and 4000 level options, including HONORS 4100, the honors writing portfolio, and at least one course chosen from the 3000 level. In addition, students will complete their independent study requirements with 3 or 6 hours of project, internship, or research work.

## Honors and Nursing; Honors and Engineering

Because of the extensive professional requirements for both Nursing and Engineering, the Honors College has, with the support of the relevant faculties, created special programs for Nursing and Engineering majors who wish to pursue the Honors College certificate. Both programs feature

reduced Honors College credit hour requirements but retain the core of the Honors program and give students ample opportunities to experience interdisciplinary inquiry, seminar-based learning, and take part in the Honors College Writing Program.

## Honors and the Bachelor of Liberal Studies (BLS)

Pierre Laclède Honors College students who wish to present the honors Certificate as a minor for the BLS must complete the Honors Capstone (HONORS 4100, one or two credit hours) and also direct three to six hours of their Honors independent study requirement as part of their BLS program. Students should consult the BLS faculty advisor in the Honors College about this requirement, as well as an Arts and Sciences advisor.

## Other Academic Features and Requirements Satisfactory/Unsatisfactory

The satisfactory/unsatisfactory option does not apply to any course work undertaken for Honors College credit.

## Admission and Retention

To be considered for admission to either the two-year or four-year honors program, a candidate must file a special Honors College application, as well as a general university application. These application forms and additional information concerning scholarship awards, general eligibility guidelines, and the admissions process are available from the Honors College admissions office at (314) 516-7769 or from the University Admissions. See also the Honors College website.

## Scholarships

Every new freshman or transfer student admitted in good standing to the Honors College receives academic scholarship support. Students continue to receive these awards as long as they meet the criteria associated with their particular scholarship.

Good academic standing To remain in good standing, a student must maintain a cumulative GPA, in all his or her UMSL courses, of at least 3.2, and must continue to meet the requirements of the honors program for which he or she was initially admitted. Unless other arrangements have been made, Honors College students are also expected to be full time, that is, to register for and satisfactorily complete at least 12 credit hours per semester. Students wishing to enter the Honors College as part-time students or to change to part-time status must make prior arrangements with the Honors College dean or associate dean.

- Honors graduates synthesize knowledge from various perspectives by comparing and contrasting diverse cultural viewpoints, academic disciplinary approaches, and information; they have a holistic approach to creating knowledge and understand their discipline in a larger context.
- Honors graduates communicate effectively, across disciplines, in speech and writing by focusing on various perspectives, audiences, and disciplinary approaches and by employing correct diction, syntax, usage, grammar, and mechanics.
- Honors graduates think and write critically and value and manage information effectively:
  - By distinguishing among opinions, facts, and inferences; identifying underlying or implicit assumptions; making informed

judgments; and solving problems through applying evaluative standards.

- By locating, critiquing, synthesizing, and distinguishing information from various scholarly and non-scholarly sources.
  - By analyzing and synthesizing information from a variety of sources, applying the results to resolving complex situations and problems, and defending conclusions using relevant evidence and reasoned argument.
  - By utilizing cultural, behavioral, and historical knowledge to clarify and articulate value systems while recognizing the ramifications of value decisions on the self, others, and the community.
  - By identifying conflicts within and between multiple perspectives and value systems, recognizing and analyzing ethical issues in a variety of contexts, and employing standards of logic to formulate a reasonable position among perspectives.
- Honors graduates, having completed coursework and experiential learning in diverse fields, are practiced in various disciplines and demonstrate essential skills and approaches relevant to those disciplines; they can apply those skills and approaches to their own areas of specialization.
    - Honors graduates understand data and mathematical concepts; they are quantitatively literate; they understand and analyze data, draw conclusions, and solve problems.
    - Honors graduates understand themselves and the world around them; they describe, explain, and predict human behavior and social systems; they understand the diversity and complexity of the cultural and social world, past and present, and come to an informed sense of self and others.
    - Honors graduates understand the ways in which people have addressed their condition through art and literature; they analyze cultural works and their historical circumstances; they formulate judgments of these works.
    - Honors graduates understand scientific principles, research procedures, and empirical methods of inquiry; they understand how scientific discoveries affect and are affected by theoretical views of the world and human history.
  - Honors graduates have well-developed awareness of career and advanced study opportunities.
    - Honors graduates demonstrate advanced knowledge in discipline(s), professional skills, and career and educational goals via participation in internships, independent study, undergraduate research, creative endeavors, community engagement, and study abroad.
    - Honors graduates are self-aware of their writing skills and development and devise and revise documents for professional purposes, employment searches, and academic applications.

## Courses

### ***HONORS 1100 Honors Freshman Composition: 3 semester hours***

Prerequisites: Consent of the Dean of the Honors College. Through formal and informal writing assignments, discussion, instruction, and research, students will improve their critical reading, thinking and writing skills, as well as their research techniques. The course is designed to help students meet the rigorous challenges of academic writing across the disciplines by emphasizing intellectual inquiry, logic, style, correct and concise expression, and formal research and documentation. In addition to four formal essay assignments, students will complete a variety of informal writings.

### ***HONORS 1110 Western Traditions: Humanities: 3 semester hours***

Prerequisites: Consent of the Dean of the Honors College. All Western Traditions seminars will be based on the reading and discussion of works of exceptional importance in the development of western culture and civilization. The works to be discussed in each seminar will follow a central theme (defined by its particular relevance to the traditional academic disciplinary areas of the humanities, arts, social sciences, mathematics, or sciences) but will relate that theme to wider developments in Western Traditions and to the American concept of a liberal education.

### ***HONORS 1130 Western Traditions: Social and Behavioral Sciences: 3 semester hours***

Prerequisites: Consent of the Dean of the Honors College. All Western Traditions seminars will be based on the reading and discussion of works of exceptional importance in the development of western culture and civilization. The works to be discussed in each seminar will follow a central theme (defined by its particular relevance to the traditional academic disciplinary areas of the humanities, arts, social sciences, mathematics, or sciences) but will relate that theme to wider developments in Western Traditions and to the American concept of a liberal education.

### ***HONORS 1150 Western Traditions: The Sciences: 3 semester hours***

Prerequisites: Consent of the Dean of the Honors College. All Western Traditions seminars will be based on the reading and discussion of works of exceptional importance in the development of western culture and civilization. The works to be discussed in each seminar will follow a central theme (defined by its particular relevance to the traditional academic disciplinary areas of the humanities, arts, social sciences, mathematics, or sciences) but will relate that theme to wider developments in Western Traditions and to the American concept of a liberal education.

### ***HONORS 1200 Freshman Symposium: Cultural Traditions I - Humanities: 3 semester hours***

Prerequisite: Consent of the Dean of the Honors College. This course surveys Western and non-Western cultural traditions from their beginnings until the 1700s. It will introduce the intellectual traditions of a wide variety of cultures through major works of literature, religion and philosophy. This course will approach texts and materials from a humanities perspective.

### ***HONORS 1201 Freshman Symposium: Cultural Traditions II - Humanities: 3 semester hours***

Prerequisite: Consent of the Dean of the Honors College. This course surveys Western and non-Western cultural traditions from the 1700s to current times. It will introduce intellectual traditions of a wide variety of cultures through major works of literature, religion and philosophy. This course will approach texts and materials from a humanities perspective.

### ***HONORS 1202 Freshman Symposium: Cultural Traditions I - Social Science: 3 semester hours***

Prerequisite: Consent of the Dean of the Honors College. This course surveys Western and non-Western cultural traditions from their beginnings until the 1700s. It will introduce the intellectual traditions of a wide variety of cultures through major works of literature, religion, history, and political theory. This course will approach texts and materials from a social science perspective.

### ***HONORS 1203 Freshman Symposium: Cultural Traditions II - Social Science: 3 semester hours***

Prerequisite: Consent of the Dean of the Honors College. This course surveys Western and non-Western cultural traditions from the 1700s. It will introduce the intellectual traditions of a wide variety of cultures through major works of literature, religion, history, science and political theory. This course will approach texts and materials from a social science perspective.

**HONORS 1230 American Traditions: Social and Behavioral Sciences: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Honors seminars in the American Traditions series involve reading and discussion of texts of major importance in the development of the culture, politics, ideologies, and values which are or have been characteristic of the United States of America. Every American Traditions seminar will cover a broad range of time, and each may include contemporary issues. HONORS 1230 (Social Sciences) satisfies the American history and government requirement, and any course in the American Traditions sequence may be taken to satisfy one of the 'core' requirements for the American Studies Minor.

**HONORS 1310 Non-Western Traditions Series Humanities: 3 semester hours**

Prerequisite: Consent of the Dean of the Honors College. Seminars focus on different topics in the humanities but address themes and problems in non-western cultures that are related to the freshmen core classes (HONORS 1200 and HONORS 1201). These topics will be examined in depth through reading discussion, and students will produce formal papers and participate in individual or small group presentations.

**HONORS 1330 Non-Western Traditions Series-Social Sciences: 3 semester hours**

Prerequisite: Consent of the Dean of the Honors College. Seminars focus on different topics in the social sciences but address themes and problems in non-western cultures that are related to the freshmen core classes (HONORS 1200 and HONORS 1201). These topics will be examined in depth through reading discussion, and students will produce formal papers and participate in individual or small group presentations.

**HONORS 2001 Topics in Communication Proficiency: 3 semester hours**

Prerequisites: Permission of the dean of the Honors College. Honors courses approved for Core: Communication Proficiency in UMSL's General Education program.

**HONORS 2002 Topics in Information Literacy: 3 semester hours**

Prerequisites: Consent of the dean of the Honors College. Honors topics approved for Core: Information Literacy in UMSL's General Education program.

**HONORS 2003 Topics in American History and Government: 3 semester hours**

Prerequisites: Consent of the dean of the Honors College. Honors topics approved for Core: American History and Government in UMSL's General Education program.

**HONORS 2010 Inquiries in The Humanities: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one of more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2020 Inquiries in the Fine and Performing Arts: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2030 Inquiries in the Social and Behavioral Sciences: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2040 Inquiries in Mathematics and Computing: 3 semester hours**

Prerequisite: Consent of the Dean of the Honors College. 2040 Inquiries courses may be used to meet relevant General Education requirements in the Explore area of Math and Life/Natural Sciences. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2050 Inquiries in the Natural Sciences: 1-3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2051 Inquiries in the Sciences: Laboratory or Field Work: 1 semester hour**

Prerequisites: Permission of Honors Dean. This course develops students' understanding of how the experimental procedures of the life and physical sciences are used to collect data and to develop and test scientific hypotheses. HONORS 2051 is taken as a required companion course to specific sections of HONORS 2050, (Inquiries in the Sciences), when laboratory or field work experience is essential to students' understanding of and competence in the scientific subject matter of the companion section of HONORS 2050.

**HONORS 2060 Inquiries in Business: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Courses in the 2060 series of courses, 'Inquiries in Business,' satisfy the Social Science area of General Education. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2070 Inquiries in Education: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors. College Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2080 Inquiries in Nursing: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2310 Cultural Diversity in the Humanities: 3 semester hours**

This seminar focuses upon cultural diversity themes, texts, and perspectives within the humanities.

**HONORS 2330 Cultural Diversity in the Social Sciences: 3 semester hours**

This seminar focuses upon cultural diversity themes, texts, and perspectives within the social sciences.

**HONORS 3001 Topics in Global Awareness: 3 semester hours**

Prerequisite: Consent of the dean of the Honors College. Honors topics approved by the College of Business for their Global Awareness requirement.

**HONORS 3010 Advanced Honors Seminar in the Humanities: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Usually restricted to Juniors and Seniors, these advanced seminars focus on in-depth study of a significant body of subject matter. The perspective employed will normally be interdisciplinary or multidisciplinary and will underscore the value of making connections between diverse areas of study. These courses will not usually require specific prerequisites, but may (with the consent of the appropriate department or division) be taken as major or minor courses. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 3020 Advanced Honors Seminar in the Fine and Performing Arts: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Usually restricted to Juniors and Seniors, these advanced seminars focus on in-depth study of a significant body of subject matter. The perspective employed will normally be interdisciplinary or multidisciplinary and will underscore the value of making connections between diverse areas of study. These courses will not usually require specific prerequisites, but may (with the consent of the appropriate department or division) be taken as major or minor courses. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 3030 Advanced Honors Seminar in the Social and Behavioral Sciences: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Usually restricted to Juniors and Seniors, these advanced seminars focus on in-depth study of a significant body of subject matter. The perspective employed will normally be interdisciplinary or multidisciplinary and will underscore the value of making connections between diverse areas of study. These courses will not usually require specific prerequisites, but may (with the consent of the appropriate department or division) be taken as major or minor courses. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 3100 Honors Advanced Composition: Writing The City: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Enhances critical thinking, research, discussion and writing skills by focusing on the city of St. Louis and on the specific fields of study of those enrolled in the course. Issues such as depth and development of content, voice, style, tone, correct expression, and research techniques are among the topics emphasized. Students maintain a Commonplace Book of journals, drafts, and creative writings; they also submit a minimum of four formal papers. This course is required for transfer students (two-year Honors Program) and an elective for students on the four-year program. For students on either program, HONORS 3100 meets the Advanced Composition requirement of the University.

**HONORS 3120 Honors Business Writing: 3 semester hours**

Prerequisite: Junior standing. This Honors course further develops the experienced writer's style and analytical capabilities to the level of sophistication necessary for upper-division writing assignments and for business and professional settings. Writing assignments may include business correspondence, reports, resumes, proposals, analyses, feasibility studies, and articles for in-house publications. The course emphasizes clarity, conciseness, organization, format, style, tone and mechanical correctness; expands upon students' research and documentation skills; and requires research in university libraries. Formal assignments, including one large project and several informal papers, are required for this challenging Honors course. HONORS 3120 fulfills the University's junior-level writing requirement.



***HONORS 3160 Honors Writing in the Sciences: 3 semester hours***

Prerequisites: Junior-level standing. This honors course, designed to meet the needs for students in the science disciplines, will satisfy the campus junior-level writing requirement. The course will stress writing observation reports, academic journals, laboratory reports and a major project suited to the specific area of study of each student enrolled in the class. Instruction will include correct documentation of science sources, synthesis techniques of research information, technology-based research skills and effective laboratory reporting methods. Four formal papers, including one large project, and several informal papers will be required for this challenging course.

***HONORS 4100 Independent Portfolio Writing: 1-2 semester hours***

Prerequisites: Senior status. Students in this course will meet with their instructor on a regular basis to discuss and revise their writing portfolio and write their master resume, career or academic resume, personal statements for graduate school, or other projects for careers or their futures. The course is required to be at least one hour and may be taken for two hours to allow for more personal time and assistance from the instructor.

***HONORS 4900 Independent Study in Honors: 1-6 semester hours***

Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Most Honors students will fulfill their Honors independent study requirements in another department or division of the university. Where this is not possible, and where academic credit seems an appropriate reward for the independent study in question, the project may be undertaken as HONORS 4900, normally as a 3-credit course. This will involve substantial reading, research, and/or field work, and will be supervised by a permanent member of the Honors College academic staff. Completed proposal forms for this course must be submitted to the Honors College not later than the deadline for university registration.

***HONORS 4910 Independent Study: Internships: 1-6 semester hours***

# School of Social Work

## General Information

### Degrees and Areas of Specialization

The Social Work program offers courses leading to a bachelor of social work (BSW), a master of social work (MSW), and a minor in social work. The BSW and the MSW programs are fully accredited by the Council on Social Work Education. The programs stress the critical, empirical, and applied aspects of social work, incorporating a liberal arts perspective throughout the curriculum. There is a strong accent on community and agency field work as an integral part of the program. Professional social work education enables students to integrate the knowledge, values, and skills of the profession into competent practice.

Students must apply for admission into the BSW and the MSW programs. After admission, undergraduate social work majors and Master's students should obtain a copy of the Student Handbook (available on the School of Social Work's web page). Students in both programs must meet with a social work advisor for advisement each semester, and must set up an appointment with the practicum office and attend a series of pre-practicum orientation sessions one semester prior to enrolling in the practicum.

### Career Outlook

The Bachelor of Social Work program prepares students for entry-level employment in social welfare agencies, schools, hospitals, correctional institutions, social action and community organizations, and day care, geriatric, or rehabilitation and residential centers. The Master of Social Work program prepares professionals for advanced social work practice with individuals, families, groups, organizations, and communities. Individuals currently working in social welfare can develop skills and increase employment and job advancement opportunities with the BSW and MSW degrees.

### Courses

#### ***SOC WK 2000 Social Work and Social Issues: 3 semester hours***

Prerequisites: SOC 1010 or PSYCH 1003. Examination of the network of social programs and services developed in response to social problems in modern urban communities and the various roles and functions performed by the helping professions. Students will be introduced to basic values, skills, and training involved in a helping relationship as well as the characteristics of clients seeking help and professionals engaged in the helping process.

#### ***SOC WK 2001 Social Work and Social Issues Lab: 1 semester hour***

The lab session will be used for field trips to social agencies which will allow students to better understand the many roles social workers are involved in. This course is required for social work majors. Concurrent enrollment in SOC WK 2000 is required.

#### ***SOC WK 2102 Introduction to Gender Studies: 3 semester hours***

Same as HIST 2102, SOC 2102, POL SCI 2102 and GS 2102. This core class is required for all Gender Studies Certificate earners. This class introduces students to cultural, political and historical issues that shape gender. Through a variety of disciplinary perspectives in the humanities, social sciences, and natural sciences, the course familiarizes students with diverse female and male experiences and gendered power relationships.

#### ***SOC WK 2200 Social Welfare as a Social Institution: 3 semester hours***

Prerequisites: SOC WK 2000 or consent of instructor. This course 1) examines the development of social welfare service and philosophies underlying existing practices and systems; 2) analyzes social welfare programs with particular emphasis given to public income maintenance provisions; 3) presents issues surrounding special needs of minority and diverse populations; and 4) provides an overview of the development of social work as a profession.

#### ***SOC WK 2330 Asians in Migration: 3 semester hours***

This course is a comparative analysis of the social and cultural diversity of the peoples of East, South, and Southeast Asia. Study focuses on their reasons for migration and the extent and quality of the social and cultural connections they maintain to their homelands. Implications of these cultures for students in a variety of disciplines are explored. This course satisfies the cultural diversity requirement.

#### ***SOC WK 3100 Introduction to Strategies for Social Work Practice: 3 semester hours***

Prerequisites: SOC WK 2200, SOC 1010 and PSYCH 1003 or consent of instructor. A presentation of basic knowledge, skills, and theory used for entry-level professional practice, such as problem assessment, interviewing skills, crisis intervention and referral procedures. The course objectives will also be to teach students how to help clients negotiate systems effectively, and to use resources, services, and opportunities.

#### ***SOC WK 3210 Social Issues and Social Policy Development: 3 semester hours***

Prerequisites: SOC WK 2200, POL SCI 1100, and ECON 1000. The identification of issues concerning governmental provisions to meet contemporary social needs, with analysis of the principles and values underlying alternative solutions. A study of the processes by which citizen opinions and public policies evolve and are implemented in areas such as income maintenance, crime and delinquency, employment, family and child welfare, and public mental health.

#### ***SOC WK 3410 Research Design in Social Work: 3 semester hours***

Prerequisites: Satisfaction of Math Proficiency requirement and either SOC 3220, CRIMIN 2220, or PSYCH 2201. Students explore research concepts and procedures (hypothesis testing, sampling, measurement, and design) emphasizing issues in social work research. Students learn to collect, analyze and present data.

#### ***SOC WK 3510 Human Behavior in the Social Environment: 3 semester hours***

Prerequisites: BIOL 1012 and SOC 2160 or PSYCH 2250 or consent of instructor. This course will focus on the normative stages in the life span, and specifically, how human development is affected by the physical environment and social status characteristics. Empirical information and theoretical views on human development will be included. Human development will be viewed as a complex interaction of individual developmental stages with family, social, and community systems.

#### ***SOC WK 3700 Diversity and Social Justice: 3 semester hours***

Same as GS 3700. Prerequisites: PSYCH 2250 or SOC 2160; and SOC WK 3100 (may be taken concurrently). Analyzes the structure, dynamics, and consequences of social and economic injustice, and the impact on diverse groups in American society. Examines theoretical models and practice principles for work with diverse groups.

**SOC WK 4110 Social Work Practice with Individuals, Families, and Groups: 3 semester hours**

Prerequisites: SOC WK 3100, SOC WK 3510, and SOC WK 3700 taken prior to or concurrently. This course continues the presentation of basic knowledge and practice skills for entry level professional practice begun in SOC WK 3100. It builds on the generalized helping model, incorporating specialized skills for working with specific groups of clients (e.g., children, older adults, and people with mental illnesses and/or disabilities), with families, and small groups.

**SOC WK 4300 Social Work Practice with Communities: 3 semester hours**

Prerequisites: SOC WK 3210 (may be taken concurrently), senior standing. Continuation of basic practice skills with emphasis given to analysis and intervention at the community level. Includes assessment of community assets and needs and the development of community-level interventions. Emphasis is also placed on helping the practitioner evaluate the impact of intervention.

**SOC WK 4350 Human Service Organizations: 3 semester hours**

Prerequisite: POL SCI 1100; PSYCH 2250 or SOC 2160 and admission to the BSW program or consent from instructor. This course seeks to help develop knowledge of organizational functioning and an understanding of organizational history, principles and philosophy of effective administration. Students develop theoretical and empirical understanding of groups and organizations, including concepts such as power and authority, organizational structure, goals, membership, leadership, motivation, technology and organizational culture. They will learn to develop a budget and to submit proposals for grant funding. Using a systemic perspective with organizations as settings for practice students learn to function in and through organizations.

**SOC WK 4376 Mental Health and Aging: 3 semester hours**

Same as GERON 4376 and PSYCH 4376. Prerequisites: 9 hours of psychology, graduate standing, or consent of instructor or program director. This course provides a survey of theory and research in mental health issues for older populations, focusing on psychological and social aspects of mental health and impairment. The course details approaches to understanding prevalence, etiology, assessment, and treatment of the psychological disorders most commonly experienced by older adults, including anxiety, depression, delirium, and dementia, among others.

**SOC WK 4398 Child Maltreatment: A Multidisciplinary Approach: 3 semester hours**

Same as PSYCH 4398 and CAST 4398. Prerequisites: CAST 3290 or PSYCH 3290 (may be taken concurrently), or consent of instructor. This course, with its interdisciplinary emphasis, focuses on the systemic response to the primary domains of child maltreatment by multidisciplinary teams and child advocacy centers. Risk factors, cultural considerations, and mandated reporting of child abuse and neglect are emphasized. Students will begin to develop professional skills pertaining to child maltreatment, using a variety of experiential learning modalities.

**SOC WK 4604 Introduction to Motivational Interviewing: 1 semester hour**

Prerequisites: SOC WK 4110 or SOC WK 5100, or consent of instructor and admission to the BSW or MSW program. This course focuses on skill development in Motivational Interviewing (MI), a specific style of interaction used to help clients/patients increase internal motivation to change behavior. The course will include theoretical underpinnings of MI, including a review of research establishing MI as an evidence-based intervention for a number of behavior areas. The course will also review a model of learning MI and provide specific opportunities for students to practice the skill. The broad objective of this course is to provide social work students an overview of Motivational Interviewing and its application to various domains of social work.

**SOC WK 4610 Intimate Partner Violence: 3 semester hours**

Same as GS 4610. Prerequisites: SOC WK 3510. Focuses on theoretical and empirical understanding of domestic violence in US society and social work practice with battered women and their families. Addresses direct services, community organizing, and public policy changes to help end violence against women. Relationships between violence against women and other forms of oppression (e.g., racism, economic exploitation, heterosexism and social class) are explored.

**SOC WK 4620 Substance-Related and Addictive Disorders: 3 semester hours**

Prerequisites: SOC WK 4110 or SOC WK 5100 or equivalent, (or taking concurrently), or consent of instructor. This class examines the interface of psychological, physical, social, and spiritual aspects of addiction. This practice class is designed to deepen students' abilities to address clients' issues related to addictions and addictive behaviors, including: prevention, assessment, and intervention. It builds on the generalized helping model within a systems perspective, and it introduces specialized skills for working with individuals, with specific groups of clients, with families, and with small groups.

**SOC WK 4641 Crisis Intervention: 1 semester hour**

Prerequisites: SOC WK 4110 or SOC WK 5100 or equivalent (or are taking concurrently), or consent of instructor. This course introduces students to the theoretical framework as well as the skills needed to understand and engage in effective crisis intervention. Students will learn a specialized model for assessment and intervention with people in crisis and will have an opportunity to apply this model to a variety of case situations.

**SOC WK 4642 Safety Strategies for Social Workers: 1 semester hour**

Prerequisites: SOC WK 4110 or SOC WK 5100, and at least senior or graduate standing, and admission to the BSW or MSW program; or consent of instructor. Social Workers can find themselves in situations where their physical safety may be threatened. This hands-on interactive course introduces students to an escape and evasion curriculum. Students learn the principles of avoidance, escape, and evasion as well as the impact of the sympathetic nervous system on survival. In addition, students become familiar with techniques for avoiding aggression by learning to identify threat cues. Strategies for countering and escaping from escalating levels of physical threats are reviewed. Under the supervision of a trained campus police officer student learn to refine physical techniques for staying safe.

**SOC WK 4670 Cross Cultural Perspectives on Social Policy: 3 semester hours**

Prerequisites: SOC WK 3210 or equivalent. This course examines social policies in different countries, which may include social insurance, social assistance, health care, and social services. Using a comparative framework, the course examines the nature of government involvement, and public and private sector relations. It examines adequacy, equity, inclusiveness, comprehensiveness, effectiveness, and efficiency of social policies in the countries being studied.

**SOC WK 4680 Introduction to Gerontological Practice: 3 semester hours**

Same as GERON 4680. Prerequisites: Junior/senior undergraduate or graduate standing, or permission of the instructor or program director. This course introduces key concepts and practices in the evaluation and care of older adults. It is intended for students considering aging-focused careers in the social service or healthcare fields. Topics include developmental and health-related theories of aging, functional and psychosocial aspects of aging, working with older adults in various service settings, multi and interdisciplinary team approaches, and basic standards of professional conduct that apply across professions.

**SOC WK 4751 Skills for Healing Racism: Facilitating Dialogue for Institutional Change: 1 semester hour**

Prerequisites: BSW senior standing or graduate standing. This course will enable students to explore the social structures, institutions and patterns of thinking and behavior that perpetuate racism. In this very interactive format, participants will develop facilitation skills necessary to attempt institutional change in their agency, school or community. Students will explore their roles, both as the oppressed and the oppressor, in the dynamics of race relations and societal change.

**SOC WK 4800 Supervised Field Experience in Social Work I: 4 semester hours**

Prerequisite: SOC WK 3100, SOC WK 4110. SOC WK 4110 must be taken prior to or concurrently with SOC WK 4801; consent of instructor. This course provides students practice experience in social service agencies. Students work at the agencies approximately 20 hours per week. The purpose of this experience is to familiarize students with agency operations. Selection of the agency is based on student education needs.

**SOC WK 4801 Integrative Field Experience Seminar I: 2 semester hours**

Prerequisite: Consent of instructor. This seminar provides an opportunity for students to integrate previous course work with their experience in social work agencies. Classroom discussion will emphasize direct practice issues. Concurrent enrollment in SOC WK 4800 is required.

**SOC WK 4850 Supervised Field Experience in Social Work II: 4 semester hours**

Prerequisite: SOC WK 4800, SOC WK 4801 and consent of instructor. This is a continuation of agency practice experience. Students work at the agency approximately 20 hours per week and continue at the same agency as SOC WK 4800 or change agencies with the consent of the instructor.

**SOC WK 4851 Integrative Field Seminar II: 2 semester hours**

Prerequisites: Consent of instructor and concurrent registration in SOC WK 4850. This seminar is a continuation of SOC WK 4801. Classroom discussion will emphasize administration and community organization issues.

**SOC WK 4900 Special Study: 1-10 semester hours**

Prerequisite: Consent of instructor. Independent study through advanced readings in method and philosophy on a topic of particular interest, or field research in an agency.

**SOC WK 5100 Generalist Social Work Practice: 3 semester hours**

Prerequisites: SOC WK 4110 or equivalent or admission to MSW program. Using a problem-solving approach, students develop theoretical and empirical understanding and practical application of generalist social work methods. Students gain knowledge and skills that include interviewing, assessment, crisis and short term intervention, contracting, resource development, and case documentation needed for competent direct practice with diverse populations.

**SOC WK 5200 Social Policy and Social Services: 3 semester hours**

Prerequisites: SOC WK 3210 or POL SCI 2420 or POL SCI 3460 or equivalent or admission to the MSW program. Covers the history and development of social welfare policies, legislative processes, and existing social welfare programs. Examines frameworks for social policy analysis, analyzes how social and economic conditions impact the process of social policy development and implementation, and introduces policy practice in social work.

**SOC WK 5300 Community Practice and Social Change: 3 semester hours**

Prerequisites: SOC WK 3300, or SOC 3344, or equivalent or admission to the MSW program. Focuses on economic, social, and political theory and research on communities and social change. Examines conceptual models of community practice within the generalist model and develops skills in organizing, advocacy, and planning.

**SOC WK 5350 Social Work and Human Service Organizations: 3 semester hours**

Prerequisites: SOC WK 3510 and SOC WK 4300 or PSYCH 3318 or MGMT 3611 or equivalent or admission to the MSW program. Students develop theoretical and empirical understanding of groups and organizations, including concepts such as power and authority, structure, goals, membership, leadership, motivation, technology and organizational culture. Using organizations as settings for social work practice and as targets for change, students learn strategies and skills for assessment and intervention.

**SOC WK 5410 Critical Thinking and Analysis: 3 semester hours**

Prerequisites: Admission to MSW program. This course will require students to think critically about social work practice and analyze the evidence base. It is the first of a two-course sequence designed to provide students with the knowledge base and skills for using the scientific method ethically to advance social work practice, knowledge, and theory. It focuses on understanding a variety of methods for critical analysis and synthesis of academic literature. Students learn the importance of critically assessing quantitative and qualitative research methods and how to apply an ethical decision making model to resolve ethical dilemmas including the use of research results to inform practice.

**SOC WK 5450 Social Work Research Methods and Analysis II: 3 semester hours**

Prerequisites: SOC WK 5410 or equivalent and an approved statistics course. Advanced course, focusing on analysis of qualitative and quantitative data to advanced social work practice, knowledge, and theory. Students learn to use and interpret various statistical procedures for analyzing quantitative data, including bivariate and multivariate analysis, and content and statistical analysis for qualitative data. Students apply these analytic techniques to social work case material using computer software applications.



**SOC WK 5500 Foundations of Human Behavior in the Social Environment: 3 semester hours**

Same as GS 5500. Prerequisites: SOC WK 3510 or equivalent or admission to the MSW program. Focuses on theoretical and empirical understanding of human behavior in the social environment using a life-span perspective. Introduces biological, behavioral, cognitive, and sociocultural theories of individuals, families, and small groups, and their implications for the professional social worker's understanding of socioeconomic status, gender, disability, ethnicity, race, and sexual orientation.

**SOC WK 5635 Social Work Practice with LGBT Populations: Deconstructing the Alphabet Soup: 3 semester hours**

Same as GS 5635. Prerequisites: SOC WK 5100 and SOC WK 5500 or consent of instructor. This advanced-practice course focuses on developing the knowledge and skills necessary for effective social work practice with LGBT persons, families, and communities. The goal of this course is to facilitate deeper understanding of LGBT identities, relationships, health and mental health challenges, and issues of race, age, religion, spirituality, and class and how these intersect. The course treats lesbian women, gay men, bisexual, and transgender persons as four distinct communities.

**SOC WK 5700 Diversity and Social Justice for Social Work: 3 semester hours**

Same as GS 5700. Prerequisite: Graduate standing. Analyzes the structure, dynamics, and consequences of social and economic injustice, and the impact on diverse groups in American society. Examines theoretical models and practice principles for work with diverse groups.

**SOC WK 5800 Graduate Field Practicum I: 4 semester hours**

Prerequisites: Graduate standing and consent of academic advisor. Provides integrative field experience in generalist social work practice.

**SOC WK 5801 Foundation Field Practicum Seminar: 2 semester hours**

Prerequisite: Graduate standing and consent of instructor. Integrates academic content from foundation course work and experiential learning in field placements. Goals are to conceptualize the problem solving process in field practice, synthesize theory into a social work approach that encourages creative use of self, and underscore ethics and service to diverse groups in practices.

**SOC WK 6120 Theory and Practice with Older Adults: 3 semester hours**

Same as GERON 6120. Prerequisites: Graduate standing. This course examines theory and empirically-based assessment and intervention models for work with older adults. Topics include the differences between life circumstances of older adults and younger adult populations; how ethnicity, gender, social class, and sexual orientation intersect with age and create special intervention issues; discussion of ethical and value issues (e.g. client autonomy, rationing of health care); examination of family and community resources in providing care; interventions with older adults with physical and mental disabilities; and older adults in residential settings.

**SOC WK 6150 Theory and Practice with Families: 3 semester hours**

Prerequisites: SOC WK 5100 or equivalent, graduate standing and departmental approval. This course will examine theoretical approaches to social work with families, including the impact of the social environment. Skills will include assessment and multi-disciplinary intervention with multi-problem families. Special emphasis will be given to poverty, chemical dependency, intra-familial violence, physical and mental illnesses, and working with family members of diverse cultures, socioeconomic backgrounds, races, sexual orientation, and ability. Values and ethics will be emphasized.

**SOC WK 6160 Advanced Social Work Practice Across the Life Span: 3 semester hours**

Prerequisites: SOC WK 5100 or equivalent or consent of instructor. Examines theory and empirically-based assessment and intervention strategies for diverse populations across the life span. Students will gain basic mastery of behavioral, cognitive-behavioral, brief therapeutic and supportive psychotherapeutic techniques and their appropriate use with children, adolescents, and young, middle and older adults. The course will also consider the effects of family, peers, and societal context (e.g. poverty, racism, and ageism) in understanding psycho-social stressors particular to each life era, including academic failure and delinquency, substance abuse, physical and mental illness, family disruption and instability, and grief and loss issues.

**SOC WK 6200 Family Policy: 3 semester hours**

Prerequisites: SOC WK 5200 or equivalent or consent of instructor and graduate standing. Examines policy development, implementation and impact of social policies on children, youth, and families. International national, and state policies that affect basic family needs will be the focus, including topics such as economic support, health care, child care and protection, and child and youth development. Intended and unintended consequences of existing policies on the family will be examined as well as future policy directions.

**SOC WK 6220 Social Policy and Military Veterans: 3 semester hours**

Same as MVS 6220. Prerequisites: SOC WK 5200 or its equivalent or consent of the instructor and graduate standing. This course provides an overview of public policy towards military veterans, with an emphasis on social work. The course focuses on political theory and public policy and reviews the various methodological approaches to studying public policy, the pertinent theories related to public policy analysis, an introduction to military culture and current issues facing veterans. The main focus of the course will be on understanding the current issues facing veterans and how public policy affects these issues.

**SOC WK 6250 Social and Economic Development Policy: 3 semester hours**

Same as POL SCI 6418. Prerequisites: SOC WK 5200 or equivalent, or consent of instructor. This course examines the economic and political urban processes that planners, policy makers, service organizations and advocates seek to influence. In this course students will develop skills in policy analysis and development. The course provides an introduction to three models of modern political economy, then seeks to deepen these broad analytic approaches by examining more recent policy developments in cities like St. Louis. This course also focuses on recent strategies to address issues such as employment, wages, housing, education, taxes and social services.

**SOC WK 6300 Leadership and Management in Nonprofit Organizations: 3 semester hours**

Same as P P ADM 6300 and POL SCI 6300. Prerequisite: Graduate standing required. Addresses the role and scope of the independent sector in the United States, as well as the leadership and management of nonprofit organizations within that sector. Topics include the economic and political scope of the independent sector, the role of volunteerism in a democratic society, and the role and scope of philanthropy. Topics in voluntary organization management and leadership include the dynamics, functions, and membership structure of NPOs, especially staff-board and other volunteer relations; governance and management of NPOs; resource mobilization; and program development management and evaluation.

**SOC WK 6310 American Philanthropy and Nonprofit Resource Development: 3 semester hours**

Same as P P ADM 6310. Prerequisite: Graduate standing. This course addresses the history, philosophy, roles and scope of philanthropy in the United States, including its role in the nonprofit, voluntary sector. It further examines the contemporary forces which impact philanthropy and charitable giving, both by institutions and individuals. The course examines the effective planning and management of development programs (e.g., annual giving), fund raising vehicles (e.g., mail solicitations) and the fund raising process, form planning through donor relations.

**SOC WK 6311 Staff Management Issues in Nonprofit Organizations: 1 semester hour**

Same as P P ADM 6311. Prerequisites: Graduate standing required. This course addresses issues involved in managing staff in nonprofit organizations. The course will cover the following topics: fundamentals of staff supervision; balancing supervisory processes with counseling and coaching; selecting, hiring, evaluating, and terminating staff, and legal issues that affect these processes.

**SOC WK 6312 Legal Issues in Managing Nonprofit Organizations: 1 semester hour**

Same as P P ADM 6312. Prerequisite: Graduate standing. This course addresses legal issues involved in managing and governing nonprofit organizations. The course will cover the following topics: The Board as steward of the organization; Director and officer liability; tax laws concerning charitable giving; legal issues in managing staff and volunteers (e.g., hiring, evaluating, and terminating employees); Missouri nonprofit law.

**SOC WK 6313 Financial Issues in Managing Nonprofit Organizations: 1 semester hour**

Same as P P ADM 6313. This course addresses financial issues involved in governing and managing nonprofit organizations. The course will cover the following topics: cash flow analysis; budgeting; fund accounting; cost accounting (determining costs for programs and services); understanding and using standard financial statements, including balance sheets, cash flow statements, statements of activity, and operating and capital budgets.

**SOC WK 6380 Advanced Community Development Theory & Practice: 3 semester hours**

Prerequisites: SOC WK 5200 and SOC WK 5300. In this advanced community practice course, students examine concepts, theories, and models of macro level practice and gain skills for addressing complex community building challenges. Course content focuses on theories of social change, empowerment, and promotion of social and economic justice for culturally diverse and at-risk communities. The roles of community organizer, community developer, and social planner are emphasized in this course to help students understand and apply mezzo-macro social work interventions in urban settings.

**SOC WK 6400 Practice and Program Evaluation: 3 semester hours**

Prerequisites: SOC WK 5410 and SOC WK 5450 or equivalent or consent of instructor. Provides specialized knowledge in the use of qualitative and quantitative research skills to evaluate the effectiveness of social work practice. Topics will include single system design, group designs, and program evaluation. Students will design and conduct a research project associated with their advanced social work practicum. Results will be presented to the class and the agency. Value and ethical issues, particularly those relevant to client race and gender will be emphasized as students develop and conduct their research.

**SOC WK 6443 Health Care Policy: 3 semester hours**

Same as POL SCI 6443, P P ADM 6430, GERON 6443. Prerequisites: Graduate Standing and consent of instructor. (MSW students will normally take the social policy foundation course prior to enrolling in this course.) Survey course examining current issues in health care policy that face the nation. Policies are placed in a historical context to show how issues have been influenced by different political and economic conditions. Secondary consequences and limitations of current trends in health policy are explored.

**SOC WK 6444 Integrated Health Care: 3 semester hours**

Prerequisites: SOC WK 5500 or its equivalent. This course will introduce students to the essential practice skills needed to effectively address the challenges of integrating services, care and support for persons with health, mental health, and substance use problems.

**SOC WK 6449 Human Resources in the Public Sector: 3 semester hours**

Same as POL SCI 6449 and P P ADM 6490. This course presents an overview of personnel and labor relations in the public sector. It places particular emphasis on issues which are unique to the public sector, such as the merit system, the questions of representative bureaucracy, and the constraints of personnel in the nonprofit sector. Course topics may include personnel reforms in the federal sector, equal employment and affirmative action policies, testing, selection, hiring, comparable worth, job evaluation and labor relations, including grievance arbitration and collective bargaining.

**SOC WK 6450 Gerontological Assessment: 3 semester hours**

Same as GERON 6450. Prerequisite: Graduate standing. This course provides an overview of psychosocial assessment with older adults and their family caregivers. major areas of gerontological assessment practice are considered, including dementia, mood disorders, suicide, grief, alcoholism, elder abuse/neglect, family caregiving, and interdisciplinary team issues.

**SOC WK 6491 Strategic and Program Planning for Nonprofit Organizations: 3 semester hours**

Same as POL SCI 6490 and P P ADM 6550. Prerequisites: Graduate standing or consent of Instructor. Strategic and program planning enable an organization to concentrate on efforts and set priorities guided by a mission, vision, and an understanding of its environment. Focus is on preparing a strategic plan and a program plan for a nonprofit organization and analyzing an organization's ability to deliver goods and/or services to its constituents in today's economic, social and political climate.

**SOC WK 6601 Evid Based Approaches in Direct SW Practice: Cog & Rational Emotive Behavioral Therapy Models: 1 semester hour**

Prerequisites: SOC WK 5100 or advanced standing, and graduate standing. This course examines theory and evidence based practices through use of the Cognitive Behavioral and Rational Emotive Behavioral therapy models. Students will use these theories to conduct hands-on intervention practices of assessment, treatment planning, interventive strategies, and termination when working within a family or direct practice setting. Student-conducted interventions through the use of role-plays will be videotaped and viewed by the instructor and classmates at each stage of the therapeutic process. This course will include integration and application of the Diagnostic and Statistical Manual of Mental Disorders through the psychotherapeutic process.

**SOC WK 6603 Evid Based Approaches in Dir SWork Practice: Play and Interactive Models: 1 semester hour**

Prerequisites: SOC WK 5100 or advanced standing status, and graduate standing. This course examines theory and evidence-based practices through use of the Play and Interactive therapy models. Students will use these theories to conduct hands-on intervention practices of assessment, treatment planning, interventive strategies, and termination when working within a family or direct practice setting. Student-conducted interventions through the use of role-plays will be videotaped and viewed by the instructor and classmates at each stage of the therapeutic process. This course will include integration and application of the Diagnostic and Statistical Manual of Mental Disorders through the psychotherapeutic process.

**SOC WK 6605 Screening, Brief Intervention, and Referral to Treatment: 1 semester hour**

Prerequisites: SOC WK 5100 and SOC WK 5500; or their equivalents. This course will include in depth information on screening tools to identify high risk substance use, application of SBIRT and specific motivational interviewing techniques, referral procedures that include how and to whom to refer patients for further treatment and how best to communicate with specialty providers, procedures for following patients after referral, use of electronic health records, and how to integrate SBIRT into established systems of care.

**SOC WK 6606 Evidence-Based Approaches in Direct Social Work Practice: Dialectical Behavior Therapy: 1 semester hour**

Prerequisites: SOC WK 5100 or advanced standing status, and graduate standing. This course examines theory and evidence-based practices through the Dialectical Behavior Therapy (DBT) model. DBT combines cognitive and behavioral theories in individual and group treatment. Students will use these theories to understand the DBT skills of Mindfulness, Emotion Regulation, Interpersonal Effectiveness, and Distress Tolerance. Students will engage in role playing while learning the four components of DBT: DBT skills training, DBT individual therapy, DBT phone coaching, and DBT therapist consultation team meeting. This course will include integration and application of the DSM-5.

**SOC WK 6630 Diagnosis and Related Pharmacology for Social Work Practice: 3 semester hours**

Prerequisites: SOC WK 5100 or equivalent or consent of instructor. Course is designed for social work students, and will provide an overview of the development and treatment of selected mental health disorders classified by Diagnostic and Statistical Manual of Mental Disorders. In particular, the course will examine, from a systems perspective, the psychological and neuropsychological etiologies of mood, psychotic, personality and other disorders and their preferred pharmacological treatment.

**SOC WK 6640 School Social Work Practice in Public Schools: 3 semester hours**

Prerequisites: SOC WK 5100 or equivalent or graduate standing and consent of instructor. Examines the role of the social worker in school settings and includes work with youth, families, and communities in relation to the child or adolescent's functioning in school.

**SOC WK 6645 Social Work in Healthcare Settings: 3 semester hours**

Prerequisites: SOC WK 5100 and SOC WK 5500 or equivalent. This course focuses on the key issues and practices of providing social work services in varying healthcare settings including hospital and primary care clinics. Practice issues will include admission, treatment and discharge planning (housing, transportation, insurance and finances, medications and social/community supports) with a focus on cultural competence, health literacy, and medical terminology. The course will also review inpatient medicine, inpatient psychiatry, forensic social work, emergency department social work, transplant social work and clinic social work. Course discussions will integrate information concerning current health care economics.

**SOC WK 6800 Graduate Field Practicum II: 3 semester hours**

Prerequisites: SOC WK 5800 and SOC WK 5801 and consent of academic advisor. Provides integrative field experience in student's graduate social work practice concentration. May be taken concurrently with SOC WK 6850 with special permission.

**SOC WK 6850 Graduate Field Practicum III: 3 semester hours**

Prerequisites: SOC WK 6800. Provides advanced integrative field experience in students' graduate social work concentration.

**SOC WK 6900 Directed Study in Professional Social Work: 1-10 semester hours**

Prerequisite: Graduate standing and consent of instructor. Independent graduate-level study on a topic of particular interest through readings, reports, and field work under faculty supervision.

# UMSL/Washington University Joint Undergraduate Engineering Program

## General Information

The Joint Undergraduate Engineering Program of UMSL and Washington University was approved in 1993 by the University of Missouri and the Coordinating Board for Higher Education. The program is designed to offer course work beyond the pre-engineering courses at UMSL and the area community colleges. Pre-engineering and general education courses are offered at UMSL, and upper-level engineering courses are offered in the late afternoons, evenings and on Saturdays on the Washington University campus: this schedule permits students to co-op during the day at local engineering firms. Students will be admitted to the upper-division program only after they have completed an acceptable pre-engineering program. They can earn a bachelor of science in civil engineering (BSCIE), a bachelor of science in electrical engineering (BSEE), or a bachelor of science in mechanical engineering (BSME).

## Mission Statement

The mission of the University of Missouri-St. Louis/Washington University Joint Undergraduate Engineering Program is to provide a high quality engineering education preparing students to meet the evolving expectations of industry. The program strives to excite and nurture the intellectual, technical, professional and personal development of the students through a partnership that provides a mechanism for Washington University to share its campus, resources and personnel with the UMSL students, many of whom are place-bound individuals. The Joint Program educates students from the diverse St. Louis community to elevate their future to enter the engineering profession, thereby elevating the St. Louis region.

## Program Educational Objectives

Our program aspires to make positive, substantive and lasting contributions to the lives of our students. The nontraditional and traditional students in the civil, electrical and mechanical engineering programs often have work experience in or related to engineering practice or the military. The program seeks to impart an education that inspires the graduates to constantly share their knowledge with others, to continually improve their knowledge and understanding, and to persistently adapt to change in technology and world needs. Graduates should be able to apply their comprehensive education with the highest ethical standards within the civil, electrical or mechanical engineering profession or a related field. The objectives are to:

- meet the needs of employers of civil, mechanical, and electrical engineers, with an emphasis on the St. Louis region.
- meet the expectations of graduate schools that our alumni attend.

## Student Outcomes

The student outcomes are the skills and knowledge expected of all students at the time of their graduation. Faculty members will assess

these student outcomes. The student outcomes for the Joint Engineering Program are:

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics;
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors;
3. an ability to communicate effectively with a range of audiences;
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts;
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives;
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions;
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

The BSCIE, the BSEE, and the BSME are accredited by the Engineering Accreditation Commission of ABET. <https://www.abet.org>

## Latin Honors

In accordance with the University's Latin Honors policy (p. 26), candidates graduating from the University of Missouri St. Louis/Washington University Joint Undergraduate Engineering Program in the 2020-2021 Academic Year must meet the following GPA qualifications:

Summa Cum Laude	3.947
Magna Cum Laude	3.841
Cum Laude	3.583

## Fees

Students register on the UMSL campus and pay UMSL fees plus an engineering fee for engineering courses. Limits on enrollments are determined by the availability of resources.

## Career Outlook

Engineering is one of the few careers in which the bachelor's degree is a professional degree. Students earning a bachelor of science degree in one of the engineering disciplines are well qualified for entry-level engineering positions in a variety of businesses, industries, consulting firms, and government agencies. As society becomes increasingly dependent on technology, the outlook for all engineering disciplines becomes increasingly bright. Engineering careers typically rank at, or very near, the top of virtually any published rating of promising jobs for the 21st Century. Besides tackling challenging technical problems, roughly two-thirds of all engineers will have some level of management responsibility within ten years of receiving their bachelor's degrees. Many practicing engineers will eventually continue their education by pursuing graduate degrees on a part-time basis. Typical areas of graduate study include all advanced technical and scientific fields and management.



## For Further Information

For information about enrolling in this program, please contact the UMSL/Washington University Joint Undergraduate Engineering Program at 314-516-6800.

## Degrees

Civil Engineering BSCIE (p. 376)  
Electrical Engineering BSEE (p. 436)  
Mechanical Engineering BSME (p. 505)

## Minors

Civil Engineering (p. 379)  
Electrical Engineering (p. 438)  
Mechanical Engineering (p. 506)

## Engineering Courses

### **ENGR 1010 Introduction to Engineering: 1 semester hour**

This course, required of all new Freshman with an interest in Engineering, is designed to assist students in their transition to the university experience and to UMSL by giving students the knowledge and tools needed to succeed as scholars. Students will learn about faculty expectations, support services, and student life, as well as engineering.

### **ENGR 2310 Statics: 3 semester hours**

Prerequisites: MATH 1900 and PHYSICS 2111. Statics of particles and rigid bodies. Equivalent systems of forces. Distributed forces; centroids. Applications to trusses, frames, machines, beams, and cables. Friction. Moments of inertia. Principle of virtual work and applications.

### **ENGR 2320 Dynamics: 3 semester hours**

Prerequisites: MATH 2000 and ENGR 2310. Review of vector algebra and calculus. Kinematics of a particle. Newton's laws and the kinetics of a particle. Work and energy. Impulse and momentum. Kinematics of rigid bodies. General theorems for systems of particles. Kinetics of rigid bodies. The inertia tensor.

## Joint Civil Engineering Courses

### **J C ENGR 1430 Introduction to Engineering Design: CAD & GIS: 2 semester hours**

Prerequisites: Civil Engineering major. An introduction to engineering design in the context of civil engineering problems and applications. Students will learn the basics of GIS and computer-aided design and drafting concepts and techniques to learn the fundamentals of spatial reasoning and graphical representation. Introduction to terminology, symbols, multiple use blocks and details, origins and uses of survey data, contours, alignments, working with 2D and 3D, using both model space and layouts, dimensioning and dimension styles, attributes, and xrefs, and using templates. Freehand sketching, including pictorial and orthographic views, applied to the design process as well.

### **J C ENGR 2160 Surveying: 3 semester hours**

Prerequisites: Civil Engineering major. Horizontal and vertical control surveys, including traverses, triangulation, trilateration, and leveling; basic adjustments of observations; geologic data; coordinate systems. Basic route surveying, including horizontal and vertical curves.

### **J C ENGR 3210 Computer Methods of Engineering Analysis: 2 semester hours**

Prerequisites: MATH 2020, CMP SCI 1250 (may be taken concurrently), and junior standing. This course provides an introduction to engineering design and analysis utilizing numerical methods, spreadsheet functions, and database queries. Students will build on skills gained in CMP SCI 1250 to utilize a high level programming language and spreadsheet functions to develop techniques for civil engineering design and problem solving.

### **J C ENGR 3360 Civil Engineering Materials Lab: 1 semester hour**

Prerequisite: J M ENGR 2410. This course and J M ENGR 3360 should be taken concurrently. Testing procedures, testing machines, use of laboratory equipment, analysis of data, and presentation of results. Laboratory tests on static tension, compression, bending, and torsion of metal specimens. Tests on wood. Determination of compressive and tensile strengths of concrete. Design of concrete mixes and verification of strength. Experiments in advanced topics in mechanics of materials.

### **J C ENGR 3410 Structural Analysis: 3 semester hours**

Prerequisites: ENGR 2310, J M ENGR 2410 and Civil Engineering major. A review of the calculation of reactions, shear, and bending moment. Definition, construction and use of influence lines. Deflections for statically determinate structures using the work method. Analysis of statically indeterminate trusses using the method of consistent deformations. Analysis of continuous beams and planar frames using the consistent deformation, slope-deflection and moment distribution methods. The influence of span on strength, stability, and economy of structures. An introduction to structural analysis software.

### **J C ENGR 3420 Structural Design: 3 semester hours**

Prerequisites: J M ENGR 2410 and J C ENGR 3410. Fundamentals of structural design in steel, reinforced concrete, and timber. Familiarization with the sources of various design codes and practice in interpreting them. Computer graphics applications.

### **J C ENGR 3430 Civil Engineering Design CAD & GIS: 2 semester hours**

Prerequisites: J M ENGR 1413, junior standing. This course provides an introduction to engineering design in the context of civil engineering. Students will build on skills gained in J M ENGR 1413 to utilize computer-aided design software and GIS software to learn techniques of civil engineering design and problem solving.

### **J C ENGR 3460 Transportation Engineering: 3 semester hours**

Prerequisites: Civil Engineering major. Fundamental treatment of the planning, engineering, design, and procedural aspects of multimodal transportation are covered. Intermodal freight and urban transportation planning processes and overview of environmental, energy, and economic issues are discussed.

### **J C ENGR 3520 Water and Wastewater Treatment: 3 semester hours**

Prerequisites: J M ENGR 3700 (may be taken concurrently) and Civil Engineering major, or consent of instructor. Application of the basic principles of chemistry, microbiology, and fluid mechanics to the analysis of environmental problems, especially those involving control of water and land contamination. Properties of municipal and industrial wastewater, solid waste, and hazardous waste. Estimation of assimilative capacity and other characteristics of receiving waters. Introduction to unit processes and unit operations used in the treatment of municipal and industrial wastewater. Design of processes and facilities used for treating drinking water, wastewater, and sludge disposal. Waste minimization and recycling in both industrial and municipal settings.

**J C ENGR 3760 Hydraulic Engineering: 3 semester hours**

Prerequisites: J M ENGR 3700 and Civil Engineering major. The principles of open channel flow will be discussed and illustrated with practical examples. Methods for channel design, storm sewer, culvert and bridge analysis will be presented using the concepts of gradually-varied, steady flow. A design project using computerized analysis and design is used to implement concepts in a large practical application.

**J C ENGR 4000 Independent Study: 1-3 semester hours**

Prerequisites: Civil Engineering major and consent of instructor. Independent investigation of a civil engineering topic of special interest to a student performed under the direction of a faculty member.

**J C ENGR 4190 Soil Mechanics: 3 semester hours**

Prerequisites: J M ENGR 2410, J M ENGR 3700 and Civil Engineering major. Basic geology as it relates to index and classification properties of soil. Exploration, sampling, and testing techniques. Soil classification systems. clay minerals and soil structures. Compaction and stabilization. Capillary, shrinkage, swelling, and frost action in soils. Effective stress, permeability, seepage, and flow nets. Consolidation and consolidation settlements. stresses in soil. Time rate of consolidation. Mohr's circle, stress path, and failure theories. Shearing strength of sand and clays.

**J C ENGR 4200 Soil Exploration and Testing: 1 semester hour**

Prerequisites: J C ENGR 4190 (may be taken concurrently) and Civil Engineering major. Soil exploration; in-situ soil testing, laboratory testing of soil; processing of test data using a microcomputer; statistical analysis of test data; use of test results in the decision-making process.

**J C ENGR 4630 Design of Steel Structures: 3 semester hours**

Prerequisites: J C ENGR 3410, J C ENGR 3420, and Civil Engineering major. Behavior and design of steel frames by 'allowable stress' and 'maximum strength' based on deterministic and LRFD (Load-resistance factor design) methods. Design of beams, columns, beamcolumns, plate girders, connections, multistory frames, and bridge girders, Torsional design of steel structures. Plastic analysis and design of steel structures. Miscellaneous topics in structural steel construction and design.

**J C ENGR 4640 Foundation Engineering: 3 semester hours**

Prerequisites: J C ENGR 3420, J C ENGR 4190, J C ENGR 4200 and Civil Engineering major. Principal problems in design and construction of foundations for bridges and buildings. Bearing capacity of deep and shallow foundations; pressure on retaining walls and shallow foundations; pressure on retaining walls and slope stability; modern developments in piling, cofferdams, open caissons, pneumatic caissons.

**J C ENGR 4660 Advanced Design of Concrete Structures: 3 semester hours**

Prerequisites: J M ENGR 3360, J C ENGR 3410, J C ENGR 3420, and Civil Engineering major. Flexural behavior and design, strength and deformation of rectangular and nonrectangular sections, shear strength, beamcolumns, long columns, slab systems, design of frames, and footings will be covered.

**J C ENGR 4670 Structural Design Projects: 3 semester hours**

Prerequisites: J C ENGR 4630 and Civil Engineering major. Students carry out the complete design of typical and unusual building and bridge structures. Use of the computer as a design tool is emphasized. Projects are conducted in cooperation with production engineers.

**J C ENGR 4720 Legal Aspects of Construction: 3 semester hours**

Prerequisites: Junior standing or permission of instructor, and Civil Engineering major.

**J C ENGR 4740 Economic Decisions in Engineering: 3 semester hours**

Same as J M ENGR 4730. Prerequisites: Enrolled in the Joint Engineering Program. This course examines the principles of economics involved in engineering decisions. It looks at decisions between alternatives based on the efficient allocation of resources. Topics include the time element in economics, analytical techniques for economic studies and taxes.

**J C ENGR 4830 Fundamentals of Surface Water Hydrology and Environmental Engineering: 3 semester hours**

Prerequisites: J M ENGR 3700 and senior status. The principles of the hydrologic cycle including precipitation, evaporation, transpiration, infiltration, runoff, streamflow, and groundwater will be discussed and illustrated. In addition, computational fundamentals of hydrologic analysis will be presented such as unit hydrographs, routing, data analysis, and flood frequency. Elements of quantitative problems in urban stormwater systems and management, water quality and urbanization. Concepts of sustainability and green engineering such as low impact development and other best management practices will be presented. Computer software will be utilized.

**J C ENGR 4910 Hydrology and Hydraulic Design Project: 3 semester hours**

Prerequisites: J M ENGR 3700, J C ENGR 3760, J C ENGR 4830 and Civil Engineering major. This course is designed to provide seniors in Hydrology and Hydraulics with a major design/facility plan project. The principals of hydrologic and hydraulic design will be utilized in developing the hydrology, hydraulics and floodplain analysis for a local watershed or land area. Hydrologic analysis is performed to size hydraulic systems and evaluate watershed and floodplain performance. The course is structured to apply hydrologic theory and modeling techniques to engineering hydrology and hydraulics for watershed analysis, floodplain delineation, and urban stormwater. The student will also consider the next generation of hydrologic computation, watershed evaluation and the importance of severe storm impacts and flood management. Consideration of sustainability and green infrastructure practices will also be included. A final written report and class presentation of the design project is included.

**J C ENGR 4950 Fundamentals of Civil Engineering Review: 1 semester hour**

Prerequisite: Senior standing. A review and preparation of the most recent NCEES Fundamentals of Engineering (FE) Exam specifications for Civil Engineering students is offered in a classroom setting. Exam strategies will be illustrated using examples.

**Joint Computer Science Courses****J CMP SC 1002 Introduction to Computing Tools: Matlab Skills: 1 semester hour**

This course is aimed at the acquisition of MATLAB skills through hands-on familiarization and practice. Students practice the array, vector, and meshgrid representations, programming and plotting, and apply these skills to solve numerical problems and generate reports.

**Joint Electrical Engineering Courses****J E ENGR 2300 Introduction to Electrical Networks: 3 semester hours**

Prerequisites: Electrical Engineering or Mechanical Engineering major. Elements, sources, and interconnects. Ohm's and Kirchoff's laws, superposition and Thevenin's theorem; the resistive circuit, transient analysis, sinusoidal analysis, and frequency response.

**J E ENGR 2320 Introduction to Electronic Circuits: 3 semester hours**

Prerequisites: J E ENGR 2300 and Electrical Engineering major. Introduction to contemporary electronic devices and their circuit applications. Terminal characteristics of active semiconductor devices. Incremental and D-C models of junction diodes, bipolar transistor (BJTs), and metal-oxide semiconductor field effect transistors (MOSFETs) are developed and used to design single- and multi-stage amplifiers. Models of the BJT and MOSFET in cutoff and saturation regions are used to design digital circuits.

**J E ENGR 2330 Electrical and Electronic Circuits Laboratory: 3 semester hours**

Prerequisites: J E ENGR 2300 and Electrical Engineering major. Lectures and laboratory exercises related to sophomore topics in introductory networks and basic electronics.

**J E ENGR 2340 Electrical Laboratory for Mechanical Engineers: 1 semester hour**

Prerequisites: J E ENGR 2300 (may be taken concurrently) and Mechanical Engineering major. Laboratory in introductory electrical circuits and devices of relevance to mechanical engineers.

**J E ENGR 2600 Introduction to Digital Logic and Computer Design: 3 semester hours**

Prerequisites: CMP SCI 1250. Digital computers and digital information-processing system; Boolean algebra, principles and methodology of logical design; machine language programming; register transfer logic; microprocessor hardware, software, and interfacing; fundamental of digital circuits and systems; computer organization and control; memory systems; arithmetic unit design. Occasional laboratory exercises.

**J E ENGR 3300 Engineering Electro Magnetic Principles: 3 semester hours**

Prerequisites: Electrical Engineering major. Electromagnetic theory as applied to electrical engineering; vector calculus; electrostatics and magnetostatics; Maxwell's equations, including Poynting's theorem and boundary conditions; uniform plane-wave propagation; transmission lines-TEM modes, including treatment of general, lossless line, and pulse propagation; introduction to guided waves; introduction to radiation and scattering concepts.

**J E ENGR 3310 Electronics Laboratory: 3 semester hours**

Prerequisites: J E ENGR 2300, J E ENGR 2330 and Electrical Engineering major. Laboratory exercises for juniors covering topics in computer-aided measurements, computer simulation, and electronic circuits.

**J E ENGR 3320 Power, Energy and Polyphase Circuits: 3 semester hours**

Prerequisites: J E ENGR 2300 and Electrical Engineering major. Fundamental concepts of power and energy; electrical measurements; physical and electrical arrangement of electrical power systems; polyphase circuit theory and calculations; principle elements of electrical systems such as transformers, rotating machines, control, and protective devices, their description and characteristics; elements of industrial power system design.

**J E ENGR 3360 Principles of Electronic Devices: 3 semester hours**

Prerequisites: Electrical Engineering major. Introduction to the solid-state physics of electronic materials and devices, including semiconductors, metals, insulators, diodes and transistors, Crystals growth technology and fundamental properties of crystals. Electronic properties and band structure of electronic materials, and electron transport in semiconductor materials. Fabrication of pn junction diodes, metal-semiconductor junctions, and transistors and integrated-circuit chips. Fundamental electrical properties of rectifying diodes and light-emitting diodes, bipolar transistors and field effect transistors. Device physics of diodes and transistors, large-signal electrical behavior and high-frequency properties.

**J E ENGR 3370 Electronic Devices and Circuits: 3 semester hours**

Prerequisites: J E ENGR 2320 and Electrical Engineering major. Introduction to semiconductor electronic devices: transistors and diodes. Device electrical DC and high-frequency characteristics. Bipolar transistors, field-effect transistors for analog electronics applications. Transistors fabrication as discrete devices and as integrated-circuit chips. Large-signal analysis of transistor amplifiers: voltage gain, distortion, input resistance and output resistance. Analysis of multitransistor amplifiers: Darlington, Cascode, and coupled-pair configurations. Half-circuit concepts, differential-mode gain, common-mode gain, and differential-to-single-ended conversion. Transistor current sources, active loads, and power-amplifier stages. Applications to operational amplifiers and feedback circuits.

**J E ENGR 3510 Signals and Systems: 3 semester hours**

Prerequisites: J E ENGR 2300, J E MATH 3170 and Electrical Engineering major. Elementary concepts of continuous-time and discrete-time signals and systems. Linear time-invariant (LTI) systems, impulse response, convolution, Fourier series, Fourier transforms, and frequency-domain analysis of LTI systems. Laplace transforms, Z-transforms, and rational function descriptions of LTI systems. Principles of sampling and modulation. Students participate weekly in recitation sections to develop oral communications skills using class materials.

**J E ENGR 3620 Computer Architecture: 3 semester hours**

Prerequisites: J E ENGR 2600 and Electrical Engineering major. Study of interaction and design philosophy of hardware and software for digital computer systems: Machine organization, data structures, I/O considerations. Comparison of minicomputer architectures.

**J E ENGR 4000 Independent Study: 1-3 semester hours**

Prerequisites: Electrical Engineering major and consent of instructor. Opportunities to acquire experience outside the classroom setting and to work closely with individual members of the faculty. A final report must be submitted to the department. Open as a senior elective only. Hours and credit to be arranged. Credit variable, maximum credit per semester 3 hours. Maximum program total credit 3 hours.

**J E ENGR 4050 Reliability and Quality Control: 3 semester hours**

Prerequisites: J E MATH 3260, MATH 1320 and Electrical Engineering major. An integrated analysis of reliability and quality control function in manufacturing. Statistical process control, analysis, reliability prediction, design, testing, failure analysis and prevention, maintainability, availability, and safety are discussed and related. Qualitative and quantitative aspects of statistical quality control and reliability are introduced in the context of manufacturing.



**J E ENGR 4340 Solid State Power Circuits and Applications: 3 semester hours**

Prerequisites: J E ENGR 2320, J E ENGR 3510, and Electrical Engineering major. Study of the strategies and applications of power control using solid-state semiconductor devices. Survey of generic power electronic converters. Applications to power supplies, motor drives, and consumer electronics. Introduction to power diodes, thyristors, and MOSEFETs.

**J E ENGR 4350 Electrical Energy Laboratory: 3 semester hours**

Prerequisites: J E ENGR 2330 and Electrical Engineering major. Experimental studies of principles important in modern electrical energy systems. Topics: power measurement, transformers, batteries, static frequency converters, thermoelectric cooling, solar cells, electrical lighting, induction, commutator, and brushless motors, synchronous machines.

**J E ENGR 4360 Energy Alternatives: 3 semester hours**

Same as J M ENGR 4360. Prerequisites: J E ENGR 2300 or J M ENGR 3200. This course introduces engineering analyses of the human uses of energy. Both non-renewable (e.g., oil, natural gas, coal, nuclear) and sustainable (e.g., hydropower, solar, wind, biomass) resources are covered. Topics include the engineer's role in harvesting, production, storage, conversion, delivery, and uses of energy. Students will learn system analysis, design, integration, optimization, and operational aspects of selected resources delivery systems, and end uses. Technical content will include site selection, conversion and delivery efficiency calculations, engineering economic analyses, control systems, and energy resource systematic classification. Measure will consist of a mix of homework, quizzes, tests, class participation, and projects.

**J E ENGR 4410 Control Systems I: 3 semester hours**

Same as J M ENGR 4310. Prerequisites: J E MATH 3170, J E ENGR 2300. Introduction to automatic control concepts. Block diagram representation of single and multiloop systems. Multi-input and multi-output systems. Control system components. Transient and steady-state performance; stability analysis; Routh, Nyquist, Bode, and root locus diagrams. Compensation using lead, lag and lead-lag networks. Synthesis by Bode plots and root-locus diagrams. Introduction to state-variable techniques, state-transition matrix, state-variable feedback.

**J E ENGR 4440 Sensors and Actuators: 3 semester hours**

Prerequisites: Senior standing. The course provides engineering students with basic understanding of two of the main components of any modern electrical or electromechanical system; sensors as inputs and actuators as outputs. This course is useful for those students interested in control engineering, robotics and systems engineering.

**J E ENGR 4470 Robotics Laboratory: 3 semester hours**

Prerequisites: J E ENGR 3510 or J E ENGR 4410, and Electrical Engineering major. Introduces the students to various concepts such as modeling, identification, model validation and control of robotic systems. The course focuses on the implementation of identification and control algorithms on a two-link robotic manipulator (the so-called pendubot) that will be used as an experimental testbed. Topics include: introduction to the mathematical modeling of robotic systems; nonlinear model, linearized model; identification of the linearized model: input-output and state-space techniques; introduction to the identification of the nonlinear model: energy-based techniques; model validation and simulation; stabilization using linear control techniques; a closer look at the dynamics; stabilization using nonlinear control techniques.

**J E ENGR 4520 Power Systems Analysis: 3 semester hours**

Prerequisites: J E ENGR 3320 and Electrical Engineering major. Introduction to the modeling and elements of power systems; machines, lines, and loads; load flow methods and applications; short circuit analysis using symmetrical components on symmetrical and unsymmetrical faults; methods of economic operation of power systems and contingency; state estimators, stability, and introduction of the independent system operator.

**J E ENGR 4710 Communications Theory and Systems: 3 semester hours**

Prerequisites: J E ENGR 3510, J E MATH 3260 or MATH 1320, and Electrical Engineering major. Introduction to the concepts of transmission of information via communication channels. Amplitude and angle modulation for the transmission of continuous-time signals. Analog-to-digital conversion and pulse code modulation. Transmission of digital data. Introduction to random signals and noise and their effects on communication. Optimum detection systems in the presence of noise. Elementary information theory. Overview of various communication technologies such as radio, television, telephone networks, data communication, satellites, optical fiber, and cellular radio.

**J E ENGR 4720 Internet Communications: 3 semester hours**

Prerequisites: Electrical Engineering major. This course will introduce and cover the architecture, protocols, security, and quality of service (QoS) of Internet Communications. Starting with the design principles and architecture of the Internet, communication applications such as Voice over IP (VoIP), video conferencing, and presence and instant messaging will be covered. Protocols developed by the Internet Engineering Task Force (IETF) including IP, TCP, UDP, DNS, SIP, XMPP, and ENUM will be studied. Latest areas of research including the Service Oriented Architecture (SOA) and peer-to-peer (P2P) architectures for Internet Communications will be covered.

**J E ENGR 4730 Radar Systems: 3 semester hours**

Prerequisites: J E ENGR 3510. Overview of a radar system and examples of fielded radars. The block diagram representation of a radar. Review of signals. Introduction to common radar waveforms. How the environment can distort the waveform. Introduction to noise and clutter. How a target and clutter look like to a radar. Overview of the radar range equation and its multiple forms. Introduction and overview of noise sources present in a radar and their effect on performance. A more detailed look at radar waveforms in the presence of clutter and noise. Optimum detection systems in the presence of clutter and noise. Radar design from a systems engineering approach. Techniques to improve signal to noise ratio. A second look at fielded radars using what we have learned.

**J E ENGR 4820 Digital Signal Processing: 3 semester hours**

Prerequisites: J E ENGR 3510 and Electrical Engineering major. Introduction to analysis and synthesis of discrete-time linear time-invariant (LTI) systems. Discrete-time convolution, discrete-time Fourier transform, Z-transform, rational function descriptions of discrete-time LTI systems. Sampling, analog-to-digital conversion and digital processing of analog signals. Techniques for the design of finite impulse response (FIR) and infinite impulse response (IIR) digital filters. Hardware implementation of digital filters and finiteregister effects. The discrete Fourier transform and the fast Fourier transform (FFT) algorithm.

**J E ENGR 4950 Fundamentals of Electrical Engineering Review: 1 semester hour**

Prerequisites: Senior standing. A review and preparation of the most recent NCEES Fundamentals of Engineering (FE) Exam specifications for Electrical Engineering students is offered in a classroom setting. Exam strategies will be illustrated using examples.



***J E ENGR 4990 Electrical Engineering Senior Seminar: 1 semester hour***

Prerequisites: Senior standing. This course focuses on personal and professional development to prepare graduates entering the electrical engineering profession. Topics may include personality characteristics, diversity, team dynamics, professionalism, early career development, graduate study, effective presentations, and case histories of electrical engineering projects. Performance is based on class participation, oral presentations, and written reports.

**Joint Engineering Communication Courses*****J E COMM 2000 Engineering Studio I: 1 semester hour***

This one credit hour seminar introduces a holistic, professional formation approach to engineering education. This seminar will help students build real-world understanding of business, ethics, and society; integrate real-world perspective with traditional coursework; and build their own professional identity. Students will learn from local leaders in industry and work in teams to explore modern problems and solutions. This course must be taken during the first semester of the upper level engineering program.

**Joint Engineering Mathematics Courses*****J E MATH 3170 Engineering Mathematics: 4 semester hours***

Prerequisites: MATH 2020 or equivalent, and Electrical Engineering or Mechanical Engineering major. The Laplace transform and applications; series solutions of differential equations, Bessel's equation, Legendre's equation, special functions; matrices, eigenvalues, and eigenfunctions; Vector analysis and applications; boundary value problems and spectral representation; Fourier series and Fourier integrals; solution of partial differential equations of mathematical physics.

***J E MATH 3260 Probability and Statistics for Engineering: 3 semester hours***

Prerequisites: MATH 2000, and Electrical Engineering or Mechanical Engineering major. Study of probability and statistics together with engineering applications. Probability and statistics: random variables, distribution functions, density functions, expectations, means, variances, combinatorial probability, geometric probability, normal random variables, joint distribution, independence, correlation, conditional probability, Bayes theorem, the law of large numbers, the central limit theorem. Applications: reliability, quality control, acceptance sampling, linear regression, design and analysis of experiments, estimation, hypothesis testing. Examples are taken from engineering applications.

**Joint Mechanical Engineering Courses*****J M ENGR 1413 Introduction to Engineering Design: CAD: 2 semester hours***

Prerequisites: Civil Engineering or Mechanical Engineering major. An introduction to engineering design in the context of mechanical engineering. Students learn the fundamentals of spatial reasoning and graphical representation. Freehand sketching, including pictorial and orthographic views, are applied to the design process. Computer modeling techniques provide accuracy, analysis, and visualization tools necessary for the design of devices and machines. Topics in detailing design for production, including fasteners, dimensioning, tolerancing, and creation of part and assembly drawings are also included.

***J M ENGR 1414 Introduction to Engineering Design: Project: 2 semester hours***

Prerequisites: Mechanical Engineering major. An introduction to engineering design in the context of mechanical engineering. Students first complete a series of experiments that introduce physical phenomena related to mechanical engineering. Understanding is achieved by designing and building simple devices and machines. The course proceeds to a design contest in which the students design and build from a kit of parts a more significant machine that competes in a contest held at the end of the course. The course is open to all and is appropriate for anyone interested in mechanical devices, design, and the design process.

***J M ENGR 2110 Machine Shop, Fabrication, and Prototyping: 2 semester hours***

Basic machine shop and mechanical fabrication skills are taught in the context of case studies from prototype design and build projects. After considering possible redesigns, students build the hardware considered in the case study. Through these 'build' assignments students learn basic machine shop skills including precision measurement, workholding, sawing, drilling, turning, milling, and grinding. The assignments also provide the opportunity to learn general purpose mechanical fabrication activities including glueing, basic woodwork, welding, and basic electronic control. Completion of the course provides certification to use the Washington University engineering machine shop.

***J M ENGR 2410 Mechanics of Deformable Bodies: 3 semester hours***

Prerequisites: MATH 1900, ENGR 2310, and Civil Engineering or Mechanical Engineering major. Normal and shear stresses and strains. Stress-strain diagrams. Hooke's law and elastic energy. Thermal stresses. Stresses in beams, columns, torsional members, and pressure vessels. Elastic deflection of beams and shafts. Statically indeterminate structures. Mohr's circle of stress. Stability concepts.

***J M ENGR 3010 Computer Aided Design: 3 semester hours***

Prerequisites: J M ENGR 1413 and Mechanical Engineering major. Computer aided design, analysis and optimization of parts and assemblies; solid modeling of complex surfaces, creation of detail drawings, dimensioning and tolerancing; assembly modeling, assembly constraints, interference checking; motion constraints, force and acceleration analysis, thermal analysis; part optimization for weight, strength and thermal characteristics using Unigraphics software.

***J M ENGR 3110 Mechanical Design and Machine Elements: 3 semester hours***

Prerequisite: J M ENGR 2410. Provides a thorough overview of the steps in the engineering design process and introduces analytical/quantitative techniques applicable to each step. Topics include recognition of need, specification formulation, concept generation, concept selection, embodiment, and detail design. Includes an introduction to several classes of machine elements such as shafts, bearings, gears, brakes, and threaded fasteners. Underlying analytical models of the machine elements are presented along with guidelines about designing and choosing such elements for practical applications. Students complete a case study project to conclude the course.

***J M ENGR 3200 Thermodynamics: 3 semester hours***

Prerequisites: MATH 1900, CHEM 1111 and PHYSICS 2111, and Electrical Engineering or Mechanical Engineering major. Classical thermodynamics; thermodynamic properties; work and heat; first and second laws. Entropy, irreversibility, availability. Application to engineering systems.

**J M ENGR 3250 Material Science for J M ENGR: 4 semester hours**

Prerequisites: CHEM 1111. Introduces the chemistry and physics of engineering materials. Emphasis on atomic and molecular interpretation of physical and chemical properties, the relationships between physical and chemical properties, and performance of an engineering material.

**J M ENGR 3360 Material Science for J C ENGR: 3 semester hours**

Prerequisites: CHEM 1111 and Civil Engineering major. Introduces the chemistry and physics of engineering materials. Emphasis on atomic and molecular interpretation of physical and chemical properties, the relationships between physical and chemical properties, and performance of an engineering material.

**J M ENGR 3700 Fluid Mechanics: 3 semester hours**

Prerequisites: MATH 2020 and ENGR 2320. Fundamental concepts of fluids as continua. Viscosity. Flow field: velocity, vorticity, streamlines. Fluid statics: hydrostatic forces manometers. Conservation of mass and momentum. Incompressible inviscid flow. Dimensional analysis and similitude. Flow in pipes and ducts. Flow measurement. Boundary-layer concepts. Flow in open channels.

**J M ENGR 3710 Principles of Heat Transfer: 3 semester hours**

Prerequisites: J M ENGR 3200, J M ENGR 3700 and J E MATH 3170, and Mechanical Engineering major. Introductory treatment of the principles of heat transfer by conduction, convection, or radiation. Mathematical analysis of steady and unsteady conduction along with numerical methods. Analytical and semiempirical methods of forced and natural convection systems. Heat exchangers: LMTD and e-NTU analysis. Boiling and condensation heat transfer. Radiation between blackbody and real surfaces. Radiation network analysis.

**J M ENGR 3721 Fluid Mechanics Laboratory: 1 semester hour**

Prerequisites: J M ENGR 3700 and Civil Engineering or Mechanical Engineering major. Physical laboratory exercises focusing on fluid properties and flow phenomena covered in J M ENGR 3700. Calibration and use of a variety of equipment; acquisition, processing, and analysis of data by manual as well as automated methods.

**J M ENGR 3722 Heat Transfer Laboratory: 1 semester hour**

Prerequisites: J M ENGR 3721, J M ENGR 3710 and Mechanical Engineering major. Physical laboratory exercises, including some numerical simulations and computational exercises, focusing on heat-transfer phenomena covered in J M ENGR 3710. Calibration and use of variety of laboratory instrumentation; acquisition, processing, and analysis of data by manual as well as automated methods; training in formal report writing.

**J M ENGR 3750 Fluid Control and Power Systems Theory and Practice: 3 semester hours**

Prerequisites: J M ENGR 3700 and Mechanical Engineering major. Topics to be covered include: design of hydraulic and pneumatic control and power systems using advanced concepts and analytical tools; analysis of fluid flow through small orifices and between parallel and inclined planes; theory of spool and flapper valves; physical configuration of practical components: pumps, motors, fluid lines and valves, accumulators and storage devices; integration of components into practical systems, development of realistic performance diagrams using MATLAB Symulink; application of performance diagrams in design and analysis of fluid power systems.

**J M ENGR 4000 Independent Study: 1-3 semester hours**

Prerequisites: Mechanical Engineering major and consent of instructor. Independent investigation of a mechanical engineering topic of special interest to a student performed under the direction of a faculty member.

**J M ENGR 4110 Mechanical Engineering Design Project: 3 semester hours**

Prerequisites: J M ENGR 3110. Small student teams complete design projects subject to various constraints (e.g. economic, safety, legal, environmental, ethical), and appropriate codes and standards. Teams first perform a background information study, which is followed by a specification and conceptual design study. Embodiment and fabrication plans are produced for the chosen concept. The results of an engineering analysis study influence the final design of a working prototype, which is built and demonstrated. This is 'documented' in an appropriate manner (e.g. a CAD model) that allows others to reproduce a version, and it is 'published' so that other interested parties learn of its existence.

**J M ENGR 4120 Design of Thermal Systems: 3 semester hours**

Prerequisites: J M ENGR 3200 and senior standing. Analysis and design of advanced thermo-fluid systems. Student teams participate in the design process which could involve research, design formulation, codes, standards, engineering economics, a design project report, and formal presentations. Topics include: thermal-fluid systems and components, such as power, heating, and refrigeration systems, pumps, fans, compressors, combustors, turbines, nozzles, coils, heat exchangers and piping.

**J M ENGR 4170 Dynamic Response of Physical Systems: 2 semester hours**

Prerequisites: ENGR 2320 and J E MATH 3170, J M ENGR 4170 and J M ENGR 4180 must be taken in the same semester. Free and forced vibration of mechanical systems with lumped inertia, springs, and dampers. Methods of Laplace transform, complex harmonic balance, and Fourier series. Electrical analogs. Introduction to Lagrange's equations of motion and matrix formulations. Transient response of continuous systems by partial differential equations, by rayleigh methods, and by lumped parameters.

**J M ENGR 4180 Dynamic Response Laboratory: 1 semester hour**

Prerequisites: J M ENGR 4170 and J M ENGR 4180 must be taken during the same semester. Laboratory problems focusing on materials covered in J M ENGR 4170.

**J M ENGR 4250 Material Selection in Engineering Design: 3 semester hours**

Prerequisites: J M ENGR 3250 and Mechanical Engineering major. Analysis of the scientific bases of material behavior in the light of research contributions of the last 20 years. Development of a rational approach to the selection of materials to meet a wide range of design requirements for conventional and advanced applications. Although emphasis will be placed on mechanical properties, other properties of interest in design will be discussed, e.g., acoustical, optical and thermal.

**J M ENGR 4310 Control Systems I: 3 semester hours**

Same as J E ENGR 4410. Prerequisites: J E MATH 3170, J E ENGR 2300. Introduction to automatic control concepts. Block diagram representation of single and multi-loop systems. Multi-input and multi-output systems. Control system components. Transient and steady-state performance; stability analysis; Routh, Nyquist, Bode, and root locus diagrams. Compensation using lead, lag, and lead-lag networks. Synthesis by Bode plot plots and root-locus diagrams. Introduction to state-variable techniques, state transition matrix, state-variable feedback.

**J M ENGR 4360 Energy Alternatives: 3 semester hours**

Same as J E ENGR 4360. Prerequisites: J E ENGR 2300 or J M ENGR 3200. This course introduces engineering analyses of the human uses of energy. Both non-renewable (e.g., oil, natural gas, coal, nuclear) and sustainable (e.g., hydropower, solar, wind, biomass) resources are covered. Topics include the engineer's role in harvesting, production, storage, conversion, delivery, and uses of energy. Students will learn system analysis, design, integration, optimization, and operational aspects of selected resources delivery systems, and end uses. Technical content will include site selection, conversion and delivery efficiency calculations, engineering economic analyses, control systems, and energy resource systematic classification. Measure will consist of a mix of homework, quizzes, tests, class participation, and projects.

**J M ENGR 4630 Nanotechnology: Concepts and Applications: 3 semester hours**

The aim of this course is to introduce to students the general meaning, terminology and ideas behind nanotechnology and its potential application in various industries. The topics covered will include nanoparticles - properties, synthesis and applications, carbon nanotubes - properties, synthesis and applications, ordered and disordered nanostructured materials and their applications, quantum wells, wires and dots, catalysis and self-assembly, polymers and biological materials, nanoelectronics and nanophotonics, nanomanufacturing and functional nano-devices, health effects and nanotoxicity etc.

**J M ENGR 4700 Sustainable Environmental Building Systems: 3 semester hours**

Prerequisites: Mechanical Engineering major. Sustainable design of building lighting and HVAC systems considering performance, life-cycle cost and downstream environmental impact. Criteria, codes and standards for comfort, air quality, noise/vibration and illumination. Life cycle and other investment methods to integrate energy consumption/conservation, utility rates, initial cost, system/component longevity, maintenance cost and building productivity. Direct and secondary contributions to acid rain, global warming and ozone depletion.

**J M ENGR 4706 Aircraft Performance: 3 semester hours**

Prerequisites: Enrolled in the Joint Engineering Program. This course introduces the principles and applications of aerodynamics to determine the performance of typical jet engine and propeller airplanes. The performance calculations include flight conditions of takeoff, climb, level flight, and landing. The topics covered also include range and endurance computation, turning flight, flight envelope, constraint analysis and design process. The knowledge and skill gained in this course can be readily applied in the preliminary design of an airplane.

**J M ENGR 4730 Economic Decisions in Engineering: 3 semester hours**

Same as J C ENGR 4740. Prerequisites: Enrolled in the Joint Engineering Program. This course examines the principles of economics involved in engineering decisions. It looks at decisions between alternatives based on the efficient allocation of resources. Topics include the time element in economics, analytical techniques for economic studies and taxes.

**J M ENGR 4810 HVAC Analysis and Design I: 3 semester hours**

Prerequisites: Enrolled in the Joint Engineering Program. Moist air properties and the psychrometric chart. Classic moist air processes and design procedures for heating and cooling systems. Design of heating, ventilating, and air conditioning systems for indoor environmental comfort and health. Basics of heat transfer in building structures. Solar radiation effects on building heat transfer. Calculation procedures for the analysis of heating and cooling loads in buildings.

**J M ENGR 4820 HVAC Analysis and Design II: 3 semester hours**

Prerequisites: Enrolled in the Joint Engineering Program. Energy calculations to estimate the quantity of energy needed to heat and cool building structures. Fundamentals of incompressible flow, basics of centrifugal pump performance, and design procedures for water piping systems. Space air diffuser design to assure that temperatures, humidities, and air velocities within occupied spaces are acceptable. Air duct design and fan analysis for optimally distributing air through building air duct systems. Performance analysis of refrigeration systems, including the effects of pressure losses and heat transfer. Direct contact heat and mass transfer.

**J M ENGR 4900 Engineering Project Management: 3 semester hours**

Prerequisites: Electrical Engineering or Mechanical Engineering major. Basic fundamentals and advanced concepts of engineering project management applicable to projects and programs, both large and small. Project management skills, techniques, systems, software and application of management science principles will be covered and related to research, engineering, architectural, and construction projects from initial evaluations through approval, design, procurement, construction and startup.

**J M ENGR 4950 Fundamentals of Mechanical Engineering Review: 1 semester hour**

Prerequisites: Senior standing and Mechanical Engineering major. A review and preparation of the most recent NCEES Fundamentals of Engineering (FE) Exam specifications for Mechanical Engineering students is offered in a classroom setting. Exam strategies will be illustrated using examples.

**J M ENGR 4990 Mechanical Engineering Senior Seminar: 1 semester hour**

Prerequisites: Mechanical Engineering major. Personal and professional development to prepare graduates entering the mechanical engineering profession. Topics may include personality characteristics, diversity, team dynamics, professionalism, early career development, graduate study, effective presentations, and case histories of mechanical engineering projects. Performance is based on class participation, oral presentations, and written reports.

# International Studies and Programs

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## General Information

UMSL Global supports academic programs, seminars, and conferences designed to promote research in international studies, improve teaching of international studies, and encourage an interest in international affairs in the university and community.

UMSL Global houses the E. Desmond Lee Global Ethnic Collaborative, the Karakas Family Foundation Alliance for the Advancement of Hellenic Studies, and endowed professorships in African/African American studies, Chinese studies, Greek studies, International Education, Irish studies, and Japanese studies. The German Culture Center and Nicholas and Theodora Matsakis Hellenic Culture Center are also vital parts of UMSL Global's international programming.

## Fellows

Each year a number of UMSL faculty are appointed as research Fellows.

## Education Abroad and Exchange Programs

The Education Abroad section of this Bulletin contains details about campus study abroad and international exchange programs. Those programs are administered by UMSL Global's Education Abroad team.

## International Student and Scholar Services

International Student and Scholar Services (ISSS) provides services for international students and scholars, including admissions, visa and immigration matters, credential evaluations, health insurance, tax matters, nonacademic advising, initial campus arrival, orientation, social activities, and referrals to other campus units.

## Education Abroad Programs

### Study Abroad Programs

The University of Missouri-St. Louis is committed to broadening students' understanding of different cultures and preparing them for the global community in which we live. One of the most successful ways of achieving this global mindset is to study overseas. The opportunity to live and study in a different culture is an enriching experience, both academically and personally.

UMSL Global (formerly The Office of International Studies and Programs) provides UMSL students of nearly any major the opportunity to study around the globe. Most programs run for an academic year, semester, or summer. Two to three week-long faculty-led programs are offered during the winter intersession and summer. Through individual advising, students can find the program best suited to their personal, academic, and career goals.

## Fees and Financial Aid

The cost of the program depends on the type of program, the services provided and the country of study. For most programs, participants continue to pay UMSL fees plus airfare, room and board, and spending money. Students studying abroad for a semester or more are usually housed in dormitories or are assisted in finding apartments. In most cases, students are able to use their UMSL financial aid toward a study abroad program. Study abroad scholarships are available for qualified applicants through UMSL Global.

## Application

Applications are generally due in mid-February (summer, fall and academic year programs) and mid-September (winter intersession and spring programs). Students should plan to spend at least one or two months researching a program before applying.

Participant selection is based on academic achievement, faculty recommendations, departmental/divisional approval of the proposed course of study, and for some programs, proficiency in the foreign language of instruction. Most programs are designed for undergraduate students in their sophomore to senior years of study; however, a limited number of programs for freshmen and graduate students are available.

## Student Teaching Abroad

Teacher Education students may be able to student teach in Fuxin, China during the spring semester. In addition to meeting the other requirements for student teaching, students complete an application form for the site.

## Courses

*C I ST 3200 Study Abroad, Non UM-St. Louis Program: 1-24 semester hours*

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*C I ST 5200 Study Abroad Non UM-St Louis Program Grad: 1-15 semester hours*

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# Supporting Offices

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## Academic Affairs

### Campus Testing Center

93 JC Penney  
Phone: 314-516-6396  
Email: [assessctr@umsl.edu](mailto:assessctr@umsl.edu)  
Website: <http://www.umsl.edu/~campustesting/>

### Center for Teaching and Learning

519 Lucas Hall  
Phone: 314-516-4508  
Fax: 314-516-7130  
Email: [ctl@umsl.edu](mailto:ctl@umsl.edu)  
Website: <http://www.umsl.edu/services/ctl/>

### Computer Education Training Center

West County Computer Education  
12837 Flushing Meadows Dr.  
St. Louis MO 63131  
Phone: 314-984-9000  
Fax: 314-966-0409  
Email: [info@cetc.umsl.edu](mailto:info@cetc.umsl.edu)  
Website: <http://www.cetc.umsl.edu>

### English-as-a-Second Language/English for Academic Purposes

554 Clark Hall  
Phone: 314-516-6240  
Fax: 314-516-6237  
Website: <http://www.umsl.edu/divisions/artscience/forlanglit/Languages/esl.html>

### International Student and Scholar Services

361 Social Sciences Building  
Phone: 314-516-5229  
Fax: 314-516-5636  
Email: [iss@umsl.edu](mailto:iss@umsl.edu)  
Website: <http://www.umsl.edu/~intelstu/>

### Mathematics and Writing Academic Center

222 Social Sciences Building  
Phone: 314-516-6863  
Website: [http://umsl.edu/divisions/artscience/math\\_cs/math-academic-center/index.html](http://umsl.edu/divisions/artscience/math_cs/math-academic-center/index.html)  
Website: <http://www.umsl.edu/~umslenglish/Writing%20Center/index.html>

### New Student Programs

366 Millennium Student Center  
Phone: 314-516-5291  
Email: [orientation@umsl.edu](mailto:orientation@umsl.edu)  
Website: <http://www.umsl.edu/newstudentprograms>

## Student Academic Support Services

### Precollegiate Student Support Services-Bridge Program

107 Lucas Hall  
Phone: 314-516-5196  
Email: [precollegiate@umsl.edu](mailto:precollegiate@umsl.edu)  
Website: <http://www.umsl.edu/~precollegiate>

### Multicultural Student Services

225 Millennium Student Center  
Phone: 314-516-6807  
Email: [multicultural@umsl.edu](mailto:multicultural@umsl.edu) ([multicultural@umsl.edu](mailto:multicultural@umsl.edu))  
Website: <http://www.umsl.edu/~mcraa>

### Student Enrichment and Achievement

107 Lucas Hall  
Phone: 314-516-5300  
Email: [umslsea@umsl.edu](mailto:umslsea@umsl.edu) ([umslsea@umsl.edu](mailto:umslsea@umsl.edu))  
Website: ([umslsea@umsl.edu](mailto:umslsea@umsl.edu))<http://www.umsl.edu/services/sea>

### University Tutoring Center

225 Millennium Student Center  
Phone: 314-516-6807  
Email: [tutoring@umsl.edu](mailto:tutoring@umsl.edu)  
Website: <https://www.umsl.edu/~webdev/tutoring/index.html>

### Science and Technology Academic Center

125 Stadler Hall  
Website: <http://www.umsl.edu/~stac/contactus.html>

### Student Affairs

301 Woods Hall  
Phone: 314-516-5211  
Fax: 314-516-5221  
Email: [student\\_affairs@umsl.edu](mailto:student_affairs@umsl.edu)  
Website: <http://www.umsl.edu/studentlife/dsa/>

### Career Services

278 Millennium Student Center  
Phone: 314-516-5111  
Fax: 314-516-6535  
Email: [careerservices@umsl.edu](mailto:careerservices@umsl.edu)  
Website: <http://www.umsl.edu/depts/career/>

### Disability Access Services

144 Millennium Student Center  
Phone: 314-516-6554  
TDD: 314-516-5212  
Fax: 314-516-6561  
Website: <http://www.umsl.edu/services/disabled/>

### Recreation and Wellness Center

229 Student Recreation and Wellness Center  
Phone: 314-516-2238  
Website: <http://www.umsl.edu/campusrecreation/>

### Social Work Based Services

144 Millennium Student Center

Phone: 314-516-6369

## Student Involvement

366 Millennium Student Center

Phone: 314-516-5291

Fax: 314-516-6747

Email: [studentlife@umsl.edu](mailto:studentlife@umsl.edu)

Website: <http://www.umsl.edu/studentlife/osl/index.html>

## Triton Pantry

144 Millennium Student Center

Phone: 314-516-6369

Website: [www.umsl.edu/studentsocialservices/triton-pantry/index.html](http://www.umsl.edu/studentsocialservices/triton-pantry/index.html)

## University Bookstore and Triton Tech

Phone: 314-516-5763

Fax: 314-516-5770

Website: <http://www.umslbookstore.com/>

## University Health, Wellness and Counseling Services

131 Millennium Student Center

Phone: 314-516-5671

Fax: 314-516-5988

Email: [health\\_services@umsl.edu](mailto:health_services@umsl.edu)

Website: <http://www.umsl.edu/~uhwcs/>

## Veteran's Center

211 Clark Hall

Phone: 314-516-5705

Email: [VeteransOffice@umsl.edu](mailto:VeteransOffice@umsl.edu)

Website: <http://www.umsl.edu/veterans/>

## Advancement

### Alumni Association

414 Woods Hall

Phone: 314-516-5833

Fax: 314-516-5858

Email: [alumni@umsl.edu](mailto:alumni@umsl.edu)

Website: <http://www.umslalumni.org>

## Athletics

### Intercollegiate Sports

225 Mark Twain Building

Phone: 314-516-5661

Fax: 314-516-5503

Website: <http://www.umsltritons.com/>

## Enrollment Management

### Admissions

351 Millennium Student Center

Phone: 314-516-5451 / 1-800-462-8675

Fax: 314-516-5310

Email: [admissions@umsl.edu](mailto:admissions@umsl.edu)

Website: <http://www.umsl.edu/admissions/index.html>

## Degree Audit Reporting System (DARS)

261 Millennium Student Center

Phone: 314-516-6815

Fax: 314-516-4725

Website: <http://www.umsl.edu/services/dars/index.html>

## Registrar

269 Millennium Student Center

Phone: 314-516-5545

Fax: 314-516-7096

Email: [registration@umsl.edu](mailto:registration@umsl.edu)

Website: <http://www.umsl.edu/~register>

## Student Financial Aid

327 Millennium Student Center

Phone: 314-516-5526

Fax: 314-516-5408

Email: [financialaid@umsl.edu](mailto:financialaid@umsl.edu)

Website: <http://www.umsl.edu/services/finaid/>

## Welcome Center

257 Millennium Student Center

Phone: (314) 516-4104

Website: <https://www.umsl.edu/admissions/tours/index.html>

## Diversity Equity and Inclusion

127 Woods Hall

Phone: 314-516-5695

Fax: 314-516-5673

Website: <http://www.umsl.edu/services/oeo/>

## Finance and Administration

### Cashier's Office

285 Millennium Student Center

Phone: 314-516-5151

Fax: 314-516-5302

Email: [cashiers@umsl.edu](mailto:cashiers@umsl.edu)

Website: <http://www.umsl.edu/cashiers/>

## Information Technology Services

451 Express Scripts Hall

Phone: 314-516-6000

Fax: 314-516-6007

Website: <http://www.umsl.edu/technology/index.html>

## Institutional Safety (Police)

44 Campus Police Building

Phone: 314-516-5155

Fax: 314-516-6536

Website: <http://safety.umsl.edu/police/>

## Parking and Transportation

44 Campus Police Building

Phone: 314-516-4190

Website: <http://www.umsl.edu/~transportation/>

## **University Libraries**

### **The Thomas Jefferson Library**

Phone: 314-516-5060

Website: <http://www.umsl.edu/services/library/index.html>

### **St. Louis Mercantile Library**

Phone: 314-516-7240

Website: <http://www.umsl.edu/mercantile/>

## **University Archives**

220 Thomas Jefferson Library

Phone: 314-516-5129

Website: <http://www.umsl.edu/services/library/university-archives/index.html>

# Internship and Cooperative Education Positions

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## Internship/Cooperative Education Positions

Internships and Co-ops give students the opportunity to combine classroom studies with work experience in a field related to their education and career goals. These degree related positions offer students an excellent opportunity to gain professional job experience and earn money to help with expenses while in school. Through these opportunities, students begin to understand what career choices they might make, gain valuable contacts in their field, and, in many cases, get paid for their work. They graduate with a college degree and an impressive resume. Career Services and academic departments work with students and employers to ensure that positions are linked to curriculum and career development. These opportunities are available to UMSL students at all levels in all majors. Contact Career Services for more information at 516-5111, or visit 278 Millennium Center.

In addition to internships available through Career Services, internships and practica are available through many academic departments. Academic advisors can provide information about the requirements for these experiences, some of which are summarized below:

## College of Arts and Sciences

### Anthropology

ANTHRO 4325- ANTHRO 4329, Internship in Cultural Anthropology, Archaeology, Folklore, Museum Studies, Physical Anthropology - elective, for credit; placement with outside organizations; junior standing required. Positions available on competitive basis as lab and research assistants, teachers/facilitators, and interns/assistants - optional, noncredit.

The Human Origin and Cultural Diversity program offers internships in educational anthropology and diversity education.

### Art

ART HS 3387, Professional Internship for Art History majors only elective, for credit.

### Biology

BIOL 3699, Undergraduate Internship in Biotechnology - optional as part of certificate program, for credit or noncredit, enrollment in certificate program required.

BIOL 4299, Practicum in Conservation - required as part of certificate program, for credit, enrollment in certificate program required.

### Chemistry and Biochemistry

Opportunities are available to pursue research with faculty members for credit during the academic year, normally while enrolled in CHEM 3905. Stipends may be available in some cases. Expanded opportunities are available in the summer through the Research Experience for Undergraduates Program, which is typically funded by the National Science Foundation and local industry. In some cases students may

conduct CHEM 3905 research at a local company through collaborative arrangement between a faculty members and an industrial chemist.

### Communication

COMM 4920, Practicum in Applied Communication

COMM 4950, Internship in Applied Communication

### Computer Science

CMP SCI 3990, Undergraduate Internship in Computer Science

### Criminology and Criminal Justice

CRIMIN 3280, Internship in Criminology and Criminal Justice - elective, for credit.

### Economics

ECON 4990, Internship in Applied Economics; not required; 3 hours maximum.

### English

ENGL 4890, Independent Writing Project - internships offered in areas such as journalism, public relations, advertising, publishing, and technical writing; for credit, enrollment in Writing Certificate Program required.

### History

HIST 4001, Special Readings - internships occasionally available with historical agencies; department chair and/or undergraduate coordinator must approve to obtain credit.

### Mathematics

Career-related work arrangements for students majoring in math are primarily administered through Career Services located in 278 Millennium Student Center. These positions are paid and non-credit-bearing.

### Music

PRACTM 4920, Internship – required, for credit, enrollment in bachelor of music business required. Department sponsored internships available for all majors at St. Louis area arts institutions.

### Physics and Astronomy

The department funds research internships in the department in both physics and astronomy. The awards are competitive, and preference is given to students who have completed the PHYSICS 2111/ PHYSICS 2112 sequence.

### Political Science

POL SCI 3940 Public Affairs Internship - required, for credit, for bachelor of science in public administration program. It may also count as an elective, for credit, within the bachelor of arts in political science program and is open to all majors. Placements include municipal, state, and federal governmental agencies, nonprofit organizations, courts, and political campaign offices.

### Psychology

PSYCH 3390, Research Assistant.



## Social Work

SOC WK 4800 and SOC WK 4850, Supervised Field Experience in Social Work I and II - required, for credit, admission to B.S.W. program and prior consent of instructor are required.

## Sociology

SOC 4385 Internship in Sociology - elective, for credit.

## College of Business Administration

Career Services works in partnership with the College of Business Administration to assist students in securing career-related work arrangements for students majoring in all areas of business. These positions can be paid or unpaid and credit bearing or non-credit bearing. Those students choosing to receive academic credit through one of the courses listed below must contact the College of Business Administration Internship Coordinator in Room 469 SSB, by phone at 314-516-6117, or by email.

ACCTNG 3490	Internship in Accounting	1-3
BUS AD 3090	Internship in Business Administration	1-3
INTL BUS 3289	Practicum in International Business	3
BUS AD 3990	Internship in Business Law	1-3
FINANCE 3590	Internship in Finance	1-3
INFSYS 3890	Internship in Information Systems	1-3
MGMT 3690	Internship in Management	1-3
MKTG 3790	Internship in Marketing	1-3
SCMA 3390	Internship in Supply Chain and Analytics	1-3

## College of Education

Internships (4989) are required for 3 hours credit for most undergraduate programs and Site Based Experience (4990 and 4991) is required for 12 hours credit in all teacher certification programs. For more information, contact the Teacher Certification and Advising Office at 314-516-6710.

## Joint Engineering Program

UMSL/Washington University Joint Undergraduate Engineering Program career-related work arrangements for students majoring in all areas of engineering are administered through Career Services and the UMSL Engineering Advisor. These positions are paid and non-credit-bearing.

## College of Nursing

Clinical courses are required in both the undergraduate and graduate programs. These experiences are limited to nursing majors only.

## Pierre Laclede Honors College

Internships chosen by Honors College students, or arranged by their major departments, are valuable opportunities to broaden educational experience while also meeting the honors independent study requirement for graduation.

# Academic Integrity

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## Academic Dishonesty

Academic dishonesty is a serious offense that may lead to probation, suspension, or expulsion. One form of academic dishonesty is plagiarism--the use of an author's ideas, statements, or approaches without crediting the source. Academic dishonesty also includes such acts as cheating by copying information from another student's examination, take-home test, or laboratory manual. The Code of Student Conduct is in this Bulletin and is also available in the UMSL Student Planner.

## Honor Statement

The University of Missouri-St. Louis encourages students to pursue excellence within a respectful and collegial environment and to assume responsibility for the consequences of personal actions. For that reason the university requires students to reject any type of dishonest behavior.

Honesty precludes seeking, providing, or receiving any form of unauthorized assistance on tests or any type of assignment. It requires giving credit through appropriate citation to the author of materials used in written or oral assignments.

The full Student Standard of Conduct is available on the Web and in the student planner. By registering for a class at UMSL, students agree to follow this standard of integrity.

# Student Conduct and Title IX Policies

By registering for a class at any University of Missouri campus, students agree to abide by the Code of Student Conduct below. For more information about student conduct contact Student Conduct and Community Standards in the Office of Student Affairs (301 Woods Hall; 314-516-5211).

## Code of Student Conduct

### 200.010 Standard of Conduct

**Amended Bd. Min. 3-20-81; Bd. Min. 8-3-90, Bd. Min 5-19-94; Bd. Min. 5-24-01, Bd. Min. 7-27-12; Bd. Min. 12-7-12; Bd. Min. 6-19-14; Revised 9-22-14 by Executive Order 41; Revised 11-3-15 by Executive Order 41; Amended 2-9-17.**

A student at the University assumes an obligation to behave in a manner compatible with the University's function as an educational institution and voluntarily enters into a community of high achieving scholars. A student organization recognized by the University of Missouri also assumes an obligation to behave in a manner compatible with the University's function as an educational institution. Consequently, students and student organizations must adhere to community standards in accordance with the University's mission and expectations.

These expectations have been established in order to protect a specialized environment conducive to learning which fosters integrity, academic success, personal and professional growth, and responsible citizenship.

A. **Jurisdiction of the University of Missouri** generally shall be limited to conduct which occurs on the University of Missouri premises or at University-sponsored or University-supervised functions. However, the University may take appropriate action, including, but not limited to the imposition of sanctions under Sections 200.020 and 600.030 of the Collected Rules and Regulations against students and student organizations for conduct occurring in other settings, including off campus, in order to protect the physical safety of students, faculty, staff, and visitors or if there are effects of the conduct that interfere with or limit students' ability to participate in or benefit from the University's educational programs and activities.

B. A **student organization** is a recognized student organization which has received official approval in accordance with Section 250.010 of the Collected Rules and Regulations. To determine whether a student organization is responsible for conduct outlined in Section 200.010.C, all circumstances will be considered, including but not limited to whether:

1. The student organization approved, condoned, allowed, encouraged, assisted or promoted such conduct;
2. The prohibited behavior in question was committed by one or more student organization officers or a significant number of student organization members;
3. Student organization resources, such as funds, listservs, message boards or organization locations, are used for the prohibited conduct; and/or

4. A policy or official practice of the student organization resulted in the prohibited conduct.

C. **Conduct** for which students and student organizations, when applicable, are subject to sanctions falls into the following categories::

1. **Academic dishonesty**, including but not limited to cheating, plagiarism, or sabotage. The Board of Curators recognizes that academic honesty is essential for the intellectual life of the University. Faculty members have a special obligation to expect high standards of academic honesty in all student work. Students have a special obligation to adhere to such standards. In all cases of academic dishonesty, the instructor shall make an academic judgment about the student's grade on that work and in that course. The instructor shall report the alleged academic dishonesty to the Primary Administrative Officer.
  - a. The term **cheating** includes but is not limited to: (i) use of any unauthorized assistance in taking quizzes, tests, or examinations; (ii) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; (iii) acquisition or possession without permission of tests or other academic material belonging to a member of the University faculty or staff; or (iv) knowingly providing any unauthorized assistance to another student on quizzes, tests, or examinations.
  - b. The term **plagiarism** includes, but is not limited to: (i) use by paraphrase or direct quotation of author with footnotes, citations or bibliographical reference; (ii) unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials; or (iii) unacknowledged use of original work/material that has been produced through collaboration with others without release in writing from collaborators.
  - c. The term **sabotage** includes, but is not limited to, the unauthorized interference with, modification of, or destruction of the work or intellectual property of another member of the University community.
2. **Forgery, alteration, or misuse of University documents, records or identification, or knowingly furnishing false information to the University.**
3. **Obstruction or disruption of teaching, research, administration, conduct proceedings, or other University activities, including its public service functions on or off campus.**
4. **Physical abuse or other conduct which threatens or endangers the health or safety of any person.**
5. **Stalking** another by following or engaging in a course of conduct with no legitimate purpose that puts another person reasonably in fear for his or her safety or would cause a reasonable person under the circumstances to be frightened, intimidated or emotionally distressed.
6. **Violation of the University's Equal Employment/Education Opportunity and Nondiscrimination Policy** located at Section 600.010 of the Collected Rules and Regulations.
7. **Violation of the University's Sex Discrimination, Sexual Harassment and Sexual Misconduct in Education/Employment Policy in Section 600.020 of the Collected Rules and Regulations.**
8. **Threatening or Intimidating Behaviors**, defined as written or verbal conduct that causes a reasonable expectation of injury to the health or safety of any person or damage to any property or implied threats or acts that cause a reasonable fear of harm in another.

9. **Participating in attempted or actual taking of, damage to, or possession without permission of property of the University or of a member of the University community or of a campus visitor.**
10. **Unauthorized possession, duplication or use of keys to any University facilities or unauthorized entry to or use of University facilities.**
11. **Violation of University policies, rules or regulations or of campus regulations** including, but not limited to, those governing residence in University-provided housing, or the use of University facilities, or student organizations, or the time, place and manner of public expression.
12. **Manufacture, use, possession, sale or distribution of alcoholic beverages or any controlled substance without proper prescription or required license or as expressly permitted by law or University regulations**, including operating a vehicle on University property, or on streets or roadways adjacent to and abutting a campus, under the influence of alcohol or a controlled substance as prohibited by law of the state of Missouri.
13. **Disruptive conduct.** Conduct that creates a substantial disruption of University operations including obstruction of teaching, research, administration, other University activities, and/or other authorized non-University activities that occur on campus.
14. **Failure to comply with directions of University officials acting in the performance of their duties.**
15. **The illegal or unauthorized possession or use of firearms, explosives, other weapons, or hazardous chemicals.**
16. **Hazing**, defined as an act that endangers the mental or physical health or safety of a student, or an act that is likely to cause physical or psychological harm to any person within the University community, or that destroys or removes public or private property, for the purpose of initiation, admission into, affiliation with, or as a condition for continued membership in a group or organization. Participation or cooperation by the person(s) being hazed does not excuse the violation. Failing to intervene to prevent, failing to discourage, and/or failing to report those acts may also violate this policy.
17. **Misuse of computing resources in accordance with University policy**, including but not limited to:
  - a. Actual or attempted theft or other abuse;
  - b. Unauthorized entry into a file to use, read, or change the contents, or for any other purpose;
  - c. Unauthorized transfer of a file;
  - d. Unauthorized use of another individual's identification and password;
  - e. Use of computing facilities to interfere with the work of another student, faculty member, or University official;
  - f. Use of computing facilities to interfere with normal operation of the University computing system; and
  - g. Knowingly causing a computer virus to become installed in a computer system or file.

## Student Disciplinary Matters

### 200.20 Rules of Procedures in Student Conduct Matters

Bd. Min. 11-8-68, Amended Bd. Min. 3-20-81; Bd. Min. 12-8-89; Amended 5-19-94; Bd. Min. 5-24-01; Bd. Min. 7-27-12, 6-19-14; Revised 9-22-14 by Executive Order 41; Revised 11-3-15 by Executive Order 41; Amended 2-9-17.

**A. Preamble.** The following rules of procedure in student or student organization conduct matters are hereby adopted in order to ensure insofar as possible and practicable (a) that the requirements of procedural due process in student conduct proceedings will be fulfilled by the University, (b) that the immediate effectiveness of Section 10.030, which is Article V of the Bylaws of the Board of Curators relating to student conduct and sanctions may be secured for all students in the University of Missouri, and (c) that procedures shall be definite and determinable within the University of Missouri. Student or student organization conduct involving discrimination, harassment, and sexual misconduct is governed by Section 600.030: *Equity Resolution Process for Resolving Complaints of Discrimination, Harassment and Sexual Misconduct against a Student or Student Organization*.

**B. Definitions.** As used in these rules, the following definitions shall apply:

1. **Primary Administrative Officers.** As used in these procedures, the Chief Student Affairs Administrator on each campus is the Primary Administrative Officer except in cases of academic dishonesty, where the Chief Academic Administrator is the Primary Administrative Officer. Each Primary Administrative Officer may appoint designee(s) who are responsible for the administration of these conduct procedures, provided all such appointments are made in writing and filed with the Chancellor of the campus and the Office of General Counsel. The Primary Administrator's Office will certify in writing that the given designee has been trained in the administration of student conduct matters.
2. **Student Panelist Pool.** The student panelist pool is a panel of students appointed by the Vice Chancellor for Student Affairs, who may participate on the Student Conduct Committee. Specifically, if requested by the accused student or student organization, the Chair of the Student Conduct Committee shall select not more than three students from the Student Panelist Pool to serve as members on the Student Conduct Committee, or not more than two students to serve as members on a Hearing Panel.
3. **Student.** A person having once been admitted to the University who has not completed a course of study and who intends to or does continue a course of study in or through one of the campuses of the University. For the purpose of these rules, student status continues whether or not the University's academic programs are in session.
4. **Student Organization.** A recognized student organization which has received official approval in accordance with Section 250.010 of the Collected Rules and Regulations. Three members of the organization may represent the student organization in all proceedings, and the registered faculty/staff advisor may be present, though not act on behalf of the student organization. Each student organization shall designate, and such designation shall be on file with the University, the individual who will receive all notices, findings, determinations and decisions on behalf of the student organization. If the student organization fails to have a designation on file with the University, the President of the organization is the default designee. The registered faculty/staff advisor will also be sent a courtesy copy of all notices, findings, determinations and decisions.
5. **Student Conduct Committee.** As used in these procedures, 'Student Conduct Committee,' hereinafter referred to as the Committee, is that body on each campus which is authorized to conduct hearings and to make dispositions under these procedures or a Hearing Panel of such body as herein defined.
6. **Hearing Panel.** As used in these procedures, the term 'hearing panel' refers to the part of the Student Conduct Committee described in Section 200.020.E.3(b) below.



### C. Sanctions.

1. The following sanctions, when applicable, may be imposed upon any student or student organization found to have violated the Student Conduct Code. More than one of the sanctions may be imposed for any single violation. Sanctions include but are not limited to:
  - a. **Warning.** A notice in writing to the student or student organization that there is or has been a violation of the institutional regulations.
  - b. **Probation.** A written reprimand for violation of specified regulations. Probation is for a designated period of time and includes the probability of more severe sanctions if the student or student organization is found to be violating any institutional regulation(s) during the probationary period.
  - c. **Loss of Privileges.** Denial of specified privileges of the student or student organization for a designated period of time.
  - d. **Restitution.** Compensation by the student or student organization for loss, damage, or injury to the University or University property. This may take the form of appropriate service and/or monetary or material replacement.
  - e. **Discretionary Sanctions.** Work assignments, service to the University or community, or other related discretionary assignments, or completion of educational programming or counseling.
  - f. **University Housing Suspension.** Separation of the student or student organization from University owned or operated housing for a definite period of time, after which the student or student organization is eligible to return. Conditions for readmission may be specified.
  - g. **University Housing Expulsion.** Permanent separation of the student or student organization from University owned or operated housing.
  - h. **University Dismissal.** An involuntary separation of the student from the institution for misconduct. It is less than permanent in nature and does not imply or state a minimum separation time.
  - i. **University Suspension.** Separation of the student from the University for a definite period of time, after which the student is eligible to return. Conditions for readmission may be specified.
  - j. **University Expulsion.** Permanent separation of the student from the University.
  - k. **Withdrawal of Recognition.** Student organization loses its official approval as a recognized student organization. May be either temporary or permanent. Conditions for future approval may be specified.
2. **Temporary Suspension.** The Chancellor or Designee may at any time temporarily suspend or deny readmission to a student from the University pending formal procedures when the Chancellor or Designee finds and believes from available information that the presence of a student on campus would seriously disrupt the University or constitute a danger to the health, safety, or welfare of members of the University community. The appropriate procedure to determine the future status of the student will be initiated within seven business days.
3. **Temporary Suspension of a Student Organization.** The Chancellor or Designee may at any time temporarily suspend the student organization's operations. University recognition, access to and use of the University campus/facilities/events and/or all other University activities or privileges for which the student organization might otherwise be eligible, pending formal procedures when the Chancellor or Designee finds and believes from available information that the

presence of the student organization on campus would seriously disrupt the University or constitute a danger to the health, safety, or welfare of members of the University community. The appropriate procedure to determine the future status of the student organization will be initiated within seven business days.

**D. Records Retention.** Student conduct records shall be maintained for seven years after University action is completed.

### E. Policy and Procedures.

1. **Preliminary Procedures.** The Primary Administrative Officer or Designee (hereafter 'Primary Administrative Officer') shall investigate any reported student or student organization misconduct before initiating formal conduct procedures and give the student or student organization the opportunity to present a personal or organizational version of the incident or occurrence. The Primary Administrative Officer shall utilize the preponderance of the evidence standard in deciding whether or not to initiate formal conduct procedures and in deciding whether or not to offer an informal disposition in accordance with Section 200.020.E.2 below. The Primary Administrative Officer may discuss with any student or student organization such alleged misconduct and the student or student organization shall attend such consultation as requested by the Primary Administrative Officer. The Primary Administrative Officer, in making an investigation and disposition, may utilize student courts and boards and/or divisional deans to make recommendations.
2. **Informal Dispositions.** The Primary Administrative Officer shall have the authority to make a determination and to impose appropriate sanctions and shall fix a reasonable time within which the student or student organization shall accept or reject a proposed informal disposition. A failure of the student or student organization either to accept or reject within the time fixed may be deemed by the University to be an acceptance of the determination, provided the student or student organization has received written notice of the proposed determination and the result of the student or student organization's failure to formally reject and, in such event, the proposed disposition shall become final upon expiration of such time. If the student or student organization rejects informal disposition it must be in writing and shall be forwarded to the Committee. The Primary Administrative Officer may refer cases to the Committee without first offering informal disposition.
3. **Formal Procedure and Disposition.**
  - a. **Student Conduct Committee:**
    - i. The Committee shall be appointed by the Vice Chancellor for Student Affairs and shall have the authority to impose appropriate sanctions upon any accused student or students or student organization appearing before it.
    - ii. When deemed appropriate or convenient by the Chair of the Committee, the Chair may divide the Committee into Hearing Panels each consisting of no less than five (5) Committee members of which no more than two (2) shall be students. If the Chair creates such Hearing Panels, the Chair of the Committee shall designate a Hearing Panel Chair. A Hearing Panel has the authority of the whole Committee in those cases assigned to it. The Chair of the Committee or a Hearing Panel Chair shall count as one member of the Committee or Hearing Panel and have the same rights as other members.
    - iii. The Vice Chancellor for Student Affairs shall appoint a panel of students, to be known as the Student Panelist Pool. Upon written request of an accused student or the student organization designee before the Committee made at least

seventy-two (72) hours prior to the hearing, the Chair of the Committee shall appoint from the Student Panelist Pool not more than three students to sit with the Committee or the Hearing Panel Chair shall appoint two students to sit with the Hearing Panel for that particular case. When students from the Student Panelist Pool serve as members of the Committee or as members of the Hearing Panel, they shall have the same rights as other members of the Committee or Hearing Panel.

- b. **General Statement of Procedures.** A student or student organization accused of violating the Student Conduct Code is entitled to a written notice and a formal hearing unless the matter is disposed of under the rules for informal disposition. Student conduct proceedings are not to be construed as judicial trials and need not wait for legal action before proceeding; but care shall be taken to comply as fully as possible with the spirit and intent of the procedural safeguards set forth herein. The Office of the General Counsel shall be legal adviser to the Committee and the Primary Administrative Officer, but the same attorney from the Office of the General Counsel shall not perform both roles with regard to the same case.
- c. **Notice of Hearing.** At least fourteen (14) business days prior to the Student Conduct Committee Hearing, or as far in advance as is reasonably possible if an accelerated resolution process is scheduled with the consent of the accused student or student organization, the Primary Administrative Officer will send a letter to the accused student or student organization with the following information:
- i. A description of the alleged violation(s) and applicable policies
  - ii. A description of the applicable procedures
  - iii. A statement of the potential sanctions/remedial actions that could result; and
  - iv. The time, date and location of the hearing. If any party does not appear at the hearing, the hearing will be held in their absence. For compelling reasons, the hearing may be rescheduled.
    1. This Notice of Charges letter will be made in writing and will be delivered either: 1) in person, 2) by email only to the Party's University-issued email account if the Party has consented in writing to receipt of all notifications by email; or 3) mailed to the mailing address of the respective Party as indicated in the official University records and emailed to the Party's University-issued email account. If there is no local address on file, mail will be sent to the Party' permanent address.

Notice is presumptively deemed delivered, when: 1) provided in person or 2) emailed to the individual (when prior consent - whether electronically or in writing - has been given to receipt of all notifications by email or 3) when mailed and emailed.

Any request to reschedule the hearing shall be made in writing to the Chair, who shall have the authority to reschedule the hearing if the request is timely and made for good cause. The Chair shall notify the Primary Administrative Officer and the accused student or student organization of the new date for the hearing. If the accused student or student organization fails to appear at the scheduled time, the Committee may hear and determine the matter.

4. **Right to Petition for Review:** (other than University expulsion, University dismissal, or University suspension or Withdrawal of Recognition).
- a. In all cases where the sanction imposed by the Committee is other than University expulsion, University dismissal, University suspension or Withdrawal of Recognition, the Primary Administrative Officer or the accused student or student organization may petition the Chancellor or Designee in writing for a review of the decision within five (5) business days after written notification. A copy of the Petition for Review must also be served upon the non-appealing party or parties within such time. The Petition for Review must state the grounds or reasons for review in detail, and the non-appealing party or parties may answer the petition within five (5) business days.
  - b. The Chancellor or Designee (hereafter 'the Chancellor') may grant or refuse the right of review. In all cases where the Petition for Review is refused, the action of the Committee shall be final. If the Chancellor reviews the decision, the action of the Chancellor shall be final unless it is to remand the matter for further proceedings.
5. **Right of Appeal** (University expulsion, University dismissal, University suspension only or Withdrawal of Recognition only).
- a. When an accused student is expelled, dismissed, or suspended from the University or when a student organization has its recognition withdrawn, either temporarily or permanently, by the Committee, the Primary Administrative Officer, the accused student or student organization may appeal such decision to the Chancellor by filing written notice of appeal stating the grounds or reasons for appeal in detail with the Chancellor within ten (10) business days after notification of the decision of the Committee. The appealing party may file a written memorandum for consideration by the Chancellor with the Notice of Appeal, and the Chancellor may request a reply to such memorandum by the appropriate party.
  - b. The Chancellor shall review the record of the case and the appeal documents and may affirm, reverse, or remand the case for further proceedings. The Chancellor shall notify the accused student or student organization in writing of the decision on the appeal. The action of the Chancellor shall be final unless it is to remand the matter for further proceedings.
6. **Status During Appeal.**
- a. In cases of suspension, dismissal, or expulsion where a Notice of Appeal is filed within the required time, a student may petition the Chancellor in writing for permission to attend classes pending final determination of appeal. The Chancellor may permit a student to continue in school under such conditions as may be designated pending completion of appellate procedures, provided such continuance will not seriously disrupt the University or constitute a danger to the health, safety, or welfare of members of the University community. In such event, however, any final sanctions imposed shall be effective from the date of the action of the Committee.
  - b. In cases of withdrawal of recognition where a Notice of Appeal is filed within a required time, a student organization may petition the Chancellor in writing to stay the withdrawal of recognition while the appeal is pending. The Chancellor may stay the withdrawal of recognition under such conditions as may be designated pending completion of appellate procedures, provided such continuance will not seriously disrupt the University or constitute a danger to the health, safety, or welfare of members of the University community.

7. **Student Honor System.** Forums under the student honor systems established for investigating facts, holding hearings, and recommending and imposing sanctions are authorized when the student honor code or other regulations containing well defined jurisdictional statements and satisfying the requirements of Section 10.030, which is Article V of the Bylaws of the Board of Curators, have been reduced to writing and have been approved by the Chancellor and the Board of Curators and notice thereof in writing has been furnished to students subject thereto. Though the student honor system has jurisdiction, together with procedures set forth therein, instead of the Primary Administrative Officer, the standard of conduct called for in any such student honor system shall be deemed to contain at a minimum the same standards set forth in Section 200.010, entitled Standards of Conduct. Procedures shall satisfy the requirements of the Board of Curators' Bylaws, Section 10.030, which is Article V, and shall contain procedures herein before stated insofar as appropriate and adaptable to the particular situation and shall be approved by the Chancellor and the General Counsel. Students subject to student honor systems shall have the rights of appeal as set forth in Section 200.020.E.6 and 7.

## F. Hearing Procedures.

1. **Pre-Hearing Witness List and Documentary Evidence.** At least seven (7) business days prior to the hearing, the student or representatives of the student organization will provide the Primary Administrative Officer a list of the names of the proposed witnesses and copies of all proposed documentary evidence. At least five (5) business days prior to the hearing, the Primary Administrative Officer will have the names of proposed witnesses, copies of all pertinent documentary evidence and a copy of any investigative report available for the student or representatives of the student organization, and a copy of the same will be sent to the Hearing Panel Chair.

2. **Conduct of Hearing.** The Chair shall preside at the hearing, call the hearing to order, call the roll of the Committee in attendance, ascertain the presence or absence of the student or representatives of the student organization accused of misconduct, read the notice of hearing and charges, verify the receipt of notices of charges by the student or student organization, report any continuances requested or granted, establish the presence of any adviser or counselor of the student or student organization and the registered faculty/staff adviser of the student organization, and call to the attention of the accused student or student organization and the adviser any special or extraordinary procedures to be employed during the hearing and permit the student or student organization to make suggestions regarding or objections to any procedures for the Conduct Committee to consider.

### a. Opening Statements.

- i. The Primary Administrative Officer shall make opening remarks outlining the general nature of the case and testify to any facts the investigation has revealed.
- ii. The accused student or student organization may make a statement to the Committee about the charge at this time or at the conclusion of the University's presentation.

### b. University Evidence.

- i. University witnesses are to be called and identified or written reports of evidence introduced as appropriate.
- ii. The Committee may question witnesses at any time.
- iii. The accused student or student organization or, with permission of the Committee, the adviser or counselor may

question witnesses or examine evidence at the conclusion of the University's presentation.

### c. Accused Student or Student Organization Evidence.

- i. If the accused student or student organization has not elected to make a statement earlier under a.(2) above, the accused student or student organization shall have the opportunity to make a statement to the Committee about the charge.
- ii. The accused student or student organization may present evidence through witnesses or in the form of written memoranda.
- iii. The Committee or Hearing Panel may question the accused student or representatives of the accused student organization or witnesses at any time. The Primary Administrative Officer may question the accused student or witnesses.

d. **Rebuttal Evidence.** The Committee may permit the University or the accused student or student organization to offer a rebuttal of the others' presentation(s).

e. **Rights of Student Conduct Committee.** The Committee shall have the right to:

- i. Hear together cases involving more than one student or more than one student organization which arise out of the same transaction or occurrence, but in that event shall make separate findings and determinations for each student or student organization;
- ii. Permit a stipulation of facts by the Primary Administrative Officer and the student or student organization involved;
- iii. Permit the incorporation in the record by reference of any documentation, produced and desired in the record by the University or the accused;
- iv. Question witnesses or challenge other evidence introduced by either the University or the student or student organization at any time;
- v. Hear from the Primary Administrative Officer about dispositions made in similar cases and any dispositions offered to the accused student or student organization appearing before the Committee;
- vi. Call additional witnesses or require additional investigation;
- vii. Dismiss any action at any time or permit informal disposition as otherwise provided;
- viii. Permit or require at any time amendment of the Notice of Hearing to include new or additional matters which may come to the attention of the Committee before final determination of the case; provided, however, that in such event the Committee shall grant to the student or student organization or Primary Administrative Officer such time as the Committee may determine reasonable under the circumstances to answer or explain such additional matters;
- ix. Dismiss any person from the hearing who interferes with or obstructs the hearing or fails to abide by the rulings of the Chair of the Committee;
- x. Suspend summarily students from the University who, during the hearing, obstruct or interfere with the course of the hearing or fail to abide by the ruling of the Chair of the Committee on any procedural question or request of the Chair for order.

3. **Rights of Accused upon Hearing.** A student or student organization appearing before a Committee shall have the right to:

- a. Be present at the hearing
- b. Have an adviser or counselor and to consult with such adviser or counselor during the hearing;

- c. Hear or examine evidence presented to the Committee;
  - d. Question witnesses present and testifying;
  - e. Present evidence by witnesses or affidavit;
  - f. Make any statement to the Committee in mitigation or explanation of the conduct in question;
  - g. Be informed in writing of the findings of the Committee and any sanctions it imposes; and
  - h. Request review or appeal to the Chancellor as herein provided.
4. **Determination by the Student Conduct Committee.** The Committee shall make its findings and determinations based on the preponderance of the evidence in executive session out of the presence of the Primary Administrative Officer and the accused student or student organization. Separate findings are to be made:
- a. As to the conduct of the accused student or student organization, and
  - b. On the sanctions, if any, to be imposed. No sanctions shall be imposed on the accused student or student organization unless a majority of the Committee present is convinced by the preponderance of the evidence that the student or student organization has committed the violation charged. In determining what sanction, if any, is appropriate, the Committee may take into consideration the previous disciplinary history of the accused student or student organization.
5. **Official Report of Findings and Determinations.** The Committee shall promptly consider the case on the merits and make its findings and determination and transmit them to the Primary Administrative Officer/Designee(s) and the accused student or student organization designee.
6. **Other Procedural Questions.** Procedural questions which arise during the hearing not covered by these general rules shall be determined by the Chair, whose ruling shall be final unless the Chair shall present the question to the Committee at the request of a member of the Committee, in which event the ruling of the Committee by majority vote shall be final.
7. **General Rules of Decorum.** The following general rules of decorum shall be adhered to:
- a. All requests to address the Committee shall be addressed to the Chair.
  - b. The Chair will rule on all requests and points of order and may consult with Committee's legal adviser prior to any ruling. The Chair's ruling shall be final and all participants shall abide thereby, unless the Chair shall present the question to the Committee at the request of a member of the Committee, in which event the ruling of the Committee by majority vote shall be final.
  - c. Rules of common courtesy and decency shall be observed at all times.
  - d. An adviser or counselor may be permitted to address the Committee at the discretion of the Committee. An adviser or counselor may request clarification of a procedural matter or object on the basis of procedure at any time by addressing the Chair after recognition.
8. **Record of Hearing.** An audio, video, digital or stenographic record of the hearing shall be maintained. The notice, exhibits, hearing record and the findings and determination of the Committee shall become the 'Record of the Case' and shall be filed in the Office of the Primary Administrative Officer and for the purpose of review or appeal be accessible at reasonable times and places to the University, and the accused student(s) or student organization designee.

## UMSL Anti-Hazing Policy

Hazing, defined by the Fraternity Executive Association and accepted by the University of Missouri St. Louis, is any intentional action taken or situation created, whether on or off University or chapter premises, that produces mental or physical discomfort, embarrassment, harassment, or ridicule. This includes but is not limited to: paddling in any form, creation of excessive fatigue, physical or psychological shocks, wearing apparel in public, stunts and buffoonery, morally degrading or humiliating games and activities, involuntary labor, or any activity not consistent with the University Of Missouri Board Of Curators Standard Of Student Conduct.

***The University of Missouri-St. Louis does not condone nor tolerate hazing of any type by any organization, or by an individual against another individual.***

The University and the Office of Student Involvement will investigate any incident in which a charge of hazing has been made. University recognition may be temporarily withdrawn pending hearings and due process procedures.

1. Automatic and indefinite suspension of campus recognition with an accompanying loss of all campus privileges, (i.e. use of facilities, student services, etc.)
2. Disciplinary action against those members involved in the incident(s) including suspension or expulsion from the University.

The following diversity, equity and inclusion policies have been established by the University of Missouri Board of Curators to govern the academic and administrative functions of the four campuses and are available on the UM System website.

600.010 Equal Employment/Educational Opportunity and Nondiscrimination Policy

600.070 Policy Related to Students with Disabilities

330.070 Affirmative Action on Committee Appointments

Students may contact Student Affairs or the Title IX Office to lodge complaints or seek information about these procedures.

## Equal Employment/Educational Opportunity

### 600.010 Equal Employment/Educational Opportunity and Nondiscrimination Policy

Bd. Min. 2-19-71; Reaffirmed Bd. Min. 10-14-77; Amended Bd. Min. 5-23-80; Amended Bd. Min. 10-15-82; Amended Bd. Min. 10-16-03; Amended Bd. Min. 6-19-14; Revised 9-22-14 by Executive Order 41. Revised 2-5-15; Amended 2-9-17 with an effective date of 3-1-17; Revised 7-28-20 with effective date of 8-14-20.

**A. Equal Employment/Educational Opportunity Policy and Statement of Nondiscrimination.** The Curators of the University of Missouri does hereby reaffirm and state the policy of the University of Missouri on Equal Employment/Educational Opportunity and Nondiscrimination.

1. Equal Opportunity is and shall be provided for all employees and applicants for employment on the basis of their demonstrated ability and competence without unlawful discrimination on the basis of their race, color, national origin, ancestry, religion, sex, pregnancy, sexual orientation, gender identity, gender expression, age, disability, protected veteran status, or any other status protected by applicable



state or federal law. This policy shall not be interpreted in such a manner as to violate the legal rights of religious organizations or the recruiting rights of military organizations associated with the Armed Forces or the Department of Homeland Security of the United States of America.

2. Equal Opportunity is and shall be provided for all students and applicants for admission without unlawful discrimination on the basis of their race, color, national origin, ancestry, religion, sex, pregnancy, sexual orientation, gender identity, gender expression, age, disability, protected veteran status, or any other status protected by applicable state or federal law. This policy shall not be interpreted in such a manner as to violate the legal rights of religious organizations or the recruiting rights of military organizations associated with the Armed Forces of the Department of Homeland Security of the United States of America.
3. The University of Missouri does not discriminate on the basis of race, color, national origin, ancestry, religion, sex, pregnancy, sexual orientation, gender identity, gender expression, age, disability, protected veteran status, and any other status protected by applicable state or federal law. As used in this policy, the word "sex" is also inclusive of the term "gender."

The University's Nondiscrimination policies apply to any phase of its employment process, any phase of its admission or financial aid programs, other aspects of its educational programs or activities, and instances occurring in other settings, including off-campus, if there are effects of the conduct that interfere with or limit any person's ability to participate in or benefit from the University's educational programs, activities or employment. Notices of Nondiscrimination are posted online and in physical locations for the UM System and each of the Universities in the System.

The President of the University shall establish affirmative action procedures to implement this policy.

**B. Definition of Discrimination and Harassment.** For purposes of determining whether a particular course of conduct constitutes prohibited discrimination or harassment under this policy, the following definitions will be used:

1. Conduct that constitutes sex discrimination (including discrimination on the basis of sex, pregnancy, gender identity, and gender expression), sexual harassment, sexual misconduct, stalking on the basis of sex, dating/intimate partner violence or sexual exploitation is defined in Section 600.020 – Sex Discrimination, Sexual Harassment and Sexual Misconduct in Employment/Education Policy.
2. Conduct that is based upon an individual's race, color, national origin, ancestry, religion, sexual orientation, age, disability, protected veteran status, or any other status protected by applicable state or federal law that:
  - a. Adversely affects a term or condition of employment, education, living environment or participation in a University activity; or
  - b. Creates a hostile environment by being sufficiently severe or pervasive and objectively offensive that it interferes with, limits, or denies the ability to participate in or benefit from the University's educational programs, activities, or employment.

**C. Equity Officers.** Duties and responsibilities of the University's Equity Officers include monitoring and oversight of overall implementation and compliance with the University's Equal Employment/Educational Opportunity and Nondiscrimination Policy, including coordination of training, education, communications and coordination with the equity

resolution processes for faculty, staff, students and other members of the University community and investigation of complaints of discrimination, harassment, and retaliation.

Any person having inquiries concerning this policy should contact their respective UM System or campus Equity Officer. The following individuals serve as Equity Officers and are designated to handle inquiries regarding the Anti-Discrimination policies and to serve as the coordinators for purposes of compliance with those policies:

**University of Missouri-St. Louis**

Dana Beteet Daniels  
Title IX Coordinator and Chief Equity Officer  
Senior Human Resources Consultant

**Address:**

220 Woods Hall  
St. Louis, MO 63121

**Telephone:** (314) 516-4538

**Email:** dana@umsl.edu

www.umsl.edu/title-ix

NOTE: The above-listed contact information for Title IX Coordinators may be updated as needed and without requiring the approval of the Board of Curators.

If the Complaint involves the University's Equity Officer, Complaints may be made to the System Equity Officer. If the Complaint involves the System Equity Officer, reports may be made to the System President. The contact information for the System President is:

Office of the President  
321 University Hall  
Columbia, MO 65211

**Telephone:** (573) 882-2011

**Email:** umpresident@umsystem.edu

NOTE: The above-listed contact information for Equity Officers may be updated as needed and without requiring the approval of the Board of Curators.

**D. Equity Resolution Processes.** The University is committed to preventing and eliminating impermissible discrimination and harassment in its educational programs, activities and employment. To that end, the University maintains policies regarding reporting, investigation, and resolution of complaints of discrimination, harassment, or sexual misconduct. Specifically, please see:

1. Section 600.030 – Equity Resolution Process for Resolving Complaints of Discrimination, Harassment and Sexual Misconduct Against a Student or Student Organization
2. Section 600.040 – Equity Resolution Process for Resolving Complaints of Discrimination, Harassment and Sexual Misconduct Against a Faculty Member
3. Section 600.050 – Equity Resolution Process for Resolving Complaints of Discrimination, Harassment and Sexual Misconduct Against a Staff Member
4. Section 600.060 - Equity Resolution Process for Resolving Complaints of Discrimination and Harassment Against the University of Missouri

**E. Retaliation.** Retaliation is any adverse action taken against a person because of that person's participation in protected activity. The University strictly prohibits retaliation against any person for making any good faith report of discrimination, harassment, or sexual misconduct, or for filing, testifying, assisting, or participating in any investigation or proceeding

involving allegations of discrimination, harassment or sexual misconduct. Any person who engages in such retaliation shall be subject to disciplinary action, up to and including expulsion or termination, in accordance with applicable procedures. Any person who believes they have been subjected to retaliation is encouraged to promptly notify the Equity Officer or Title IX Coordinator. The University will promptly investigate all claims of retaliation.

**F. False Reporting.** False reporting is making an intentional false report or accusation in relation to this policy as opposed to a report or accusation, which, even if erroneous, is made in good faith. False reporting is a serious offense subject to appropriate disciplinary action up to and including expulsion or termination.

**G. Witness Intimidation or Harassment.** No individual participating in an investigation relating to a report or Complaint that a violation of this policy has occurred should, directly or through others, take any action which may interfere with the investigation. The University prohibits attempts to or actual intimidation or harassment of any potential witness. Failure to adhere to these requirements may lead to disciplinary action ranging up to and including expulsion or termination.

**H. U.S. Department of Education – Office for Civil Rights.** Inquiries concerning discrimination in educational opportunities also may be referred to the United States Department of Education’s Office of Civil Rights. For further information on notice of nondiscrimination and for the address and phone number of the U.S. Department of Education office which serves your area call 1-800-421-3481. The State of Missouri regional Office for Civil Rights is located in Kansas City and is available to provide assistance.

Office for Civil Rights  
U.S. Department of Education  
One Petticoat Lane  
1010 Walnut, 3<sup>rd</sup> Floor, Suite 320  
Kansas City, MO 64106  
Telephone: (816) 268-0550  
FAX: (816) 268-0599  
TDD: (800) 877-8339  
Email: OCR.KansasCity@ed.gov

## 600.030 Resolution Process for Resolving Complaints of Sexual Harassment under Title IX - for matters involving conduct alleged to have occurred on or after August 14, 2020

**A. General.** The University will promptly and appropriately respond to any report of violation of the University’s Title IX policies.

**B. Jurisdiction.** Jurisdiction of the University of Missouri under the Title IX policies shall be limited to sexual harassment which occurs in an education program or activity of the University of Missouri against a person in the United States. For purposes of this policy, “education program or activity” includes locations, events, or circumstances over which the University exercised substantial control over both the Respondent and the context in which the conduct occurs, and includes any building owned or controlled by a student organization that is officially recognized by the University. This policy does not apply to sexual harassment which occurs outside of the United States, even when the conduct occurs in an education program or activity of the University.

If a Complainant alleges or the investigation suggests that another University policy violation occurred in concert with an alleged violation of

the University’s Title IX policies, the University shall have the authority to investigate and take appropriate action regarding the alleged violations of other University policies pursuant to this process. In conducting such investigations, the Title IX Coordinator(s), and/or their Investigator may consult with and/or seek guidance from the Equity Officer, Student Conduct Coordinator, or other University officials as appropriate. If the allegations in a Formal Complaint that fall under this policy are dismissed, the University may discontinue the process under this policy and proceed under the applicable University procedure for all remaining allegations in the Formal Complaint.

### C. Definitions:

- 1. Academic Medical Center.** University of Missouri Hospitals and Clinics, and other Academic Medical Centers as may be designated by the University in the future.
- 2. Academic Medical Center Resolution Process.** Resolution of a Formal Complaint by a decision-maker making a finding on each of the alleged policy violations and a finding on sanctions.
- 3. Administrative Resolution.** A voluntary informal resolution process where a decision-maker makes a finding on each of the alleged policy violations in a Formal Complaint and a finding on sanctions without a hearing.
- 4. Advisors.** The individuals selected by the Complainant and the Respondent, or if a Party does not have their own Advisor, selected by the University, to conduct all cross-examination and other questioning on behalf of a Party at a hearing; an Advisor may, but is not required to, be an attorney.
- 5. Alternate Methods of Notice:** Methods of providing Notice to a Party other than in person or by email to the Party’s University email account; these include email to another email account specified by the Party, or a Party’s designation of an address to which Notice may be mailed via U.S. Mail; a Party seeking to designate an Alternate Method of Notice must provide such designation in writing to the Title IX Coordinator.
- 6. Complainant.** “Complainant” means an individual who is alleged to be the victim of conduct that could constitute sexual harassment.
- 7. Emergency Removal Appeal Individual/Committee:** An individual or committee of three (3) individuals appointed by the Chancellor (or Designee) to hear appeals of an Emergency Removal decision by the Title IX Coordinator.
- 8. Equity Resolution Appellate Officer.** For Staff, Student(s) or Student Organization Respondents, a trained, senior-level administrator appointed by the Chancellor (or Designee) to hear all appeals stemming from the Title IX Resolution Process. For Faculty Respondents, the Chancellor (or Designee).
- 9. Equity Resolution Hearing Panel (“Hearing Panel”).** A group of two (2) trained Equity Resolution Hearing Panelist Pool members who, together with the Hearing Officer, serve as the Hearing Panel for a specific Formal Complaint. A good faith attempt will be made for the Hearing Panel to include at least one faculty member and one administrator or staff member. The Hearing Officer shall serve as the Chair of the Hearing Panel.
- 10. Equity Resolution Hearing Panelists Pool (“Hearing Panelist Pool”).** A group of at least five (5) faculty and five (5) administrators and/or staff selected by the Chancellor (or Designee) to serve as hearing panel members in the Hearing Panel Resolution process. The faculty hearing panel members selected by the Chancellor (or Designee) shall be selected from a list of no less than ten (10) faculty members proposed by the

faculty council/senate. Selection of hearing panel pool members shall be made with an attempt to recognize the diversity of the University community. Hearing Panel members from one University may be asked to serve on a hearing panel involving another University.

11. **Formal Complaint.** Formal Complaint means a written document filed by a Complainant or signed by the Title IX Coordinator alleging sexual harassment against a Respondent and requesting that the University investigate the allegation of sexual harassment. The phrase “document filed by a Complainant” means a document or electronic submission (such as by electronic mail or an online portal provided for this purpose by the University) that contains the Complainant’s physical or digital signature, or otherwise indicates that the Complainant is the person filing the Formal Complaint.
12. **Hearing Officer.** A trained individual appointed by the Chancellor (or Designee) to preside over a hearing and act as a member of the Hearing Panel, and to rule on objections and the relevancy of questions and evidence during the hearing.
13. **Hearing Panel Decision.** Resolution of a Formal Complaint by an Equity Resolution Hearing Panel recommending or making a finding on each of the alleged policy violations and sanctions, if applicable.
14. **Hearing Panelist Pool Chair (“Pool Chair”).** The Hearing Panelist Pool Chair is selected by the Chancellor (or Designee). The Pool Chair randomly selects and coordinates the hearing panel members to serve on the Hearing Panel for a specific Formal Complaint. The Pool Chair may serve as a panel member for a specific Formal Complaint.
15. **Informal Resolution.** A voluntary resolution process using alternative dispute resolution mechanisms such as mediation, facilitated dialogue, administrative resolution, or restorative justice.
16. **Investigators.** Investigators are trained individuals appointed by the Title IX Coordinator (or designee) to conduct investigations of the alleged violations of the University’s Title IX Policies.
17. **Parties.** The Complainant and the Respondent are collectively referred to as the Parties.
18. **Record of the Case.** The Record of the Case in the Section 600.030 Process includes, when applicable: All Notices to the Parties; investigative report; recordings of Party and witness interviews; exhibits used at a hearing or at the Academic Medical Center (AMC) Meeting; recordings of meetings between the AMC decision-maker and Parties and witnesses, if any; the hearing record (an audio or audiovisual record of the hearing); any determination of dismissal of all or part of a Formal Complaint; the determination on each of the alleged policy violations and sanctions by either the Hearing Panel or decision-maker; and the decision on the appeal, if any, including the request for appeal, any additional evidence submitted for the appeal, and written arguments of the Parties.
19. **Report.** Any verbal or written communication or notice of an alleged violation of the University’s Title IX Policies.
20. **Respondent.** Respondent means an individual who has been reported to be the perpetrator of conduct that could constitute sexual harassment.
21. **Rules of Decorum.** Hearing process rules to which Parties and their Advisors must adhere during any Hearing under this policy.
22. **Student.** A person having once been admitted to the University who has not completed a course of study and who intends to

or does continue a course of study in or through one of the Universities of the University System. For the purpose of these rules, student status continues whether or not the University’s academic programs are in session.

23. **Student Organization.** A recognized student organization which has received Official Approval in accordance with Section 250.010 of the Collected Rules and Regulations. Three members of the organization may represent the student organization as the Party.
24. **Support Person.** An individual selected by a Party to accompany the Party to all meetings and interviews to provide support for the Party throughout the Title IX Process. A Support Person may not attend a hearing under the Title IX process unless also serving as a Party’s Advisor.
25. **Title IX Coordinator.** The Title IX Coordinator is a trained administrator designated by the Chancellor (or Designee) to respond to reports of sexual harassment; and to receive and assist with the Title IX process for Formal Complaints alleging violation of the University’s Sexual Harassment in Employment/ Education Policy. All references to “Title IX Coordinator” throughout this policy refer to the Title IX Coordinator or the Title IX Coordinator’s designee.
26. **University’s Title IX Policies.** The University’s Title IX Policies include this Policy and the Sexual Harassment in Employment/ Education Policy located at Section 600.020 of the Collected Rules and Regulations (CRR).

**D. Making a Report.** Any person (whether or not the person reporting is the Complainant) may report sexual harassment to the Title IX Coordinator. Such Reports may be made in person, or at any time (including during non-business hours) by mail, by telephone, or by electronic mail, using the contact information listed for the Title IX Coordinator, by an online portal set up by the University for this purpose, or by any other means that results in the Title IX Coordinator receiving the person’s verbal or written report. Individuals may also contact University police if the alleged offense may also constitute a crime. In order to foster reporting and participation, the University may provide amnesty to Parties and witnesses accused of minor student conduct violations ancillary to the incident.

**E. Preliminary Contact.** Upon receiving a Report, the Title IX Coordinator shall promptly contact the Complainant to discuss the availability of Supportive Measures as defined herein, consider the Complainant’s wishes with respect to Supportive Measures, inform the Complainant of the availability of Supportive Measures with or without the filing of a Formal Complaint, and explain to the Complainant the process for filing a Formal Complaint. If the identity of the Complainant is unknown, the Title IX Coordinator may conduct a limited investigation sufficient to identify the Complainant to the extent possible.

**F. Filing of a Formal Complaint.** A Complainant may file a Formal Complaint with the Title IX Coordinator in person, by mail, or by electronic mail, by using the contact information set forth in CRR 600.020, or through an online portal provided for this purpose by the University. At the time of filing a Formal Complaint, the Complainant must be participating in or attempting to participate in an education program or activity of the University.

The Title IX Coordinator may sign a Formal Complaint when they believe that with or without the Complainant’s desire to participate in this process, a non-deliberately indifferent response to the allegations requires an investigation. Where the Title IX Coordinator signs a Formal Complaint,

the Title IX Coordinator is not a Complainant or otherwise a Party under this policy.

If the Respondent files a Formal Complaint against the Complainant within ten (10) business days of the date of the Notice of Allegations where the allegations of sexual harassment in both Formal Complaints arise out of the same facts or circumstances, the University will consolidate the Formal Complaints for purposes of investigation and resolution in accordance with this policy.

The University may consolidate Formal Complaints as to allegations of sexual harassment against more than one Respondent, or by more than one Complainant against one or more Respondents, or by one Party against the other Party where the allegations of sexual harassment arise out of the same facts or circumstances. If the Respondent files a Formal Complaint against the Complainant more than ten (10) business days after the date of the Notice of Allegations where the allegations of sexual harassment in both Formal Complaints arise out of the same facts or circumstances, the University may consolidate the Formal Complaints for purposes of investigation and resolution in accordance with this policy. Where this process involves more than one Complainant or more than one Respondent, each Complainant and each Respondent shall be entitled and subject to all of the rights and obligations set forth herein.

#### **G. Notice of Allegations:**

1. Upon receipt of a Formal Complaint, the Title IX Coordinator will provide a written notice to the known Parties that includes the following:
  - a. A description of the University's Title IX Process, including Informal Resolution;
  - b. Notice of the allegations of sexual harassment, including sufficient details known at the time. Sufficient details include the identities of the Parties involved in the incident, if known; the conduct allegedly constituting the sexual harassment; and the date and location of the alleged incident.
  - c. A statement that the Respondent is presumed not responsible for the alleged conduct and that a determination regarding responsibility is made at the conclusion of the Title IX process.
  - d. A statement reminding the Respondent that they have the right to file a report or Formal Complaint with the Title IX Coordinator; however, both Parties are advised that retaliation against any Party is prohibited.
  - e. A statement notifying the Parties of the availability of Supportive Measures.
  - f. A statement notifying the Parties of their right to have an Advisor of their choice, who may be, but is not required to be, an attorney. The Parties will be advised that if they do not have an Advisor to conduct cross-examination at a hearing on their behalf, the University will appoint such an Advisor; this Advisor may be, but is not required to be, an attorney. (This provision does not apply to matters proceeding under the process for Academic Medical Centers set forth in Section R).
  - g. A statement notifying the Parties that they may have a Support Person selected by a Party accompany the Party to all meetings and interviews to provide support for the Party throughout the Title IX Process. A Support Person may not attend a hearing under the Title IX process unless also serving as a Party's Advisor.

- h. A statement notifying the Parties that they will be permitted to inspect and review any evidence obtained as part of the investigation that is directly related to the allegations raised in the Formal Complaint, including the evidence upon which the University does not intend to rely in reaching a determination regarding responsibility, and including inculpatory and exculpatory evidence whether obtained from a Party or other source.
  - i. A statement notifying the Parties that they must be truthful when making any statement or providing any information or evidence to the University throughout the Title IX process, and all documentary evidence must be genuine and accurate. False statements and fraudulent evidence by an employee may be the basis for personnel action pursuant to CRR 370.010 or HR 601, or other applicable University policies, or for disciplinary action pursuant to CRR 200.010 for students.
  - j. A statement that nothing in the Title IX process is intended to supersede nor expand any rights the individual may have under applicable state or federal statutory laws or the U.S. Constitution.
  - k. A statement informing a Party that all notices hereafter will be sent via their University-issued email account, unless they provide to the Title IX Coordinator an alternate method of notification. If a Party does not have a University-issued email account, all notices will be via U.S. Mail unless they provide the Title IX Coordinator with a preferred method of notification.
2. The Notice of Allegations will be made in writing to the Parties by email to the Party's University-issued email account, with a read-receipt. If a read-receipt is not returned within one (1) business day or the Party does not have a University-issued email account, the Notice of Allegations shall be sent via U.S. Mail postage pre-paid to the last known address of the Party. Notice also may be provided in person to either Party. Notice is presumptively deemed delivered, when: 1) provided in person, 2) emailed to the individual, or 3) when mailed.

**H. Supportive Measures.** Supportive measures are non-disciplinary, non-punitive individualized services offered as appropriate, as reasonably available, and without fee or charge to the Complainant or the Respondent before or after the filing of a Formal Complaint or where no Formal Complaint has been filed. These measures are designed to restore or preserve equal access to the University's education program or activity without unreasonably burdening the other Party, including measures designed to protect the safety of all Parties or the University's education environment, or deter sexual harassment. The University will maintain as confidential any Supportive Measures provided to the Complainant or Respondent, to the extent that maintaining such confidentiality would not impair the ability of the University to provide the Supportive Measures. The Title IX Coordinator is responsible for the effective implementation of Supportive Measures. Supportive Measures may include:

1. Referral and facilitating contact for the Complainant or Respondent for counseling or other support services.
2. Mutual restrictions on contact between the Parties.
3. Providing campus escort services to the Parties.
4. Increased security and monitoring of certain areas of the campus.



5. Adjusting the extracurricular activities, work schedules, work assignments, supervisory responsibilities, or work arrangements of the Complainant and/or the Respondent, as appropriate.
6. If either Party is a student:
  - a. Referral of that Party to academic support services and any other services that may be beneficial to the Party.
  - b. Adjusting the courses, assignments, and/or exam schedules of the Party.
  - c. Altering the on-campus housing assignments, dining arrangements, or other campus services for the Party.
7. Providing limited transportation accommodations for the Parties.
8. Informing the Parties of the right to notify law enforcement authorities of the alleged incident and offering to help facilitate such a report.
9. Implementing an Emergency Removal of a Respondent from the University's education program or activity on an emergency basis, if the Title IX Coordinator, after conducting an individualized safety and risk analysis, determines that an immediate threat to the physical health or safety of any student or other individual arising from the allegations of sexual harassment, justifies removal.
  - a. In all cases in which an Emergency Removal is imposed, the Respondent will immediately be given notice and an opportunity to challenge the decision of the Title IX Coordinator either prior to such Removal being imposed, or as soon thereafter as reasonably possible but no later than five (5) business days, to show cause why the removal should not be implemented. Any such challenge shall be made in writing and directed to the Title IX Coordinator who will forward such challenge to the Emergency Removal Appeal Individual/Committee, which will make a final decision on removal within three (3) business days.
  - b. Violation of an Emergency Removal under this policy may be grounds for discipline.
10. Suspending, on an interim basis, a Respondent Student Organization's operations, University recognition, access to and use of the University campus/facilities/events and/or all other University activities or privileges for which the Respondent Student Organization might otherwise be eligible, pending the completion of the Title IX Process when the Title IX Coordinator finds and believes from available information that the presence of the student organization on campus would seriously disrupt the University or constitute a danger to the health, safety, or welfare of members of the University community. The appropriate procedure to determine the future status of the student organization will be initiated within seven (7) business days.
11. Implementing an administrative leave for an employee in accordance with University Human Resources Policies. Administrative leave for an employee is not an Emergency Removal under this policy.

**I. Employees and Students Participating in the Title IX Process.** All University employees and students must be truthful when making any statement or providing any information or evidence to the University throughout the process, including but not limited to the Investigator, Title IX Coordinator, the Hearing Panel and/or the Equity Resolution Appellate Officer, and all documentary evidence must be genuine and accurate. False statements or fraudulent evidence provided in this process, including

but not limited to the Investigator, Title IX Coordinator, Hearing Panel and/or the Equity Resolution Appellate Officer, by an employee may be the basis for personnel action pursuant to CRR 370.010 or HR 601, or other applicable University policies, or if by a student may be the basis for disciplinary action pursuant to the provisions of CRR 200.010. However, this obligation does not supersede nor expand any rights the individual may have under applicable state or federal statutory law or the U.S. Constitution. Nothing in this provision is intended to require a Party or witness to participate in the process. The fact that a determination has been made that a Respondent has or has not violated any policy is not sufficient grounds, by itself, to declare that a false statement or fraudulent evidence has been provided by a Party or witness.

No employee or student, directly or through others, should take any action which may interfere with the investigation. Employees and students are prohibited from attempting to or actually intimidating or harassing any potential witness. Failure to adhere to these requirements may lead to disciplinary action, up to and including expulsion or termination.

#### **J. Rights of the Parties in the Title IX Process**

1. To be treated with respect by University officials.
2. To be free from retaliation.
3. To have access to University support resources (such as counseling and mental health services and University health services).
4. To request a no contact directive between the Parties.
5. To have a Support Person of the Party's choice accompany the party to all interviews and meetings (excluding hearings) throughout the Title IX Process.
6. To refuse to have an allegation resolved through the Informal Resolution Processes.
7. To receive prior to a hearing or other time of determination regarding responsibility, an investigative report that fairly summarizes the relevant evidence in an electronic format or hard copy for their review and written response.
8. To have an opportunity to present a list of potential witnesses and provide evidence to the Investigator.
9. To have Formal Complaints heard in substantial accordance with these procedures.
10. To receive written notice of any delay of this process or limited extension of time frames for good cause which may include considerations such as the absence of a Party, a Party's Advisor or a witness; concurrent law enforcement activity; or the need for language assistance or accommodation of disabilities.
11. To be informed of the finding, rationale, sanctions and remedial actions.
12. To report the matter to law enforcement (if applicable) and to have assistance in making that report.
13. To have an opportunity to appeal the dismissal of all or a portion of a Formal Complaint, and appeal the determination of a Hearing Panel or other decision-maker.
14. Additional Rights for Students as a Party:
  - a. To request reasonable housing, living and other accommodations and remedies consistent with Section 600.030.H.
  - b. To receive amnesty for minor student misconduct that is ancillary to the incident, at the discretion of the Title IX Coordinator.
15. Additional Rights for Hearing Panel Resolution:

- a. To receive notice of a hearing.
  - b. To have the names of witnesses who may participate in the hearing and copies of all documentary evidence gathered in the course of the investigation and any investigative report prior to the hearing.
  - c. To be present at the hearing, which right may be waived by either written notification to the Hearing Officer or by failure to appear.
  - d. To have present an Advisor during the hearing and to consult with such Advisor during the hearing, and have the Advisor conduct cross-examination and other questioning on behalf of the Party at the hearing.
  - e. To have an Advisor of the University's selection appointed for a Party where the Party does not have an Advisor of their own choice at a hearing.
  - f. To testify at the hearing or refuse to testify at the hearing; however, if a Party or witness fails to submit to cross-examination at the hearing, the Hearing Panel shall not rely on any statement of that Party or witness in reaching a determination regarding responsibility. The Hearing Panel shall not draw any inference about the determination regarding responsibility based solely on a Party's or witness's failure to submit to cross-examination.
  - g. To have an equal opportunity to present and question witnesses, including fact and expert witnesses, and present relevant evidence.
  - h. To request that the hearing be held virtually, with technology enabling participants simultaneously to see and hear each other.
16. Additional Rights for Academic Medical Center Process:
- a. To receive notice of the meeting with the decision-maker.
  - b. To submit written, relevant questions that a Party wants asked of any Party or witness and to be provided with the answers to such questions.
  - c. To be allowed additional, limited follow-up questions.

#### K. Role of Support Persons and Advisors.

1. **Support Persons.** Each Complainant and Respondent is allowed to have one Support Person of their choice present with them for all Title IX Process interviews and meetings. The Parties may select whomever they wish to serve as their Support Person, including an attorney or parent. The Support Person may also act as the Party's Advisor.  
If requested by a student Party, the Title IX Coordinator may assign a Trained Support Person to explain the Title IX process and attend interviews and meetings with a Party. University Trained Support Person(s) are administrators, faculty, or staff at the University trained on the Title IX Process. A Trained Support Person cannot be called upon as a witness by a Party in a hearing to testify about matters learned while that individual was acting in their capacity as a Trained Support Person.
2. **Advisors.** Each Party may have an Advisor of their choice present at the hearing to conduct cross-examination and other questioning for that Party. A Party may not directly question any other Party or any witness; all cross-examination and other questioning on behalf of a Party must be conducted by their Advisor. The Advisor may be, but is not required to be, an

attorney. If a Party does not have an Advisor of their choice present at the hearing, the University will provide, without fee or charge to that Party, an Advisor of the University's choice to conduct cross-examination and other questioning on behalf of that Party. The Parties may not require that the assigned Advisor have specific qualifications such as being an attorney. At the hearing, a Party's Advisor may ask the other Party and any witnesses all relevant questions and follow-up questions, including those challenging credibility. An Advisor may conduct cross-examination and other questioning for a Party, and object to questions on limited grounds as specified in the Rules of Decorum. The Advisor may not make a presentation or otherwise represent the Complainant or the Respondent during the hearing. The Advisor may consult with the Party quietly or in writing, or outside the hearing during breaks, but may not speak on behalf of the Party, other than to conduct cross-examination or other questioning for the Party. Advisors who do not follow the Rules of Decorum will be warned or dismissed from the hearing at the discretion of the Hearing Officer.

3. **Investigation.** If a Formal Complaint is filed, then the Title IX Coordinator will promptly appoint a trained Investigator or a team of trained Investigators to investigate.  
The burden of proof and the burden of gathering evidence sufficient to reach a determination regarding responsibility rests on the University.

For purposes of the Investigation, the University cannot access, consider, disclose, or otherwise use a Party's records that are made or maintained by a physician, psychiatrist, or other recognized professional or paraprofessional acting in the professional's or paraprofessional's capacity, or assisting in that capacity, and which are made and maintained in connection with the provision of treatment to the Party, unless the University obtains that Party's voluntary, written consent to do so for use in the Title IX process.

The Parties are not prohibited from discussing the allegations under investigation or from gathering and presenting relevant evidence. The Parties may present witnesses, including fact and expert witnesses, and other inculpatory and exculpatory evidence; all such evidence must be relevant.

A Party whose participation is expected or invited at a hearing, interview or other meeting, shall receive written notice of the date, time, location, participants, and purpose of all hearings, investigative interviews, or other meetings, with sufficient time for the Party to prepare to participate.

The Parties may be accompanied to any related meeting or interview by a Support Person of their choice, who may be, but is not required to be, an attorney; however, the Support Person may only participate in the proceedings as set forth in this policy.

The Parties shall be permitted to inspect and review any evidence obtained as part of the investigation that is directly related to the allegations raised in the Formal Complaint, including the evidence upon which the University does not intend to rely in reaching any determination regarding responsibility, and inculpatory or exculpatory evidence whether obtained from a Party or other source and copies of recordings of all interviews conducted during the investigation, in sufficient time for the

Parties to meaningfully respond to the evidence prior to the conclusion of the investigation.

Prior to completion of the investigative report, the University will make available to each Party and the Party's Advisor, if any, the evidence subject to inspection and review in an electronic format or a hard copy, and the Parties will have ten (10) business days to submit a written response to the Investigator, which the Investigator will consider prior to completion of the investigative report.

The final investigative report will fairly summarize the relevant evidence, and prior to a hearing or other time of determination regarding responsibility, the investigator will send to each Party and the Party's Advisor, if any, the final investigative report in an electronic format or a hard copy, for their review and written response. If a written response is received from either Party, that response will be shared with the other Party and their Advisor, if any.

All investigations will be thorough, reliable and impartial. All interviews shall be recorded. In the event that recording is not possible due to technological issues, the investigator shall take thorough notes and such notes shall be provided to the Parties in lieu of recordings. The investigator shall document the reason the recording was not possible and such documentation shall become part of the Record of the Case.

The investigation of reported sexual harassment should be completed expeditiously, normally within thirty (30) business days of the filing of the Formal Complaint. Investigation of a Formal Complaint may take longer based on the nature and circumstances of the Formal Complaint.

**M. Impact of Optional Report to Law Enforcement.** A delay may also occur when criminal charges on the basis of the same behaviors that invoke this process are being investigated, to allow for evidence collection by the law enforcement agency. However, University action will not typically be altered or precluded on the grounds that civil cases or criminal charges involving the same incident have been filed or that such charges have been dismissed or reduced.

The Title IX Coordinator will not wait for the conclusion of a criminal investigation or criminal proceeding to begin the Title IX process. However, a Title IX investigation and resolution process may be temporarily delayed for good cause, which can include concurrent law enforcement activity. In such instances, written notice of the delay or extension with reasons for the action will be sent to each Party.

If delayed, the Title IX Coordinator will promptly resume the Title IX investigation as soon as notified by the law enforcement agency that it has completed the evidence-gathering process. The Title IX Coordinator will implement appropriate supportive measures during the law enforcement agency's investigation period to provide for the safety of all Parties, the University community and the avoidance of retaliation or sexual harassment.

**N. Dismissal of a Formal Complaint.** During or upon the completion of the investigation, the Title IX Coordinator will review the Formal Complaint and the investigative report, if available, to determine if the Formal Complaint is subject to dismissal. A Formal Complaint shall be dismissed: (1) if the conduct alleged in the Formal Complaint would not constitute sexual harassment, as defined in CRR 600.020 even if proved; (2) the

conduct alleged in the Formal Complaint did not occur in the University's education program or activity, or (3) the conduct alleged in the Formal Complaint did not occur against a person in the United States. A dismissal under this provision does not preclude action under other applicable University processes.

A Formal Complaint or any allegations therein, may be dismissed at any time during the investigation or hearing if (1) the Complainant notifies the Title IX Coordinator in writing that the Complainant would like to withdraw the Formal Complaint or any allegations therein; (2) the Respondent is no longer enrolled or employed by the University; or (3) specific circumstances prevent the University from gathering evidence sufficient to reach a determination as to the Formal Complaint or the allegations therein.

Upon a dismissal required or permitted under this provision, the University will promptly send written notice of the dismissal and reason(s) therefor simultaneously to the Parties. Either Party may appeal a dismissal as set forth in Section U herein.

If the Title IX Coordinator determines there is a sufficient basis to proceed with the Formal Complaint, then the Title IX Coordinator will direct the process to continue. The Formal Complaint will then be resolved through Informal Resolution or Hearing Panel Resolution, or the Academic Medical Center (AMC) Process, if applicable.

**O. Informal Resolution.** Upon the filing of a Formal Complaint, the Parties may choose to engage in Informal Resolution. The decision of the Parties to engage in Informal Resolution must be voluntary, informed, and in writing. The Parties are not required to engage in Informal Resolution as a condition of enrollment or continuing enrollment, or employment or continuing employment, or enjoyment of any other right. The Parties are not required to waive their right to an investigation of a Formal Complaint or a right to a hearing process, or AMC Process, if applicable. At any time prior to agreeing to (or in Administrative Resolution, rendering of) a final resolution, any Party has the right to withdraw from the Informal Resolution process and the matter will be referred back for further investigation and/or hearing as may be applicable.

Informal Resolution is never available to resolve allegations that an employee sexually harassed a student.

In Informal Resolution, which includes mediation or facilitated dialogue, a neutral facilitator will foster a dialogue with the Parties to an effective resolution, if possible. The Complainant's and the Respondent's Support Persons may attend the Informal Resolution meeting. The Parties will abide by the terms of the agreed-upon resolution. Failure to abide by the terms of the agreed-upon resolution may be referred to the Title IX Coordinator for review and referral to the appropriate University Process for discipline or sanctions. The Title IX Coordinator will keep records of any Informal Resolution that is reached.

In the event the Parties are unable to reach a mutually agreeable resolution, the matter will be referred back for further investigation and/or hearing as may be applicable. The content of the Parties' discussions during the Informal Resolution Process will be kept confidential in the event the matter proceeds to the hearing process. The Parties' agreement to participate, refusal to participate in, or termination of participation in Informal Resolution shall not be factors in any subsequent decisions regarding whether a policy violation occurred.

Among the resolutions which may be reached at this stage, the Respondent may voluntarily request to permanently separate from the University of Missouri System. If the Title IX Coordinator accepts the

Respondent's proposal, the Respondent must sign a Voluntary Permanent Separation and General Release agreement to effectuate their separation and terminate the Title IX Process.

**P. Procedural Details for Administrative Resolution.** The Parties may mutually choose to participate in a type of Informal Resolution called Administrative Resolution. The Administrative Resolution process is not available where a student has alleged that an employee sexually harassed the student. The Administrative Resolution process is not available to Academic Medical Centers (AMC).

The Administrative Resolution process is a process whereby the decision-maker will meet separately with the Parties and their Support Person, if any, and consider the evidence provided by the investigator, including the investigative report, and evidence provided by the Parties, and will make a determination of responsibility that is binding on both Parties. The decision of the Parties to participate in Administrative Resolution must be voluntary, informed and in writing provided to the investigator, and must include a knowing written waiver of their right to a hearing under the Title IX process. However, either Party may choose to leave the process and opt for a hearing at any time before a final determination has been rendered. In addition, the following will apply to the Administrative Resolution process:

1. The standard of proof will be "preponderance of the evidence," defined as determining whether the evidence shows it is more likely than not that a policy violation occurred.
2. The decision-maker has the discretion to determine the relevance of any witness or documentary evidence and may exclude information that is irrelevant, immaterial, cumulative, or more prejudicial than informative. In addition, the following rules shall apply to the introduction of evidence:
  - a. Questions and evidence about the Complainant's pre-disposition or prior sexual behavior are not relevant, unless such questions and evidence about the Complainant's prior sexual behavior are offered to prove that someone other than the Respondent committed conduct alleged by the Complainant, or if the questions and evidence concern specific incidents of the Complainant's prior sexual behavior with respect to the Respondent and are offered to prove consent.
  - b. Character evidence is information that does not directly relate to the facts at issue, but instead reflects upon the reputation, personality, or qualities of an individual, including honesty. Such evidence regarding either Party's character is of limited utility and shall not be admitted unless deemed relevant by the decision-maker.
  - c. Incidents or behaviors of the Respondent not directly related to the possible violation(s) will not be considered unless they show a pattern of related misconduct. History of related misconduct by the Respondent that shows a pattern may be considered only if deemed relevant by the decision-maker.
  - d. A Party's records that are made or maintained by a physician, psychiatrist, psychologist, or other recognized professional or paraprofessional acting in the professional's or paraprofessional's capacity, or assisting in that capacity, and which are made or maintained in connection with the provision of treatment to the Party, may not be used without that Party's express consent.
- e. The decision-maker shall not require, allow, rely upon, or otherwise use questions or evidence that constitute, or seek disclosure of, information protected under a legally recognized privilege, unless the person holding such privilege has waived the privilege.
3. In the Administrative Resolution Process, the Respondent and the Complainant may provide a list of questions for the decision-maker to ask the other Party. If those questions are deemed appropriate and relevant, they may be asked on behalf of the requesting Party; answers to such questions will be shared with the requesting Party.
4. At any time prior to a final determination being rendered, the Complainant and/or the Respondent may request that the Formal Complaint shift from the Administrative Resolution Process to the Hearing Panel Resolution Process. Upon receipt of such timely request from either Party, the Formal Complaint will shift to the Hearing Panel Resolution Process.
5. The Administrative Resolution process will normally be completed within sixty (60) business days of the decision-maker's receipt of the Formal Complaint. Deviations from this timeframe will be promptly communicated to both Parties.
6. For good cause, the decision-maker in the Administrative Resolution Process may, in their discretion, grant reasonable extensions to the time frames and limits provided.
7. The Administration Resolution process consists of:
  - a. A prompt, thorough and impartial investigation;
  - b. A separate meeting with each Party and their Support Person, if any, and the decision-maker;
  - c. A written finding by the decision-maker on each of the alleged policy violations;
  - d. A written finding by the decision-maker on sanctions and remedial actions for findings of responsibility; and
  - e. The decision-maker shall be as follows:
    - (1) For Student or Student Organization Respondents and Staff Respondents, the decision-maker will be the Title IX Coordinator;
    - (2) For Faculty Respondents, the decision-maker will be as follows:
      - (a) The Title IX Coordinator will act as decision-maker and make recommendation(s) on findings of responsibility and sanctions and remedial actions, if applicable, to the Provost who will be the final decision-maker.
      - (b) The Title IX Coordinator has the option to request that a designee from the Provost's office act as decision-maker in Administrative Resolution and make recommendation(s) regarding findings of responsibility and sanctions and remedial actions, if applicable, to the Provost who will be the final decision-maker.
8. At least fifteen (15) business days prior to meeting with the decision-maker or if no meeting is requested, at least fifteen (15) business days prior to the decision-maker rendering a finding(s), the Title IX Coordinator or Provost's designee, if applicable, will send a letter (Notice of Administrative Resolution) to the Parties with the following information:
  - a. A description of the alleged violation(s) and applicable policy or policies that are alleged to have been violated.



- b. The name of the decision-maker.
- c. Reference to or attachment of the applicable procedures.
- d. A copy of the final investigative report.
- e. The option and deadline of ten (10) business days from the date of the notice to request a meeting with the decision-maker.
- f. An indication that the Parties may have the assistance of a Support Person of their choosing at the meeting, though the Support Person's attendance at the meeting is the responsibility of the respective Parties.

9. The sanctions of expulsion and termination are not available sanctions under the Administrative Resolution process in this Policy. Further, any suspension of a student under this Administrative Resolution process shall not exceed two (2) years. Any suspension of an employee under this Administrative Resolution process may be without pay, but may not exceed ten (10) business days.

10. The decision-maker can, but is not required to, meet with and question the Investigator and any identified witnesses. The decision-maker may request that the Investigator conduct additional interviews and/or gather additional information. The decision-maker will meet separately with the Complainant and the Respondent, and their Support Person, if any, to review the alleged policy violations and the investigative report. The Respondent may choose to admit responsibility for all or part of the alleged policy violations at any point in the process. If the Respondent admits responsibility, in whole or in part, the decision-maker will render a finding that the individual is in violation of University policy for the admitted conduct. For any disputed violations, the decision-maker will render a finding using the preponderance of the evidence standard. The decision-maker will also determine appropriate sanctions or remedial actions.

11. The decision-maker will inform the Respondent and the Complainant simultaneously of the finding on each of the alleged policy violations and the finding of sanctions, if applicable, in writing by email to the Party's University-issued email account, or by the method of notification previously designated in writing by the Party. Notice is presumptively deemed delivered, when: 1) provided in person, 2) emailed to the individual to their University-issued email account, or 3) when sent via the alternate method of notification specified by the Party.

12. Either Party may appeal a decision under Administrative Resolution in accordance with Section U of this policy.

**Q. Hearing Panel Resolution.** This process is not available for Academic Medical Centers. See Section R.

1. **Equity Resolution Hearing Panelist Pool.** Each University will create and annually train a pool of not less than five (5) faculty and five (5) administrators and/or staff to serve as hearing panel members in the Hearing Panel Resolution Process. The faculty hearing panel pool members selected by the Chancellor (or Designee) shall be selected from a list of no less than ten (10) faculty members proposed by the faculty council/senate. Pool members are selected by the Chancellor (or Designee) and serve a renewable one-year term. Selection of hearing panel pool members shall be made with an attempt to recognize the diversity of the University community. Hearing Panel members from one University may be asked to serve on a hearing panel involving another University.

The Chancellor (or Designee) will select a Hearing Panelist Pool Chair ("Pool Chair"). The Pool Chair randomly selects and coordinates the hearing panel members to serve on the Hearing Panel for a specific Formal Complaint. The Pool Chair may serve as a panel member for a specific Formal Complaint.

Administrators, faculty, and staff will be removed from the Hearing Panelist Pool if they fail to satisfy the annual training requirements, as determined by the Title IX Coordinator. Under such circumstances, the Title IX Coordinator will notify the Chancellor (or Designee), who will inform the administrator, faculty, or staff member of the discontinuation of their term.

2. **Title IX Hearing Panel ("Hearing Panel").** When a Formal Complaint is not resolved through an Informal Resolution process, the Hearing Panelist Pool Chair will randomly select two (2) members from the Hearing Panelist Pool to serve on the specific Hearing Panel together with the Hearing Officer. A good faith attempt will be made for the Hearing Panel to include at least one faculty member and one administrator or staff member. Up to two (2) alternates may be designated to sit in throughout the process as needed. The University reserves the right to have its attorney present during the hearing and during deliberations to advise the Hearing Panel.

### 3. Notice of Hearing.

- a. At least twenty (20) business days prior to the hearing, the Title IX Coordinator will send a letter (Notice of Hearing) to the Parties with the following information:

- (1) A description of the alleged violation(s) and applicable policy or policies that are alleged to have been violated
- (2) A description of the applicable procedures.
- (3) A statement that the Parties may have the assistance of an Advisor of their choosing, at the hearing; that the Party's Advisor will conduct all cross-examination and other questioning of the other Party and all witnesses on behalf of the Party they are advising; that if the Party does not have an Advisor, an Advisor will be provided by the University for the purpose of conducting cross-examination and other questioning for that Party; and the Advisor may be, but is not required to be, an attorney.
- (4) The time, date and location of the hearing.
- (5) A list of the names of each of the Hearing Panel members, including the Hearing Officer, and alternates, and information on how to raise an objection to any member of the Hearing Panel and the timeline in which to raise any objections.
- (6) A copy of the final investigative report and exhibits.
- (7) Notification to the Parties that all of the evidence gathered in the course of the investigation that is directly related to the allegations including inculpatory and exculpatory evidence, is available to the Parties and instructions regarding how to request access to that evidence.
- (8) Notice that if a Party or witness does not submit to cross-examination at the hearing, the decision-maker(s) must not rely on any statement of that Party or witness in reaching a determination regarding responsibility, but no inference can be drawn from the fact that a Party or witness failed to submit to cross-examination.

(9) Notice that the Parties may request a virtual hearing and/or any necessary accommodations.

b. The Notice of Hearing letter will be sent to each Party by email to their University-issued email account, or by the method of notification previously designated in writing by the Party. Notice is presumptively deemed delivered, when: 1) provided in person, 2) emailed to the individual to their University-issued email account, or 3) when sent via the alternate method of notification specified by the Party.

#### 4. Pre-Hearing Witness List and Documentary Evidence.

a. At least fifteen (15) business days prior to the hearing, the Complainant and Respondent will provide to the Investigator a list of the names of the proposed witnesses and copies of all proposed documentary evidence that a Party intends to call or use at the hearing.

b. At least ten (10) business days prior to the hearing, the Investigator will provide to each Party the names of proposed witnesses and proposed documentary evidence that the other Party intends to call or use at the hearing.

c. No employee or student, directly or through others, should take any action which may interfere with the investigation or hearing procedures. Employees and students are prohibited from attempted or actual intimidation or harassment of any potential witness. Failure to adhere to these requirements may lead to disciplinary action, up to and including expulsion or termination.

#### 5. Objection to or Recusal of Hearing Panel Member.

a. Hearing Panel members, including the Hearing Officer, shall not have a conflict of interest or bias for or against Complainants or Respondents generally or an individual Complainant or Respondent. If a Hearing Panel member or Hearing Officer feels that they have a conflict of interest or bias, or cannot make an objective determination, they must recuse themselves from the proceedings in advance of the hearing.

b. The Parties will have been given the names of the Hearing Panel members, including the Hearing Officer, in the Notice of Hearing. Should any Complainant or Respondent object to any panelist, they must raise all objections, in writing, to the Title IX Coordinator at least fifteen (15) business days prior to the hearing.

c. Hearing Panel members will only be unseated and replaced if the Title IX Coordinator concludes that good cause exists for the removal of a panel member. Good cause may include, but is not limited to, bias that would preclude an impartial hearing or circumstances in which the Hearing Panel member's involvement could impact the Party's work or learning environment due to current or potential interactions with the Hearing Panel member (e.g., a panel member being in the same department as either Party). If the Title IX Coordinator determines that a Hearing Panel member, other than the Hearing Officer, should be unseated and replaced, then Title IX Coordinator will ask the Hearing Panel Pool Chair to randomly select another member from the pool to serve on the Hearing Panel. The Title IX Coordinator will select an

alternate Hearing Officer if they determine that the Hearing Officer should be replaced. The Title IX Coordinator will provide a written response to all Parties addressing any objections to the Hearing Panel members, including the Hearing Officer.

**6. Alternative Attendance or Questioning Mechanisms.** All hearings will be live. However, at the request of either Party or by the University's designation, the live hearing may occur with the Parties located in separate rooms with technology enabling the Hearing Panel, including the Hearing Officer, and their legal advisor, if any, the Parties and their Advisors, and the Investigator, to simultaneously see and hear the Party or the witness answering questions. Should any hearing take place in this manner, the Title IX Coordinator (or Designee) shall be in charge of the technology during the hearing. The University will make reasonable accommodations for the Parties in keeping with the principles of equity and fairness.

**7. Requests to Reschedule the Hearing Date.** For good cause, the Title IX Coordinator may grant requests to reschedule the hearing date.

#### 8. Pre-Hearing Matters.

- a. At least ten (10) business days prior to the hearing date, a Party shall inform the Title IX Coordinator whether the Party intends to bring an Advisor of their choice to the hearing.
- b. At least ten (10) business days prior to the hearing date, a Party shall inform the Title IX Coordinator whether the Party is requesting accommodations for the hearing.
- c. At least five (5) business days prior to the hearing date, the final investigative report and all exhibits will be provided to the Hearing Panel members.

**9. Pre-Hearing Meeting.** Unless otherwise agreed by the Parties and the Hearing Officer, a pre-hearing meeting may be scheduled one hour prior to the start of the hearing between the Hearing Officer and Parties' Advisors. Parties may, but are not required to, be in attendance at this meeting.

**10. Conduct of Hearing.** The Hearing Officer shall participate on the Hearing Panel and preside at the hearing, call the hearing to order, call the roll of the Hearing Panel and alternates in attendance, ascertain the presence or absence of the Investigator, the Complainant and the Respondent, confirm receipt of the Notice of Allegations and Notice of Hearing by the Parties, report any extensions requested or granted and establish the presence of any Advisors.

**a. Order of Evidence.** The order of evidence shall generally be the following:

- (1) The Complainant will proceed first and may give a verbal statement of their allegations of sexual harassment against the Respondent. The Hearing Panel may next ask questions of the Complainant. The Complainant will then be subject to cross-examination by the Advisor of the Respondent. The Complainant may also call witnesses who will be subject to questioning by the Advisor of the Complainant, questioning by the Hearing Panel, and cross-examination by the Advisor of the Respondent. The Complainant may also submit documentary evidence

(2) The Respondent will proceed next and may give a verbal statement in response to the allegations of sexual harassment made by the Complainant. The Hearing Panel may next ask questions of the Respondent. The Respondent will be subject to cross-examination by the Advisor of the Complainant. The Respondent may also call witnesses who will be subject to questioning by the Advisor of the Respondent, questioning by the Hearing Panel, and cross-examination by the Advisor of the Complainant. The Respondent may also submit documentary evidence.

(3) The Investigator will then be available to answer questions of the Hearing Panel. The Investigator will next be subject to cross-examination by the Advisors of the Complainant and the Respondent. The Investigator may also call witnesses who will be subject to questioning by the Hearing Panel, and cross-examination by the Advisors of the Complainant and Respondent. The Investigator may also submit documentary evidence.

(4) The Hearing Panel may ask questions of the Parties or any witnesses including the Investigator at any time during the hearing.

**b. Record of Hearing.** The Title IX Coordinator shall arrange for an audio or audiovisual recording of the hearing. The recording of the hearing will become part of the Record of the Case.

#### 11. Hearing Process Rules.

- a. The formal rules of evidence shall not apply to any live hearing.
- b. Questions and evidence about the Complainant's predisposition or prior sexual behavior are not relevant, unless such questions and evidence about the Complainant's prior sexual behavior are offered to prove that someone other than the Respondent committed conduct alleged by the Complainant, or if the questions and evidence concern specific incidents of the Complainant's prior sexual behavior with respect to the Respondent and are offered to prove consent.
- c. Character evidence is information that does not directly relate to the facts at issue, but instead reflects upon the reputation, personality, or qualities of an individual, including honesty. Such evidence regarding either Party's character is of limited utility and shall not be admitted unless deemed relevant by the Hearing Officer.
- d. Incidents or behaviors of a Party not directly related to the possible violation(s) will not be considered unless they show a pattern of related misconduct. History of related misconduct by a Party that shows a pattern may be considered only if deemed relevant by the Hearing Officer.
- e. A Party's records that are made or maintained by a physician, psychiatrist, psychologist, or other recognized professional or paraprofessional acting in the professional's or paraprofessional's capacity, or assisting in that capacity, and which are made or maintained in connection with the provision of treatment to the Party, may not be used without that Party's express consent.
- f. The Hearing Officer shall not require, allow, rely upon, or otherwise use questions or evidence that constitute, or seek disclosure of, information protected under a legally recognized privilege, unless the person holding such privilege has waived the privilege.

g. The relevancy and admissibility of any evidence offered at the hearing shall be determined by the Hearing Officer, whose ruling shall be final.

h. A Party's Advisor will be permitted to ask the other Party and any witnesses relevant questions and follow-up questions, including those challenging credibility. Before a Complainant, Respondent or witness answers a cross-examination or other question, the Hearing Officer must first determine whether the question is relevant and explain any decision to exclude a question as not relevant. Where the Hearing Officer permits a question to be answered, a presumption shall be made that the Hearing Officer determined that the question was relevant.

i. The Party's Advisors may object to questions on limited grounds as specified in the Rules of Decorum. The Hearing Officer will rule on such objections and that ruling shall be final.

j. The Hearing Officer may dismiss any person from the hearing who interferes with or obstructs the hearing, fails to adhere to the Rules of Decorum, or fails to abide by the rulings of the Hearing Officer.

k. Procedural questions which arise during the hearing and which are not covered by these general rules shall be determined by the Hearing Officer, whose ruling shall be final.

#### 12. Findings of the Hearing Panel.

a. The Hearing Panel will deliberate with no others present, except any legal advisor to the Hearing Panel, to find whether the Respondent is responsible or not responsible for the policy violation(s) in question. The Hearing Panel will base its finding on a preponderance of the evidence (i.e., whether it is more likely than not that the Respondent committed each alleged violation). If a Respondent is found responsible by a majority of the Hearing Panel, the Hearing Panel will determine appropriate sanctions and remedial actions by a majority vote.

b. The Hearing Officer will prepare a written determination reflecting the decision of the Hearing Panel regarding responsibility, sanctions and remedial actions, if any ("Hearing Panel Decision"), and deliver it to the Title IX Coordinator detailing the following:

- (1) Identification of the allegations potentially constituting sexual harassment as defined in CRR 600.020;
- (2) A description of the procedural steps taken from the receipt of the Formal Complaint through the determination, including any notifications to the Parties, interviews with Parties and witnesses, site visits, methods used to gather other evidence and hearings held;
- (3) Findings of fact supporting the determination;
- (4) Conclusions regarding the application of the University's Title IX Policies to the facts;
- (5) A statement of, and rationale for, the result as to each allegation, including a determination regarding responsibility, any disciplinary sanctions to be imposed on the Respondent, and whether remedies designed to restore or preserve equal access to the University's education programs or activities will be provided by the University to the Complainant; and

(6) The procedures and permissible bases for the Complainant and the Respondent to appeal.

c. The Hearing Panel Decision should be submitted to the Title IX Coordinator within five (5) business days of the end of deliberations. Deviations from the five-day period will be communicated by the Hearing Officer to the Parties and the Title IX Coordinator, along with an expected time for completion. The Hearing Panel Decision will be provided to the Title IX Coordinator who will provide it to the Parties simultaneously within five (5) business days of receipt of the decision.

d. The Hearing Panel Decision will be sent to each Party by email to their University-issued email account, or by the method of notification previously designated in writing by the Party. Notice is presumptively deemed delivered, when: 1) provided in person, 2) emailed to the individual to their University-issued email account, or 3) when sent via the alternate method of notification specified by the Party.

e. The Hearing Panel Decision will become final either on the date that the Parties are provided with the written determination of the result of the appeal, if an appeal is filed, or if an appeal is not filed, the date on which an appeal would no longer be considered timely.

f. The Title IX Coordinator is responsible for effective implementation of any remedies.

#### R. Process for Academic Medical Centers (AMC)

1. Academic Medical Centers at the University of Missouri are not required to provide for a live hearing, but rather must adhere to the following process for resolving Formal Complaints alleging Title IX violations.
2. The decision-maker(s) for the Title IX Process for Academic Medical Centers shall be a neutral, impartial, and unbiased decision-maker designated by the Executive Vice Chancellor for Health Affairs.
3. **Notice of AMC Meeting.** The decision-maker will meet separately with each Party. At least fifteen (15) business days prior to the initial meeting with the decision-maker, the Title IX Coordinator will send a letter (Notice of AMC Meeting) to the Parties with the following information:
  - a. A description of the alleged violation(s) and applicable policy or policies that are alleged to have been violated.
  - b. A description of the applicable procedures.
  - c. A statement that the Parties may be accompanied by a Support Person of their choosing at the AMC Meeting.
  - d. The time, date and location of the AMC Meeting.
  - e. The name of the decision-maker, and information on how to raise an objection to the decision-maker and the timeline in which to raise any objections.
  - f. A copy of the investigative report and exhibits.
  - g. Notification to the Parties that all of the evidence gathered in the course of the investigation that is directly related to the allegations, including inculpatory and exculpatory evidence, is available to the Parties and how to request access to that evidence.
4. The Notice of AMC Meeting letter will be sent to each Party by email to their University-issued email account, or by the method of notification previously designated in writing by the Party. Notice is presumptively deemed delivered, when: 1) provided in person, 2) emailed to the individual to their University-issued

email account, or 3) when sent via the alternate method of notification specified by the Party.

5. At least fifteen (15) business days prior to the initial AMC Meeting, the Investigator will provide to the Parties access to all evidence gathered in the investigation which is directly related to the allegations in the Formal Complaint, including any evidence upon which the Investigator does not intend to rely, and inculpatory and exculpatory evidence whether obtained from a Party or other source, copies of recordings of all interviews conducted during the investigation, and a copy of any investigative report.
6. At least ten (10) business days prior to the initial AMC Meeting, the Complainant and Respondent may provide the decision-maker with written, relevant questions the Party wants asked of any Party or witness. At least five (5) business days prior to the initial AMC Meeting, the decision-maker will provide each Party with the answers, and allow for additional, limited follow-up questions from each Party. The decision-maker must explain to the Party proposing the questions any decision to exclude a question as not relevant. The Parties may also provide the decision-maker with documentary evidence.
7. No employee or student, directly or through others, should take any action which may interfere with the investigation or the AMC process. Employees and students are prohibited from attempted or actual intimidation or harassment of any potential witness. Failure to adhere to these requirements may lead to disciplinary action, up to and including expulsion or termination.
8. The decision-maker shall not have a conflict of interest or bias for or against Complainants or Respondents generally or an individual Complainant or Respondent. If a decision-maker feels that they have a conflict of interest or bias, or cannot make an objective determination, they must recuse themselves from the proceedings in advance of the AMC meeting.
9. At least ten (10) business days prior to the initial AMC Meeting, the Parties shall provide to the Title IX Coordinator all objections in writing to the decision-maker identified in the Notice of AMC Meeting. If the Title IX Coordinator determines that the decision-maker should be replaced, the Title IX Coordinator will select an alternate decision-maker. The Title IX Coordinator will provide a written response to all Parties addressing the objections.
10. Questions and evidence about the Complainant's pre-disposition or prior sexual behavior are not relevant, unless such questions and evidence about the Complainant's prior sexual behavior are offered to prove that someone other than the Respondent committed conduct alleged by the Complainant, or if the questions and evidence concern specific incidents of the Complainant's prior sexual behavior with respect to the Respondent and are offered to prove consent.
11. Character evidence is information that does not directly relate to the facts at issue, but instead reflects upon the reputation, personality, or qualities of an individual, including honesty. Such evidence regarding either Party's character is of limited utility and shall not be admitted unless deemed relevant by the Hearing Officer.
12. Incidents or behaviors of a Party not directly related to the possible violation(s) will not be considered unless they show a pattern of related misconduct. History of related misconduct by a Party that shows a pattern may be considered only if deemed relevant by the Hearing Officer.



13. A Party's records that are made or maintained by a physician, psychiatrist, psychologist, or other recognized professional or paraprofessional acting in the professional's or paraprofessional's capacity, or assisting in that capacity, and which are made or maintained in connection with the provision of treatment to the Party, may not be used without that Party's express consent.
  14. The decision-maker shall not require, allow, rely upon, or otherwise use questions or evidence that constitute, or seek disclosure of, information protected under a legally recognized privilege, unless the person holding such privilege has waived the privilege.
  15. All meetings between the decision-maker and Parties and/or witnesses shall be recorded.
  16. Within ten (10) business days of the last meeting with any Party or witness, the decision-maker must issue a written determination regarding responsibility, applying the preponderance of the evidence standard of evidence. The written determination must include:
    - a. Identification of the allegations potentially constituting sexual harassment as defined in CRR 600.020.
    - b. A description of the procedural steps taken from the receipt of the Formal Complaint through the determination, including any notifications to the parties, interviews with parties and witnesses, site visits, methods used to gather other evidence and meetings held;
    - c. Findings of fact supporting the determination;
    - d. Conclusions regarding the application of the Title IX policies to the facts;
    - e. A statement of, and rationale for, the result as to each allegation, including a determination regarding responsibility, any disciplinary sanctions to be imposed on the Respondent, and whether any remedies designed to restore or preserve equal access to the University's education program or activity will be provided by the University to the Complainant; and
    - f. The University's procedures and permissible bases for the Complainant and Respondent to appeal as set forth in Section U.
  17. The written determination will be provided to the Title IX Coordinator, who will provide it to the Parties simultaneously within five (5) business days of receipt of the determination. Notification will be made in writing and sent to each Party by email to their University-issued email account, or by the method of notification previously designated in writing by the Party. Notice is presumptively deemed delivered, when: 1) provided in person, 2) emailed to the individual to their University-issued email account, or 3) when sent via the alternate method of notification specified by the Party.
  18. The determination becomes final either on the date that the University provides the Parties with the written determination of the result of the appeal, if any appeal is filed, or if any appeal is not filed, the date on which an appeal would no longer be considered timely.
  19. The Title IX Coordinator is responsible for effective implementation of any remedies.
1. If the Respondent is found responsible for a violation of the University's Title IX Policies, the Hearing Panel, or the decision-maker in the Administrative Resolution Process or Academic Medical Center Process, will determine sanctions and remedial actions. The Title IX Coordinator will apply and enforce the sanctions and remedial actions and may also add other remedial actions as deemed appropriate.
    - a. Factors Considered When Finding Sanctions/Remedial Actions include but are not limited to:
      - (1) The nature, severity of, and circumstances surrounding the violation;
      - (2) The disciplinary history of the Respondent;
      - (3) The need for sanctions/remedial actions to bring an end to the conduct;
      - (4) The need for sanctions/remedial actions to prevent the future recurrence of the conduct; and
      - (5) The need to remedy the effects of the conduct on the Complainant and the University community.
2. **Types of Sanctions.** The following sanctions may be imposed upon any Respondent found to have violated the University's Title IX Policies. Multiple sanctions may be imposed for any single violation. Sanctions include but are not limited to the following:
- a. **For Respondents who are Student(s) or Student Organization(s):**
    - (1) **Warning.** A notice in writing to the Respondent that there is or has been a violation of institutional regulations, and cautioning that if there are further violations, the existence of the Warning may result in more severe sanctions in the future.
    - (2) **Probation.** A written reprimand for violation of specified regulations. Probation is for a designated period of time and includes the probability of more severe sanctions if the Respondent is found to be violating any institutional regulation(s) during the probationary period.
    - (3) **Loss of Privileges.** Denial of specified privileges for a designated period of time.
    - (4) **Restitution.** Compensating the University for loss, damage, or injury to University property. This may take the form of appropriate service and/or monetary or material replacement.
    - (5) **Discretionary Sanctions.** Work assignments, service to the University, or other related discretionary assignments, or completion of educational programming.
    - (6) **Residence Hall Suspension.** Separation of the Respondent from the residence halls for a definite period of time, after which the Respondent is eligible to return. Conditions for readmission may be specified.
    - (7) **Residence Hall Expulsion.** Permanent separation of the Respondent from the residence halls.
    - (8) **Campus Suspension.** Respondent is suspended from being allowed on a specific University campus for a definite period of time. Logistical modifications consistent with the

## S. Sanctions and Remedial Actions.

sanction imposed, may be granted at the discretion of the Chief Student Affairs Officer (or Designee).

(9) **University System Suspension.** Separation of the Respondent from the University System for a definite period of time, after which the Respondent is eligible to return. Conditions for readmission may be specified.

(10) **Withdrawal of Recognition.** Respondent Student Organization loses its Official Approval as a recognized student organization. May be either temporary or permanent.

(11) **University System Expulsion.** Permanent and complete separation (i.e., not eligible for online courses either) of the Respondent from the University System.

**b. For Respondents who are Employee(s):**

- (1) Warning – verbal or written;
- (2) Performance improvement plan;
- (3) Required counseling;
- (4) Required training or education;
- (5) Loss of annual pay increase;
- (6) Loss of supervisory responsibility;
- (7) Recommendation of discipline in a training program, including recommendation of termination, suspension or other corrective or remedial actions;
- (8) For Non-Regular Faculty, immediate termination of term contract and employment;
- (9) For Regular, Untenured Faculty, immediate termination of term contract and employment. Notice of not reappointing would not be required;
- (10) Suspension without pay;
- (11) Non-renewal of appointment;
- (12) For Regular, Tenured Faculty, suspension without pay, removal from campus and referral to the Chancellor to initiate dismissal for cause as detailed in Section 310.060 of the Collected Rules and Regulations;
- (13) For Staff, Demotion;
- (14) For Staff, Termination.

**c. Remedial Actions.** The following remedial actions may also be imposed to address the effects of the violation(s) of the University's Title IX Policies on the Complainant. Such remedial actions will vary depending on the circumstances of the policy violation(s), but may include:

- (1) Where the Complainant is a student:
  - (a) Permitting the student to retake courses;
  - (b) Providing tuition reimbursement;
  - (c) Providing additional academic support;

- (d) Removal of a disciplinary action; and
- (e) Providing educational and/or on-campus housing accommodations.

(2) Where the Complainant is an employee:

- (a) Removal of a disciplinary action;
- (b) Modification of a performance review;
- (c) Adjustment in pay;
- (d) Changes to the employee's reporting relationships; and
- (e) Workplace accommodations.

In addition, the University may offer or require training and/or monitoring as appropriate to address the effects of the violation(s) of the University's Title IX Policies.

**d. When Implemented.** Sanctions will be imposed once the written determination regarding responsibility becomes final; the determination regarding responsibility is final either on the date that the Parties are provided with the written determination of the result of the appeal, if an appeal is filed, or if an appeal is not filed, the date on which an appeal would no longer be considered timely.

**T. Withdrawal While Charges Pending.** Should a Respondent decide to resign employment, or withdraw from the University and not participate in the investigation and/or hearing without signing a Voluntary Permanent Separation and General Release Agreement and without the approval of the Title IX Coordinator, the Formal Complaint may be dismissed, or the Title IX Coordinator may determine that the process will nonetheless proceed in the Respondent's absence to a reasonable resolution and, if the Respondent is found responsible, the Respondent will not be permitted to return to the University unless all sanctions have been satisfied.

**U. Appeal.**

1. **Grounds for Appeal.** Both Complainant and Respondent are allowed to appeal the dismissal of a Formal Complaint or any of the allegations therein, or the findings of the Administrative Resolution Process, the Hearing Panel Resolution Process, or the Academic Medical Center process. Appeals are limited to the following:
  - a. A procedural irregularity that affected the outcome of the matter (e.g., material deviation from established procedures, etc.);
  - b. To consider new evidence that was not reasonably available at the time the determination regarding responsibility or dismissal was made, that could affect the outcome of the matter;
  - c. The Title IX Coordinator, Investigator(s), or decision-maker(s) had a conflict of interest or bias for or against Complainants or Respondents generally or the individual Complainant or Respondent that affected the outcome of the matter; or
  - d. The sanctions fall outside the range typically imposed for this offense, or for the cumulative conduct record of the Respondent.
2. **Requests for Appeal.** Both the Complainant and the Respondent may appeal a dismissal of a Formal Complaint or any allegations therein, or a determination regarding

responsibility to the Equity Resolution Appellate Officer. The Equity Resolution Appellate Officer must not have a conflict of interest or bias for or against Complainants or Respondents generally or an individual Complainant or Respondent; if the Equity Resolution Appellate Officer does not believe that they can make an objective decision about an appeal, they should recuse themselves and the Chancellor (or Designee) shall appoint an alternate Equity Resolution Appellate Officer to hear the pending appeal. All requests for appeal must be submitted in writing to the Equity Resolution Appellate Officer within five (5) business days of the delivery of the notice of dismissal or Administrative Resolution Decision, Hearing Panel Decision, or AMC Determination. When any Party requests an appeal, the other Party will be notified and receive a copy of the request for appeal.

3. **Response to Request for Appeal.** Within five (5) business days of the delivery of the notice and copy of the request for appeal, the non-appealing Party may file a response to the request for appeal. The response can address that sufficient grounds for appeal have not been met and/or the merits of the appeal.
4. **Review of the Request to Appeal.** The Equity Resolution Appellate Officer will make an initial review of the appeal request(s) to determine whether:
 

The Equity Resolution Appellate Officer will reject the request for appeal if any of the above requirements are not met. The decision to reject the request for appeal is final and further appeals and grievances are not permitted. The Equity Resolution Appellate Officer will render a written decision whether the request for appeal is accepted or rejected within fifteen (15) business days from receipt of the request for appeal. If no written decision is provided to the Parties within fifteen (15) business days from receipt of the request, the appeal will be deemed accepted.

  - a. The request is timely, and
  - b. The appeal is on the basis of any of the articulated grounds listed above, and
  - c. When viewed in the light most favorable to the appealing Party, the appeal states grounds that could result in an adjusted finding or sanction.
5. **Review of the Appeal.** If all three (3) requirements for appeal listed in paragraph 4 above are met, the Equity Resolution Appellate Officer will accept the request for appeal and proceed with rendering a decision on the appeal applying the following additional principles:
  - a. Appeals are not intended to be full re-hearings of the Formal Complaint and are therefore deferential to the original findings. In most cases, appeals are confined to a review of the written documentation and Record of the Case, and relevant documentation regarding the grounds for appeal. Appeals granted based on new evidence should normally be remanded to the original decision-maker for reconsideration.
  - b. The Equity Resolution Appellate Officer will render a written decision on the appeal to all Parties within ten (10) business days from accepting the request for appeal. In the event the Equity Resolution Appellate Officer is unable to render a written decision within ten (10) business days from accepting the request for appeal, the Equity Resolution Appellate Officer will promptly notify the Parties in writing of the delay.

c. Once an appeal is decided, the outcome is final. Further appeals are not permitted.

6. **Extensions of Time.** For good cause, the Equity Resolution Appellate Officer may grant reasonable extensions of time (e.g.: 7-10 business days) to the deadlines in the appeal process. The Equity Resolution Appellate Officer will notify the Parties in writing if such extensions are granted.

**V. Failure to Complete Sanctions/Comply with Interim and Long-term Remedial Actions.** All Respondents are expected to comply with all sanctions and remedial actions within the timeframe specified. Failure to follow through on these sanctions and remedial actions by the date specified, whether by refusal, neglect or any other reason, may result in additional sanctions and remedial actions and/or suspension, expulsion, termination, referral to Dismissal for Cause process, or withdrawal of recognition from the University. Suspension will only be lifted when compliance is achieved to the satisfaction of the Title IX Coordinator.

**W. Dismissal for Cause Referral.** If the recommended sanction for a Regular, Tenured Faculty member is referral to the Chancellor to initiate Dismissal for Cause, the Record of the Case will be forwarded to the appropriate Faculty Committee on Tenure. Because the Dismissal for Cause proceeding is not a re-hearing of the Complaint, the Record of the Case will be included as evidence and the findings will be adopted for proceeding as detailed in Section 310.060: Procedures in Case of Dismissal for Cause in the Collected Rules and Regulations.

**X. Records.** In implementing this policy, records of all Formal Complaints, the Hearing Process or Academic Medical Center Process, and resolutions (including Informal resolution and result therefrom), will be kept by the Title IX Coordinator. For the purpose of review or appeal, the Record of the Case will be accessible at reasonable times and places to the Respondent and the Complainant. The Record of the Case will be kept for seven (7) years following final resolution.

In addition, a record of the response to all complaints of sexual harassment, must be maintained for a period of seven (7) years, including records of any actions, including Supportive Measures, taken in response to a report or Formal Complaint of sexual harassment. In each instance, the University must document the basis for its conclusion that its response was not deliberately indifferent, and document that it has taken measures designed to restore or preserve equal access to the University's education programs or activities. If the University did not provide a Complainant with Supportive Measures, the University must document the reasons why such a response was not clearly unreasonable in light of the known circumstances.

Each Title IX Coordinator, including the Title IX Coordinator for the academic medical center, shall maintain statistical, de-identified data on the race, gender and age of each Party to a Formal Complaint for that university/ academic medical center, and will report such data on an annual basis to the President of the University of Missouri. Additionally, statistical data relating to each university in the University of Missouri System shall be reported on an annual basis to that university's Chancellor and chief officers for human resources, student affairs, and diversity, equity and inclusion; the academic medical center shall report such statistical data for the academic medical center on an annual basis to the Executive Vice-Chancellor for Health Affairs. Data relating to the University of Missouri System shall be reported on an annual basis to the University of Missouri System's chief officers for human resources, student affairs, and diversity, equity and inclusion.

**Y. Retaliation.** No person may intimidate, threaten, coerce, or discriminate against any individual for the purpose of interfering with any right or privilege secured by Title IX, or because the individual has made a report or complaint, testified, assisted, or participated or refused to participate in any manner in an investigation, proceeding, or hearing under this policy. Intimidation, threats, coercion, or discrimination, including charges against an individual for policy violations that do not involve sex discrimination or sexual harassment, but arise out of the same facts or circumstances as a report or complaint of sex discrimination, or a report or Formal Complaint of sexual harassment, for the purpose of interfering with any right or privilege secured by Title IX, constitutes retaliation.

The University must keep confidential the identity of any individual who has made a report or complaint of sex discrimination, including any individual who has made a report or filed a Formal Complaint of sexual harassment, any Complainant, any individual who has been reported to be the perpetrator of sex discrimination, any Respondent, and any witness, except as may be permitted by the FERPA statute, 20 U.S.C. 1232g, or FERPA regulations, 34 CFR part 99, or as required by law, or to carry out the purposes of Title IX, including the conduct of any investigation, hearing, or judicial proceeding arising thereunder. Complaints alleging retaliation may be filed with the Equity Officer in accordance with CRRs 600.010, 600.040, and 600.050.

The exercise of rights protected under the First Amendment does not constitute retaliation prohibited under this section.

Charging an individual with a policy violation for making a materially false statement in bad faith in the course of the any proceedings under this policy does not constitute retaliation provided, however that a determination regarding responsibility, alone, is not sufficient to conclude that any Party made a materially false statement in bad faith.

## 600.020 Sex Harrassment under Title IX - for matters involving conduct alleged to have occurred on or after August 14, 2020

Executive Order 40, 4-8-14; Revised 6-19-14; Revised 9-22-14 by Executive Order 41. Revised 2-9-17 with an effective date of 3-1-17.

**A. Sex Discrimination, Sexual Harassment and Sexual Misconduct in Education.** The University is committed to affording equal employment and education opportunities to its employees and students, and to creating an environment free from discrimination (see Section 600.010 of the Collected Rules and Regulations). In furtherance of these commitments, both University policy and applicable state and federal law, prohibit all students, employees, volunteers and visitors at the University from engaging in discrimination on the basis of any protected characteristic, including sex, pregnancy, gender identity, and gender expression. In addition, University policy and the law prohibit sexual misconduct, sexual harassment, stalking on the basis of sex, dating/intimate partner violence, and sexual exploitation, as defined in Section 600.020.B. As used in this policy, the word "sex" is also inclusive of the term "gender." This policy applies to any phase of its employment process, any phase of its admission or financial aid programs, and all other aspects of its educational programs or activities. Additionally, this policy applies to allegations of sexual misconduct or allegations of other forms of sex discrimination, as defined in Section 600.020.B., occurring in other settings, including off-campus, if there are effects of the conduct that interfere with or limit any person's ability to participate in or benefit from the University's educational programs, activities or employment. Notices

of nondiscrimination are posted online and in physical locations for the UM System and each of the campuses.

### B. Definitions

1. **Sex Discrimination.** Sex discrimination is conduct that is based upon an individual's sex, pregnancy, gender identity, or gender expression that adversely affects a term or condition of an individual's employment, education, living environment, or participation in a University activity.

In addition, sexual harassment, sexual misconduct, sexual exploitation, stalking on the basis of sex and dating/intimate partner violence, as further defined below, are forms of sex discrimination which are prohibited under this policy.

2. **Sexual Harassment.** Sexual harassment is defined as:
  - a. Unwelcome sexual advances or requests for sexual activity by a person or persons in a position of power or authority to another person; or
  - b. Other unwelcome verbal or physical conduct of a sexual nature or because of sex, pregnancy, gender identity, or gender expression when:
    - i. Submission to or rejection of such conduct is used explicitly or implicitly as a condition for academic or employment decisions; or
    - ii. Such conduct creates a hostile environment by being sufficiently severe or pervasive or objectively offensive that it interferes with, limits or denies the ability to participate in or benefit from the University's educational programs, activities, or employment.
3. **Sexual Misconduct.** Sexual misconduct includes: 1) Nonconsensual sexual intercourse; 2) Nonconsensual sexual contact involving the sexual touching of a body part (i.e., the lips, genitals, breast, anus, groin, or buttocks of another person) or the nonconsensual sexual touching of another with one's own genitals whether directly or through the clothing; 3) Exposing one's genitals to another under circumstances in which one should reasonably know that the conduct is likely to cause affront or alarm; or 4) Sexual exploitation.
4. **Stalking on the Basis of Sex.** Stalking on the basis of sex is following or engaging in a course of conduct on the basis of sex with no legitimate purpose that makes another person reasonably concerned for their safety or would cause a reasonable person under the circumstances to be frightened, intimidated or emotionally distressed.
5. **Dating/Intimate Partner Violence.** Violence, threats of violence, intimidation and acts of coercion committed by a person who is or has been in a social relationship of a romantic or intimate nature with the recipient of the violent behavior.
6. **Sexual Exploitation.** Sexual exploitation occurs when one person takes nonconsensual or abusive sexual advantage of another person for one's own advantage or benefit or for the advantage or benefit of anyone other than the person being exploited and which behavior does not constitute any other form of sexual misconduct. Examples of sexual exploitation include, but are not limited to, the following activities done without the consent of all participants:
  - a. Invasion of sexual privacy;
  - b. Prostituting another person;
  - c. Taping or recording of sexual activity;
  - d. Going beyond the boundaries of consent to sexual activity (e.g., letting your friends hide to watch you engaging in sexual activity);
  - e. Engaging in voyeurism;



- f. Knowingly transmitting an STI, STD, venereal disease or HIV to another person;
- g. Inducing another to expose their genitals;
- h. Nonconsensual distribution of intimate images;
- i. Use or distribution of drugs or alcohol with intent to facilitate sexual contact without consent (i.e., predatory drugs or alcohol).

7. **Consent to Sexual Activity.** Consent to sexual activity is knowing and voluntary. Consent to sexual activity requires of all involved persons a conscious and voluntary agreement to engage in sexual activity. Each person engaged in the sexual activity must have met the legal age of consent. It is the responsibility of each person to ensure they have the consent of all others engaged in the sexual activity. Consent must be obtained at the time of the specific activity and can be withdrawn at any time. Consent, lack of consent or withdrawal of consent may be communicated by words or non-verbal acts.

Someone who is incapacitated cannot consent. Silence or absence of resistance does not establish consent. The existence of a dating relationship or past sexual relations between the Parties involved should never by itself be assumed to be an indicator of consent. Further, consent to one form of sexual activity does not imply consent to other forms of sexual activity. Consent to engage in sexual activity with one person does not imply consent to engage in sexual activity with another. Coercion and force, or threat of either, invalidates consent.

8. **Incapacitated or incapacitation.** A state in which rational decision-making or the ability to consent is rendered impossible because of a person's temporary or permanent physical or mental impairment, including but not limited to physical or mental impairment resulting from drugs or alcohol, disability, sleep, unconsciousness or illness. Consent does not exist when the Respondent knew or should have known of the other individual's incapacitation. Incapacitation is determined based on the totality of the circumstances. Incapacitation is more than intoxication but intoxication can cause incapacitation.

Factors to consider in determining incapacity include, but are not limited to, the following:

- Lack of awareness of circumstances or surroundings (e.g., an inability to understand, either temporarily or permanently, the who, what, where, how and/or why of the circumstances; blackout state)
- Inability to physically or verbally communicate coherently, particularly with regard to consent (e.g., slurred or incoherent speech)
- Lack of full control over physical movements (e.g., difficulty walking or standing without stumbling or assistance)
- Physical symptoms (e.g., vomiting or incontinence).

**C. Title IX Coordinators.** Duties and responsibilities of the University's Title IX Coordinators include monitoring and oversight of overall implementation of Title IX compliance at the University, including coordination of training, education, communications and coordination with the Equity Resolution Processes for faculty, staff, students and other members of the University community and investigation of complaints of sex discrimination. The University may designate Deputy Coordinators as needed to assist in fulfillment of the Coordinator's duties and responsibilities.

NOTE: All references to "Title IX Coordinator" throughout this policy refer to the Title IX Coordinator or the Coordinator's designee.

Any person having inquiries concerning the application of Title IX should contact their respective UM System or campus Title IX Coordinator.

The following individuals serve as Title IX Coordinators and are designated to handle inquiries regarding the Anti-Discrimination policies and to serve as coordinators for purposes of Title IX compliance:

**University of Missouri-St. Louis**

Dana Beteet Daniels  
Title IX Coordinator and Chief Equity Officer  
Senior Human Resources Consultant

**Address:**

220 Woods Hall  
St. Louis, MO 63121

**Telephone:** 314-516-4538

**Email:** dana@umsl.edu

www.umsl.edu/title-ix

If the Complaint involves the University's Title IX Coordinator, Complaints may be made to the System Title IX Coordinator. If the Complaint involves the System Title IX Coordinator, reports may be made to the System President. The contact information for the System President is:

Office of the President  
321 University Hall  
Columbia, MO 65211

**Telephone:** 573-882-2011

**Email:** umpresident@umsystem.edu

NOTE: The above-listed contact information for Title IX Coordinators may be updated as needed and without requiring the approval of the Board of Curators.

**D. Reporting Sex Discrimination, Including Sexual Harassment and Sexual Misconduct**

1. **Students, Employees, Volunteers, Visitors, and Patients.**

Students, employees, volunteers, visitors, and patients of the University who have experienced any form of sex discrimination, sexual harassment or sexual misconduct, are encouraged to report the incident promptly to the appropriate Title IX Coordinator listed in Section 600.020.C. above. In addition, students, volunteers, visitors, and patients of the University who have witnessed such conduct are encouraged to report the incident promptly to the appropriate Title IX Coordinator. The University will investigate and appropriately resolve all such reports pursuant to one of its Equity Resolution Processes (see Sections 600.030, 600.040, 600.050, 600.060). For questions regarding confidentiality or requests that the Complaint not be pursued, see Section 600.020.E. below. In order to foster reporting and participation, the University may provide amnesty to Complainants and witnesses for minor student conduct violations ancillary to the incident.

2. **Mandated Reporters.** Any employee of the University, except as noted below, who becomes aware of sex discrimination as defined in this policy (including sexual harassment, sexual misconduct, stalking on the basis of sex, dating/intimate partner violence or sexual exploitation) is a Mandated Reporter, regardless of whether the recipient of the behavior is a student, employee, volunteer or visitor of the University.

3. **Employees with a Legal Obligation or Privilege of Confidentiality.**

Employees with a legal obligation or privilege of confidentiality (including health care providers, counselors, lawyers, and their associated staff) are not considered Mandated Reporters and are not required to report when the information is learned in the course of a confidential communication. This also means that the employee seeking the exemption is employed by the University for that specific

purpose and was acting in that capacity when the confidential disclosure was made. If the information is not learned in the course of confidential communication (for example, behavior is observed in class) then the employee has the same obligation as a Mandated Reporter.

4. **Designated Confidential Employees.** Consistent with the law and upon approval from the Office of the General Counsel, campuses may also designate non-professional counselors or advocates as confidential for purposes of this policy and, therefore, excluded from the definition of Mandated Reporters. However, these individuals are required once per month to report to the Title IX Coordinator aggregate, non-personally identifiable information regarding incidents of sex discrimination reported to them. The aggregate data report should contain general information about individual incidents of sexual violence such as the nature, date, time, and general location of the incident. Confidentiality in this context is not the same as privilege under the law.
5. **Required Reporting and Disclosure.** A mandated Reporter is required to promptly report the information to the appropriate Title IX Coordinator. The Mandated Report must be made regardless of whether the person reporting the information to the Mandated Reporter requests confidentiality and regardless of how the Mandated Reporter becomes aware of the offensive behavior (personal observation, direct information from the subject of the behavior, indirect information from a third party, etc.). If the Complainant requests confidentiality or that the charges not be pursued, the Mandated Reporter should warn the Complainant that, at this stage in the process, the Mandated Reporter must report all known information to the Title IX Coordinator.
6. **Content of Mandated Report to Title IX Coordinator.** Mandated Reporters must report all details that they possess. This includes names of the Parties, if known, and all other information in the Mandated Reporter's possession.

#### **E. Requests for Confidentiality or Not to Pursue an Investigation**

1. The Title IX Coordinator or other appropriate official should inform and obtain the consent from the Complainant before beginning an investigation. If the Complainant requests confidentiality or asks that the Complaint not be pursued, the Title IX Coordinator should take all reasonable steps to investigate and respond to the Complaint consistent with the request for confidentiality or request not to pursue an investigation. If a Complainant requests confidentiality or insist that identifiable information, such as the Complainant's name, not be disclosed to the Respondent, the Title IX Coordinator should inform the Complainant that the institution's ability to respond may be limited. The Title IX Coordinator should evaluate the Complainant's request in the context of providing a safe and nondiscriminatory environment for the University community.
2. If, after due deliberation and based on the nature and severity of the Complaint, the Title IX Coordinator determines there is a sufficient basis to proceed with the Complaint, the Title IX Coordinator may initiate an investigation notwithstanding a Complainant's request that the Complaint not be pursued. Such a decision should be well-reasoned and documented. Documentation of the decision will be maintained by the Title IX Coordinator. In such cases, the Title IX Coordinator will inform the Complainant of the decision to commence an investigation.

Alternatively, if after due deliberation and based on the nature and severity of the Complaint, the Title IX Coordinator determines there is not a sufficient basis to proceed with the Complaint, the Title IX

Coordinator may decide not to initiate an investigation and/or may also refer the Complaint to the appropriate procedural process. Such a decision should be well-reasoned and documented. Documentation of the decision will be maintained by the Title IX Coordinator. If, after due deliberation, the Title IX Coordinator decides the University cannot or should not take disciplinary action with respect to the Respondent, the Title IX Coordinator should consider other steps to limit the effects of the alleged harassment and prevent its recurrence, and remedy its effects on the victim and the University community.

**F. Impact of Optional Report to Law Enforcement.** In accordance with federal law, the Title IX Coordinator will not wait for the conclusion of a criminal investigation or criminal proceeding to begin the Title IX preliminary investigation. It may be necessary to delay temporarily the fact-finding portion of a Title IX preliminary investigation while the police are gathering evidence. The Title IX Coordinator will promptly resume the preliminary Title IX investigation as soon as notified by the law enforcement agency that it has completed the evidence-gathering process. The Title IX Coordinator will implement appropriate interim steps during the law enforcement agency's investigation period to provide for the safety of the Complainant and the campus community and the avoidance of retaliation.

**G. Non-compliance.** Failure to comply with this policy can result in disciplinary action. Employees also are cautioned that non-compliance with this policy may increase their risk of personal liability. Further, an individual who fails to report as required under this policy may be determined to be ineligible for defense or protection under Section 490.010 for any associated claims, causes of action, liabilities or damages.

**H. Retaliation.** Retaliation is any adverse action taken against a person because of that person's participation in protected activity. The University strictly prohibits retaliation against any person for making any good faith report to a Title IX Coordinator or for filing, testifying, assisting, or participating in any investigation or proceeding involving allegations of sex discrimination, sexual harassment or sexual misconduct. Any person who engages in such retaliation shall be subject to disciplinary action, up to and including expulsion or termination, in accordance with applicable procedures. Any person who believes they have been subjected to retaliation is encouraged to promptly notify the Equity Officer or Title IX Coordinator. The University will promptly investigate all claims of retaliation.

Examples of prohibited retaliation include, but are not limited to, giving a lesser grade than the student's academic work warrants because the student filed a Complaint of sexual harassment; giving lower than justified performance appraisals because a person was a witness in an investigation of alleged sexual harassment; and threatening to spread false information about a person for filing a Complaint of sexual harassment.

**I. False Reporting.** False reporting is making an intentional false report or accusation in relation to this policy as opposed to a report or accusation, which, even if erroneous, is made in good faith. False reporting is a serious offense subject to appropriate disciplinary action ranging up to and including expulsion or termination.

**J. Witness Intimidation or Harassment.** No individual participating in an investigation relating to a report or Complaint that a violation of this policy has occurred should, directly or through others, take any action which may interfere with the investigation. The University prohibits attempts to or actual intimidation or harassment of any potential witness. Failure to

adhere to these requirements may lead to disciplinary action, up to and including expulsion or termination.

**K. U.S. Department of Education—Office for Civil Rights.** Inquiries concerning the application of Title IX also may be referred to the United States Department of Education's Office for Civil Rights. For further information on notice of nondiscrimination, visit <http://wdcrobcolp01.ed.gov/CFAPPS/OCR/contactus.cfm> and for the address and phone number of the U.S. Department of Education office which serves your area, or call 1-800-421-3481.

The State of Missouri regional Office for Civil Rights is located in Kansas City and is available to provide assistance.

Office for Civil Rights  
U.S. Department of Education  
One Petticoat Lane  
1010 Walnut, 3<sup>rd</sup> Floor, Suite 320  
Kansas City, MO 64106  
Telephone: 816-268-0550  
**FAX:** 816-268-0599  
**TDD:** 800-877-8339  
**Email:** [OCR.KansasCity@ed.gov](mailto:OCR.KansasCity@ed.gov)

600.040 Equity Resolution Process for Resolving Complaints of Discrimination, Harassment, and Sexual Misconduct against a Faculty Member

600.050 Equity Resolution Process for Resolving Complaints of Discrimination, Harassment, and Sexual Misconduct against a Staff Member

600.060 Equity Resolution Process for Resolving Complaints of Discrimination and Harassment against the University of Missouri

# Confidentiality Policies

These statements are set forth as guidelines and procedures to implement the University of Missouri policy on student records developed from the federal Family Educational Rights and Privacy Act of 1974.

The University of Missouri--St. Louis, as charged in the act, will annually inform its eligible students by including in the Student Planner and the UMSL Bulletin the following information:

1. 'Education Records' are those records, files, documents, and other materials that contain information directly related to a student and are maintained by the university. Those records, made available for review to the student under The Family Educational Rights and Privacy Act of 1974, are student financial aid, the student's cumulative advisement file, student health records, disciplinary records, admissions file, and academic record. Confidential letters and statements of recommendation that were placed in student credential folders at the Office of Career Placement Services after January 1, 1975, are also made available, if the student has not waived the right to view these recommendations.

The University of Missouri--St. Louis 'Education Records' do not include:

Records of instructional, supervisor, and administrative personnel and educational personnel ancillary thereto which are in the sole possession of the maker thereof and which are not accessible or revealed to any other person except a substitute.

Records of the University of Missouri Police Department created for a law enforcement purpose and maintained by the police department.

In the case of persons who are employed by the university but who are not in attendance at the university, records made and maintained in the normal course of business that related exclusively to such persons and that person's capacity as an employee where the records are not available for any other purpose.

All records on any university student that are created and maintained by a physician, psychiatrist, psychologist, or other recognized professional or paraprofessional acting in his professional or paraprofessional capacity, or assisting in that capacity, and created, maintained, or used only in connection with the provision of treatment to the student, and are not available to anyone other than persons providing such treatment, provided, however, that such records can be personally reviewed by a physician or other appropriate professional of the student's choice.

Directory Information:

1. The University of Missouri-St. Louis recognizes 'Directory Information/ Public Information' to mean a student's name, address, telephone listing, e-mail, enrollment status, current level, major field of study, participation in officially recognized activities and sports, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student. All students must inform the Office of the Registrar if the information designated as directory information should not be released without the student's prior consent. Students may change their privacy settings by logging in to MyView.
2. University of Missouri-St. Louis students have access to the educational records identified in Paragraph 1 above. In accordance

with Public Law 93380 as amended, the University of Missouri--St. Louis will not make available to students the following materials:

Financial records of the parents of students or any information contained therein.

Confidential letters and statements of recommendation placed in the education records prior to January 1, 1975, if such letters or statements are not used for the purpose other than those for which they were specifically intended.

Confidential recommendations respecting admission to the university, application for employment and receipt of honor, or honorary recognition, where the student has signed a waiver of the student's rights of access as provided in 6.0404, the University Policy on Student Records.

1. The Director of Financial Aid, the appropriate academic dean, Assistant Vice Provost for Student Affairs: Health, Wellness, & Counseling Services, the Vice Provost for Student Affairs, the Director of Career Placement Services, the Director of Admissions, and the Registrar are the officials responsible for the maintenance of each type of record listed in Paragraph 1.
2. Any student may, upon request, review his or her records and, if inaccurate information is included, may request the expunging of such information from the file. Such inaccurate information will then be expunged upon authorization of the official responsible for the file.
3. Students desiring to challenge the content of their record may request an opportunity for a hearing to challenge the content of the educational record in order to ensure that the record is not inaccurate, misleading, or otherwise in violation of the privacy or other rights of the student, to provide an opportunity for the correction or deletion of any such inaccurate, misleading, or otherwise inappropriate data contained therein, and to insert into such records a written explanation respecting the content of such records.
4. The university official charged with custody of the records will attempt to settle informally any disputes with any student regarding the content of the university's educational records through informal meetings and discussions with the student.
5. Upon request of the student or the university official charged with custody of the records of the student, a formal hearing shall be conducted as follows:
  - a. The request for a hearing shall be submitted in writing to the chancellor, who will appoint a hearing officer or a hearing committee to conduct the hearing.
  - b. The hearing shall be conducted and decided within a reasonable period of time following the request for a hearing. The parties will be entitled to written notice 10 days prior to the time and place of the hearing.
  - c. The hearing shall be conducted and the decision rendered by an appointed hearing official or officials who shall not have a direct interest in the outcome of the hearing.
  - d. The student shall be afforded a full and fair opportunity to present evidence relevant to the hearing.
  - e. The decision shall be rendered in writing within a reasonable period of time after the conclusion of the hearing.

Either party may appeal the decision of the hearing official or officials to the campus chancellor. Appeal of the chancellor's decision is to the president. Appeal of the president's decision is to the Board of Curators.



1. The University of Missouri-St. Louis will not provide grade reports to parents unless the student has granted access to academic information via their self-service student center.
2. The University of Missouri--St. Louis may permit access to or release of the educational records without the written consent of the student to the parents of a dependent student as defined in Section 152 of the Internal Revenue Code of 1954.
3. If any material or document in the educational record of a student includes information on more than one student, the student may inspect and review only such part of such material or document as relates to him or her or to be informed of the specific information contained in such part of such material.

# Tuition and Payments

## Fee Assessment

Fees for coursework vary due to the student's residency standing, undergraduate, graduate or post-graduate status, credit hours, and the applicability of any course fees charged to specific courses or programs. Detailed information on tuition and fee rates and residency status can be found on the Cashier's website.

## Financial Responsibility

A Statement of Financial Responsibility will be presented to all students at least once per academic year. The agreement explains the billing methods, payment options, and all policies related to student accounts. It is the responsibility of the student that fees and other financial obligations are paid as they become due regardless of who is making the payments. Students who need assistance in meeting financial obligations to the University should contact the Financial Aid Office in a timely manner. Students are expected to adhere to important dates and policies that impact fees. Due dates and fee reassessment dates are posted on the Cashier's website and through links on the eBill website. The non-payment of any financial obligation may result in additional collection fees, the inability to register, and the withholding of student records.

## Billing

The Cashier's Office bills you by posting a monthly student account billing statement on eBill around the 15th of any month in which there is a new charge or credit on your account. The Cashier's Office will send you and your authorized payer (if any) a billing notification email reminder to check your statement and pay any balance due. The mail.umsl.edu email address will be used for students and the authorized payers email address will be used for authorized payers.

## Payment of Fees

Payments are due on the 10th day of each month. The minimum payment can be found at the top of the monthly billing statement or by checking the percentage due as shown in the billing schedules on the Cashier's website. If a student chooses to make the minimum payment or a partial payment, a finance charge of 1% will be assessed on the unpaid billed balance. The monthly 1% finance charge can be avoided by paying the balance in full. A \$25 late payment fee will be charged to student accounts in which the billed minimum or payment in full is not paid by the due date.

All fees, fines, bookstore charges, etc. must be paid by the last day of the term. After the term ends, unpaid accounts will be turned over to an outside collection agency. The University will pursue any and all collection efforts and practices including referring accounts to collection agencies and reporting to the credit bureaus. Accounts may be assessed additional collection charges of 30% of the unpaid principal balance when it is referred to a collection agency. Your Missouri state income tax refund may also be intercepted to partially or fully satisfy a past due debt to the University. Educational and related fees are generally non-dischargeable in bankruptcy and will survive after the bankruptcy has closed. Except in certain limited situations, this means that a student will still owe the debt to the University after the bankruptcy.

## Payment Options

**Online** – Log on to the MyView student system to make payment using a personal checking or savings account (with no additional fee) or any major credit card (a 2.85% service fee will be applied to credit card payments).

**Mail** – Send your check or money order to the Cashier's Office at: University of Missouri - St. Louis, 285 Millennium Student Center (MC 212), One University Blvd., St. Louis, MO 63121-4400. Include student name and student number on the check or money order.

**In person** – Visit the Cashier's Office on the second floor of the Millennium Student Center in Room 285. Payment in cash, check, money order or pin-based debit are accepted. Credit card payments cannot be processed at the Cashier's Office, but are accepted online at <http://ebill.umsl.edu>.

**Payment Drop Box** – A secure payment drop box is located outside the Cashier's Office, Room 285 of the Millennium Student Center. Only check or money order payments, please.

Any communications concerning disputed debts, including instruments tendered as full satisfaction of debt, must be sent to Account Disputes, One University Blvd., 289 Millennium Student Center, St. Louis, MO 63121-4400.

Any check presented to the University for payment that is not honored by your bank will be assessed a \$20.00 returned check fee in addition to any fees that the bank may charge.

**ERDPP** – Employer Reimbursement Deferred Payment Program. Many companies offer tuition reimbursement to their employees. While the student is ultimately responsible for the payment of their tuition and fees, the Cashier's Office offers the ERDPP program to allow a student to take advantage of this employer benefit by deferring payment of all, or a portion, of their tuition and related costs. There is a non-refundable \$50.00 application fee each semester. A \$100 late fee will be assessed if student does not make payment in full by the semester's deadline.

**Financial Aid** – If you have applied for financial aid in advance and have received an award letter, your letter describes how much of your award will be paid towards your student fees. If your financial aid does not cover all the fees, then you must pay the remainder of your student fees yourself by the due date. Financial aid that has not yet been disbursed will appear on your monthly billing statement as "Anticipated Aid". Your statement will reflect Anticipated Aid as being deducted from your Account Balance giving you an Adjusted Amount Due. Your Minimum Payment is a percentage of the Adjusted Amount Due. Students should pay either the Adjusted Amount Due or the Minimum Payment by the due date to avoid a late payment fee.

**Third Party Sponsor** – When an organization makes a commitment to pay your educational expenses, they are considered a Third Party Sponsor. If you are expecting a third party sponsor to pay your tuition and fees, you will need to have your sponsor submit a letter of authorization to the Cashier's Office. Once the sponsor's letter is received, a credit for the amount the sponsor has indicated will be applied to your student account. An invoice for this amount will then be sent to your sponsor. You are responsible for paying any charges not covered by your sponsor on time, to avoid finance and late charges or other penalties. If your sponsor does not pay for the charges they authorized, the responsibility of paying those charges defaults back to you.

## UMSL Compliance with the Veteran Access, Choice and Accountability Act of 2014, Section 702

UMSL is compliant with the requirements of PL 113-146 the Veteran Access, Choice and Accountability Act of 2014, Section 702. Section 702 targets educational assistance through ensuring in-state tuition/in-district rates to uniformed services veterans and their qualified dependents covered under this Section.

The following individuals shall be charged the in-state rate, or otherwise considered a resident, for tuition purposes:

- A Veteran using educational assistance under either chapter 30 (Montgomery G.I. Bill – Active Duty Program) or chapter 33 (Post-9/11 G.I. Bill), of title 38, United States Code, who lives in Missouri while attending a school located in Missouri (regardless of his/her formal State of residence) and enrolls in the school within three years of discharge or release from a period of active duty service of 90 days or more.
- Anyone using transferred Post-9/11 GI Bill benefits (38 U.S.C. § 3319) who lives in Missouri while attending a school located in Missouri (regardless of his/her formal State of residence) and enrolls in the school within three years of the transferor's discharge or release from a period of active duty service of 90 days or more.
- Anyone described above while he or she remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters, or terms) at the same school. The person so described must have enrolled in the school prior to the expiration of the three year period following discharge or release as described above and must be using educational benefits under either chapter 30 or chapter 33, of title 38, United States Code.
- Anyone using benefits under the Marine Gunnery Sergeant John David Fry Scholarship (38 U.S.C. § 3311(b)(9)) who lives in Missouri while attending a school located in Missouri (regardless of his/her formal State of residence).
- Anyone using transferred Post-9/11 G.I. Bill benefits (38 U.S.C. § 3319) who lives in Missouri while attending a school located in Missouri (regardless of his/her formal state of residence) and the transferor is a member of the uniformed service who is serving on active duty.

## UMSL Compliance with the Veterans Benefits and Transition Act of 2018, Section 103

This policy ensures that UMSL will not impose any penalty, including the assessment of late fees, the denial of access to classes, libraries, or other institutional facilities, or the requirement that a covered individual borrow additional funds, on any covered individual because of the individual's inability to meet his or her financial obligations to the institution due to the delayed disbursement of a payment to be provided by the VA under chapter 31 or 33 of this title.

### Refunds

A credit balance is the result of an overpayment on a student's account from financial aid, loans or payments received. Credit balance refunds will be processed when a credit actually exists on the student's account. Anticipated financial aid must be received and posted to the student's account in order for a credit to exist and for a refund to be processed.

When financial aid funds are received by the University, the funds are applied to the students account. During the Fall and Spring semesters, financial aid funds are applied to student accounts no sooner than ten days prior to the start of classes. During the Summer semester, a student must be enrolled in enough hours to qualify for financial aid. Aid for that term will not apply to the student's account until all of the course(s) begin that satisfy that qualification. If the student has a credit balance after financial aid funds have paid all account charges in full, the student is now eligible for a refund.

**Parent-Plus Loan Refund** - If you have any funds available after what is owed directly to the University, the refund may be released to the parent at the address listed on the PLUS Loan Application. Refunds from proceeds of PLUS will be issued to the student only if the parent requests that on the PLUS application.

**Credit Card Refund** - If a credit card payment has been made towards your student account in the past 120 days, any refund due to you will be returned to that credit card.

**Drop/Withdrawal Refund** – Students who are leaving school or dropping classes are responsible for canceling their registration and verifying that their classes have been dropped. Any refunding of fees will be made according to the reassessment schedule available on the Cashier's website. Fees reassessed may include Tuition and Course/Supplemental fees (if applicable). The Spring and Fall reassessment schedules only apply to regular 16-week session courses. The Summer reassessment schedules only apply to regular 4-week, 8-week and 12-week session courses. Fee reassessment for courses not in regular sessions will be based on the course's total number of calendar days (weekends and holidays included) and the number of calendar days that the student was enrolled in the course. If the meeting dates for your course are different from the regular session meeting dates, please contact the Cashier's Office as your fee reassessment for withdrawal or dropping may differ from the regular reassessment.

After the withdrawal/drop of a class, the refund process may require two to four weeks processing time. When a student completely withdraws from a semester and was receiving federal financial aid, the University and/or the student may be required to return some of the financial aid awarded to the student.

Charges that students accrue prior to a refund being issued will be deducted from the refund amount. Charges that are accrued after a refund is issued will be billed to the student on the monthly billing statement. As student accounts go into credit balance, the Cashier's Office processes refunds to students by checks through the mail and by direct deposit to students personal checking or savings accounts. Students should allow 7-10 business days from the day that the refund is processed to receive a refund check in the mail. For students that have direct deposit, please allow 3-5 business days from the day that the refund is processed to receive the refund in your bank account.

### Cancellation of Registration Due to Nonpayment of Fees

The university will attempt to notify any student whose registration is about to be administratively canceled for nonpayment of fees prior to taking this action. On or before the last day on which a student may enroll in a course, a canceled student's space in a course will be given to other students on that course's wait lists. The canceled student will be placed at the end of the course wait list. Any student who has been administratively canceled for nonpayment of assessed fees may not enroll in a class

unless the required fees have been paid. If your classes are canceled for nonpayment and you wish to be reinstated, the minimum payment will be required plus a late registration fee. When payment is received, you will be charged for all classes that were canceled.

### **Fees May Change Without Notice**

The University reserves the right to modify by increase or decrease the fees charged for attendance and other services at the University, including but not limited to tuition or educational fees, at any time when in the discretion of the governing board the same is in the best interest of the University with all modification of fees to be effective irrespective as to whether fees have or have not been paid by or on behalf of a student prior to the effective date of the modification.



# Missouri Score Card

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Pursuant to Missouri HB 1606 (2018), information regarding the number of credit hours, program length, employment rate, wage data, and graduates employed in careers related to their program of study at The University of Missouri - St. Louis can be found at the following URL: <https://scorecard.mo.gov/scorecard/>.

## To Search:

- Enter “**University of Missouri at St Louis**” in the School / Program box.
- Choose a Degree/Credential Type. We offer:
  - Bachelor's Degrees
  - Certificates
  - Doctoral/Professional Degrees
  - Educational Specialist
  - Graduate Certificates
  - Master's Degrees
- Choose the Field of Study.

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**Accounting BS**

**General Education Requirements**

All Business majors must meet the university general education requirements (p. 51). As part of meeting the university's general education requirements, all Business majors must complete the prerequisite courses below :

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
MATH 1030	College Algebra (MOTR MATH 130)	3

MATH 1100	Basic Calculus	3
MATH 1105	Basic Probability and Statistics	3

**Degree Requirements**

All Business majors must meet College of Business G.P.A., good standing and credit requirements (p. 179) as outlined in the Bulletin.

**Lower Division Business Core Requirements**

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
INFSYS 2800	Information Systems Concepts and Applications	3
Total Hours		12

**Upper Division Requirements**

ENGL 3120	Business Writing	3
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**Upper Division Non-Business or Business Requirement**

Two global awareness courses selected from an approved list maintained in the Office of Undergraduate Academic Advising in the College of Business Administration; also available on our web site.

**Upper Division Business Requirements**

FINANCE 3500	Financial Management	3
SCMA 3300	Business Analytics and Statistics	3
SCMA 3301	Introduction to Supply Chain Management	3
MGMT 3600	Management and Organizational Behavior	3
MGMT 4219	Strategic Management	3
MKTG 3700	Basic Marketing	3
A minimum of 18 additional hours of upper division approved business electives		18

**Assessment Requirement**

MGMT 4220	Business Assessment Testing	0
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**Degree Requirements**

**Lower or Upper Division Courses Required**

COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	3
Choose one of the following courses:		3
ACCTNG 2430	Accounting Ethics	
PHIL 1130	Approaches to Ethics (MOTR PHIL 102)	
PHIL 2254	Business Ethics	

**Upper Division Accounting Courses Required <sup>1</sup>**

ACCTNG 3401	Financial Accounting and Reporting I	3
ACCTNG 3402	Financial Accounting and Reporting II	3

ACCTNG 3411	Cost Accounting	3
ACCTNG 3421	Accounting Information Systems	3
or INFSYS 3810	Information Systems Analysis	
ACCTNG 3441	Income Taxes	3
ACCTNG 4435	Auditing	3
Total Hours		24

<sup>1</sup> The prerequisite for enrollment in ACCTNG 3402, ACCTNG 3411, ACCTNG 3441, ACCTNG 3451, and all 4000-level accounting courses is an upper-level accounting grade point average of 2.3 or higher.

See the Office of Undergraduate Academic Advising for alternatives to satisfy the State of Missouri's requirement of 150 hours for eligibility to take the Uniform Certified Public Accounting Examination.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Interpret business process transactions and create financial statements
- Analyze relevant strategic options relevant to business processes
- Explain the impact of International Financial Reporting Standards upon Financial Reporting
- Identify and assess legal and ethical issues with financial reporting and the accounting profession
- Effectively prepare and present oral and written financial information individually and within group settings
- Evaluate business decisions in the functional areas of financial analysis, corporate governance, taxation, or business processes

### Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
MATH 1030		3 MATH 1100	3
ENGL 1100		3 ECON 1001	3
BUS AD 1000		3 INFSYS 2800	3
INFSYS 1800		3 EXPLORE – Humanities & Fine Arts	3
EXPLORE – Humanities & Fine Arts		3 EXPLORE – Math & Sciences	3
		15	15
Second Year			
Fall	Hours	Spring	Hours
ACCTNG 2400		3 ACCTNG 2410	3
ECON 1002		3 ACCTNG 2430, PHIL 1130, PHIL 2254, or PHIL 2249	3
MATH 1105		3 BUS AD 2900	3
COMM 1040		3 SCMA 3301	3
CORE – US History & Government		3 Cultural Diversity Requirement	3
		15	15
Third Year			
Fall	Hours	Spring	Hours
ACCTNG 3401		3 ACCTNG 3402	3
MGMT 3600		3 MKTG 3700	3
SCMA 3300		3 FINANCE 3500	3
ENGL 3120		3 Non-Business Elective	6
Non-Business Elective		3	
		15	15
Fourth Year			
Fall	Hours	Spring	Hours
ACCTNG 3421		3 MGMT 4219 or 4220	3

ACCTNG 3441	3 ACCTNG 3411	3
Global Awareness Course	3 ACCTNG 4435	3
Non-Business Elective	6 Global Awareness Course	3
	Non-Business Elective	3
		15
Total Hours: 120		15

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor. All requirements are subject to change.*

## Accounting Data Analytics Graduate Certificate

The Graduate Certificate in Accounting Data Analytics is designed for individuals seeking expertise in the fast growing data analytics specialty in CPA Practice and corporate practice. Students will gain experience with data visualization and analytics techniques applied to business settings.

### Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

### Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs. All 12 credit hours taken as part of this certificate transfer to the MBA degree program.

Choose four of the following courses:		12
ACCTNG 5435	Graduate Topics in Auditing	
ACCTNG 5443/ INFSYS 6833	Decision Support Systems for Business Intelligence	
ACCTNG 5444/ SCMA 6345	Business Analytics and Data Mining	
ACCTNG 4450/ SCMA 4350	Prescriptive Analytics and Optimization	
ACCTNG 6460	Advanced Data Integration	
Total Hours		12

## Accounting Data Security Graduate Certificate

The Accounting Data Security Certificate requires 18 credit hours in data security. Students pursuing the Master of Accounting degree, the MBA with an Accounting Emphasis, or the Post-Baccalaureate Certificate in Accounting may be interested in also earning this certificate. Any six of the following courses qualifies for credit towards the certificate:

ACCTNG 5408	Fraud Examination	3
ACCTNG 5435	Graduate Topics in Auditing	3
ACCTNG 5436	Systems Auditing	3
ACCTNG 5465	Principles of Information Security	3
ACCTNG 5466	Management of Accounting Networks and Security	3

ACCTNG 5467	Advanced Data Security Concepts	3
ACCTNG 5468	Accounting Software Assurance	3
ACCTNG 5469	Management of Accounting Data Security	3

## Accounting MAcc

### Prerequisite Courses

The Master of Accounting program is designed to accommodate students who have earned an undergraduate degree with an accounting major. Students who have not completed an undergraduate accounting degree must complete the following courses prior to entry into the MAcc program:

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
ACCTNG 3401	Financial Accounting and Reporting I	3
ACCTNG 3402	Financial Accounting and Reporting II	3
ACCTNG 3411	Cost Accounting	3
ACCTNG 3421	Accounting Information Systems	3
ACCTNG 3441	Income Taxes	3

These requirements may be waived with appropriate prior coursework. Candidates who have not completed the preparatory courses may apply and be provisionally accepted into the MAcc program, but must complete the courses before registration as a Master of Accounting student can be finalized.

Students must complete a minimum of 30 credit hours while enrolled as a graduate student.

### MAcc Degree Requirements

#### Quantitative Methods

All students must complete the following course:

SCMA 5300	Statistical Analysis for Management Decisions	3
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#### Finance Requirement

FINANCE 6500	Financial Management	3
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#### Business Breadth 12

Select four of the following courses:

BUS AD 5100	Managerial Communication
BUS AD 5900	Law, Ethics and Business
BUS AD 6990	Strategy Formulation and Implementation
INFSYS 5800	Management Information Systems
SCMA 5320	Production and Operations Management
MGMT 5600	Managing People in Organizations
MKTG 5700	Contemporary Marketing Concepts

#### Accounting Course Requirements

Students must complete the following three courses:

ACCTNG 4401	Financial Accounting and Reporting III	3
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ACCTNG 4402	Financial Accounting and Reporting IV	3
ACCTNG 4435	Auditing	3

#### Research Course

Select one of the following:

ACCTNG 5402 or ACCTNG 5406 or ACCTNG 5441	Professional Accounting Research Research and Professional Writing in Accounting Tax Research	3
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#### Graduate Topics

Select one of the following:

ACCTNG 5403 or ACCTNG 5412 or ACCTNG 5435 or ACCTNG 6441	Graduate Topics in Financial Accounting Graduate Topics in Management Accounting: Controllership Graduate Topics in Auditing Graduate Topics in Taxation	3
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#### Electives 15

Students must complete 15 hours of electives including at least six hours of Accounting courses.

#### Accounting Electives

Select at least two of the following (Not all courses are offered each year):

ACCTNG 5402	Professional Accounting Research
ACCTNG 5403	Graduate Topics in Financial Accounting
ACCTNG 5406	Research and Professional Writing in Accounting
ACCTNG 5408	Fraud Examination
ACCTNG 5412	Graduate Topics in Management Accounting: Controllership
ACCTNG 5435	Graduate Topics in Auditing
ACCTNG 5436	Systems Auditing
ACCTNG 5441	Tax Research
ACCTNG 5446	Advanced Topics in Taxation
ACCTNG 5451	Accounting and Auditing in Governmental and Not-for-Profit Entities
ACCTNG 5480	International Accounting
ACCTNG 5490	Graduate Internship in Accounting
ACCTNG 5491	Contemporary Issues In Accountancy
ACCTNG 5498	Graduate Seminar in Accounting
ACCTNG 6441	Graduate Topics in Taxation

#### Non-Accounting Courses

Students may complete up to 9 hours from other business disciplines (maximum: 9 credit hours at the graduate level)

- Any BUS AD 5000 and above
- Any FINANCE 6500 and above
- Any INFSYS 5800 and above
- Any SCMA 5300 and above
- Any MGMT 5600 and above



Any MKTG 5700 and above

Total Hours 48

## Learning Outcomes

Upon Completion of the program, graduates will be able to:

- Synthesize business process transactions as well as create and analyze financial statements
- Analyze, critique, and inform strategic options relevant to business processes, corporate governance, internal controls, and security
- Identify and discuss the impact of International Financial Reporting Standards upon financial reporting
- Apply ethical judgement in analyzing accounting situations and be able to formulate ethical accounting and business decisions
- Actively participate in team collaborations as well as prepare written professional communications that justify, critique, or inform relevant accounting or business decisions
- Analyze and critique business decisions in the functional business areas of financial analysis, corporate governance, taxation, or business processes

## Accounting Minor

### General Requirements

- All minors are 15 credit hours or 5 courses, including business core courses.
- Students must attain a 2.0 grade point average for all courses in the minor.
- Students must attain a minimum grade of C- in each course included in the minor.
- All courses in the minor must be on a graded basis.
- A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.
- One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.
- A minor may be added for up to two years following completion of the baccalaureate degree

### Specific Requirements for the Minor

Available to all students except those pursuing the Bachelor of Science in Accounting degree. Students must complete:

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
Plus any three upper division accounting electives		9
Total Hours		15

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Analyze business process transactions and create financial statements
- Critically examine strategic options relevant to business processes, corporate governance, internal controls, and security

- Assess business decisions in the functional areas of financial analysis, corporate governance, taxation, and business processes

## Accounting Post Baccalaureate Undergraduate Certificate

### Prerequisite

Bachelor's degree (in any subject)

### Prerequisite Courses

MATH 1030	College Algebra (MOTR MATH 130) <sup>1</sup>	3
ACCTNG 2400	Fundamentals of Financial Accounting <sup>2</sup>	3
ACCTNG 2410	Managerial Accounting <sup>2</sup>	3

<sup>1</sup> MATH 1030 College Algebra is a prerequisite for the required accounting courses. It may be taken concurrently with ACCTNG 2400 Fundamentals Of Financial Accounting, but must be completed prior to enrollment in ACCTNG 2410 Managerial Accounting.

<sup>2</sup> ACCTNG 2400 Fundamentals Of Financial Accounting and ACCTNG 2410 Managerial Accounting are also prerequisites for the 3000-level accounting courses.

### Required

Complete 27 hours of accounting courses at the 3000-level or above, at least 15 hours of which are completed at UMSL. The accounting courses must include the six required courses listed below and three accounting electives. Courses previously completed can be waived upon presentation of appropriate documentation. Waived courses will not count toward the 15-hour residency requirement.

Courses must be completed with a grade of C- or higher. The grade point average for all courses counting toward the Post-Baccalaureate Certificate in Accounting must be 2.3 or higher. The prerequisite for enrollment in ACCTNG 3402, ACCTNG 3411, ACCTNG 3441, ACCTNG 3451 and all 4000-level accounting courses is an upper-level accounting grade point average of 2.3 or higher.

### Required Courses

ACCTNG 3401	Financial Accounting and Reporting I	3
ACCTNG 3402	Financial Accounting and Reporting II	3
ACCTNG 3411	Cost Accounting	3
ACCTNG 3421	Accounting Information Systems	3
ACCTNG 3441	Income Taxes	3
ACCTNG 4435	Auditing	3

### Electives

Select three of the following: <sup>1</sup> 9

ACCTNG 3451	Accounting for Governmental and Not-For-Profit Entities	
ACCTNG 4401	Financial Accounting and Reporting III	
ACCTNG 4402	Financial Accounting and Reporting IV	
ACCTNG 4405	Professional Accounting Research	

ACCTNG 4441	Advanced Federal Income Tax: Business Taxation	
Total Hours		27

<sup>1</sup> Most of these are offered only once a year.

### Notes on qualifying for the CPA exam in Missouri

Successful completion of the Post-Baccalaureate Certificate in Accounting includes all the accounting courses needed to qualify for the CPA exam in Missouri. However, Missouri law also requires a total of 60 credit hours in business (including the accounting courses). Many students with undergraduate degrees in business have satisfied this requirement. A student who has not satisfied this requirement must take additional business classes in order to qualify for the CPA exam.

In addition, Missouri requires 150 credit hours of college level coursework in order to qualify for the CPA exam. A student who has completed a 120-hour undergraduate business degree and the Post-Baccalaureate Certificate in Accounting will need additional coursework in order to satisfy the 150-hour requirement.

### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Analyze business process transactions and create financial statements
- Critically examine strategic options relevant to business processes, corporate governance, internal controls, and security
- Assess business decisions in the functional areas of financial analysis, corporate governance, taxation, and business processes

## ACP Instructional Communication Graduate Certificate

The ACP Instructional Communication Certificate is designed for secondary educators interested in teaching public speaking and related courses to high school students for college credit through programs such as UMSL's Advanced Credit Program. The certificate combines practical application with theory and research to provide teachers with a grounded approach to delivering college appropriate courses with empirical research in communication at the foundation.

Through a combination of online courses and independent studies, students can complete the ACP Communication graduate certificate without visiting campus.

Students who earn the ACP Instructional Communication graduate certificate will be eligible to teach college level courses in public speaking at the secondary level.

Requirements: Graduate Standing. To earn the ACP Communication certificate, students must complete a minimum of 18 hours. Typically, students will earn the certificate by completing the following courses in sequence<sup>1</sup>:

COMM 5000	ACP - Elements of Public Speaking ([R])	3
COMM 5010	ACP: Elements of Debate ([R])	3
COMM 5020	ACP - Persuasion and Influence ([R])	3
COMM 5050	ACP - Special Topics ([E]) <sup>2,3</sup>	6

COMM 5099	ACP - Observation and Implementation ([R]) <sup>2</sup>	3
Total Hours		18

<sup>1</sup> Other 5000+ electives may be substituted based on approval and availability. Contact the Graduate Coordinator in the Department of Communication for more information.

<sup>2</sup> Pre-requisites: Students must have completed or currently be enrolled in each of the following courses: COMM 5000, COMM 5010, COMM 5020

<sup>3</sup> May be repeated.

[R] Required for the certificate.

[E] Elective.

## Actuarial Science BS

**Campus Address:** 408 Social Sciences and Business Building (SSB)

**Main Number:** 314-516-5353

**Fax Number:** 314-516-5352

### Bachelor of Science (B.S.) in Actuarial Science

The B.S. in Actuarial Science provides students with the quantitative skills used by actuaries. Students are required to complete courses offered by the Department of Mathematics and Computer Science, the Department of Economics and the College of Business Administration. Students take coursework in calculus, financial mathematics, statistics, economics, econometrics, and finance. The program is designed to provide students with a solid preparation to take exams and to complete validation by educational experience requirements needed to begin a career as an actuary.

### Certificate in Actuarial Studies

The Certificate in Actuarial Studies is designed to provide the education needed for entry level employment in the actuarial profession.

### Career Outlook in Actuarial Science

Graduates with this skill set are hired by insurance firms, consulting firms, and financial institutions. Actuarial training is also transferable to broader jobs in data science and analytics. Job prospects for those with actuarial degrees are expected to remain strong over the next decade.

For more information on careers in actuarial science, visit the website of the Society of Actuaries (<https://www.soa.org/Member/>).

## Bachelor of Science in Actuarial Science General Education Requirements

Students must satisfy the university general education requirements (p. 51). Many of the courses for the degree may be used to fulfill math proficiency, information literacy, social science, and math and life/natural sciences requirements. There is no foreign language requirement for the degree.

### Satisfactory/Unsatisfactory Option

Courses required for the major may not be taken on a satisfactory/unsatisfactory basis.

## Required Courses

Candidates for the B.S. in Actuarial Science degree must complete a program of 62 credit hours of required courses. Each required course must be completed with a grade of C- or better and students must maintain a GPA of 2.0 for courses required for the degree.

ACCTNG 2400	Fundamentals of Financial Accounting	3
CMP SCI 1250	Introduction to Computing	3
ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
ECON 4100	Introduction to Econometrics	4
ECON 4120	Time Series Econometrics for Economics and Finance	4
or ECON 4130	Business and Economic Forecasting	
FINANCE 3500	Financial Management	3
FINANCE 3520	Investments	3
FINANCE 3521	Financial Engineering: Applying Derivatives	3
INFSYS 2800	Information Systems Concepts and Applications	3
MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
MATH 1320	Introduction to Probability and Statistics	3
or ECON 3100	Economic Data and Statistics	
MATH 4010	Financial Mathematics I	3
MATH 4020	Financial Mathematics II	3
MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3
Total Hours		62

## Recommended Courses

Students are strongly encouraged to take as many of the following courses as possible.

CMP SCI 2250	Programming and Data Structures	3
ECON 3001	Intermediate Microeconomics	3
ECON 3002	Intermediate Macroeconomics	3
ECON 4110	Applied Econometrics	4
ECON 4995	Internship in Actuarial Science	1-3
or MATH 4995	Internship in Actuarial Science	
FINANCE 3561	Principles of Insurance	3
MATH 2450	Elementary Linear Algebra	3
MATH 4260	Introduction to Stochastic Processes	3

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Learn basic programming techniques for use in actuarial applications.

- Understand the fundamental concepts of financial mathematics and how those concepts are applied in present and accumulated values for various streams of cash flow.
- Develop the fundamental probability tools for quantitatively assessing risk.
- Use the concepts of statistical inference, such as estimation and hypothesis testing, required for actuarial modeling.
- Become familiar with regression models to analyze and forecast time series data.
- Use economic reasoning to explain individual decision-making and economy-wide outcomes.
- Understand and apply accounting concepts and knowledge of financial instruments and how they are utilized.
- Develop knowledge of the theoretical basis of actuarial models and the application of those models to insurance and other financial risks.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 INFSYS 1800	3
ENGL 1100		3 MATH 1320	3
MATH 1800		5 MATH 1900	5
CMP SCI 1250		3 EXPLORE - Humanities and Fine Arts	3
CORE - Communication Proficiency		3	
	15		14
Second Year			
Fall	Hours	Spring	Hours
ECON 1001		3 ACCTNG 2400	3
INFSYS 2800		3 ECON 1002	3
MATH 2000		5 MATH 4020	3
MATH 4010		3 MATH 4200	3
		EXPLORE - Humanities and Fine Arts	3
	14		15
Third Year			
Fall	Hours	Spring	Hours
ECON 4100		4 FINANCE 3521	3
ENGL 3100 or 3120		3 EXPLORE - Social Sciences	3
FINANCE 3500		3 EXPLORE - Humanities and Fine Arts	3
MATH 4210		3 Cultural Diversity Requirement	3
CORE - US History and Government		3 Recommended course, elective or minor	3
	16		15
Fourth Year			
Fall	Hours	Spring	Hours
ECON 4130		4 Recommended course, elective or minor	3
FINANCE 3561		3 Recommended course list, elective or minor	3
Recommended course list, elective or minor		3 Recommended course list, elective or minor	3
Recommended course list, elective or minor		3 Recommended course list, elective or minor	3
Recommended course list, elective or minor		3 Recommended course list, elective or minor	3
	16		15
Total Hours: 120			

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Actuarial Studies Undergraduate Certificate

Actuaries use the tools of economics, finance, and mathematics to evaluate and price risk. They are employed by insurance companies, pension funds, consulting firms, and a variety of other financial institutions. The actuarial profession has consistently been ranked as one of the most desirable professions in which to be employed. To become an actuary one must satisfy certain educational requirements, pass exams offered by the Society of Actuaries, and complete professional courses.

The Certificate in Actuarial Studies is designed to provide the education needed for entry level employment in the actuarial profession. Those who complete the certificate will satisfy some of the Validation by Educational Experience requirement of the Society of Actuaries and be prepared to take the first two actuarial examinations (P and FM).

Completion of the certificate requires the following courses. Please note that many of these courses have prerequisites so anyone pursuing the certificate should work carefully with an academic advisor.

### Required Courses

FINANCE 3500	Financial Management	3
FINANCE 3521	Financial Engineering: Applying Derivatives	3
MATH 4010	Financial Mathematics I	3
MATH 4020	Financial Mathematics II	3
MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3
Total Hours		18

Residency Requirement: Of the above required six courses at least five must be taken at the University of Missouri-St. Louis.

### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Interpret, formulate and solve applied problems in probability and statistics.
- Interpret, formulate and solve applied problems in mathematics relating to annuities, bonds and derivative investments.

## Acute Care Pediatric Nurse Practitioner Post-Graduate Certificate

Post-graduate certificate (PGC) requirements are tailored to the individual student, depending on past academic work, experience, the student's goals, and specialty requirements. Upon completion of the PGC requirements, a certificate is awarded by the College of Nursing (CON) and Graduate School. Graduates are eligible to apply to take board

certification exams in the advanced practice role and population for which they have been prepared.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html).

### Admission Criteria

- Admission to the University by completing the UMSL Graduate Application
- Completion of College of Nursing supplemental application
- MSN or DNP from a nationally accredited nursing program
- MSN or DNP 3.0 minimum GPA
- Current professional licensure

### Certificate Requirements

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
NURSE 6739	Adult Health I	4
NURSE 6740	Adult Health II	4
NURSE 6954	Advanced Practice Nursing: Residency I	2-4
NURSE 6955	Advanced Practice Nursing: Residency II	2-4
NURSE 7954	Advanced Practice Nursing: Residency III	2-4

All students must complete 8 credit hours of Residency. One credit hour is equivalent to 75 residency hours.

## Adult and Higher Education MEd, Adult Education Emphasis

**Effective Fall 2019, the Adult and Higher Education with Adult Education Emphasis program will not be accepting applications at this time.**

### Admission Requirements

This degree program follows the policies of The College of Education and the Graduate School relating to admissions, academic standards, residency, transfer credit, time limitations, and thesis options (see Graduate Study in the Bulletin). The minimum number of hours required for the M.Ed. degree is 32 credit hours.

### Education Requirements

#### Foundation Courses

Select a course focusing on the learner from the following:	3
ADULT ED 6410	The Adult Learner
or HIGHERED 6474	The College Student



Select a course in historical foundations from the following: 3

ADULT ED 6411	History of Adult Education
or HIGHERED 6477	History and Philosophy of American Higher Education

Select a course on the improvement of instruction from the following: 3

ADULT ED 6413	Improvement of Instruction in Adult Education
HIGHERED 6473	Curriculum in Higher Education
ED PSY 7647	Teaching For Learning In The University

Select one of the following: 3-6

ADULT ED 6412 & ADULT ED 6414	Philosophical Foundations of Adult Education and Curriculum Theory and Development in Adult Education <sup>1</sup>
HIGHERED 6476	Organization and Administration of Higher Education

### Adult and Higher Education Electives

Select a minimum of 12 hours from the following: 12

ADULT ED 6230	Adult Learning and Development
ADULT ED 6416	Survey of Adult Distance Education
ADULT ED 6417	Multicultural Issues in Adult Education
ADULT ED 6418	Assessment In The Adult Classroom <sup>3</sup>
ADULT ED 6419	Developing Intercultural Competence
ADULT ED 6420	Survey of Human Resource Development and Adult Education
ADULT ED 6432	Teaching In The Community College
ADULT ED 6494	Directed Readings in Adult Learning
ADULT ED 6497	Problems in Adult Education
ADULT ED 6404	Seminar in Adult Education Research
HIGHERED 5401	Current Issues in Higher Education
HIGHERED 5402	Student Affairs Administration
HIGHERED 6404	Seminar
HIGHERED 6405	Financial Issues in Higher Education
HIGHERED 6406	Governance of Higher Education
HIGHERED 6408	Legal Issues in Student Affairs
HIGHERED 6410	Ethics in Higher Education Administration
HIGHERED 6422	Policy Analysis of Higher Education
HIGHERED 6430	The Community College
ED ADM 6601	Administration of Adult and Community Education
ED ADM 6602	Programming in Community and Adult Education
ED PSY 6111	Educational Psychology
ED TECH 5340	Selection and Utilization of Educational Multimedia
ED TECH 6416	Teaching and Learning with Technology: Graphical Representational Tools

ED TECH 6436 Computer-Mediated Communication in Education

ED TECH 6437 Distance Learning via Networks and Telecommunications

ED TECH 6452 Educational Multimedia Design

ED TECH 6454 Instructional Video Production

### Research Course(s)

Select 3-6 hours from the following: 3-6

ED REM 6707 Classroom Measurement and Evaluation

ED REM 6709 Educational and Psychological Measurement <sup>3</sup>

ED REM 6710 Educational Research Methods and Design <sup>2</sup>

### Exit Requirement

Select one of the following taken during the last 9 semester hours of the program: 3

HIGHERED 6900 Internship (3 credit hours)  
or ADULT ED 6990 Internship

**Total Hours 32**

<sup>1</sup> Both classes are required for Adult Ed program

<sup>2</sup> Required for Higher Education

<sup>3</sup> This course will not be offered during the 2020-2021 academic year. Please contact the program director for more information.

## Adult and Higher Education MEd, Higher Education Emphasis

The M.Ed. in Adult & Higher Education is intended for

1. faculty and other educators who want to improve their adult teaching skills;
2. persons who occupy and seek to advance into administrative or management positions in a variety of educational settings; and
3. others who work with adults in a variety of agencies.

The degree program includes courses in foundations, curriculum and teaching (including distance learning), organization and administration, research, and electives so that students can create an emphasis area to fit their career goals. To help address student interests, special topic seminars are offered from time to time. An internship in the student's emphasis area is a required exit experience. Students elect either the adult education or higher education emphasis area.

### Admission Requirements

This degree program follows the policies of The College of Education and the Graduate School relating to admissions, academic standards, residency, transfer credit, time limitations, and thesis options (see Graduate Study in the Bulletin). The minimum number of hours required for the M.Ed. degree is 32 credit hours.

### Education Requirements

#### Foundation Courses

Select a course focusing on the learner from the following: 3

ADULT ED 6410 The Adult Learner  
or HIGHERED 6474 The College Student

Select a course in historical foundations from the following: 3

ADULT ED 6411	History of Adult Education
or HIGHERED 6477	History and Philosophy of American Higher Education

Select a course on the improvement of instruction from the following: 3

ADULT ED 6413	Improvement of Instruction in Adult Education
HIGHERED 6473	Curriculum in Higher Education
ED PSY 7647	Teaching For Learning In The University

Select one of the following: 3-6

ADULT ED 6412 & ADULT ED 6414	Philosophical Foundations of Adult Education and Curriculum Theory and Development in Adult Education <sup>1</sup>
HIGHERED 6476	Organization and Administration of Higher Education

#### Adult and Higher Education Electives

Select a minimum of 12 hours from the following: 12

ADULT ED 6230	Adult Learning and Development
ADULT ED 6416	Survey of Adult Distance Education
ADULT ED 6417	Multicultural Issues in Adult Education
ADULT ED 6418	Assessment In The Adult Classroom <sup>3</sup>
ADULT ED 6419	Developing Intercultural Competence
ADULT ED 6420	Survey of Human Resource Development and Adult Education
ADULT ED 6432	Teaching In The Community College
ADULT ED 6494	Directed Readings in Adult Learning
ADULT ED 6497	Problems in Adult Education
ADULT ED 6404	Seminar in Adult Education Research
HIGHERED 5401	Current Issues in Higher Education
HIGHERED 5402	Student Affairs Administration
HIGHERED 6404	Seminar
HIGHERED 6405	Financial Issues in Higher Education
HIGHERED 6406	Governance of Higher Education
HIGHERED 6408	Legal Issues in Student Affairs
HIGHERED 6410	Ethics in Higher Education Administration
HIGHERED 6422	Policy Analysis of Higher Education
HIGHERED 6430	The Community College
ED ADM 6601	Administration of Adult and Community Education
ED ADM 6602	Programming in Community and Adult Education
ED PSY 6111	Educational Psychology
ED TECH 5340	Selection and Utilization of Educational Multimedia
ED TECH 6416	Teaching and Learning with Technology: Graphical Representational Tools

ED TECH 6436 Computer-Mediated Communication in Education

ED TECH 6437 Distance Learning via Networks and Telecommunications

ED TECH 6452 Educational Multimedia Design

ED TECH 6454 Instructional Video Production

#### Research Course(s)

Select 3-6 hours from the following: 3-6

ED REM 6707 Classroom Measurement and Evaluation

ED REM 6709 Educational and Psychological Measurement <sup>3</sup>

ED REM 6710 Educational Research Methods and Design <sup>2</sup>

#### Exit Requirement

Select one of the following taken during the last 9 semester hours of the program: 3

HIGHERED 6900 Internship (3 credit hours)  
or ADULT ED 6990 Internship

**Total Hours 32**

<sup>1</sup> Both classes are required for Adult Ed program

<sup>2</sup> Required for Higher Education

<sup>3</sup> This course will not be offered during the 2020-2021 academic year. Please contact the program director for more information.

## Adult-Geriatric Nurse Practitioner Post-Graduate Certificate

Post-graduate certificate (PGC) requirements are tailored to the individual student, depending on past academic work, experience, the student's goals, and specialty requirements. Upon completion of the PGC requirements, a certificate is awarded by the College of Nursing (CON) and Graduate School. Graduates are eligible to apply to take board certification exams in the advanced practice role and population for which they have been prepared.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html).

### Certificate Requirements

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
NURSE 6739	Adult Health I	4
NURSE 6740	Adult Health II	4
NURSE 6954	Advanced Practice Nursing: Residency I	2-4
NURSE 6955	Advanced Practice Nursing: Residency II	2-4

NURSE 7954	Advanced Practice Nursing: Residency III	2-4
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All students must complete 8 credit hours of Residency. One credit hour is equivalent to 75 residency hours.

## Advanced Nursing Practice with Educator Functional Role Post-Graduate Certificate

Post-graduate certificate (PGC) requirements are tailored to the individual student, depending on past academic work, experience, the student's goals, and specialty requirements. Upon completion of the PGC requirements, a certificate is awarded by the College of Nursing (CON) and Graduate School. Graduates are eligible to apply to take board certification exams in the advanced practice role and population for which they have been prepared.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html).

### Certificate Requirements

NURSE 6320	Learning and Curriculum Development in Nursing	3
NURSE 6321	Instructional Strategies in Nursing	3
NURSE 6322	Evaluation Strategies in Nursing	3
NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment For Advanced Nursing Practice	3
NURSE 6951	Advanced Intensive Clinical for the Nurse Educator	2
NURSE 6952	Synthesis Practicum	3

## African/African American Studies Minor

Core Course (Required):

C I ST 2000		3
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Select at least four of the following electives: 12

ANTHRO 2124	Introduction to Contemporary African Cultures (Core Course (Required))	
ANTHRO 3235	Women in Sub-Saharan Africa: A Contemporary Perspective	
ART HS 1105		
HIST 1003	African American History	
HIST 1061		
HIST 1062	Modern Africa: From Colonies to Nations	
HIST 2016		

HIST 2017	African American History: From Civil Rights to Black Power	
HIST 2063		
HIST 2064		
M H L T 1180	Musical Journey Through Africa	
POL SCI 2320	African Americans and the Political System	
POL SCI 2580	African Politics	
POL SCI 3580		
Total Hours		15

## American Politics Minor

### Requirements for Political Science Minors

A general minor in political science can be arranged, as well as specialized minors in eight different subfields of the discipline. Interested students should see a faculty adviser to plan a coherent program of study as a minor field.

Students must achieve a cumulative 2.0 GPA in the political science courses chosen to qualify for the minor. Students may count no more than 3 hours in political science taken on a satisfactory/unsatisfactory basis toward the minor. Students taking an internship POL SCI 3940 may count no more than three hours of the internship toward the minor.

### American Politics

Designed for those students interested in careers in communications, education, business, social work, political consulting, and other fields requiring knowledge of American urban, state, and national politics and institutions. Education majors planning to teach in the social studies field, communications majors planning on a career in journalism, or business majors thinking about working in corporate relations may especially wish to consider a double major in political science with a focus in this area. In addition to the core curriculum and common requirements for all majors, students are advised to take:

Select at least five of the following: 15

POL SCI 2280	Judicial Politics	
POL SCI 2300	State Politics	
POL SCI 2320	African Americans and the Political System	
POL SCI 2350	Introduction to Urban Politics	
POL SCI 2380	The Politics of Gender in the United States	
POL SCI 2420	Introduction to Public Policy	
POL SCI 2650	American Political Thought	
POL SCI 2820	United States Foreign Policy	
POL SCI 2900	Studies in Political Science (when appropriate)	
POL SCI 3300		
POL SCI 3330	Public Opinion and Political Participation	
POL SCI 3331		
POL SCI 3340	Politics And The Media	
POL SCI 3350	Political Parties and Elections	
POL SCI 3390	Studies in American Politics	

POL SCI 3480	Environmental Policy	
POL SCI 3900	Special Readings (when appropriate)	
POL SCI 3940	Public Affairs Internship (when appropriate)	
Total Hours		15

In addition, students may wish to choose other political science courses listed below under the public policy and administration program of study. Given the growing reality of international interdependence, students should not restrict their studies completely to American politics but should take some course work in comparative and international politics as well. Depending on their specific career interest, students may wish to round out their program with course work in other social science departments such as criminal justice, communications, economics, or social work.

## Public Policy and Administration

### Learning Outcomes

- Demonstrate knowledge of the institutions, political culture, and processes of American politics.
- Analyze the actions of political actors and their motives.
- Assess political issues, formulate evidence-based recommendations, and communicate them with clarity and coherence.

## American Studies Minor

American Studies involves an interdisciplinary approach to the study of the history, cultures, politics, and economy of the United States, its colonial antecedents, and its indigenous peoples. At UMSL, the minor enables students also to study the city and region of St. Louis, a quintessentially American city.

Students interested in this minor should contact the coordinator of American Studies for advice and information.

There are 18 hours required in the minor, and in completing these hours candidates must take courses from at least three disciplines. Candidates must have a cumulative grade point average of 2.0 or better in the minor. Three hours of the minor may be taken on a satisfactory/unsatisfactory basis, and a maximum of nine hours will be accepted in transfer. Candidates wishing to take American Studies courses in the Honors College do not need to be members of the Honors College but must register for the courses via the Honors College.

### Requirements for the Minor

Completion of the American Studies Minor requires at least 18 credit hours (6 courses) including an interdisciplinary introductory course. Of the remaining 15 hours, at least six hours must be taken from a small group of core courses designed to give students a foundation for further study and at least six hours from a larger group of elective courses which will broaden students' experience or enable them to specialize in specific areas. At least six hours must be taken from advanced level (3000 and 4000) undergraduate courses. Students are recommended to include in this advanced work an American Studies "capstone", an option that may be fulfilled in several ways, which are described below.

### Introductory Course

HIST 2160	Introduction to American Studies (must be taken in first 12 hours of the minor)	3
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### Core Courses

Choose at least one of the following:		3
ENGL 3710	American Literature Before 1865	3
ENGL 3720	American Literature After 1865	3
Choose at least one of the following:		3
HIST 1001	American Civilization to 1865 (MOTR HIST 101)	
HIST 1002	American Civilization 1865 to Present (MOTR HIST 102)	
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	
HONORS 1230	American Traditions: Social and Behavioral Sciences	

### Elective Courses

Choose at least two courses from the following American Studies electives		6
Anthropology		
ANTHRO 2120	Native Peoples of North America	
Art History		
ART HS 1140	Indigenous Arts of the Americas	
ART HS 2270	Art of the United States	
Criminology		
CRIMIN 1100	Introduction to Criminology and Criminal Justice	
CRIMIN 1120	Criminal Law	
CRIMIN 1150	Violence in America	
CRIMIN 4300	Communities and Crime	
CRIMIN 4325	Gender, Crime, and Justice	
CRIMIN 4340	Race, Crime, and Justice	
Economics		
ECON 2800	History of American Economic Development	
English		
ENGL 4610	Selected Major American Writers I	
ENGL 4620	Selected Major American Writers II	
ENGL 4650	Modern American Fiction	
History		
HIST 2005	Becoming Modern America: From the Gilded Age to the Great Depression	
HIST 2008	History of St. Louis	
HIST 2028	Sex, Drugs, and Rock 'n Roll: The 1960s in Song, Fashion, Dating, and Protest	
Gender Studies		
GS 2020	Women and Social Movements in U.S. History	
GS 2380	Politics of Gender in the United States	
GS 3031	History of Women in The United States	



GS 3700	Diversity and Social Justice
GS 4335	Gender and Body Image in Media and Culture
<b>Honors</b>	
HONORS 2010	Inquiries in The Humanities (topic must be approved by American Studies coordinator)
HONORS 2030	Inquiries in the Social and Behavioral Sciences (topic must be approved by American Studies coordinator)
HONORS 3010	Advanced Honors Seminar in the Humanities (topic must be approved by American Studies coordinator)
HONORS 3030	Advanced Honors Seminar in the Social and Behavioral Sciences (topic must be approved by American Studies coordinator)
<b>Military and Veterans Studies</b>	
MVS 2100	Veterans in American Society
MVS 2130	Gender and the Military
<b>Music History</b>	
M H L T 1003	History of Rock Music (MOTR MUSC 100RP)
M H L T 1070	Introduction to Jazz (MOTR MUSC 100J)
M H L T 1140	Popular Music in America
M H L T 1190	Musical Journey of the Native North American
M H L T 4280	American Music
<b>Political Science</b>	
POL SCI 2260	Law, Politics and Society
POL SCI 2320	African Americans and the Political System
POL SCI 2330	The American Presidency
POL SCI 2370	The Politics of Identity and Social Justice
POL SCI 2380	The Politics of Gender in the United States
POL SCI 3210	Civil Liberties
POL SCI 3330	Public Opinion and Political Participation
POL SCI 3460	The Politics of Poverty and Welfare
<b>Sociology</b>	
SOC 1040	Social Problems
SOC 2202	Urban Sociology
SOC 2203	The City
SOC 4100	Introduction to Feminist and Gender Theory
SOC 4312	Sociology of Wealth and Poverty

Student considering other elective choices must work with the American Studies faculty coordinator to obtain approval to apply these courses to the minor.

Capstone options:

Students are encouraged to complete a capstone for the American Studies minor. A capstone course can satisfy three credit hours of the 18 hour minor. Experiences that could serve as a capstone include appropriate departmental capstone courses, independent studies, research projects, and internships. Interested students should work with the coordinator of American Studies to have a capstone course approved.

## Anthropology BA

Anthropology is the scientific study of humanity. Anthropologists take a broad approach to understanding the diversity of human biology, culture, and language in the past and present. Anthropology students learn about the processes that shape our own culture and the cultures of others, and develop a solid knowledge of the underlying humanity that connects and defines us. Opportunities exist for students to pursue diverse research experiences across a vast range of topics on human actions, beliefs, and organization, and to intern with local organizations.

### General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). Any foreign language may be used to meet the language requirement for the B.A. degrees.

### Degree Requirements

All required courses for the major must be completed with a grade of C- or better. The following courses are required:

ANTHRO 1005	Introduction to Biological Anthropology	4
ANTHRO 1011	Introduction To Cultural Anthropology (MOTR ANTH 201)	3
ANTHRO 1019	Introduction to Archaeology	3
ANTHRO 4315	Anthropology Past, Present, and Future	3
Select nine additional credit hours in Anthropology numbered 1000-2999 <sup>1</sup>		9
Select two of the following methods courses:		6
ANTHRO 3209	Forensic Anthropology	
ANTHRO 3212	Medical Anthropology	
ANTHRO 3211	Linguistic Anthropology	
ANTHRO 4000	Ethnographic Field Research Methods	
ANTHRO 4015	Data Analytics in the Social Sciences	
ANTHRO 4100	Field Methods in Archaeology	
ANTHRO 4307	Community Based Research in Anthropology	
ANTHRO 4310	Laboratory Methods in Archaeology	
Select nine additional credit hours in Anthropology numbered 3000-4999		9
<b>Total Hours</b>		<b>37</b>

<sup>1</sup> The three courses must come from two different subfields: Cultural Anthropology, Archaeology, or Biological Anthropology.

The total number of hours required for the major is 37. Students may elect to take up to, but not to exceed, 15 additional hours in anthropology courses of their choice.

At the end of the program, students should have these competencies:

- **Discipline-Specific (Content) Knowledge**  
Graduates will be able to discuss the importance of cultural diversity, thus preparing them to function in multicultural or international settings. Graduates will understand the common evolutionary origins that unify all cultural differences, as well as human biological variation within our shared humanity. Graduates will develop in-depth knowledge of the culture of a particular region of the world.
- **Communication Skills**  
Graduates will develop social science writing skills, including writing of a research proposal for a grant agency and a substantial research report. Graduates will develop oral presentation skills, including presenting a formal research report.
- **Information Management/Quantitative Skills**  
Graduates will master research methods in one of the subfields of anthropology (cultural anthropology, biological anthropology, archaeology). Graduates will learn to design and conduct an original research project, working in close cooperation with faculty.
- **Valuing/Ethics/Integrity**  
Graduates will be able to discuss and articulate the professional ethics and codes of conduct of the discipline.
- **Critical Thinking Skills**  
Graduates will develop the ability to apply anthropological concepts in performing critical analysis of broad historical trends and complex social issues. Graduates will be able to value cultural diversity, thus preparing them to function in multicultural or international settings.
- **Application/Internship Skills**  
Graduates will gain hands-on experience in the application of anthropological concepts to real life and will be able to apply anthropological theory to real-life experience.

- Demonstrate knowledge of the evolutionary and historical processes that shaped our ancestors and led to the biological, behavioral, and cultural diversity seen in the present
- Demonstrate a command of key concepts, issues, theories, and debates in anthropology
- Demonstrate knowledge of varying types of anthropological data and how they are collected, analyzed, synthesized, and interpreted
- Think critically and analytically about issues of social justice and social inequality
- Apply problem-solving and research skills beneficial to anthropology as well as to a variety of careers in today’s global economy
- Communicate cross-culturally and within multicultural settings
- Demonstrate an appreciation for the role of anthropology in the workplace and the real world

### Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 ANTHRO 1005	4
ANTHRO 1011		3 ANTHRO 1019	3
ENGL 1100		3 Foreign Language 1002	5
CORE - Mathematics Proficiency		3 EXPLORE - Humanities and Fine Arts	3
Foreign Language 1001		5	
		15	15
Second Year			
Fall	Hours	Spring	Hours
ANTHRO 1000-2999 level course		3 ANTHRO 1000-2999 level course	3
ANTHRO 1000-2999 level course		3 CORE - US History and Government	3
Foreign Language 2101		3 CORE - Information Literacy	3
EXPLORE - Humanities and Fine Arts		3 EXPLORE - Math and Sciences	3
EXPLORE - Math and Natural Sciences		3 Elective or minor	3
		15	15
Third Year			
Fall	Hours	Spring	Hours
ANTHRO 4000		3 ANTHRO 3000-4999 course	3
ANTHRO 3000-4999 level course		3 CORE - Communication Proficiency	3
ENGL 3100		3 Elective or minor	3
EXPLORE - Humanities and Fine Arts		3 Elective or minor	3
EXPLORE - Math and Natural Sciences		3 Elective or minor	3
		15	15
Fourth Year			
Fall	Hours	Spring	Hours
ANTHRO 4000		3 ANTHRO 4315	3
ANTHRO 3000-4999 course		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
		Recommended course list, elective or minor	1
		15	16

Total Hours: 121

INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are*

### Residency Requirement

Undergraduate majors must complete a minimum of 17 hours of upper-level (3000-5000) Anthropology courses in residence, including:

ANTHRO 4315	Anthropology Past, Present, and Future	3
And at least one of the following:		3
ANTHRO 3209	Forensic Anthropology	
ANTHRO 3211	Linguistic Anthropology	
ANTHRO 3212	Medical Anthropology	
ANTHRO 4015	Data Analytics in the Social Sciences	
ANTHRO 4000	Ethnographic Field Research Methods	
ANTHRO 4100	Field Methods in Archaeology	
ANTHRO 4307	Community Based Research in Anthropology	
ANTHRO 4310	Laboratory Methods in Archaeology	
Total Hours		6

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate an appreciation for the diversity of human cultures and the interconnectedness of people around the world

encouraged to meet with their advisor each semester. All requirements are subject to change.

## Anthropology Minor

All required courses for the minor must be completed with a grade of C- or better.

Select two of the following	6-7
ANTHRO 1005 Introduction to Biological Anthropology	
ANTHRO 1011 Introduction To Cultural Anthropology (MOTR ANTH 201)	
ANTHRO 1019 Introduction to Archaeology	
Anthropology numbered 1000-2999	3
Anthropology numbered 3000-4999	6
Total Hours	15-16

## Applied Behavior Analysis Graduate Certificate

### Required Foundation Courses

Students are required to complete the following courses within the first 15 hours of study.

SPEC ED 6641 Basic Principles and Concepts of Behavior Analysis	3
SPEC ED 6642 Behavior Assessment	3
SPEC ED 6643 Research Methods in Applied Behavior Analysis	3
Total Hours	9

### Required Courses

Students are required to complete the following courses.

SPEC ED 6644 Behavior Interventions in Applied Behavior Analysis	3
SPEC ED 6645 Ethics and Professionalism in Applied Behavior Analysis	3
SPEC ED 6646 Verbal Behavior Concepts and Applications	3
SPEC ED 6647 Advanced Concepts and Principles in Behavior Analysis	3
SPEC ED 6648 Behavior-Based Consultation and Supervision	2
Total Hours	14

### Required Practicum Courses

Through the course of five semesters, students are required to completed practicum courses in order to accrue the minimal hours of supervised experience required by the BACB to qualify for the BCBA exam.

SPEC ED 6651 Practicum I in Applied Behavior Analysis	2
SPEC ED 6652 Practicum II in Applied Behavior Analysis	2

SPEC ED 6653 Practicum III in Applied Behavior Analysis	2
SPEC ED 6654 Practicum IV in Applied Behavior Analysis	2
SPEC ED 6655 Practicum V in Applied Behavior Analysis	2
Total Hours	10

## Applied Econometrics and Data Analysis Undergraduate Certificate

Those with economics degrees are in high demand in a large number of occupations, whether in business or government; students with advanced econometrics skills who understand how to apply these techniques in real-world settings are in even higher demand. This Certificate in Applied Econometrics and Data Analysis is designed to provide the education needed for employment in analysis positions in business or government. The Certificate is a valuable credential for economics majors with a quantitative focus, (applied) math majors, and selected students from other social sciences.

The Certificate consists of 6 courses met through 3 required courses and 3 electives which must be selected from the list below. At least 4 of these courses must be completed in residency at UMSL.

(Note that all of these courses have prerequisites that the student must complete before taking the selected course.)

### Required Courses

ECON 4100 Introduction to Econometrics	4
ECON 4110 Applied Econometrics	4
ECON 4120 Time Series Econometrics for Economics and Finance	4
or ECON 4130 Business and Economic Forecasting	

### Electives

The remaining 3 electives must come from the following list: 9-10

ECON 4040 Booms and Busts in the Economy: Data and Theory	
ECON 4120 Time Series Econometrics for Economics and Finance (if course not used above)	
ECON 4130 Business and Economic Forecasting (if course not used above)	
ECON 4160 Geospatial Analysis in the Social Sciences	
MATH 4200 Mathematical Statistics I	
MATH 4210 Mathematical Statistics II	
POL SCI 4040 Survey Research Practicum in Political Science	
PSYCH 4365 Psychological Testing and Assessment	
SOC 4040 Survey Research Practicum for Sociology	
SOC 3221 Qualitative Methods in Social Research	
SOC 4312 Sociology of Wealth and Poverty	

## Learning Outcomes

- Use statistical software to estimate, analyze, and interpret economic relationships applying regression analysis techniques to data.
- Develop appropriate econometric models using real-world data to make management or policy recommendations in a variety of professional settings.
- Apply key concepts of estimation and forecasting in a time series context.

## Artificial Intelligence Graduate Certificate

The graduate certificate in Artificial Intelligence is a four-course (12 credit hour) program. It provides skills and training necessary to start and/or advance in the growing areas of AI, with a range of electives to focus more specifically in one's desired direction of study. All students must take two required courses and two electives.

A minimum of three courses must be taken from UMSL. A maximum of two courses can be used from the 4000-level. Courses may be substituted with the permission of the certificate coordinator. For more information, students can contact the department chair or email [info@arch.umsl.edu](mailto:info@arch.umsl.edu).

### Required Courses

CMP SCI 5130	Advanced Data Structures and Algorithms	3
CMP SCI 5300	Artificial Intelligence	3

### Elective Courses

Choose 2 of the following:

CMP SCI 5320	Evolutionary Computation	6
CMP SCI 5340	Machine Learning	
CMP SCI 5342	Data Mining	
CMP SCI 5370	Biological Data Science	
CMP SCI 5390	Deep Learning	
CMP SCI 5420	Digital Image Processing and Computer Vision	
CMP SCI 6320	Advances in Evolutionary Computation	
CMP SCI 6340	Genetic Programming	

Total Hours 12

## Artificial Intelligence Undergraduate Certificate

The undergraduate certificate in Artificial Intelligence is a five-course (15 credit hour) program. It provides skills and training necessary to start or progress in the growing areas of AI, with a range of electives to focus more specifically in one's desired direction of study. A minimum GPA of 2.5 is required for admission.

A minimum of three courses must be taken from UMSL. Courses may be substituted with the permission of the certificate coordinator. For more information, students can contact the department chair or email [info@arch.edu](mailto:info@arch.edu).

### Required Courses

CMP SCI 3130	Design and Analysis of Algorithms	3
CMP SCI 4300	Introduction to Artificial Intelligence	3

### Electives

Choose three of the following courses: 9

CMP SCI 4320	Introduction to Evolutionary Computation	15
CMP SCI 4340	Introduction to Machine Learning	
CMP SCI 4342	Introduction to Data Mining	
CMP SCI 4370	Introduction to Biological Data Science	
CMP SCI 4390	Introduction to Deep Learning	
CMP SCI 4420	Introduction to Digital Image Processing and Computer Vision	

Total Hours 15

## Athletic Coaching Minor

The Athletic Coaching minor is intended for those who would like to work with youth in a variety of sport settings, in either school or non-school settings. The following courses are required:

HLTH PE 3275	Psychological Aspects of Physical Education	3
HLTH PE 3280	Human Anatomy and Physiology	4
HLTH PE 3285	Safety and Emergency Care for Health & Physical Education	3
PHY ED 3283	Kinesiology	3
PHY ED 3287	Seminar in Exercise Science	3
HLTH PE 3284	Physiology of Human Exercise	3
EDUC 4989	Internship I	3

Total Hours 22

## Auditing Graduate Certificate

The Certificate Program in Auditing provides students with the knowledge and judgment needed to conduct audits of for-profit, not-for-profit, and government entities. Concepts associated with independent audits, systems audits, controls evaluations, internal audits, and operational audits are examined.

### Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

### Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs. All 12 credit hours taken as part of this certificate transfer to the MBA degree program.

### Required Courses

ACCTNG 4435	Auditing	3
ACCTNG 5435	Graduate Topics in Auditing	3

### Electives

Select two of the following courses: 6



ACCTNG 5402	Professional Accounting Research
ACCTNG 5408	Fraud Examination
ACCTNG 5436	Systems Auditing
Total Hours	12

## Autism Studies Graduate Certificate

The mission of the certificate program is:

- To improve current preparation of teachers and related educational practitioners in the greater St. Louis area with dedicated coursework that increases program participants' understanding and skills necessary to providing comprehensive and holistic programming (in areas of academic, social, functional, and life skills) that addresses the unique characteristics of individuals with Autism.
- To provide contemporary, best practices-based preparation of professionals who specialize in the treatment of individuals with autism spectrum disorders (ASD) and/or who work collaboratively with school personnel to recognize and follow the ASD profile that best educates the students
- To gain greater understanding of challenges faced by families of individuals with ASD
- To prepare personnel to educate and support individuals with ASD, which includes autism, Asperger Syndrome, and other pervasive developmental disorders
- To address the complex needs of students with ASD, including those who require intensive and highly individualized programs, to those who require less intensive modifications to succeed in their educational, functional, and life goals
- To increase the current body of scholarly and applied knowledge pertaining to the science and practice in areas of cognitive disability studies.

### Required Courses

A. Special Education Concentration I: 9 hours <sup>1</sup>		
SPEC ED 6415	The Law and Special Education	3
SPEC ED 6437	Applied Behavior Analysis: Functional Assessment and Interventions	3
ED PSY 6545	Consultation in Schools and Related Settings	3
B. Autism and Developmental Disabilities Concentration II: 9 hours		
SPEC ED 6430	Characteristics and Education of Individuals with Low-Incidence Disabilities	3
SPEC ED 6610	Foundations of Autism Spectrum Disorder: Research to Practice	3
SPEC ED 6620	Assessment and Interventions for Children and Youth with Autism Spectrum Disorder	3

<sup>1</sup> The first three courses in the autism certificate are the same as those in the M.Ed. Special Education Concentration I.

Total Hours: Minimum 18 credit hours

## Biochemistry and Biotechnology BS

The mission of the Biochemistry and Biotechnology Program is to provide students with a solid foundation in both chemistry and biology, as well as specialized training in the rapidly growing fields of biochemistry and biotechnology. Faculty members in this program are engaged in teaching and research in a broad range of areas, including genetics and molecular biology, microbiology and immunology, and protein biochemistry and biophysics. Students have the opportunity through coursework, laboratories, seminars, and research experience to develop the knowledge and skills necessary to enter the workforce or to continue with further graduate education.

### Degree Requirements

#### General Education Requirements

Students must satisfy the university and college general education requirements (p. 51). Some math or science courses required for the major may be used to meet the science and mathematics requirement of the university. There is no foreign language requirement for the degree.

All Biochemistry & Biotechnology majors are required to take a capstone seminar (either CHEM 4797 or BIOL 4797) during the semester in which they plan to graduate (the winter semester for students graduating in the summer). Students may not receive credit for both CHEM 4797 and BIOL 4797.

#### Satisfactory/Unsatisfactory Option

Up to 18 credit hours may be taken on a satisfactory /unsatisfactory (s/ u). Excluded from this option are required courses in biology, chemistry, physics, and mathematics.

#### Non-major Biology or Chemistry courses

Courses in Biology with a number less than 1800 and courses in Chemistry with a number less than 1100 do not count toward the credit hours required for a major in biochemistry and biotechnology.

#### Research for Credit

A maximum of 3 credit hours from any combination of BIOL 4905 and CHEM 3905 may be applied toward the Biochemistry & Biotechnology program.

#### Transfer of Credit from Saint Louis Community Colleges

Students transferring BIO 219 and BIO 220 from Saint Louis Community Colleges will not have to complete BIOL 4614. However, they will have to take an additional 3 credit hours of Biochemistry and Biotechnology Elective coursework.

#### Biology Core Courses

BIOL 1831	Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L)	5
BIOL 2012	Genetics	3
BIOL 2013	Genetics Laboratory	2
BIOL 2482	Microbiology	3
BIOL 2483	Microbiology Laboratory	2

BIOL 3622	Cell Biology	3
<b>Chemistry Core Courses</b>		
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
CHEM 1121	Introductory Chemistry II	5
CHEM 2223	Quantitative Analysis in Chemistry	3
CHEM 2612	Organic Chemistry I	3
CHEM 2622	Organic Chemistry II	3
CHEM 2633	Organic Chemistry Laboratory	2
CHEM 3302	Physical Chemistry for The Life Sciences	3
<b>Math and Physics Core Courses</b>		
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1035	Trigonometry	2
MATH 1100	Basic Calculus	3
or MATH 1800	Analytic Geometry and Calculus I	
PHYSICS 1011	Basic Physics I	4
PHYSICS 1012	Basic Physics II	4
<b>Biochemistry and Biotechnology Core Courses</b>		
BIOL 4602	Molecular Biology (if both courses are taken, one can be used as an elective)	3
or BIOL 4612	Molecular Genetics of Bacteria	
BIOL 4614	Biotechnology Laboratory I (if both courses are taken, one can be used as an elective)	4
or BIOL 4615	Biotechnology Laboratory II	
BIOL/CHEM 4712	Biochemistry	3
CHEM 4733	Biochemistry Laboratory	2
CHEM 4722	Advanced Biochemistry	3
BIOL 4797	Biochemistry and Biotechnology Seminar (Students may not receive credit for both BIOL 4797 and CHEM 4797)	1
or CHEM 4797	Biochemistry and Biotechnology Seminar	
<b>Biochemistry and Biotechnology Elective Courses</b>		
Select two of the following:		6
BIOL 4550	Bacterial Pathogenesis	
BIOL 4602	Molecular Biology	
BIOL 4612	Molecular Genetics of Bacteria	
BIOL 4614	Biotechnology Laboratory I	
BIOL 4615	Biotechnology Laboratory II	
BIOL 4622	Cellular Basis of Disease	
BIOL 4632	Nucleic Acid Structure and Function	
BIOL 4642	Plant Molecular Biology and Biotechnology	
BIOL 4652	Virology	
BIOL 4842	Immunobiology	
BIOL 4905	Research (up to 3 credit hours)	
BIOL 4920	Selected Topics in Biology (when relevant)	
CHEM 3643	Advanced Organic Chemistry Laboratory	
CHEM 3905	Chemical Research	

CHEM 4772	Physical Biochemistry	
Total Hours		80

### Electives

Recommendations include basic statistics (MATH 1310 or MATH 1320), computer science, public speaking (COMM 1040), foreign language, ethics, and undergraduate research.

### Research Opportunity

Students may use up to 3 credit hours of undergraduate research as elective hours in the B.S. degree. This provides an opportunity to gain research experience under the supervision of a faculty member. The project will normally include a review of the literature, laboratory experience and a final research report.

### Minor in Biology

Students who complete the B.S. degree in Biochemistry and Biotechnology may also obtain a minor in biology by completing BIOL 1821, Introductory Biology : Organisms and the Environment. The minor must be approved by the chair of the Department of Biology. At least 9 hours of the biology course credits must be taken in residence at UMSL. Candidates must have a cumulative grade point average of 2.0 or better in the minor, and none of the courses may be taken on a satisfactory/unsatisfactory (S/U) basis.

### Minor in Chemistry

Students who complete the B.S. degree in Biochemistry and Biotechnology will also fulfill the course requirements for a minor in Chemistry. A GPA of at least 2.0 is required for the courses presented for the minor. At least three courses toward the Chemistry minor must be completed at UMSL.

### Program Learning Outcomes

Students often think of the physical and life sciences as areas in which one masters a collection of "scientific facts". However, an education in Biochemistry & Biotechnology involves much more than memorizing facts. Students in this program will develop a well-rounded set of competencies in several critical areas. These include:

- **Discipline-Specific Knowledge.** Graduates will demonstrate a clear understanding of the overriding principles and theorems within and between the primary content areas of chemistry, biology, and biochemistry, including the
  - Structure and function of the basic biological units of living organisms and their role in life and disease.
  - Information flow, exchange, and storage from parent to offspring or from parent cells to progeny cells.
  - Organic reactions and physical chemical principles underlying metabolic reactions.
  - Molecular mechanisms commonly used to regulate metabolic and cellular pathways.
- **Laboratory Skills.** Scientists not only learn the results of others, they work in the lab to generate new knowledge. Graduates will develop basic skills associated with performing laboratory experiments in chemistry, biology, and biochemistry following a broad introduction of commonly used equipment and procedures.
- **Critical thinking Skills.** Graduates will be able to formulate meaningful hypotheses and evaluate data critically, including

an appreciation of the potential sources of error associated with laboratory measurements and an ability to troubleshoot technical issues.

- **Problem Solving Skills.** Graduates will be able to define and solve scientific problems. In part, this expands on laboratory skills, as students learn how to interpret and evaluate their data.
- **Translational Skills.** Graduates will be able to take general principles from various areas of chemistry, biochemistry, and biology and apply them towards solutions for novel and emerging biotechnology problems.
- **Communication Skills.** Scientists not only must be able to solve problems, they must also be able to communicate those solutions to others. Graduates of this program can present data in a clear and accurate manner. Graduates will be able to write scientific reports and make effective oral presentations of their results and ideas.
- **Scientific Literacy.** Scientists must be able to build on the previous work of others and to put their new results into the larger context of the field. Graduates will be able to find and retrieve information within the vast scientific literature in chemistry, biology, and biochemistry. Graduates will have the background knowledge necessary to read the literature and scientific information presented to the public with good comprehension and be able to critically evaluate reliability, accuracy, authority, and point of view or bias.
- **Professional Ethics.** Graduates will follow standard scientific practices, including honestly and objectively evaluating and reporting data and acknowledging the ideas and published work of others. In doing so, graduates will demonstrate an understanding and respect for the accepted standards of conduct associated with the profession.

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003		1 CHEM 1111	5
ENGL 1100	3	CORE - Communication Proficiency	3
MATH 1030	3	EXPLORE - Humanities and Fine Arts	3
MATH 1035	2	EXPLORE - Social Sciences	3
CORE - US History and Government	3		
EXPLORE - Social Sciences	3		
	15		14

### Second Year

Fall	Hours	Spring	Hours
BIOL 1831		5 BIOL 2012	3
CHEM 1121	5	BIOL 2013	2
MATH 1100	3	CHEM 2612	3
Cultural Diversity Requirement	3	EXPLORE - Social Sciences	3
		EXPLORE - Humanities and Fine Arts	3
	16		14

### Third Year

Fall	Hours	Spring	Hours
BIOL 3622		3 BIOL 2482	3
BIOL 4614	4	BIOL 2483	2
CHEM 2622	3	BIOL 4602	3
PHYSICS 1011	3	CHEM 2223	3
PHYSICS 1011L	1	PHYSICS 1012	3
ENGL 3160	3	PHYSICS 1012L	1
	17		15

### Fourth Year

Fall	Hours	Spring	Hours
CHEM 4712		3 CHEM 3302	3
CHEM 2633	2	CHEM 4722	3
CHEM 4733	2	Biochemistry/Biotechnology Elective	3
Biochem/Biotech Elective	3	CHEM 4797 or BIOL 4797	1
EXPLORE - Humanities and Fine Arts	3	Elective or minor	3
Elective or minor	3		
	16		13

Total Hours: 120

- <sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change*

## Biochemistry and Biotechnology BS/MS Dual Degree Program

The BS/MS ('2+3') BCBT program is an accelerated program that allows students of appropriate academic ability and maturity to complete both a B.S. and a M.S. in Biochemistry and Biotechnology in five years of full time study. The program allows students to apply 12 of the 30 M.S. credit hours towards the B.S. (per the approval of the College of Arts and Sciences), reducing the overall required hours for the two. Students will pay graduate credit hour tuition for all courses applied to the graduate degree. All other requirements for the B.S. and M.S. degrees remain in effect.

### Admission Requirements

Students interested in this program must go through a two-step admission process. First, applicants for Provisional Status must have completed all courses in the biology, chemistry, math and physics cores of the B.S. BCBT program. CHEM 4712 Biochemistry must be in progress or completed prior to applying for Provisional Graduate status. Applicants should have completed all of the general education requirements. Applicants must also have a minimum G.P.A. of 3.0 (both overall and in science courses) and must submit at least two letters of recommendation (one instructor and one academic advisor is recommended).

The second step of the admission process is the transition from Provisional status to formal graduate status. Admission requirements for formal graduate status are the same as for the traditional MS program.

### Awarding of Degrees

Both degrees (the B.S. and M.S.) will be awarded when all requirements for the entire program have been completed. In other words, the B.S. and M.S. degrees will be simultaneously awarded at the completion of study.

Students who officially withdraw from the BS/MS Dual BCBT Degree Program and who have successfully completed all of the requirements for the B.S. degree will be awarded the B.S. degree.

## Biochemistry and Biotechnology MS

The Biochemistry and Biotechnology Program offers three types of Master of Science degrees.

- One is a 30 credit hour non-thesis option suitable for those with laboratory research experience or for others, such as educators, who do not require research experience.
- The second is a 32 credit hour Professional Science emphasis area that includes a strong business component for students who are interested in learning more about the business aspects of companies. This track may not be appropriate for students who are interested in pursuing a PhD or working primarily as laboratory scientists.
- The third option includes laboratory-based research under the supervision of one of the program faculty members, leading to a written thesis. All students admitted to the graduate program are considered to be in the non-thesis program. They may transfer into the thesis program after they have been accepted as a thesis student by one of the faculty.

### Admission Requirements

Applicants to the M.S. program must submit a completed application and personal data forms, and transcripts of all previous postsecondary academic work. Submission of Graduate Record Examination scores, although not required, will be considered. Admission as a regular graduate student requires graduation from an accredited college with a minimum grade point overall and in biology and chemistry courses of 3.0 (where A=4.0). Students will generally be expected to have completed a major in biology, chemistry, biochemistry or biotechnology. In addition to the Graduate School admission requirements, applicants should have completed an undergraduate course in biochemistry. Successful applicants will typically have completed courses in organic chemistry, cell biology, and genetics. Applicants may be asked to make up any deficiencies in these areas as a condition of enrollment.

All international applicants, except those from countries where English is the primary language, must take the TOEFL. Ordinarily, a score of 213 on the computer-based exam (550 on the paper-based exam or 80 on the internet-based exam) or better is required.

### Degree Requirements

Both the thesis and non-thesis options require a total of 30 graduate credit hours, of which at least half must be at the 5000-level or above. A maximum of 12 or 5 credit hours of Graduate Research (BIOL 6905 or CHEM 6905) may be applied toward the 30 credit hour total for the thesis or non-thesis options, respectively. Students must have a 3.0 GPA in non-research courses.

#### Required Courses

CHEM 4722	Advanced Biochemistry	3
CHEM 5774	Bioinformatics	3
BIOL 6615	Advanced Biotechnology Laboratory II	4
BIOL 6602	Advanced Molecular Biology	3
BIOL 6889	Graduate Seminar	2

#### Elective Courses

CHEM 4733	Biochemistry Laboratory	2
CHEM 4772	Physical Biochemistry	3

CHEM 5694	Special Topics in Organic Chemistry	3
CHEM 5794	Special Topics in Biochemistry	3
CHEM 6787	Problem Seminar in Biochemistry	1
CHEM 6905	Graduate Research in Chemistry	1-10
BIOL 4842	Immunobiology	3
BIOL 5069	Topics in Cellular and Molecular Biology	1
BIOL 6442	Advanced Developmental Biology	3
BIOL 6550	Advanced Bacterial Pathogenesis	3
BIOL 6602	Advanced Molecular Biology	3
BIOL 6622	Advanced Cellular Basis of Disease	3
BIOL 6632	Advanced Nucleic Acid Structure and Function	3
BIOL 6642	Advanced Plant Biology and Biotechnology	3
BIOL 6652	Advanced Virology	3
BIOL 6699	Graduate Internship in Biotechnology	1-4
BIOL 6889	Graduate Seminar	2
BIOL 6905	Graduate Research in Biology	1-10
BIOL 6920	Advanced Topics in Biology (when relevant)	2-5

## Biochemistry and Biotechnology MS, Professional Emphasis

### Professional Science Master's Emphasis

This track requires a total of 32 graduate credit hours, of which at least half must be at the 5000-level or above. Students take 21 credit hours of science courses (Biology and Chemistry) and 9 hours in business courses. In addition, each student is required to take 2 credit hours of either an on-campus practicum course or an off-campus internship.

#### Required Courses in Biology and Chemistry

CHEM 4722	Advanced Biochemistry	3
CHEM 5774	Bioinformatics	3
or BIOL 5436	Applied Bioinformatics	
BIOL 6615	Advanced Biotechnology Laboratory II	4
BIOL 6602	Advanced Molecular Biology	3
or BIOL 6612	Advanced Molecular Genetics of Bacteria	
BIOL 6889	Graduate Seminar	2

#### Required Internship or Practicum

Choose one of the following:

CHEM/BIOL 5798	Practicum in Science in Business	
CHEM/BIOL 5799	Internship in Science in Business	

#### Professional Science Business Electives

MGMT 3623	Industrial and Organizational Psychology	9
BUS AD 5000	Economics for Managers	
BUS AD 5100	Managerial Communication	
MGMT 5600	Managing People in Organizations	
MKTG 5700	Contemporary Marketing Concepts	
BUS AD 5900	Law, Ethics and Business	



Elective Courses in Biology and Chemistry		6
CHEM 4733	Biochemistry Laboratory	
CHEM 4764		
CHEM 4772	Physical Biochemistry	
CHEM 5694	Special Topics in Organic Chemistry	
CHEM 5794	Special Topics in Biochemistry	
CHEM 6787	Problem Seminar in Biochemistry <sup>1</sup>	
CHEM 6905	Graduate Research In Chemistry <sup>2</sup>	
or BIOL 6905	Graduate Research in Biology	
BIOL 4842	Immunobiology	
BIOL 6602	Advanced Molecular Biology	
BIOL 6612	Advanced Molecular Genetics of Bacteria	
BIOL 6622	Advanced Cellular Basis of Disease	
BIOL 6632	Advanced Nucleic Acid Structure and Function	
BIOL 6642	Advanced Plant Biology and Biotechnology	
BIOL 6652	Advanced Virology	
BIOL 6920	Advanced Topics in Biology	
Total Hours		32

<sup>1</sup> Can be repeated for up to 2 credit hours.

<sup>2</sup> Can be taken for up to 2 credit hours in either CHEM 6905 or BIOL 6905. Students must have a 3.0 GPA in non-research courses.

## Biology BA

The B.A. degree in biology is designed to prepare students for basic technical positions and graduate studies in the life sciences. Candidates for the degree have the same core courses and general education requirements as those seeking the Bachelor of Science degree, but with less emphasis on science electives and more emphasis on liberal arts.

### General Education Requirements

Students must satisfy the university and college general education requirements (p. 51). Some Biology courses may be used to meet the science and mathematics requirement of the university.

Candidates for the B.A. degree must fulfill the foreign language requirement of the College of Arts and Sciences. There is no foreign language requirement for the B.S. degree.

### Satisfactory/Unsatisfactory Option

Up to 18 credit hours may be taken on a satisfactory/ unsatisfactory (s/u) basis. Excluded from this option are required courses in biology, chemistry, physics, and mathematics.

### Non-major biology courses

The following 1000 level biology courses do not count toward the biology credit hours required for a major in biology. Moreover, if biology majors take these courses, they are treated as biology courses when computing the 70 credit hours outside of biology needed to be included in the 120 total credit hours required for graduation.

BIOL 1012	General Biology (MOTR BIOL 100)	3
BIOL 1013	General Biology Laboratory	1

BIOL 1102	Human Biology (MOTR LIFS 150)	3
BIOL 1131	Human Physiology and Anatomy I	4
BIOL 1141	Human Physiology and Anatomy II	4
BIOL 1162	General Microbiology	3
BIOL 1999	Evolution for Everyone	3
BIOL 1202	Environmental Biology	3

## Declaring the Biology Major

Students seeking to major in biology are first designated as pre-biology majors until they have successfully completed Genetics, BIOL 2012, in residence with a grade of C or better. Students who have completed a Genetics course elsewhere will have to either pass a proficiency examination in Genetics or complete BIOL 2012 in residence with a grade of C or better. Students may then declare biology as their major. BIOL 2012 must be completed successfully within two attempts, including excused withdrawals.

The B.A. degree provides maximum flexibility for biology majors to pursue an undergraduate liberal arts course of study that can lead to professional careers in medicine, allied health, public and environmental health, law, and graduate studies in the life sciences. Candidates must have a cumulative grade point average of 2.0 or better in biology courses. Candidates must also earn a minimum grade of C- in all core courses.

All B.A. degree majors must take at least 40 credit hours, but not more than 50 hours, in appropriate biology course work. A minimum of 18 hours at or above the 2000 level (including one laboratory) must be taken in residence in the UMSL Department of Biology in order to receive a B.A. degree from the College of Arts and Sciences with a major in biology.

## Lecture and Seminar Course Requirements

The following biology courses or their equivalents are required:

### Core

BIOL 1800	Introduction to the Biology Major	1
BIOL 1821	Introductory Biology: Organisms and the Environment (MOTR BIOL 150L)	5
BIOL 1831	Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L)	5
BIOL 2012	Genetics	3
BIOL 3302	Evolution	3
BIOL 3622	Cell Biology	3

### Biological Diversity **3-5**

Select one of the following diversity courses:

BIOL 2102	Ecology	
BIOL 2402	Vertebrate Anatomy	
BIOL 2482	Microbiology	
BIOL 2501	Biology of Plants	
BIOL 4402	Ornithology	
BIOL 4422	Entomology	
BIOL 4501	Flowering Plant Families: Phylogeny and Diversification	

### Capstone **2-4**

Select one of the following:

BIOL 4889	Senior Seminar	
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SEC ED 4985	Curriculum and Methods of Teaching Life Sciences	
Total Hours		25-29

## Elective Courses

Three additional biology lecture courses, at the 2000 level or higher are required. They may be selected from any of the lecture or lecture-laboratory courses offered. Selection of these courses should reflect the career interest of the student. Biology courses taken to fulfill basic skill requirements (e.g., statistics requirement or biochemistry option) can be used to satisfy this requirement).

At least two biology lecture courses taken as part of the core or as electives must be at the 4000 level or higher. No more than one of these higher level courses can be used to fulfill other requirements (e.g., diversity or statistics requirements, or biochemistry option). Biochemistry CHEM 4722 can also be used toward satisfying this requirement.

BIOL 4905 or BIOL 4915 can be applied to the electives requirement but two 4000 level lecture courses are still required.

## Laboratory Course Requirements

Three biology laboratory courses at the 2000 level or higher are required. They may be taken from any of the lecture-laboratory or laboratory courses offered. Two credit hours of BIOL 3699, BIOL 4299, BIOL 4905, or BIOL 4915 (no combination of these courses allowed) can be used to fulfill one laboratory requirement. Students may take CHEM 4733 to satisfy one of these laboratory course requirements, but students may not use both BIOL 4713 and CHEM 4733 to fulfill this requirement.

## Basic Skills Requirement

A well-rounded biologist needs certain skills outside the biology subject matter. The basic skills requirement is designed to provide the student with a background in communication skills and knowledge in associated science areas.

Communication Skills. Courses in foreign languages and in writing are required for development of the basic communication skills needed to transmit scientific information. The following satisfy this requirement:

### Foreign Language

The foreign language requirement of the College of Arts & Sciences fulfills the departmental requirement.	3
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### Writing

ENGL 3160	Writing in the Sciences (strongly preferred)	3
or ENGL 3100	Junior-Level Writing	

Total Hours		6
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## Associated Science Area

The following courses or their equivalents must be successfully completed in science areas related to biology:

PHYSICS 1011	Basic Physics I	3
PHYSICS 1011L	Basic Physics I Laboratory	1
PHYSICS 1012	Basic Physics II	3
PHYSICS 1012L	Basic Physics II Laboratory	1
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
CHEM 1121	Introductory Chemistry II	5
CHEM 2612	Organic Chemistry I	3

Select one of the following:		2-3
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CHEM 2223	Quantitative Analysis in Chemistry	
CHEM 2622	Organic Chemistry II	
CHEM 2633	Organic Chemistry Laboratory	
BIOL 4732	Principles of Biochemistry	
MATH 1310	Elementary Statistical Methods	
MATH 1035	Trigonometry	
MATH 1100	Basic Calculus	
or MATH 1800	Analytic Geometry and Calculus I	

Select one of the following:		3-4
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BIOL 4122	Biometry	
MATH 1310	Elementary Statistical Methods	
MATH 1320	Introduction to Probability and Statistics	

Total Hours		26-28
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## Research Opportunity

Students in the B.S. Biology degree program who are interested in gaining research experience are encouraged to take a minimum 2 credit hours of undergraduate research, BIOL 4905. The privilege of doing undergraduate research provides students with a first-hand opportunity to experience the research process under the supervision of a faculty member or off-campus scientist. The project normally includes a library search of pertinent literature, laboratory or field experience, and a summary paper and a presentation, all based on an average 8 hr. per week per credit hour for a 15 week semester.

## Thesis in Biology Research and the Degree with Distinction

The Department of Biology offers high-achieving students the opportunity to present primary research in the form of a written thesis and to graduate with a Degree with Distinction in Biology. The first step in conducting an undergraduate thesis is to identify a faculty research mentor with whom you can conduct novel research. The mentor, along with two UMSL faculty members, will be readers of the thesis. Students need a minimum of two semesters, usually more, to conduct research. After students have identified a research mentor and have completed 75 credit hours, they may apply for a Degree with Distinction in Biology. The final thesis will be written in the form of a scientific manuscript and presented orally in an advertised public forum at least 6 weeks prior to commencement. The readers of the thesis will decide if the thesis merits a Degree with Distinction, and will report their recommendation to the Dean of Arts and Sciences. In addition to fulfilling the coursework required for a B.S. or B.A. in Biology and the thesis itself, students must also fulfill all the requirements for UMSL's Degree with Distinction.

## Academic Tracks within the Major of Biology

Biology majors may choose to focus their elective hours in a particular sub-discipline of biology, or academic track. These tracks are groups of departmental courses that fit within sub-disciplines of biology and are recommendations for students wanting to pursue careers in specific sub-disciplines. Academic tracks are NOT majors and are only intended to serve as guides for courses within a particular area of biology and are represented by current faculty expertise. Selecting an academic track does not prevent a student from taking courses in another track. Students should not expect to take all recommended courses for each academic track. Students may choose not to select an academic track.

Currently, the Biology Department offers three academic tracks: Cell and Molecular Biology; Ecology, Evolution and Conservation Biology; and Pre-professional/Health Sciences.

#### Cell and Molecular Biology Track

BIOL 2482	Microbiology	3
BIOL 2483	Microbiology Laboratory	2
BIOL 4442	Developmental Biology	3
BIOL 4550	Bacterial Pathogenesis	3
BIOL 4602	Molecular Biology	3
BIOL 4614	Biotechnology Laboratory I	4
BIOL 4615	Biotechnology Laboratory II	4
BIOL 4622	Cellular Basis of Disease	3
BIOL 4632	Nucleic Acid Structure and Function	3
BIOL 4642	Plant Molecular Biology and Biotechnology	3
BIOL 4652	Virology	3
BIOL 4712	Biochemistry	3
BIOL 4713	Techniques in Biochemistry	2
BIOL 4842	Immunobiology	3

#### Ecology, Evolution and Conservation Biology Track

BIOL 2102	Ecology	3
BIOL 2103	Ecology Laboratory	2
BIOL 2402	Vertebrate Anatomy	3
BIOL 2403	Vertebrate Anatomy Laboratory	2
BIOL 2482	Microbiology	3
BIOL 2483	Microbiology Laboratory	2
BIOL 2501	Biology of Plants	5
BIOL 3102	Animal Behavior	3
BIOL 3103	Animal Behavior Laboratory	2
BIOL 3202	Conservation Biology	3
BIOL 3203	Conservation Biology Laboratory	2
BIOL 3802	Vertebrate Physiology	3
BIOL 3803	Vertebrate Physiology Lab	2
BIOL 4102	Behavioral Ecology	3
BIOL 4122	Biometry	3
BIOL 4182	Population Biology	3
BIOL 4192	Applications of Geographic Information Systems	5
BIOL 4222	Tropical Ecology and Conservation	3
BIOL 4245	Field Biology	3
BIOL 4299	Practicum in Conservation	2
BIOL 4402	Ornithology	3
BIOL 4403	Ornithology Laboratory	2
BIOL 4422	Entomology	3
BIOL 4423	Entomology Laboratory	2
BIOL 4501	Flowering Plant Families: Phylogeny and Diversification	5

#### Pre-professional/Health Sciences Track

BIOL 2402	Vertebrate Anatomy	3
BIOL 2403	Vertebrate Anatomy Laboratory	2
BIOL 2482	Microbiology	3
BIOL 2483	Microbiology Laboratory	2

BIOL 3802	Vertebrate Physiology	3
BIOL 3803	Vertebrate Physiology Lab	2
BIOL 4442	Developmental Biology	3
BIOL 4550	Bacterial Pathogenesis	3
BIOL 4602	Molecular Biology	3
BIOL 4622	Cellular Basis of Disease	3
BIOL 4652	Virology	3
BIOL 4712	Biochemistry	3
BIOL 4822	Introduction to Neuroscience	3
BIOL 4842	Immunobiology	3

## B.S. Ed. in Secondary Education with Emphasis in Biology

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Biology with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

### Integrative Knowledge

Graduates will demonstrate a clear understanding of the overriding principles and theorems within and between the content areas of anatomy, botany, cytology, ecology, evolutionary biology, microbiology, physiology, and zoology. Specifically, graduates will demonstrate competency in the following areas:

- Structure and function of the basic biological units of living organisms
- Information flow, exchange and storage from parent to offspring or from parent cells to progeny cells.
- Pathways and transformations of energy and matter that govern metabolism
- Systems that govern interactions between organisms or between organisms and their environment

- Biodiversity at the genetic, organismal, community, and global scales
- Evolution, common ancestry, and changes to biological populations over successive generations.

### Laboratory Skills

Scientists not only learn the results of others, they work in the lab to generate new knowledge. Graduates will demonstrate basic skills associated with performing laboratory experiments or field studies in biology following a broad introduction of commonly used equipment and procedures.

### Critical Thinking Skills

Graduates will be able to formulate meaningful hypotheses, design experiments to test them, and evaluate data critically, including an appreciation of the potential sources of error associated with laboratory measurements and troubleshooting technical issues.

### Scientific Literacy

Graduates will be able to identify the need for information, procure the information from relevant scientific literature publications and databases, and critically evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias.

### Communication Skills

Scientists not only must be able to solve problems, they also must be able to communicate those solutions to others. Graduates of this program demonstrate how to present scientific concepts and information in a clear and accurate manner. Specifically, graduates will be able to write scientific reports and make effective oral presentations of their results and ideas.

### Professional and Research Ethics

Graduates will honestly and objectively evaluate and report data in an ethical and legal manner to promote the values that are essential to scholarly work: trust, accountability, mutual respect, and fairness. By doing so, graduates will come to understand and respect the accepted standards of conduct associated with the scientific profession regarding citation, use of privileged information, integrity of data, and authorship.

### Foreign Language

B.A. graduates will demonstrate basic proficiency in speaking, listening, writing and reading in a language in addition to English.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>	1	BIOL 1821	5
BIOL 1800	1	CHEM 1111	5
ENGL 1100	3	MATH 1035	2
MATH 1030	3	CORE - Communication Proficiency	3
CORE- US History & Government	3		
EXPLORE - Social Sciences	3		
	14		15
Second Year			
Fall	Hours	Spring	Hours
BIOL 1831	5	BIOL 2012	3
CHEM 1121	5	BIOL 2013	2
MATH 1100	3	CHEM 2612	3
EXPLORE - Humanities and Fine Arts	3	MATH 1320	3

		EXPLORE - Social & Behavioral Sciences	3
	16		14
Third Year			
Fall	Hours	Spring	Hours
BIOL 2000+ Biology Lecture Elective	3	BIOL 2000+ Biology Lecture Elective	3
BIOL 2000+ Biology Laboratory Elective	2	PHYSICS 1012	3
BIOL 3302	3	PHYSICS 1012L	1
CHEM XXXX Chemistry Major Requirement	3	ENGL 3160	3
PHYSICS 1011	3	Foreign Language 1001	5
PHYSICS 1011L	1		
	15		15
Fourth Year			
Fall	Hours	Spring	Hours
BIOL 3622	3	BIOL 4889	2
BIOL XXXX Biology Diversity Elective	3	BIOL 4XXX 4000-Level Biology Lecture Elective	3
BIOL XXXX Biology Laboratory Elective	3	Foreign Language 2101	3
FGN LANG 1002	5	Cultural Diversity Requirement	3
EXPLORE - Humanities and Fine Arts	3	EXPLORE - Humanities and Fine Arts	3
		EXPLORE - Social Sciences	3
	17		17

Total Hours: 123

- <sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Biology BS

The B.S. degree in biology is designed to prepare students for basic technical positions and graduate studies in the life sciences. Candidates for the degree have the same core courses and general education requirements as those seeking the Bachelor of Arts degree, as well as additional requirements in depth of study, laboratory experience, communication skills, and background in associated science areas.

## General Education Requirements

Students must satisfy the university and college general education requirements (p. 51). Some Biology courses may be used to meet the science and mathematics requirement of the university.

Candidates for the B.A. degree must fulfill the foreign language requirement of the College of Arts and Sciences. There is no foreign language requirement for the B.S. degree.

## Satisfactory/Unsatisfactory Option

Up to 18 credit hours may be taken on a satisfactory/ unsatisfactory (s/u) basis. Excluded from this option are required courses in biology, chemistry, physics, and mathematics.



## Non-major biology courses

The following 1000 level biology courses do not count toward the biology credit hours required for a major in biology. Moreover, if biology majors take these courses, they are treated as biology courses when computing the 70 credit hours outside of biology needed to be included in the 120 total credit hours required for graduation.

BIOL 1012	General Biology (MOTR BIOL 100)	3
BIOL 1013	General Biology Laboratory	1
BIOL 1102	Human Biology (MOTR LIFS 150)	3
BIOL 1131	Human Physiology and Anatomy I	4
BIOL 1141	Human Physiology and Anatomy II	4
BIOL 1162	General Microbiology	3
BIOL 1999	Evolution for Everyone	3
BIOL 1202	Environmental Biology	3

## Declaring the Biology Major

Students seeking to major in biology are first designated as pre-biology majors until they have successfully completed Genetics, BIOL 2012, in residence with a grade of C or better. Students who have completed a Genetics course elsewhere will have to either pass a proficiency examination in Genetics or complete BIOL 2012 in residence with a grade of C or better. Students may then declare biology as their major. BIOL 2012 must be completed successfully within two attempts, including excused withdrawals.

## Degree Requirements

The B.S. degree in biology is designed to prepare students for basic technical positions and graduate studies in the life sciences. Candidates for the degree have the same core courses and general education requirements as those seeking the Bachelor of Arts degree, as well as additional requirements in depth of study, laboratory experience, communication skills, and background in associated science areas. Candidates must have a cumulative grade point average of 2.0 or better in biology courses. Candidates must earn a minimum grade of C- in all core courses.

There is no foreign language requirement for the B.S. degree. However, students should realize that the literature for biological studies is in many different languages and the ability to extract information from this literature is an important skill.

To fulfill the requirements for the B.S. degree a minimum of 45 hours, but not more than 50 hours, must be completed in appropriate biology course work. A minimum of 22 hours at or above the 2000 level (including two laboratory courses) must be taken in residence in the UMSL Department of Biology in order to receive a B.S. degree from the College of Arts and Sciences with a major in biology.

## Lecture and Seminar Course Requirements

The following biology courses or their equivalents are required:

### Core

BIOL 1800	Introduction to the Biology Major	1
BIOL 1821	Introductory Biology: Organisms and the Environment (MOTR BIOL 150L)	5
BIOL 1831	Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L)	5

BIOL 2012	Genetics	3
BIOL 3302	Evolution	3
BIOL 3622	Cell Biology	3
<b>Biological Diversity</b>		<b>3-5</b>

Select one of the following diversity courses:

BIOL 2102	Ecology
BIOL 2402	Vertebrate Anatomy
BIOL 2482	Microbiology
BIOL 2501	Biology of Plants
BIOL 4402	Ornithology
BIOL 4422	Entomology
BIOL 4501	Flowering Plant Families: Phylogeny and Diversification

### Capstone 2-6

Select one of the following:

BIOL 4889	Senior Seminar
SEC ED 4985	Curriculum and Methods of Teaching Life Sciences

Total Hours 25-31

## Elective Courses

Four additional biology lecture courses at the 2000 level or higher are required. They may be selected from any of the lecture or lecture-laboratory courses offered. Selection of these courses should reflect the career interest of the student and may be selected from optional academic tracks (see below). Biology courses taken to fulfill basic skill requirements (e.g., statistics requirement or biochemistry option can be used to satisfy this requirement.

At least two biology lecture courses taken as electives must be at the 4000 level or higher. No more than one of these higher level courses can be used to fulfill other requirements (e.g., statistics requirement or biochemistry option). Biochemistry CHEM 4722 can also be used toward satisfying this requirement. BIOL 4905 or BIOL 4915 can be applied to the electives requirement but two 4000 level lecture courses are still required.

## Laboratory Course Requirements

Four biology laboratory courses at the 2000 level or higher are required. They may be selected from any of the lecture-laboratory or laboratory courses offered. Two credit hours of BIOL 3699, BIOL 4905, or BIOL 4915 (no combination of these courses allowed) can be used to fulfill one laboratory requirement. Students may take CHEM 4733 to satisfy one of these laboratory course requirements, but students may not use both BIOL 4713 and CHEM 4733 to fulfill this requirement.

## Basic Skills Requirement

A well-rounded biologist needs certain skills outside the biology subject matter. The basic skills requirement is designed to provide the student with a background in communication skills and knowledge in associated science areas.

## Communication Skills

Courses in both formal speaking and writing are required for development of the basic communication skills needed to transmit scientific information.

### Formal Speaking

COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	3
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**Writing**

ENGL 3160	Writing in the Sciences (strongly preferred)	3
or ENGL 3110	Junior-Level Writing for International Students	
Total Hours		6

**Associated Science Area**

The following courses or their equivalents must be successfully completed:

PHYSICS 1011	Basic Physics I	3
PHYSICS 1011L	Basic Physics I Laboratory	1
PHYSICS 1012	Basic Physics II	3
PHYSICS 1012L	Basic Physics II Laboratory	1
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
CHEM 1121	Introductory Chemistry II	5
CHEM 2612	Organic Chemistry I	3
CHEM 2622	Organic Chemistry II	3
CHEM 2223	Quantitative Analysis in Chemistry	3
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1035	Trigonometry	2
MATH 1100	Basic Calculus	3
or MATH 1800	Analytic Geometry and Calculus I	
Select one of the following:		3-4
BIOL 4122	Biometry	
MATH 1310	Elementary Statistical Methods	
MATH 1320	Introduction to Probability and Statistics	
PHIL 2256	Bioethics	
or PHIL 3380	Philosophy of Science	
Total Hours		38-39

**Research Opportunity**

Students in the B.S. Biology degree program who are interested in gaining research experience are encouraged to take a minimum 2 credit hours of undergraduate research, BIOL 4905. The privilege of doing undergraduate research provides students with a first-hand opportunity to experience the research process under the supervision of a faculty member or off-campus scientist. The project normally includes a library search of pertinent literature, laboratory or field experience, and a summary paper and a presentation, all based on an average 8 hr. per week per credit hour for a 15 week semester.

**Thesis in Biology Research and the Degree with Distinction**

The Department of Biology offers high-achieving students the opportunity to present primary research in the form of a written thesis and to graduate with a Degree with Distinction in Biology. The first step in conducting an undergraduate thesis is to identify a faculty research mentor with whom you can conduct novel research. The mentor, along with two UMSL faculty members, will be readers of the thesis. Students need a minimum of two semesters, usually more, to conduct research. After students have identified a research mentor and have completed 75 credit hours, they may apply for a Degree with Distinction in Biology. The final thesis will be written in the form of a scientific manuscript and

presented orally in an advertised public forum at least 6 weeks prior to commencement. The readers of the thesis will decide if the thesis merits a Degree with Distinction, and will report their recommendation to the Dean of Arts and Sciences. In addition to fulfilling the coursework required for a B.S. or B.A. in Biology and the thesis itself, students must also fulfill all the requirements for UMSL's Degree with Distinction.

**Pre-professional Graduation**

The Department of Biology sponsors a 3+4 Program for the UMSL College of Optometry.

In this program students may be admitted to the College of Optometry after completing three years (90 semester hours) of study in the Department of Biology. The undergraduate degree is granted when students satisfactorily complete the first year of optometry school. One or more of the following conditions must be met in order to qualify for the undergraduate degree. All general education requirements and all requirements for the major, except electives, must be completed. Any deficiency in required courses must be remedied with courses taken at UMSL within three years after entering the College of Optometry. Up to 6 hours from the College of Optometry may be substituted for undergraduate degree requirements, with approval of the Department of Biology.

**UMSL – Logan College (3+3 program)**

The Department of Biology has developed a 3+3 articulation agreement with Logan College of Chiropractic (LCC). This program enables qualified students the opportunity to complete a Bachelor of Science degree in Biology for the University of Missouri – St. Louis as well as a Doctor of Chiropractic for Logan College of Chiropractic in six years.

The program is only open to students who enter UMSL as first-time freshmen.

Participants must complete their first 90 hours of college work (3 years) at UMSL following a prescribed curriculum.

Participants who have achieved at least 3.25 GPA at UMSL will automatically be granted admission by Logan College of Chiropractic.

After successfully completing an additional 30 credit hours (4th year) at Logan, a student will receive a BS in Biology degree from UMSL.

After completing two additional years at Logan, the student will receive a doctorate in chiropractic.

The acceptance of transfer credits or testing toward completion of degree requirements shall be governed by current policies of UMSL. However, no more than 20 credits of required courses, and NONE of the science credits required for admission to LCC may be earned via examination or transfer from another school.

LCC shall accept, for the entrance date of their choice, all students who successfully complete the Pre-Chiropractic Program with a cumulative GPA of 3.25 or higher and meet all other criteria for admission.

Students who earn less than a 3.25 GPA, but at least a 2.50 GPA, will be eligible for admission to LCC, and will receive appropriate consideration in the admission process for having completed the UMSL Pre-Chiropractic Program, but will not receive the assurance of a seat reserved for students earning a 3.25 or higher GPA.

Students will make application to LCC one year in advance of their desired entrance date and will complete all required application procedures.

thereafter in a timely manner, including submission of recommendation and a satisfactory interview.

This program offers benefits to students (six years instead of seven from high school to doctorate). The University of Missouri courses are listed below:

### General Education Requirements

Humanities:		9
Select from General Education List		
Social Sciences (One course must be a Psychology):		9
Select from General Education List of courses meeting Social Science Gen. Ed requirements.		
American History & Government		3
MATH 1310	Elementary Statistical Methods	3
or MATH 1320	Introduction to Probability and Statistics	
or BIOL 4122	Biometry	
ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
ENGL 3160	Writing in the Sciences	3
<b>Major</b>		
Foundation courses:		
BIOL 1821	Introductory Biology: Organisms and the Environment (MOTR BIOL 150L)	5
BIOL 1831	Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L)	5
BIOL 2012	Genetics	3
BIOL 2482	Microbiology	3
BIOL 3622	Cell Biology	3
BIOL 3302	Evolution	3
BIOL 4732		
BIOL 4889	Senior Seminar	2
PHYSICS 1011	Basic Physics I	3
PHYSICS 1011L	Basic Physics I Laboratory	1
PHYSICS 1012	Basic Physics II	3
PHYSICS 1012L	Basic Physics II Laboratory	1
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
CHEM 1121	Introductory Chemistry II	5
CHEM 2612	Organic Chemistry I	3
CHEM 2622	Organic Chemistry II	3
CHEM 2633	Organic Chemistry Laboratory	2
PHIL 2256	Bioethics	3
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1035	Trigonometry	2
MATH 1100	Basic Calculus	3-5
or MATH 1800	Analytic Geometry and Calculus I	
Total Hours		91-93

The remaining 30 hours to be taken at Logan include:

- Transfer Credits (34):
- Anatomy I / Lab (6)
- Spinal Anatomy / Lab (5)

- Biochemistry I / Lab (4)
- Histology / Cell Biology / Lab (5)
- Anatomy II / Lab (6)
- Neuroanatomy / Lab (5)
- Biochemistry II (4)
- Physiology I (4)
- Microbiology / Lab (4)

### Academic Tracks within the Major of Biology

Biology majors may choose to focus their elective hours in a particular sub-discipline of biology, or academic track. These tracks are groups of departmental courses that fit within sub-disciplines of biology and are recommendations for students wanting to pursue careers in specific sub-disciplines. Academic tracks are NOT majors and are only intended to serve as guides for courses within a particular area of biology and are represented by current faculty expertise. Selecting an academic track does not prevent a student from taking courses in another track. Students should not expect to take all recommended courses for each academic track. Students may choose not to select an academic track. Currently, the Biology Department offers three academic tracks: Cell and Molecular Biology; Ecology, Evolution and Conservation Biology; and Pre-professional/Health Sciences.

#### Cell and Molecular Biology Track

BIOL 2482	Microbiology	3
BIOL 2483	Microbiology Laboratory	2
BIOL 4442	Developmental Biology	3
BIOL 4550	Bacterial Pathogenesis	3
BIOL 4602	Molecular Biology	3
BIOL 4612		
BIOL 4614	Biotechnology Laboratory I	4
BIOL 4615	Biotechnology Laboratory II	4
BIOL 4622	Cellular Basis of Disease	3
BIOL 4632	Nucleic Acid Structure and Function	3
BIOL 4642	Plant Molecular Biology and Biotechnology	3
BIOL 4652	Virology	3
BIOL 4712	Biochemistry	3
BIOL 4713	Techniques in Biochemistry	2
BIOL 4842	Immunobiology	3

#### Ecology, Evolution and Conservation Biology Track

BIOL 2102	Ecology	3
BIOL 2103	Ecology Laboratory	2
BIOL 2402	Vertebrate Anatomy	3
BIOL 2403	Vertebrate Anatomy Laboratory	2
BIOL 2482	Microbiology	3
BIOL 2483	Microbiology Laboratory	2
BIOL 2501	Biology of Plants	5
BIOL 3102	Animal Behavior	3
BIOL 3103	Animal Behavior Laboratory	2
BIOL 3203	Conservation Biology Laboratory	2
BIOL 3802	Vertebrate Physiology	3
BIOL 3803	Vertebrate Physiology Lab	2
BIOL 4102	Behavioral Ecology	3
BIOL 4122	Biometry	3

BIOL 4182	Population Biology	3
BIOL 4192	Applications of Geographic Information Systems	5
BIOL 4222	Tropical Ecology and Conservation	3
BIOL 4245	Field Biology	3
BIOL 4299	Practicum in Conservation	2
BIOL 4402	Ornithology	3
BIOL 4403	Ornithology Laboratory	2
BIOL 4422	Entomology	3
BIOL 4423	Entomology Laboratory	2
BIOL 4501	Flowering Plant Families: Phylogeny and Diversification	5

#### Pre-professional/Health Sciences Track

BIOL 2402	Vertebrate Anatomy	3
BIOL 2403	Vertebrate Anatomy Laboratory	2
BIOL 2482	Microbiology	3
BIOL 2483	Microbiology Laboratory	2
BIOL 3802	Vertebrate Physiology	3
BIOL 3803	Vertebrate Physiology Lab	2
BIOL 4442	Developmental Biology	3
BIOL 4550	Bacterial Pathogenesis	3
BIOL 4602	Molecular Biology	3
BIOL 4622	Cellular Basis of Disease	3
BIOL 4652	Virology	3
BIOL 4712	Biochemistry	3
BIOL 4822	Introduction to Neuroscience	3
BIOL 4842	Immunobiology	3

## B.S. Ed. in Secondary Education with Emphasis in Biology

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Biology with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the*

*discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

### Integrative Knowledge

Graduates will demonstrate a clear understanding of the overriding principles and theorems within and between the content areas of anatomy, botany, cytology, ecology, evolutionary biology, microbiology, physiology, and zoology. Specifically, graduates will demonstrate competency in the following areas:

- Structure and function of the basic biological units of living organisms
- Information flow, exchange and storage from parent to offspring or from parent cells to progeny cells.
- Pathways and transformations of energy and matter that govern metabolism
- Systems that govern interactions between organisms or between organisms and their environment
- Biodiversity at the genetic, organismal, community, and global scales
- Evolution, common ancestry, and changes to biological populations over successive generations.

### Laboratory Skills

Scientists not only learn the results of others, they work in the lab to generate new knowledge. Graduates will demonstrate basic skills associated with performing laboratory experiments or field studies in biology following a broad introduction of commonly used equipment and procedures.

### Critical Thinking Skills

Graduates will be able to formulate meaningful hypotheses, design experiments to test them, and evaluate data critically, including an appreciation of the potential sources of error associated with laboratory measurements and troubleshooting technical issues.

### Scientific Literacy

Graduates will be able to identify the need for information, procure the information from relevant scientific literature publications and databases, and critically evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias.

### Communication Skills

Scientists not only must be able to solve problems, they also must be able to communicate those solutions to others. Graduates of this program demonstrate how to present scientific concepts and information in a clear and accurate manner. Specifically, graduates will be able to write scientific reports and make effective oral presentations of their results and ideas.

### Professional and Research Ethics

Graduates will honestly and objectively evaluate and report data in an ethical and legal manner to promote the values that are essential to scholarly work: trust, accountability, mutual respect, and fairness. By doing so, graduates will come to understand and respect the accepted standards of conduct associated with the scientific profession regarding citation, use of privileged information, integrity of data, and authorship.



## Sample Plan of Study

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 MATH 1035	2
BIOL 1800		1 BIOL 1821	5
ENGL 1100		3 CHEM 1111	5
MATH 1030		3 COMM 1040	3
CORE - US History and Government		3	
EXPLORE - Social Sciences		3	
	14		15

### Second Year

Fall	Hours	Spring	Hours
BIOL 1831		5 BIOL 2012	3
CHEM 1121		5 BIOL 2013	2
MATH 1100		3 CHEM 2612	3
EXPLORE - Humanities and Fine Arts		3 MATH 1320	3
		EXPLORE - Social Sciences	3
	16		14

### Third Year

Fall	Hours	Spring	Hours
BIOL 2000+ Biology Lecture Elective		3 BIOL 2000+ Biology Lecture Elective	3
BIOL 2000+ Biology Lab Elective		3 BIOL 2000+ Biology Lab Elective	2
BIOL 3302		3 CHEM 2223 or 2633	2-3
PHYSICS 1011		3 PHYSICS 1012	3
PHYSICS 1011L		1 PHYSICS 1012L	1
CHEM 2622, 4732, or CHEM 4712		3 EXPLORE - Humanities and Fine Arts	3
	16		14-15

### Fourth Year

Fall	Hours	Spring	Hours
BIOL 3622		3 BIOL 4889	2
Biology Diversity Course		3 BIOL 4XXX 4000-Level Biology Lecture Elective	3
Biology Lab Elective		2 ENGL 3160	3
BIOL 4000-level Lecture Course		3 PHIL 2256 or 3380	3
EXPLORE - Humanities and Fine Arts		3 EXPLORE - Social Sciences	3
		Cultural Diversity Requirement	3
	14		17

Total Hours: 120-121

<sup>1</sup> INTDSC 1003 is required only for first-time freshman and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Biology BS/MS Dual Degree Program

### BS/MS Dual Degree Program in Biology

The BS/MS ('2+3') Biology program is an accelerated program that allows students of appropriate academic ability and maturity to complete both a BS and a MS in Biology in five years of full time study. The program allows students to apply 12 of the 30 MS credit hours towards the BS (per the approval of the College of Arts and Sciences), reducing the overall required hours for the two degrees. Students will pay graduate

credit hour tuition for all courses applied to the graduate degree. All other requirements for the BS and MS degrees remain in effect.

## Admission Requirements

Students interested in this program must go through a two-step admission process. First, applicants for Provisional Status must have completed all courses in the biology, chemistry, math and physics cores of the BS Biology program. Applicants should have completed all of the general education requirements. Applicants must also have a minimum GPA of 3.0 (both overall and in science courses) and must submit at least two letters of recommendation (one instructor and one academic advisor is recommended). The second step of the admission process is the transition from Provisional status to formal graduate status. Admission requirements for formal graduate status are the same as for the traditional MS program.

## Awarding of Degrees

Both degrees (the BS and MS) will be awarded when all requirements for the entire program have been completed. In other words, the BS and MS degrees will be simultaneously awarded at the completion of study. Students who officially withdraw from the BS/MS Dual Biology Degree Program and who have successfully completed all of the requirements for the BS degree will be awarded the BS degree.

## Biology Minor

Students may minor in biology by completing a minimum of 19 credit hours in biology, of which at least 9 hours of the biology course credits must be taken in residence at UMSL.

Requirements are:

BIOL 1821	Introductory Biology: Organisms and the Environment (MOTR BIOL 150L)	5
BIOL 1831	Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L)	5
BIOL 2012	Genetics	3
	Two additional courses totaling no less than 6 credit hours. At least one course should be at the 3000 level or above.	6
Total Hours		19

All students must plan an appropriate course of study in consultation with an advisor, and the program must be given prior approval by the Chairperson of the Department of Biology. Under certain circumstances, a student may deviate from the prescribed course of study and substitute a group of courses that exhibit a coherent area of specialization to coordinate with a career objective.

Candidates must have a cumulative grade point average of 2.0 or better in the minor, courses may be taken on a satisfactory/ unsatisfactory (s/u) basis.

## Learning Outcomes

### Foundational Knowledge

Students with a minor in biology will demonstrate an understanding of the fundamental principles of biology including the structure and function of cells and their components, heredity and variation in populations, and evolution.

## Laboratory Skills

Minors will acquire a basic understanding of how the scientific method is employed for research.

## Biology MS

### Advisors

All graduate students will have a faculty advisor. In the event that a student's interest changes or the faculty advisor feels the student's direction no longer falls with his/her area of expertise, the student and advisor should discuss whether a change of advisor is warranted. The graduate director must be notified in writing of any change in advisors. If a student or advisor is uncomfortable discussing the issue directly with the other, he/she is encouraged to meet with the director of the graduate program.

### Graduate Assistantships

Stipends for teaching and research assistantships are awarded on a competitive basis to qualified graduate students in masters or PhD. Programs. Tuition fees are waived for graduate assistants. Applications for assistantships must be sent to the Director of Graduate Studies in the Department of Biology and received by December 15.

The Department of Biology offers three ways of achieving the Master of Science degree. The first is a 30 credit hour non-thesis option suitable for those who may already have extensive research experience, for educators who seek to upgrade their academic skills but do not require research experience, or for those who need to broaden their biological background. The second is a 32 credit hour Professional Science track that includes a strong business component for students who are interested in learning more about the business aspects of companies. This track may not be appropriate for students who are interested in pursuing a PhD or working primarily as laboratory scientists. The third is a 30 credit hour traditional apprenticeship in research leading to a written thesis. All students admitted to the graduate program are considered to be in the non-thesis program unless they have been accepted into an individual faculty lab. Starting with a common core, both the thesis and non-thesis option may be developed into a final degree program in either of two broad areas in biology:

1. Cell and Molecular Biology or
2. Ecology, Evolution, and Systematics.

Non-thesis students may also elect to take courses in both areas. Only the non-thesis option is available in the Professional Science emphasis.

### M.S. Admission Requirements

Applicants to the M.S. program must submit completed application and personal data forms, three letters of recommendation from undergraduate faculty or work supervisors, and transcripts of all previous work. Submission of Graduate Record Examination scores, although not required, is highly recommended and will be helpful for positive consideration of admittance. Admission as a regular graduate student requires graduation from an accredited college with a minimum grade point average overall and in biology courses of 3.0 (where A = 4.0).

All foreign applicants, except those from countries where English is the primary language, must take the TOEFL. Ordinarily, a score of 213 on the computer-based exam (550 on the paper-based exam) or better is required.

In addition to the Graduate School admission requirements, applicants should have completed advanced undergraduate biology courses including genetics, biochemistry, and evolution. Courses in organic chemistry, college physics, and calculus are also expected, and a course in statistics is highly recommended.

Students admitted to the degree program who have not met some of the prerequisites may be asked to pass appropriate courses before graduating. These courses will be agreed upon by the student's advisor and the student during the first semester of enrollment. In particular, undergraduate deficiencies in genetics and either biochemistry or evolution shall be made up by taking the appropriate course(s). Three credits of BIOL 4920 Selected Topics can be given to graduate students for BIOL 2012 (Genetics) or BIOL 3302 (Evolution), if they receive a grade of B or better for all undergraduate course work and complete a graduate level paper assigned by the instructor. Instructor consent is required.

### General Requirements

All students are required to take at least 4 but not more than 8 hours of BIOL 6889, Graduate Seminar. However, Professional Science masters students must take only 4 credit hours total of BIOL 6889. Thesis students are required to take BIOL 5179, Ethical Issues in Biology. Students are expected to maintain a GPA of 3.0 or better. Students may choose to specialize in either Cellular and Molecular Biology (CMB) emphasis area or the Ecology, Evolution and Systematics (EES) emphasis area, and appropriate courses in each area will be recommended by the student's advisor. The Professional Science emphasis area in CMB has specific course requirements that are described below.

### Non-thesis Option

Including the general requirement, students must take at least 30 graduate credit hours, of which at least half must be at the 5000 or 6000 level. No more than 5 hours of BIOL 6905, Graduate Research, may be counted toward the degree.

### Thesis Option

The student and adviser work together to develop a research plan. The thesis proposal must be approved by the student's adviser and advisory committee before the student enrolls in more than 4 credit hours of BIOL 6905, Graduate Research, and before the student has completed 15 credit hours in the master's program. No more than 13 hours of BIOL 6905, Graduate Research, may be counted toward 30 hours of the degree. A thesis embodying results of original research shall be submitted to and approved by the Department of Biology and the Graduate School. This approval requires both a written thesis and oral presentation and defense.

## Biology MS, Cell and Molecular Biology Emphasis

This Master of Science in Biology with the Professional Science in Cellular and Molecular Biology emphasis requires a total of 32 credit hours, of which at least half must be at the 5000-level or above. Students will take 21 credit hours in Biology, 9 hours in business courses, and 2 credit hours of internship/practicum. Professional Science students: 1) must take 2 seminars (4 credit hours total) of BIOL 6889, 2) are limited to a maximum of 2 credit hours of Topics in Cellular and Molecular Biology (BIOL 5069) and 3) cannot count any hours of Graduate Research (BIOL 6905) as part of the 32 credit hour total.

**Required Courses**

BIOL 6889	Graduate Seminar (must be taken twice)	4
Choose three of the following:		9-10
BIOL 6602	Advanced Molecular Biology	
BIOL 6612	Advanced Molecular Genetics of Bacteria	
BIOL 6615	Advanced Biotechnology Laboratory II	
BIOL 6622	Advanced Cellular Basis of Disease	
BIOL 6632	Advanced Nucleic Acid Structure and Function	
BIOL 6642	Advanced Plant Biology and Biotechnology	

**Elective Courses in Biology** 7-8

BIOL 4713	Techniques in Biochemistry	
BIOL 4842	Immunobiology	
BIOL 5069	Topics In Cellular And Molecular Biology <sup>1</sup>	
BIOL 6442	Advanced Developmental Biology	
BIOL 6550	Advanced Bacterial Pathogenesis	
BIOL 6602	Advanced Molecular Biology	
BIOL 6612	Advanced Molecular Genetics of Bacteria	
BIOL 6622	Advanced Cellular Basis of Disease	
BIOL 6632	Advanced Nucleic Acid Structure and Function	
BIOL 6642	Advanced Plant Biology and Biotechnology	
BIOL 6652	Advanced Virology	
BIOL 6920	Advanced Topics in Biology (when relevant)	

**Required Internship or Practicum** 2

BIOL 5798 or BIOL 5799	Practicum in Science in Business Internship in Sciences in Business	
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**Professional Science Business Electives** 9

MGMT 3623	Industrial and Organizational Psychology	
BUS AD 5000	Economics for Managers	
BUS AD 5100	Managerial Communication	
MGMT 5600	Managing People in Organizations	
MKTG 5700	Contemporary Marketing Concepts	
BUS AD 5900	Law, Ethics and Business	

**Total Hours** 32<sup>1</sup> Maximum of 2 credit hours.

## Biology MS, Ecology Evolution and Systematics Emphasis

The Department of Biology offers three ways of achieving the Master of Science degree. The first is a 30 credit hour non-thesis option suitable for those who may already have extensive research experience, for educators who seek to upgrade their academic skills but do not require research experience, or for those who need to broaden their biological

background. The second is a 32 credit hour Professional Science track that includes a strong business component for students who are interested in learning more about the business aspects of companies. This track may not be appropriate for students who are interested in pursuing a PhD or working primarily as laboratory scientists. The third is a 30 credit hour traditional apprenticeship in research leading to a written thesis. All students admitted to the graduate program are considered to be in the non-thesis program unless they have been accepted into an individual faculty lab. Starting with a common core, both the thesis and non-thesis option may be developed into a final degree program in either of two broad areas in biology:

1. Cell and Molecular Biology or
2. Ecology, Evolution, and Systematics.

Non-thesis students may also elect to take courses in both areas. Only the non-thesis option is available in the Professional Science emphasis.

### M.S. Admission Requirements

Applicants to the M.S. program must submit completed application and personal data forms, three letters of recommendation from undergraduate faculty or work supervisors, and transcripts of all previous work. Submission of Graduate Record Examination scores, although not required, is highly recommended and will be helpful for positive consideration of admittance. Admission as a regular graduate student requires graduation from an accredited college with a minimum grade point average overall and in biology courses of 3.0 (where A = 4.0).

All foreign applicants, except those from countries where English is the primary language, must take the TOEFL. Ordinarily, a score of 213 on the computer-based exam (550 on the paper-based exam) or better is required.

In addition to the Graduate School admission requirements, applicants should have completed advanced undergraduate biology courses including genetics, biochemistry, and evolution. Courses in organic chemistry, college physics, and calculus are also expected, and a course in statistics is highly recommended.

Students admitted to the degree program who have not met some of the prerequisites may be asked to pass appropriate courses before graduating. These courses will be agreed upon by the student's advisor and the student during the first semester of enrollment. In particular, undergraduate deficiencies in genetics and either biochemistry or evolution shall be made up by taking the appropriate course(s). Three credits of BIOL 4920 Selected Topics can be given to graduate students for BIOL 2012 (Genetics) or BIOL 3302 (Evolution), if they receive a grade of B or better for all undergraduate course work and complete a graduate level paper assigned by the instructor. Instructor consent is required.

### General Requirements

All students are required to take at least 4 but not more than 8 hours of BIOL 6889, Graduate Seminar. However, Professional Science masters students must take only 4 credit hours total of BIOL 6889. Thesis students are required to take BIOL 5179, Ethical Issues in Biology. Students are expected to maintain a GPA of 3.0 or better. Students may choose to specialize in either Cellular and Molecular Biology (CMB) emphasis area or the Ecology, Evolution and Systematics (EES) emphasis area, and appropriate courses in each area will be recommended by the student's advisor. The Professional Science emphasis area in CMB has specific course requirements that are described below.

## Non-thesis Option

Including the general requirement, students must take at least 30 graduate credit hours, of which at least half must be at the 5000 or 6000 level. No more than 5 hours of BIOL 6905, Graduate Research, may be counted toward the degree.

## Thesis Option

The student and adviser work together to develop a research plan. The thesis proposal must be approved by the student's adviser and advisory committee before the student enrolls in more than 4 credit hours of BIOL 6905, Graduate Research, and before the student has completed 15 credit hours in the master's program. No more than 13 hours of BIOL 6905, Graduate Research, may be counted toward 30 hours of the degree. A thesis embodying results of original research shall be submitted to and approved by the Department of Biology and the Graduate School. This approval requires both a written thesis and oral presentation and defense.

# Biology MS, Professional Science in Cellular and Molecular Biology Emphasis

This Master of Science in Biology with the Professional Science in Cellular and Molecular Biology emphasis requires a total of 32 credit hours, of which at least half must be at the 5000-level or above. Students will take 21 credit hours in Biology, 9 hours in business courses, and 2 credit hours of internship/practicum. Professional Science students: 1) must take 2 seminars (4 credit hours total) of BIOL 6889, 2) are limited to a maximum of 2 credit hours of Topics in Cellular and Molecular Biology (BIOL 5069) and 3) cannot count any hours of Graduate Research (BIOL 6905) as part of the 32 credit hour total.

### Required Courses

BIOL 6889	Graduate Seminar (must be taken twice)	4
Choose three of the following:		9-10

BIOL 6602	Advanced Molecular Biology
BIOL 6612	Advanced Molecular Genetics of Bacteria
BIOL 6615	Advanced Biotechnology Laboratory II
BIOL 6622	Advanced Cellular Basis of Disease
BIOL 6632	Advanced Nucleic Acid Structure and Function
BIOL 6642	Advanced Plant Biology and Biotechnology

### Elective Courses in Biology 7-8

BIOL 4713	Techniques in Biochemistry
BIOL 4842	Immunobiology
BIOL 5069	Topics In Cellular And Molecular Biology <sup>1</sup>
BIOL 6442	Advanced Developmental Biology
BIOL 6550	Advanced Bacterial Pathogenesis
BIOL 6602	Advanced Molecular Biology
BIOL 6612	Advanced Molecular Genetics of Bacteria
BIOL 6622	Advanced Cellular Basis of Disease

BIOL 6632	Advanced Nucleic Acid Structure and Function
BIOL 6642	Advanced Plant Biology and Biotechnology
BIOL 6652	Advanced Virology
BIOL 6920	Advanced Topics in Biology (when relevant)
<b>Required Internship or Practicum 2</b>	
BIOL 5798 or BIOL 5799	Practicum in Science in Business Internship in Sciences in Business
<b>Professional Science Business Electives 9</b>	
MGMT 3623	Industrial and Organizational Psychology
BUS AD 5000	Economics for Managers
BUS AD 5100	Managerial Communication
MGMT 5600	Managing People in Organizations
MKTG 5700	Contemporary Marketing Concepts
BUS AD 5900	Law, Ethics and Business
<b>Total Hours</b>	<b>32</b>

<sup>1</sup> Maximum of 2 credit hours.

# Biology PhD, Cell and Molecular Biology Emphasis

## Graduate Studies

The graduate program offers both Masters and Ph.D. degrees, as well as Graduate Certificates in Biotechnology and Tropical Biology and Conservation.

## Advisors

All graduate students will have a faculty advisor. In the event that a student's interest changes or the faculty advisor feels the student's direction no longer falls with his/her area of expertise, the student and advisor should discuss whether a change of advisor is warranted. The graduate director must be notified in writing of any change in advisors. If a student or advisor is uncomfortable discussing the issue directly with the other, he/she is encouraged to meet with the director of the graduate program.

The doctoral program emphasizes empirical and theoretical approaches to biological research. Students are required to integrate basic skills in biology with focal studies in an emphasis area. The program is designed to provide research experience and training appropriate for advanced positions in academic research and teaching, government and public agencies, and industry.

## Ph.D. Admission Requirements

Applicants to the Ph.D. program must submit a formal application to the Graduate Admissions Office. In addition, the applicant should arrange to have sent: three letters of recommendation from faculty members at previously attended colleges or universities, GRE scores (Verbal, Quantitative, and Analytical), and transcripts of all postsecondary academic work. Admission to the Ph.D. program normally requires a minimum grade point average overall and in biology courses of 3.0 (where A=4.0). Applicants from countries where English is not a primary language are required to take the TOEFL examination. Scores must be submitted



before admission can be decided. Ordinarily, a score of 550 or better is required.

Applicants should have a bachelor's or M.S. degree from an accredited United States college or university or evidence of equivalent training at an accredited institution outside the United States. They should have the appropriate background for graduate work in biology, including courses in genetics, biochemistry, and evolution. Courses in organic chemistry, college physics, and calculus are expected. A course in statistics is recommended. Students admitted to the Ph.D. program who have not met all the prerequisites may be required to make up deficiencies before admission to candidacy. The deficiencies will be decided during orientation meetings prior to the start of the second semester. Three credits of BIOL 4920 Selected Topics can be given to graduate students for BIOL 2012 or BIOL 3302 if they receive a grade of B or better for all undergraduate course work and complete a graduate-level paper assigned by the instructor. Instructor consent is required.

## Ph.D. Degree Requirements

In addition to the general requirements of the Graduate School, the basic requirements for the Ph.D. degree in Biology include 60 graduate credit hours. At least 30 of the 60 hours must be taken at the 5000 or 6000 level. With the explicit consent of the advisory committee, students may take for graduate credit up to 3 credit hours of 3000 level courses in allied departments. All students are required to take BIOL 5178, Introduction to Graduate Research in Biology, and BIOL 5179, Ethical Issues in Biology. Courses in biology at the 3000 level and below are not available for graduate credit. At least 31 of the 60 hours must be taken while in residence at the University of Missouri-St. Louis. Graduate credit for course work transferred from another program is subject to approval by the graduate committee and by the Graduate School. Graduate courses taken elsewhere will be considered for transfer credit during orientation meetings conducted prior to the start of the second semester of enrollment.

The requirements for all Ph.D. students include:

- 30 hours of course work, including:
  - At least 6 credits of BIOL 6889, Graduate Seminar
  - One credit each of BIOL 5178, Introduction to Graduate Research in Biology, and BIOL 5179, Ethics in Biology (to be taken the first year)

The maximum number of credit hours that may be applied toward the 60-hour requirement is limited as stated below:

- BIOL 6889, Graduate Seminar: 10 hours
- BIOL 6905, Graduate Research: 30 hours

A combination of 6 total credit hours of the following:

- BIOL 5059, Topics in Ecology, Evolution, and Systematics
- BIOL 5069, Topics in Cellular and Molecular Biology
- BIOL 5079, Topics in Floristic Taxonomy
- BIOL 5089 Topics in Animal Behavior
- BIOL 5099, Biology Colloquium

## Emphasis area requirements

Each Ph.D. student is associated either with the Cellular and Molecular Biology (CMB) emphasis area, or the Ecology, Evolution and Systematics (EES) emphasis area. Each of these areas has its own course

requirements in addition to the University-wide and department-wide requirements listed above.

### Ecology, Evolution and Systematics <sup>1</sup>

BIOL 4122	Biometry	3
Select three of the following:		
BIOL 5302	Advanced Evolution	
BIOL 5312	Theory of Systematics	
BIOL 6182	Advanced Population Biology	
BIOL 5192	Community Ecology	
<b>Cellular and Molecular Biology</b>		
BIOL 5436	Applied Bioinformatics	3

<sup>1</sup> An equivalent graduate level course at another university may be substituted for one of the required courses, if approved by the Graduate Director

## Maintenance of Status

All students are expected to maintain a GPA of 3.0 or better. Students will normally meet formally with their thesis committee, or if that has not been formed, with their advisor each year to maintain their status in the program.

## First-Year Experience

Ph.D. students in the Cellular and Molecular Biology emphasis area typically rotate through three different labs during their first semester before choosing/being accepted by a particular dissertation advisor. Ph.D. students in the Ecology Evolution and Systematics emphasis area typically are accepted by a particular dissertation advisor as part of the Ph.D. program application/acceptance process. All students are expected to become involved in research by the spring semester of their first year.

## Qualifying Examination

All students must pass a qualifying examination consisting of a written and oral component. Students beginning studies in the fall semester will normally take the qualifying examination at the end of their fourth semester of full-time study. Doctoral students who have earned an M.S. degree previously are encouraged to take the examination in their first year.

The examination for Ecology, Evolution and Systematics students evaluates knowledge of fundamental principles presented in formal courses and in papers of special importance in the field. The written exam will be given in December at the end of the third semester, and the oral portion immediately afterwards.

The Qualifying Examination for Cellular and Molecular students is composed of a written portion in which the student prepares a formal research proposal on a topic different from that of her/his doctoral dissertation research, and an oral portion during which the student defends the research proposal as well as his/her knowledge of the fundamental concepts of molecular biology, cell biology, and biochemistry.

## Admission to Candidacy

To be admitted to candidacy, students must satisfy the requirements of the Graduate School, which includes passing all qualifying examinations and completing all required course work.

## Dissertation Proposal

All students must defend orally a written dissertation proposal to their dissertation committee. The approved proposal must be submitted to the

director of graduate studies in biology. Doctoral students may not enroll in more than 4 credits of graduate research (BIOL 6905) before they have received approval for their dissertation proposal. The proposal is to be successfully defended by the end of the sixth semester.

## Dissertation

A dissertation embodying the results of original research shall be submitted to and approved by the Department of Biology and the Graduate School. The general regulations of the Graduate School concerning the preparation of the dissertation must be met. These rules include a public oral defense of the written dissertation. Dissertations are to be presented in a style appropriate for one or more publications in scientific journals.

## Teaching

At least one semester of supervised teaching is required of all doctoral students.

# Biology PhD, Ecology, Evolution and Systematics Emphasis

## Graduate Studies

The graduate program offers both Masters and Ph.D. degrees, as well as Graduate Certificates in Biotechnology and Tropical Biology and Conservation.

## Advisors

All graduate students will have a faculty advisor. In the event that a student's interest changes or the faculty advisor feels the student's direction no longer falls with his/her area of expertise, the student and advisor should discuss whether a change of advisor is warranted. The graduate director must be notified in writing of any change in advisors. If a student or advisor is uncomfortable discussing the issue directly with the other, he/she is encouraged to meet with the director of the graduate program.

The doctoral program emphasizes empirical and theoretical approaches to biological research. Students are required to integrate basic skills in biology with focal studies in an emphasis area. The program is designed to provide research experience and training appropriate for advanced positions in academic research and teaching, government and public agencies, and industry.

## Ph.D. Admission Requirements

Applicants to the Ph.D. program must submit a formal application to the Graduate Admissions Office. In addition, the applicant should arrange to have sent: three letters of recommendation from faculty members at previously attended colleges or universities, GRE scores (Verbal, Quantitative, and Analytical), and transcripts of all postsecondary academic work. Admission to the Ph.D. program normally requires a minimum grade point average overall and in biology courses of 3.0 (where A=4.0). Applicants from countries where English is not a primary language are required to take the TOEFL examination. Scores must be submitted before admission can be decided. Ordinarily, a score of 550 or better is required.

Applicants should have a bachelor's or M.S. degree from an accredited United States college or university or evidence of equivalent training at an accredited institution outside the United States. They should have the appropriate background for graduate work in biology, including courses in genetics, biochemistry, and evolution. Courses in organic chemistry,

college physics, and calculus are expected. A course in statistics is recommended. Students admitted to the Ph.D. program who have not met all the prerequisites may be required to make up deficiencies before admission to candidacy. The deficiencies will be decided during orientation meetings prior to the start of the second semester. Three credits of BIOL 4920 Selected Topics can be given to graduate students for BIOL 2012 or BIOL 3302 if they receive a grade of B or better for all undergraduate course work and complete a graduate-level paper assigned by the instructor. Instructor consent is required.

## Ph.D. Degree Requirements

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The requirements for all Ph.D. students include:

- 30 hours of course work, including:
  - At least 6 credits of BIOL 6889, Graduate Seminar
  - One credit each of BIOL 5178, Introduction to Graduate Research in Biology, and BIOL 5179, Ethics in Biology (to be taken the first year)

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- BIOL 5099, Biology Colloquium

## Emphasis area requirements

Each Ph.D. student is associated either with the Cellular and Molecular Biology (CMB) emphasis area, or the Ecology, Evolution and Systematics (EES) emphasis area. Each of these areas has its own course requirements in addition to the University-wide and department-wide requirements listed above.

### Ecology, Evolution and Systematics <sup>1</sup>

BIOL 4122	Biometry	3
Select three of the following:		9
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BIOL 6182	Advanced Population Biology	
BIOL 5192	Community Ecology	
<b>Cellular and Molecular Biology</b>		
BIOL 5436	Applied Bioinformatics	3

<sup>1</sup> An equivalent graduate level course at another university may be substituted for one of the required courses, if approved by the Graduate Director

## Maintenance of Status

All students are expected to maintain a GPA of 3.0 or better. Students will normally meet formally with their thesis committee, or if that has not been formed, with their advisor each year to maintain their status in the program.

## First-Year Experience

Ph.D. students in the Cellular and Molecular Biology emphasis area typically rotate through three different labs during their first semester before choosing/being accepted by a particular dissertation advisor. Ph.D. students in the Ecology Evolution and Systematics emphasis area typically are accepted by a particular dissertation advisor as part of the Ph.D. program application/acceptance process. All students are expected to become involved in research by the spring semester of their first year.

## Qualifying Examination

All students must pass a qualifying examination consisting of a written and oral component. Students beginning studies in the fall semester will normally take the qualifying examination at the end of their fourth semester of full-time study. Doctoral students who have earned an M.S. degree previously are encouraged to take the examination in their first year.

The examination for Ecology, Evolution and Systematics students evaluates knowledge of fundamental principles presented in formal courses and in papers of special importance in the field. The written exam will be given in December at the end of the third semester, and the oral portion immediately afterwards.

The Qualifying Examination for Cellular and Molecular students is composed of a written portion in which the student prepares a formal research proposal on a topic different from that of her/his doctoral dissertation research, and an oral portion during which the student defends the research proposal as well as his/her knowledge of the fundamental concepts of molecular biology, cell biology, and biochemistry.

## Admission to Candidacy

To be admitted to candidacy, students must satisfy the requirements of the Graduate School, which includes passing all qualifying examinations and completing all required course work.

## Dissertation Proposal

All students must defend orally a written dissertation proposal to their dissertation committee. The approved proposal must be submitted to the director of graduate studies in biology. Doctoral students may not enroll in more than 4 credits of graduate research (BIOL 6905) before they have received approval for their dissertation proposal. The proposal is to be successfully defended by the end of the sixth semester.

## Dissertation

A dissertation embodying the results of original research shall be submitted to and approved by the Department of Biology and the Graduate School. The general regulations of the Graduate School concerning the

preparation of the dissertation must be met. These rules include a public oral defense of the written dissertation. Dissertations are to be presented in a style appropriate for one or more publications in scientific journals.

## Teaching

At least one semester of supervised teaching is required of all doctoral students.

# Biotechnology Graduate Certificate

The Graduate Certificate in Biotechnology is offered for students with a bachelor's degree who wish to obtain advanced level training in those fields of biology that pertain to biotechnology without necessarily earning a master's degree. Students who enter this program may have a variety of interests, including biochemistry, microbiology, molecular biology, cell biology, developmental biology, or molecular evolution.

## Admission

Students who wish to earn a Graduate Certificate in Biotechnology must apply to the Biotechnology Certificate Program for admission to the program. Students must be enrolled in the graduate program at the University of Missouri-St. Louis either as non-degree students or as master's students.

Students who wish to obtain a Master's degree with a Biotechnology Certificate must be accepted into the Master's degree program in Biology as well as into the Biotechnology Certificate Program. Students who apply to the certificate program as non-degree students will earn only the certificate.

Students must have at least a 3.0 GPA for undergraduate course work to be accepted into the program. The minimum course prerequisites for admission to the program are undergraduate courses in genetics, cell biology, and biochemistry.

## Requirements

Students must maintain a minimum GPA of 3.0 to remain in the certificate program. The certificate is awarded after completion of the courses listed below. Students enrolled in the Master's program may simultaneously earn a graduate degree and count the appropriate courses from the list below toward the Biotechnology Certificate.

The biotechnology certificate requires 18 credit hours of course work:

BIOL 6615	Advanced Biotechnology Laboratory II	4
BIOL 6602	Advanced Molecular Biology (If both Group II courses are taken, one may be used as elective credit)	3
or BIOL 6612	Advanced Molecular Genetics of Bacteria	

## Electives

Select 11 credits from the following:		11
Biology		
BIOL 4712	Biochemistry	
BIOL 4842	Immunobiology	
BIOL 5069	Topics In Cellular And Molecular Biology	
BIOL 6550	Advanced Bacterial Pathogenesis	

BIOL 6612	Advanced Molecular Genetics of Bacteria	
BIOL 6622	Advanced Cellular Basis of Disease	
BIOL 6632	Advanced Nucleic Acid Structure and Function	
BIOL 6642	Advanced Plant Biology and Biotechnology	
BIOL 6652	Advanced Virology	
BIOL 6699	Graduate Internship in Biotechnology	
BIOL 6889	Graduate Seminar	
BIOL 6915	Graduate Research Practicum	
BIOL 6920	Advanced Topics in Biology	
Chemistry		
CHEM 4722	Advanced Biochemistry	
CHEM 4733	Biochemistry Laboratory	
CHEM 4772	Physical Biochemistry	
Total Hours		18

## Business Administration BS

### General Education Requirements

All Business majors must meet the university general education requirements (p. 51). As part of meeting the university's general education requirements, all Business majors must complete the prerequisite courses below :

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1100	Basic Calculus	3
MATH 1105	Basic Probability and Statistics	3

### Degree Requirements

All Business majors must meet College of Business G.P.A., good standing and credit requirements (p. 179) as outlined in the Bulletin.

### Lower Division Business Core Requirements

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
INFSYS 2800	Information Systems Concepts and Applications	3
Total Hours		12

### Upper Division Requirements

ENGL 3120	Business Writing	3
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### Upper Division Non-Business or Business Requirement

Two global awareness courses selected from an approved list maintained in the Office of Undergraduate Academic Advising in the College of Business Administration; also available on our web site.

### Upper Division Business Requirements

FINANCE 3500	Financial Management	3
SCMA 3300	Business Analytics and Statistics	3
SCMA 3301	Introduction to Supply Chain Management	3
MGMT 3600	Management and Organizational Behavior	3
MGMT 4219	Strategic Management	3
MKTG 3700	Basic Marketing	3
A minimum of 18 additional hours of upper division approved business electives		18

### Assessment Requirement

MGMT 4220	Business Assessment Testing	0
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### General Business

For those undecided regarding a specific emphasis area, a general business degree option is available. Students must complete a minimum of 18 hours of upper division approved business electives (see comprehensive list of business courses in the course descriptions section of this publication)

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Articulate and apply foundational knowledge associated with core business disciplines (accounting, finance, supply chain management, marketing, information technology, and management). (Functional Business Knowledge)
- (a) Identify business problems and opportunities, (b) analyze relevant strategic, tactical, and operational options through qualitative and quantitative methods in order to (c) make recommendations and provide the rationale behind decisions. (Decision Making Skills)
- Identify and evaluate global business factors, including the opportunities, constraints and risks of operating across various country environments. (Global Orientation)
- Identify legal/ethical issues, assess impact, and decide on a socially responsible course of action. (Ethical Orientation)
- Students will be able to effectively communicate business issues, analyses and recommendations in written and oral presentations to stakeholders. (Business Communication Skills)
- Develop technological and quantitative skills, including those associated with statistics, data visualization and analysis, project management, social media, and those commensurate with their business specialization. (Technological Skills)
- Demonstrate interpersonal skills to collaborate within diverse teams, effectively engage with stakeholders in a professional manner, and develop leadership skills. (Interpersonal Skills)



## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
MATH 1030		3 MATH 1100	3
ENGL 1100		3 ECON 1001	3
BUS AD 1000		3 INFSYS 2800	3
INFSYS 1800		3 EXPLORE - Humanities & Fine Arts	3
Explore- Humanities & Fine Arts		3 EXPLORE – Math & Sciences	3
	15		15

### Second Year

Fall	Hours	Spring	Hours
MATH 1105		3 ACCTNG 2410	3
ACCTNG 2400		3 BUS AD 2900	3
ECON 1002		3 SCMA 3300	3
CORE: Communication Proficiency		3 EXPLORE – Humanities & Fine Arts	3
CORE: US History & Government		3 Cultural Diversity Requirement	3
	15		15

### Third Year

Fall	Hours	Spring	Hours
SCMA 3301		3 FINANCE 3500	3
MGMT 3600		3 MKTG 3700	3
ENGL 3120		3 Junior/Senior Level Business Elective	3
Non-Business Electives		6 Global Awareness Course	3
		Non-Business Elective	3
	15		15

### Fourth Year

Fall	Hours	Spring	Hours
Junior/Senior Level Business Elective		6 MGMT 4219 & MGMT 4220	3
Global Awareness Course		3 Junior/Senior Level Business Elective	9
Non-Business Electives		6 Non-Business Elective	3
	15		15

Total Hours: 120

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor. All requirements are subject to change.*

## Business Administration BS, Entrepreneurship Emphasis

The Entrepreneurship emphasis area will focus on students acquiring knowledge, abilities, and skills enabling them to ultimately develop and successfully launch entrepreneurial ventures in small, medium sized, corporate, and not-for-profit organizational settings.

### General Education Requirements

All Business majors must meet the university general education requirements (p. 51). As part of meeting the university's general education requirements, all Business majors must complete the prerequisite courses below :

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
MATH 1030	College Algebra (MOTR MATH 130)	3

MATH 1100	Basic Calculus	3
MATH 1105	Basic Probability and Statistics	3

### Degree Requirements

All Business majors must meet College of Business G.P.A., good standing and credit requirements (p. 179) as outlined in the Bulletin.

### Lower Division Business Core Requirements

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
INFSYS 2800	Information Systems Concepts and Applications	3
Total Hours		12

### Upper Division Requirements

ENGL 3120	Business Writing	3
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### Upper Division Non-Business or Business Requirement

Two global awareness courses selected from an approved list maintained in the Office of Undergraduate Academic Advising in the College of Business Administration; also available on our web site.

### Upper Division Business Requirements

FINANCE 3500	Financial Management	3
SCMA 3300	Business Analytics and Statistics	3
SCMA 3301	Introduction to Supply Chain Management	3
MGMT 3600	Management and Organizational Behavior	3
MGMT 4219	Strategic Management	3
MKTG 3700	Basic Marketing	3

A minimum of 18 additional hours of upper division approved business electives

### Assessment Requirement

MGMT 4220	Business Assessment Testing	0
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### Emphasis Area Requirements

#### Required Courses

ENT 3650	Experiential Entrepreneurship	3
ENT/BUS AD 4001	Accelerate Capstone	3
Choose three of the following courses: <sup>1</sup>		9
ENT 3040	Creativity and Systems for Innovation	
FINANCE 3545	Seminar in Venture Capital and Private Equity	
MGMT 4614	Entrepreneurship/Small Business Management	
SCMA 4347	Introduction to Project Management	
Total Hours		15

<sup>1</sup> Other elective courses may be taken with approval of program coordinator.

## Learning Outcomes

Upon completion of the program, graduates should be able to:

- Articulate and apply foundational knowledge associated with core business disciplines (accounting, finance, supply chain management, marketing, information technology, and management). (Functional Business Knowledge)
- (a) Identify business problems and opportunities, (b) analyze relevant strategic, tactical, and operational options through qualitative and quantitative methods in order to (c) make recommendations and provide the rationale behind decisions. (Decision Making Skills)
- Identify and evaluate global business factors, including the opportunities, constraints and risks of operating across various country environments. (Global Orientation)
- Identify legal/ethical issues, assess impact, and decide on a socially responsible course of action. (Ethical Orientation)
- Students will be able to effectively communicate business issues, analyses and recommendations in written and oral presentations to stakeholders. (Business Communication Skills)
- Develop technological and quantitative skills, including those associated with statistics, data visualization and analysis, project management, social media, and those commensurate with their business specialization. (Technological Skills)
- Demonstrate interpersonal skills to collaborate within diverse teams, effectively engage with stakeholders in a professional manner, and develop leadership skills. (Interpersonal Skills)
- Utilize innovation and creativity tools and techniques to solve business and social problems.
- Describe how venture capital and private equity processes operate, and explain other sources of financing for entrepreneurial ventures.
- Demonstrate an entrepreneurial mindset by creating and launching a real-world business or social venture.
- Demonstrate expertise in applying methods and processes that support effective scaling of entrepreneurial ventures, including operational and strategic planning, project management techniques, and protecting technology.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>	1	MATH 1100	3
MATH 1030	3	ECON 1001	3
ENGL 1100	3	INFSYS 2800	3
ENT 1001	3	CORE - Communication Proficiency	3
INFSYS 1800	3	EXPLORE - Humanities and Fine Arts	3
CORE - U.S. History & Government	3		
	16		15
Second Year			
Fall	Hours	Spring	Hours
MATH 1105	3	ACCTNG 2410	3
ACCTNG 2400	3	BUS AD 2900	3
ECON 1002	3	SCMA 3300	3
EXPLORE - Math and Sciences	3	ENT 3650	3
EXPLORE - Humanities and Fine Arts	3	EXPLORE - Humanities and Fine Arts	3
	15		15

Third Year			
Fall	Hours	Spring	Hours
MGMT 3600	3	FINANCE 3500	3
MKTG 3700	3	SCMA 4347	3
SCMA 3301	3	ENT 3000-level course	3
ENT 3040	3	Cultural Diversity Requirement	3
ENGL 3120	3	Non-Business Elective	3
	15		15
Fourth Year			
Fall	Hours	Spring	Hours
FINANCE 3545	3	MGMT 4219 & MGMT 4220	3
MGMT 4614	3	ENT 4001	3
Global Awareness Course	3	Global Awareness Course	3
Non-Business Elective	6	Non-Business Elective	6
	15		15
Total Hours: 121			

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Business Administration BS, Finance Emphasis

### General Education Requirements

All Business majors must meet the university general education requirements (p. 51). As part of meeting the university's general education requirements, all Business majors must complete the prerequisite courses below :

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1100	Basic Calculus	3
MATH 1105	Basic Probability and Statistics	3

### Degree Requirements

All Business majors must meet College of Business G.P.A., good standing and credit requirements (p. 179) as outlined in the Bulletin.

### Lower Division Business Core Requirements

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
INFSYS 2800	Information Systems Concepts and Applications	3
Total Hours		12

## Upper Division Requirements

ENGL 3120	Business Writing	3
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## Upper Division Non-Business or Business Requirement

Two global awareness courses selected from an approved list maintained in the Office of Undergraduate Academic Advising in the College of Business Administration; also available on our web site.

## Upper Division Business Requirements

FINANCE 3500	Financial Management	3
SCMA 3300	Business Analytics and Statistics	3
SCMA 3301	Introduction to Supply Chain Management	3
MGMT 3600	Management and Organizational Behavior	3
MGMT 4219	Strategic Management	3
MKTG 3700	Basic Marketing	3

A minimum of 18 additional hours of upper division approved business electives 18

## Assessment Requirement

MGMT 4220	Business Assessment Testing	0
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## Emphasis in Finance

Finance is a multidisciplinary field that combines various concepts from management, economics and accounting with financial techniques to make sound business decisions and solve problems.

A minimum of 18 hours of upper division finance electives must be selected from the following:

FINANCE 3501	Financial Policies	3
FINANCE 3503	Computer Applications in Finance	3
FINANCE 3520	Investments	3
FINANCE 3521	Financial Engineering: Applying Derivatives	3
FINANCE 3523	Fixed Income Analysis	3
FINANCE 3525	Practicum in Investments	1
FINANCE 3540	Introduction to Financial Institutions and Financial Markets	3
FINANCE 3541	Commercial Bank Management	3
FINANCE 3542	Principles of Real Estate	3
FINANCE 3560	Practice of Personal Financial Planning	3
FINANCE 3561	Principles of Insurance	3
FINANCE 3562	Life Insurance and Employee Benefits	3
FINANCE 3563	Retirement Planning and Employee Benefits	3
FINANCE 3564	Estate Planning and Trusts	3
FINANCE/INTL BUS 3580	International Corporate Finance	3
FINANCE/INTL BUS 3582	International Investments	3
FINANCE 3585/ INTL BUS 3281	Business in China	3

FINANCE 3590	Internship in Finance	1-3
FINANCE 3598	Seminar in Finance	1-3
FINANCE 3599	Independent Study in Finance (approved)	1-3

## Track Certification

Students may combine selected courses from the list above, and other specified upper division business electives, to fulfill a designated track with dual objectives of acquiring in depth knowledge, and to prepare and be eligible for various professional certification examinations. Detailed information is available in the Office of Undergraduate Academic Advising. The specific tracks available include:

- Corporate Finance
- Financial Institutions and Services
- Investment and Portfolio Management
- Financial Planning
- Insurance

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Articulate and apply foundational knowledge associated with core business disciplines (accounting, finance, supply chain management, marketing, information technology, and management). (Functional Business Knowledge)
- (a) Identify business problems and opportunities, (b) analyze relevant strategic, tactical, and operational options through qualitative and quantitative methods in order to (c) make recommendations and provide the rationale behind decisions. (Decision Making Skills)
- Identify and evaluate global business factors, including the opportunities, constraints and risks of operating across various country environments. (Global Orientation)
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- Students will be able to effectively communicate business issues, analyses and recommendations in written and oral presentations to stakeholders. (Business Communication Skills)
- Develop technological and quantitative skills, including those associated with statistics, data visualization and analysis, project management, social media, and those commensurate with their business specialization. (Technological Skills)
- Demonstrate interpersonal skills to collaborate within diverse teams, effectively engage with stakeholders in a professional manner, and develop leadership skills. (Interpersonal Skills)
- Explain and apply fundamental concepts in finance.
- Address corporate and investment issues by utilizing financial principles.
- Interpret and analyze financial data to evaluate firm performance.
- Apply financial tools and technologies to assist in real-life personal financial decision making and real estate investment.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
MATH 1030	3	MATH 1100	3
ENGL 1100	3	ECON 1001	3
BUS AD 1000	3	INFSYS 2800	3

INFSYS 1800	3 EXPLORE – Humanities & Fine Arts	3
EXPLORE – Humanities & Fine Arts	3 EXPLORE – Math & Sciences	3
		15

**Second Year**

Fall	Hours	Spring	Hours
MATH 1105		3 ACCTNG 2410	3
ACCTNG 2400		3 BUS AD 2900	3
ECON 1002		3 SCMA 3301	3
CORE – US History & Government		3 EXPLORE – Humanities & Fine Arts	3
CORE – Communication Proficiency		3 Cultural Diversity Requirement	3
		15	15

**Third Year**

Fall	Hours	Spring	Hours
SCMA 3300		3 MGMT 3600	3
FINANCE 3500		3 MKTG 3700	3
ENGL 3120		3 Finance Elective	3
Non-Business Electives		6 Global Awareness Course, Non-Business	3
		Non-Business Elective	3
		15	15

**Fourth Year**

Fall	Hours	Spring	Hours
Finance Elective		9 MGMT 4219 or 4220	3
Non-Business Elective		6 Finance Elective	6
		Global Awareness Course	3
		Non-Business Elective	3
		15	15

Total Hours: 120

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor. All requirements are subject to change.*

## Business Administration BS, International Business Emphasis

National markets are becoming increasingly integrated. The study of international business focuses on understanding the forces behind this globalization of markets and production.

### General Education Requirements

All Business majors must meet the university general education requirements (p. 51). As part of meeting the university's general education requirements, all Business majors must complete the prerequisite courses below :

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1100	Basic Calculus	3
MATH 1105	Basic Probability and Statistics	3

## Degree Requirements

All Business majors must meet College of Business G.P.A., good standing and credit requirements (p. 179) as outlined in the Bulletin.

### Lower Division Business Core Requirements

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
INFSYS 2800	Information Systems Concepts and Applications	3
<b>Total Hours</b>		<b>12</b>

### Upper Division Requirements

ENGL 3120	Business Writing	3
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### Upper Division Non-Business or Business Requirement

Two global awareness courses selected from an approved list maintained in the Office of Undergraduate Academic Advising in the College of Business Administration; also available on our web site.

### Upper Division Business Requirements

FINANCE 3500	Financial Management	3
SCMA 3300	Business Analytics and Statistics	3
SCMA 3301	Introduction to Supply Chain Management	3
MGMT 3600	Management and Organizational Behavior	3
MGMT 4219	Strategic Management	3
MKTG 3700	Basic Marketing	3

A minimum of 18 additional hours of upper division approved business electives 18

### Assessment Requirement

MGMT 4220	Business Assessment Testing	0
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### Emphasis Area Requirements

Twelve (12) hours are required of all individuals seeking an emphasis in International Business:

Select two of the following courses: 6

INTL BUS/MGMT 3680	International Management
INTL BUS/FINANCE 3580	International Corporate Finance
INTL BUS/MKTG 3780	International Marketing

Select two additional approved international business courses from the following: 6<sup>1</sup>

INTL BUS 3280	The Law of International Business Transactions
INTL BUS 3281	Business in China
INTL BUS 3282	Managing the Global Workforce
INTL BUS 3283	International Business and Society
INTL BUS 3284	The Japanese Management System
INTL BUS 3285	Role of the Global Corporation



INTL BUS 3289	Practicum In International Business
INTL BUS 3290	Internship in International Business
INTL BUS 3299	Independent Study in International Business
INTL BUS/FINANCE 3580	International Corporate Finance
INTL BUS/FINANCE 3582	International Investments
INTL BUS/MGMT 3680	International Management
INTL BUS/MKTG 3780	International Marketing
INTL BUS/MKTG 3787	Marketing in the European Union
INTL BUS 4281	Entrepreneurship in the Global Environment
INTL BUS 4289	International Strategic Management
INTL BUS/LOG OM 4381	Global Supply Chain Management
<b>Total Hours</b>	<b>12</b>

<sup>1</sup> Other than INTL BUS 3289.

Proficiency in a foreign language of international commerce (determined by the College of Business Administration) must be demonstrated - 13 credit hours in one approved language or satisfactory performance on the UMSL foreign language placement test.

Students must complete one of the following International Experience Requirements:

INTL BUS 4280	International Business Experience	0
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1. Study abroad for three or more credits hours.<sup>1</sup>
2. Complete an international internship approved by the International Business Institute (maximum of 3 credit hours).
3. Complete a minimum of one year international experience within 5 years of entering the program in any of the following areas: Peace Corps, volunteer work with an organization, an international posting by a company or government agency and/or approved, significant international experience. Documentation is required for approval.

<sup>1</sup> International students in the IB Emphasis will meet their International Experience requirement through their study in the United States.

## Learning Outcomes

Upon completion of the program, students will be able to:

- Articulate and apply foundational knowledge associated with core business disciplines (accounting, finance, supply chain management, marketing, information technology, and management). (Functional Business Knowledge)
- (a) Identify business problems and opportunities, (b) analyze relevant strategic, tactical, and operational options through qualitative and quantitative methods in order to (c) make recommendations and provide the rationale behind decisions. (Decision Making Skills)
- Identify and evaluate global business factors, including the opportunities, constraints and risks of operating across various country environments. (Global Orientation)
- Identify legal/ethical issues, assess impact, and decide on a socially responsible course of action. (Ethical Orientation)
- Students will be able to effectively communicate business issues, analyses and recommendations in written and oral presentations to stakeholders. (Business Communication Skills)

- Develop technological and quantitative skills, including those associated with statistics, data visualization and analysis, project management, social media, and those commensurate with their business specialization. (Technological Skills)
- Demonstrate interpersonal skills to collaborate within diverse teams, effectively engage with stakeholders in a professional manner, and develop leadership skills. (Interpersonal Skills)
- Develop language proficiency and effective communication skills in a chosen foreign language;
- Analyze cultural differences and environmental factors to develop competitive strategies globally;
- Evaluate political, legal, and ethical issues across different country markets;
- Assess alternative strategic options and make specific recommendations, such as global market entry and currency risk analysis.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
MATH 1030		3 ECON 1001	3
ENGL 1100		3 MATH 1100	3
INFSYS 1800		3 INFSYS 2800	3
BUS AD 1000		3 EXPLORE – Humanities & Fine Arts	3
EXPLORE – Humanities & Fine Arts		3 EXPLORE – Math & Sciences	3
		<b>15</b>	<b>15</b>
Second Year			
Fall	Hours	Spring	Hours
MATH 1105		3 ACCTNG 2410	3
ECON 1002		3 BUS AD 2900	3
ACCTNG 2400		3 SCMA 3301	3
Foreign Language 1001		5 Foreign Language 1002	5
CORE – Communication Proficiency		3 EXPLORE – Humanities & Fine Arts	3
		<b>17</b>	<b>17</b>
Third Year			
Fall	Hours	Spring	Hours
SCMA 3300		3 FINANCE 3500	3
MGMT 3600		3 ENGL 3120	3
MKTG 3700		3 INTL BUS Group 1 Elective	3
Foreign Language 2101		3 INTL BUS Group 2 Elective	3
CORE – US History & Government		3 Cultural Diversity Requirement	3
		<b>15</b>	<b>15</b>
Fourth Year			
Fall	Hours	Spring	Hours
INTL BUS Group 1 Elective		3 INTL BUS 4280	0
INTL BUS Group 2 Elective		3 MGMT 4219 or 4220	3
Non-Business Electives		6 Junior/Senior Business Electives	6
Business or Non-Business Elective		3 Business or Non-Business Electives	2
		<b>15</b>	<b>11</b>

Total Hours: 120

# Business Administration BS, Management Emphasis

The study of management focuses on the behavior of individuals and groups in an organizational setting.

## General Education Requirements

All Business majors must meet the university general education requirements (p. 51). As part of meeting the university's general education requirements, all Business majors must complete the prerequisite courses below :

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1100	Basic Calculus	3
MATH 1105	Basic Probability and Statistics	3

## Degree Requirements

All Business majors must meet College of Business G.P.A., good standing and credit requirements (p. 179) as outlined in the Bulletin.

## Lower Division Business Core Requirements

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
INFSYS 2800	Information Systems Concepts and Applications	3
Total Hours		12

## Upper Division Requirements

ENGL 3120	Business Writing	3
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## Upper Division Non-Business or Business Requirement

Two global awareness courses selected from an approved list maintained in the Office of Undergraduate Academic Advising in the College of Business Administration; also available on our web site.

## Upper Division Business Requirements

FINANCE 3500	Financial Management	3
SCMA 3300	Business Analytics and Statistics	3
SCMA 3301	Introduction to Supply Chain Management	3
MGMT 3600	Management and Organizational Behavior	3
MGMT 4219	Strategic Management	3
MKTG 3700	Basic Marketing	3
A minimum of 18 additional hours of upper division approved business electives		18

## Assessment Requirement

MGMT 4220	Business Assessment Testing	0
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## Emphasis Area Requirements

The study of management focuses on the behavior of individuals and groups in an organizational setting.

MGMT 3611	Advanced Management and Organizational Behavior	3
Select five of the following:		15
MGMT 3612	Professional Skills Development	
MGMT 3621	Human Resource Management	
MGMT 3622	Industrial and Labor Relations	
MGMT 3623/ PSYCH 3318	Industrial and Organizational Psychology	
MGMT 3624	Employee Training and Development	
MGMT 3625	Leadership in Organization	
MGMT/INTL BUS 3680	International Management	
MGMT 3690 or MGMT 3699	Internship in Management Independent Study in Management	
MGMT 4614	Entrepreneurship/Small Business Management	
Total Hours		18

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Articulate and apply foundational knowledge associated with core business disciplines (accounting, finance, supply chain management, marketing, information technology, and management). (Functional Business Knowledge)
- (a) Identify business problems and opportunities, (b) analyze relevant strategic, tactical, and operational options through qualitative and quantitative methods in order to (c) make recommendations and provide the rationale behind decisions. (Decision Making Skills)
- Identify and evaluate global business factors, including the opportunities, constraints and risks of operating across various country environments. (Global Orientation)
- Identify legal/ethical issues, assess impact, and decide on a socially responsible course of action. (Ethical Orientation)
- Students will be able to effectively communicate business issues, analyses and recommendations in written and oral presentations to stakeholders. (Business Communication Skills)
- Develop technological and quantitative skills, including those associated with statistics, data visualization and analysis, project management, social media, and those commensurate with their business specialization. (Technological Skills)
- Demonstrate interpersonal skills to collaborate within diverse teams, effectively engage with stakeholders in a professional manner, and develop leadership skills. (Interpersonal Skills)
- Demonstrate competence in applying management principles and theories related to motivation, leadership, group process, decision-making, job design, and organizational development.
- Demonstrate proficiency in utilizing human resource principles and concepts in the processes of attracting, selecting, developing, motivating, evaluating and retaining employees.
- Demonstrate competence in applying leadership skills, principles and theories to promote individual, group, and organizational performance.
- Demonstrate the ability to apply principles and concepts related to cross-country differences, intercultural competence and diversity management to the strategy and operations of firms.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
MATH 1030		3 MATH 1100	3
ENGL 1100		3 ECON 1001	3
BUS AD 1000		3 INFSYS 2800	3
INFSYS 1800		3 EXPLORE – Humanities & Fine Arts	3
EXPLORE – Humanities & Fine Arts		3 EXPLORE – Math & Sciences	3
	15		15
Second Year			
Fall	Hours	Spring	Hours
MATH 1105		3 ACCTNG 2410	3
ACCTNG 2400		3 BUS AD 2900	3
ECON 1002		3 SCMA 3301	3
CORE – Communication Proficiency		3 EXPLORE – Humanities & Fine Arts	3
CORE – US History & Government		3 Cultural Diversity Requirement	3
	15		15
Third Year			
Fall	Hours	Spring	Hours
SCMA 3300		3 FINANCE 3500	3
MGMT 3600		3 MKTG 3700	3
ENGL 3120		3 MGMT 3611	3
Non-Business Elective	6	MGMT Elective	3
		Non-Business Elective	3
	15		15
Fourth Year			
Fall	Hours	Spring	Hours
MGMT Elective	6	MGMT 4219 or 4220	3
Global Awareness Course	3	MGMT Elective	6
Non-Business Elective	6	Global Awareness Courses	3
		Non-Business Electives	3
	15		15

Total Hours: 120

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor. All requirements are subject to change.*

## Business Administration BS, Marketing Emphasis

### General Education Requirements

All Business majors must meet the university general education requirements (p. 51). As part of meeting the university's general education requirements, all Business majors must complete the prerequisite courses below :

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1100	Basic Calculus	3
MATH 1105	Basic Probability and Statistics	3

### Degree Requirements

All Business majors must meet College of Business G.P.A., good standing and credit requirements (p. 179) as outlined in the Bulletin.

### Lower Division Business Core Requirements

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
INFSYS 2800	Information Systems Concepts and Applications	3
Total Hours		12

### Upper Division Requirements

ENGL 3120	Business Writing	3
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### Upper Division Non-Business or Business Requirement

Two global awareness courses selected from an approved list maintained in the Office of Undergraduate Academic Advising in the College of Business Administration; also available on our web site.

### Upper Division Business Requirements

FINANCE 3500	Financial Management	3
SCMA 3300	Business Analytics and Statistics	3
SCMA 3301	Introduction to Supply Chain Management	3
MGMT 3600	Management and Organizational Behavior	3
MGMT 4219	Strategic Management	3
MKTG 3700	Basic Marketing	3

A minimum of 18 additional hours of upper division approved business electives

### Assessment Requirement

MGMT 4220	Business Assessment Testing	0
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### Emphasis Area Requirements

Marketing involves the activities needed to facilitate an exchange. This includes selling products, services, or ideas to both individual consumers and business buyers.

MKTG 3740	Marketing Analysis	3
MKTG 4700	Marketing Management	3
Select four additional upper division courses from the following:		12
MKTG 3710	Consumer Behavior	
MKTG 3720	Management of Promotion	
MKTG 3721	Introduction to Digital Marketing Strategies	
MKTG 3722	Introduction to Social Media Marketing	
MKTG 3750	Sales Management	
MKTG 3760	Business to Business Marketing	
MKTG 3770	Introduction to Transportation	

MKTG 3771	Traffic and Transportation Management	
MKTG 3776	Transportation Security and Risk	
MKTG 3777	Aviation Business	
MKTG/INTL BUS 3780	International Marketing	
MKTG 3785	Women in International Entrepreneurship	
MKTG/INTL BUS 3787	Marketing in the European Union	
MKTG 3790	Internship in Marketing	
MKTG 3798	Seminar in Marketing	
MKTG 3799	Independent Study in Marketing	
MEDIA ST 3338	Advertising Technique	
Total Hours		18

Marketing majors may choose to focus their electives in the area of digital and social media marketing and communications. This track is a group of departmental courses that will focus on the use of emerging technologies and platforms by which business use to communicate with and engage with their customers, prospects and vendors.

The Track in Digital and Social Media Marketing is comprised of the following courses:

MKTG 3721	Introduction to Digital Marketing Strategies	3
MKTG 3722	Introduction to Social Media Marketing	3
MKTG 3710	Consumer Behavior	3
MKTG 3720		

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Articulate and apply foundational knowledge associated with core business disciplines (accounting, finance, supply chain management, marketing, information technology, and management). (Functional Business Knowledge)
- (a) Identify business problems and opportunities, (b) analyze relevant strategic, tactical, and operational options through qualitative and quantitative methods in order to (c) make recommendations and provide the rationale behind decisions. (Decision Making Skills)
- Identify and evaluate global business factors, including the opportunities, constraints and risks of operating across various country environments. (Global Orientation)
- Identify legal/ethical issues, assess impact, and decide on a socially responsible course of action. (Ethical Orientation)
- Students will be able to effectively communicate business issues, analyses and recommendations in written and oral presentations to stakeholders. (Business Communication Skills)
- Develop technological and quantitative skills, including those associated with statistics, data visualization and analysis, project management, social media, and those commensurate with their business specialization. (Technological Skills)
- Demonstrate interpersonal skills to collaborate within diverse teams, effectively engage with stakeholders in a professional manner, and develop leadership skills. (Interpersonal Skills)
- Students will be able to solve marketing related problems using qualitative and/or quantitative tools.

- Students will be able to demonstrate creativity in developing marketing communication plans (e.g., advertising, social media).
- Students will be able to develop marketing plans and execute marketing strategies.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
MATH 1030		3 MATH 1100	3
ENGL 1100		3 ECON 1001	3
BUS AD 1000		3 INFSYS 2800	3
INFSYS 1800		3 EXPLORE - Humanities & Fine Arts	3
EXPLORE - Humanities & Fine Arts		3 EXPLORE - Math & Sciences	3
		15	15

Second Year			
Fall	Hours	Spring	Hours
MATH 1105		3 ACCTNG 2410	3
ACCTNG 2400		3 BUS AD 2900	3
ECON 1002		3 SCMA 3301	3
CORE - Communication Proficiency		3 EXPLORE - Humanities & Fine Arts	3
CORE - US History & Government		3 Cultural Diversity Requirement	3
		15	15

Third Year			
Fall	Hours	Spring	Hours
SCMA 3300		3 FINANCE 3500	3
MKTG 3700		3 MGMT 3600	3
ENGL 3120		3 MKTG Elective	3
Non-Business Electives		6 Global Awareness Course	3
		Non-Business Elective	3
		15	15

Fourth Year			
Fall	Hours	Spring	Hours
MKTG 3740		3 MGMT 4219 & MGMT 4220	3
MKTG Elective		6 MKTG 4700	3
Global Awareness Course, Non-Business		3 MKTG Elective	6
Non-Business Elective		3 Non-Business Elective	3
		15	15

Total Hours: 120

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor. All requirements are subject to change.*

## Business Administration BS, Supply Chain Management Emphasis

### General Education Requirements

All Business majors must meet the university general education requirements (p. 51). As part of meeting the university's general education requirements, all Business majors must complete the prerequisite courses below :

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
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ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1100	Basic Calculus	3
MATH 1105	Basic Probability and Statistics	3

### Degree Requirements

All Business majors must meet College of Business G.P.A., good standing and credit requirements (p. 179) as outlined in the Bulletin.

### Lower Division Business Core Requirements

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
INFSYS 2800	Information Systems Concepts and Applications	3
Total Hours		12

### Upper Division Requirements

ENGL 3120	Business Writing	3
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### Upper Division Non-Business or Business Requirement

Two global awareness courses selected from an approved list maintained in the Office of Undergraduate Academic Advising in the College of Business Administration; also available on our web site.

### Upper Division Business Requirements

FINANCE 3500	Financial Management	3
SCMA 3300	Business Analytics and Statistics	3
SCMA 3301	Introduction to Supply Chain Management	3
MGMT 3600	Management and Organizational Behavior	3
MGMT 4219	Strategic Management	3
MKTG 3700	Basic Marketing	3
A minimum of 18 additional hours of upper division approved business electives		18

### Assessment Requirement

MGMT 4220	Business Assessment Testing	0
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### Emphasis Area Requirements

The study of supply chain management focuses on the whole supply chain from the acquisition of raw materials, through production or service delivery, to the point of consumption.

Twelve (12) credit hours are required of all individuals seeking an emphasis in Supply Chain Management:

SCMA 3320	Advanced Supply Chain and Operations Management	3
Select three of the following courses:		9
SCMA 3321	Procurement	

SCMA 3345	Predictive Analytics and Data Mining	
SCMA 3370/MKTG 3770	Introduction to Transportation	
SCMA 3371/MKTG 3771	Traffic and Transportation Management	
SCMA 3376/MKTG 3776	Transportation Security and Risk	
SCMA 3390	Internship in Supply Chain and Analytics <sup>1</sup>	
SCMA 3398	Seminar in Supply Chain Management and Analytics	
SCMA 3399	Independent Study in Supply Chain and Analytics	
SCMA 4322	Lean Production in Manufacturing and Service Operations	
SCMA 4325	Environmental Sustainability in Business Operations	
SCMA 4330	Business Logistics	
SCMA 4331	Applied Supply Chain Modeling	
SCMA 4347	Introduction to Project Management	
SCMA 4350	Prescriptive Analytics and Optimization	
SCMA/INTL BUS 4381	Global Supply Chain Management	
SCMA 4389	Supply Chain Management Practicum <sup>1</sup>	
SCMA 4398	Advanced Topics in Supply Chain and Analytics	
Total Hours		12

<sup>1</sup> At most, only one of SCMA 3390 and SCMA 4389 may be counted towards the Supply Chain Management emphasis area.

### Tracks

Students may combine selected courses from the list above, and other specified upper division business electives, to fulfill a designated track and acquire in-depth knowledge. Detailed information is available in the Office of Undergraduate Academic Advising. The specific tracks available include:

- Supply Chain Management
- Transportation
- Business Analytics

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Articulate and apply foundational knowledge associated with core business disciplines (accounting, finance, supply chain management, marketing, information technology, and management). (Functional Business Knowledge)
- (a) Identify business problems and opportunities, (b) analyze relevant strategic, tactical, and operational options through qualitative and quantitative methods in order to (c) make recommendations and provide the rationale behind decisions. (Decision Making Skills)
- Identify and evaluate global business factors, including the opportunities, constraints and risks of operating across various country environments. (Global Orientation)
- Identify legal/ethical issues, assess impact, and decide on a socially responsible course of action. (Ethical Orientation)

- Students will be able to effectively communicate business issues, analyses and recommendations in written and oral presentations to stakeholders. (Business Communication Skills)
- Develop technological and quantitative skills, including those associated with statistics, data visualization and analysis, project management, social media, and those commensurate with their business specialization. (Technological Skills)
- Demonstrate interpersonal skills to collaborate within diverse teams, effectively engage with stakeholders in a professional manner, and develop leadership skills. (Interpersonal Skills)
- Explain basic concepts in supply chain management related to areas such as purchasing, production, operations, logistics, integration and reverse supply chains.
- Apply descriptive, predictive and prescriptive analytics for decision-making in supply chains, such as demand planning, supply chain network design, production planning, inventory control and transportation.
- Analyze supply chain related problems and justify data-driven solutions with business acumen.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
MATH 1030		3 MATH 1100	3
ENGL 1100		3 ECON 1001	3
BUS AD 1000		3 INFSYS 2800	3
INFSYS 1800		3 EXPLORE - Humanities & Fine Arts	3
EXPLORE- Humanities & Fine Arts		3 EXPLORE - Math & Sciences	3
	15		15
Second Year			
Fall	Hours	Spring	Hours
MATH 1105		3 ACCTNG 2410	3
ACCTNG 2400		3 BUS AD 2900	3
ECON 1002		3 SCMA 3301	3
CORE - Communication Proficiency		3 EXPLORE - Humanities & Fine Arts	3
CORE - US History & Government		3 Cultural Diversity	3
	15		15
Third Year			
Fall	Hours	Spring	Hours
SCMA 3300		3 FINANCE 3500	3
MGMT 3600		3 SCMA 3320	3
ENGL 3120		3 MKTG 3700	3
Non-Business Electives		6 Global Awareness Course	3
		Non-Business Elective	3
	15		15
Fourth Year			
Fall	Hours	Spring	Hours
SCMA Electives		6 MGMT 4219 & MGMT 4220	3
Global Awareness Course		3 SCMA Elective	3
Non-Business Electives		6 Junior/Senior Level Business Elective	6
		Non-Business Electives	3
	15		15

Total Hours: 120

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are*

*encouraged to meet with their advisor. All requirements are subject to change.*

## Business Administration BSBA/ MBA Dual Degree Program

The 2+3 combined BSBA/MBA program in Business Administration provides an opportunity for students of recognized academic ability and educational maturity to complete the requirements for both degrees in 5 years of full-time study. This program is available to UMSL students and students of partner universities with which UMSL has an established 2+3 Memorandum of Understanding. The combined program allows students to complete both the undergraduate and graduate degrees in Business Administration with a total of 138 credit hours instead of the typical 150 credit hours if the degrees were pursued separately. When all the requirements of the BSBA/MBA program have been completed, students will be awarded both the BSBA and MBA degrees.

### Admission Requirements

Students will apply to the 2+3 program for provisional status after they have completed 60 undergraduate credit hours with a grade point average of 3.0 or higher. After completion of the provisional period, upon recommendation of the Graduate Program Director, students can be granted formal admission into the 2+3 program, which involves admission to the Graduate School. After formal admission, the student will be classified as a graduate student, will pay graduate tuition for all subsequent courses, and must continue taking courses under graduate status until completion of the master's degree. Students must maintain a grade point average of 3.0 or higher throughout the combined program.

Students on provisional status may request enrollment in up to 6 credit hours of 4000/5000/6000 level coursework to count towards their graduate degree, while in undergraduate status, per the submission of the C1 form, and the approval of their advisor and the Director of Graduate Business Programs.

Applicants are considered for formal admission into the 2+3 program, if they meet the following four criteria:

1. earned at least 90 hours as an undergraduate;
2. have a minimum GPA of 3.0 since being granted provisional status;
3. have submitted at least one letter of recommendation from a College of Business Faculty member; and
4. have met with a Graduate Business Programs academic advisor.

Up to 12 hours of graduate coursework may be counted both to meet the 120 credit hours required for the Bachelor's degree (p. 341) and to meet the requirements of the Master's degree (p. 352). Students may resign from the 2+3 Program and apply for the Bachelor's degree. However, once the Bachelor's degree is awarded, the benefit of "double counting" courses will be lost. Any course used to meet a degree requirement for an undergraduate degree cannot be applied to a subsequent Master's degree.

The courses which will be "double counted" for both degrees must be approved by both the Undergraduate and Graduate Program Directors. All other requirements for the BSBA degree remain in effect.

A waiver of GMAT requirement may be requested if applicants meet certain criteria. Please see petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

## Awarding of Degree

Both degrees (the BSBA and MBA) will be awarded when all requirements for the entire program have been completed. In other words, the BSBA and MBA degrees will be simultaneously awarded at the completion of study.

Note: The CPA exam and Accounting licensure requirements are not related to the BSBA/MBA degree requirements.

## Business Administration Graduate Certificate

This is an 18-hour program designed to accommodate individuals with an undergraduate/graduate degree in a non-business field seeking core business knowledge. The program emphasizes coursework designed to cover the major disciplines within the field of business. Upon completion, the student will have knowledge of common business theories, practices, and procedures.

### Program Description

The Graduate Certificate in Business Administration is designed for individuals with an undergraduate/graduate degree in non-business fields. It provides students a focused exposure to core business functions and contemporary business administration frameworks. Upon successful completion, students will have the core knowledge necessary to articulate and apply business administration principles and practices across functional domains.

All 12 credit-hours taken as part of this certificate program transfer to the MBA degree program.

### Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

### Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs.

Choose four of the following courses: 12

ACCTNG 5400	Financial and Managerial Accounting
BUS AD 5100	Managerial Communication
BUS AD 5900	Law, Ethics and Business
FINANCE 6500	Financial Management
MGMT 5600	Managing People in Organizations
INFSYS 5800	Management Information Systems
MKTG 5700	Contemporary Marketing Concepts
SCMA 5310	Supply Chain Strategies

Total Hours 12

Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Apply theories and frameworks of business to analyze authentic contexts and business problems;
- Integrate core knowledge of and apply business administration principles and practices across the functional domains: finance, marketing, management, supply chain management and information systems.

## Business Administration MBA

The Master of Business Administration (MBA) at the University of Missouri-St. Louis (UMSL) is a selective program designed to create business managers and leaders. The MBA at UMSL is fully accredited by the The Association to Advance Collegiate Schools of Business (AACSB) International, the premier accrediting body in collegiate business education.

The MBA program is designed for students with bachelor's degrees from accredited institutions in fields such as the sciences, engineering, humanities, arts or business.

Students pursuing a Graduate Certificate in Business Foundations may transfer all certificate program courses toward the MBA.

For more information go to: <https://mba.umsl.edu>

For students pursuing an emphasis, the following areas are available:

- Accounting (p. 353)
- Business Analytics
- Finance (p. 356)
- Information Systems and Technology (p. 357)
- International Business (p. 358)
- Management (p. 360)
- Marketing (p. 361)
- Supply Chain Management

### Admission Requirements

The admissions decision is based on a combination of factors. Consideration is given to a candidate's academic record, scores on the Graduate Management Admissions Test (GMAT), work and leadership experience, a personal narrative on the application form and recommendation letters.

Applicants are generally required to submit Graduate Management Admissions Test (GMAT) scores. A waiver of GMAT requirement may be requested if applicants meet certain criteria. Please see petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

### Degree Requirements

Depending on the student's previous background, programs will require a minimum of 30 hours. Coursework must be completed within a maximum six-year period. At least 2/3 of coursework must be taken while enrolled as an MBA candidate at UMSL.

All students must satisfy the following requirements in professional written and oral communication, business law and ethics/ and social responsibility, economics, and business statistics. The Graduate Business Office in collaboration with department chairs will determine whether a student satisfies these requirements. In general:

The Professional and Written Communications skills requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5100

The Business Law and Ethics/Social Responsibility requirements can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5900

The Economics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5000
- Completion of Economics boot camp

The Statistics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of SCMA 5300
- Completion of Statistics boot camp

## Assurance of Learning

All MBA students are required to participate in the BUS AD 6991 Graduate Business Assessment Testing class during their last semester. This learning assessment course is not for credit.

### Business Core (18 credit hours)

The following courses or their equivalents are required of all degree candidates<sup>1</sup>.

ACCTNG 5400	Financial and Managerial Accounting	3
FINANCE 6500	Financial Management	3
INFSYS 5800	Management Information Systems	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
SCMA 5310	Supply Chain Strategies	3

<sup>1</sup> Students with prior business degrees take advanced courses in each of the functional areas listed in the Business Core, as advised by the Graduate Business Advisors assigned to the students. Based on a formal review and evaluation by the Graduate Business Programs Office, students may be granted waivers in the Business Core section. Waivers depend on the applicability of, and performance in, prior coursework. Regardless of the number of courses waived, all students must complete at least 30 credit hours to earn the MBA degree.

Strategic Management Required (3 credit hours)

Take one of the following<sup>2</sup>:

BUS AD 6990	Strategy Formulation and Implementation	3
INTL BUS 5289	International Business Strategies	3
MGMT 4614	Entrepreneurship/Small Business Management	3

<sup>2</sup> Students with a non-business undergraduate degree are required to take BUS AD 6990 to satisfy the Strategic Management requirement.

## Electives (9 credit hours)

Students may choose to pursue an Emphasis Area to satisfy the 9 credit hour Electives requirement **or** pursue an MBA with no emphasis area. No course may be used for more than one emphasis area. If no emphasis area is chosen, students have the flexibility to customize their MBA by choosing from a large collection of elective graduate courses within the College of Business Administration, in consultation with their Graduate Business academic advisor.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate knowledge of core business content in accounting, finance, information systems, supply chain analytics, management, and marketing.
- Apply core business content and principles for effective business decision making.
- Demonstrate analytical skills to solve business problems and evaluate the conditions of corporations and markets.
- Effectively communicate business insights using oral and written formats.
- Identify legal/ethical issues and implications, and make informed decisions.
- Expand leadership skills to effectively engage with stakeholders in a professional manner.
- Demonstrate a global mindset needed to effectively navigate the interconnected nature of today's business environment.

# Business Administration MBA, Accounting Emphasis

## Admission Requirements

The admissions decision is based on a combination of factors. Consideration is given to a candidate's academic record, scores on the Graduate Management Admissions Test (GMAT), work and leadership experience, a personal narrative on the application form and recommendation letters.

Applicants are generally required to submit Graduate Management Admissions Test (GMAT) scores. A waiver of GMAT requirement may be requested if applicants meet certain criteria. Please see petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

## Degree Requirements

Depending on the student's previous background, programs will require a minimum of 30 hours. Coursework must be completed within a maximum six-year period. At least 2/3 of coursework must be taken while enrolled as an MBA candidate at UMSL.

All students must satisfy the following requirements in professional written and oral communication, business law and ethics/ and social responsibility, economics, and business statistics. The Graduate Business Office in collaboration with department chairs will determine whether a student satisfies these requirements. In general:



The Professional and Written Communications skills requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5100

The Business Law and Ethics/Social Responsibility requirements can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5900

The Economics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5000
- Completion of Economics boot camp

The Statistics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of SCMA 5300
- Completion of Statistics boot camp

## Assurance of Learning

All MBA students are required to participate in the BUS AD 6991 Graduate Business Assessment Testing class during their last semester. This learning assessment course is not for credit.

### Business Core (18 credit hours)

The following courses or their equivalents are required of all degree candidates<sup>1</sup>.

ACCTNG 5400	Financial and Managerial Accounting	3
FINANCE 6500	Financial Management	3
INFSYS 5800	Management Information Systems	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
SCMA 5310	Supply Chain Strategies	3

<sup>1</sup> Students with prior business degrees take advanced courses in each of the functional areas listed in the Business Core, as advised by the Graduate Business Advisors assigned to the students. Based on a formal review and evaluation by the Graduate Business Programs Office, students may be granted waivers in the Business Core section. Waivers depend on the applicability of, and performance in, prior coursework. Regardless of the number of courses waived, all students must complete at least 30 credit hours to earn the MBA degree.

Strategic Management Required (3 credit hours)

Take one of the following<sup>2</sup>:

BUS AD 6990	Strategy Formulation and Implementation	3
INTL BUS 5289	International Business Strategies	3
MGMT 4614	Entrepreneurship/Small Business Management	3

<sup>2</sup> Students with a non-business undergraduate degree are required to take BUS AD 6990 to satisfy the Strategic Management requirement.

## Electives (9 credit hours)

Students may choose to pursue an Emphasis Area to satisfy the 9 credit hour Electives requirement **or** pursue an MBA with no emphasis area. No course may be used for more than one emphasis area. If no emphasis area is chosen, students have the flexibility to customize their MBA by choosing from a large collection of elective graduate courses within the College of Business Administration, in consultation with their Graduate Business academic advisor.

## Emphasis Area Requirements

Master of Business Administration (MBA) students seeking an emphasis in Accounting must complete a minimum of 9 hours of Accounting electives beyond ACCTNG 5400. (ACCTNG 5400 does not count toward the Emphasis in Accounting.) The following 4000-level Accounting classes may be counted toward the emphasis: ACCTNG 4401-Financial Accounting & Reporting III, ACCTNG 4402- Financial Accounting & Reporting IV, ACCTNG 4435-Auditing. A maximum of 15 hours in any functional area will count toward degree requirements. Only courses that are substantially different from courses taken for credit in a student's undergraduate program will be acceptable.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate knowledge of core business content in accounting, finance, information systems, supply chain analytics, management, and marketing.
- Apply core business content and principles for effective business decision making.
- Demonstrate analytical skills to solve business problems and evaluate the conditions of corporations and markets.
- Effectively communicate business insights using oral and written formats.
- Identify legal/ethical issues and implications, and make informed decisions.
- Expand leadership skills to effectively engage with stakeholders in a professional manner.
- Demonstrate a global mindset needed to effectively navigate the interconnected nature of today's business environment.
- Understand the Accounting cycle from analysis of transaction through financial statements.
- Apply key financial accounting topics related to balance sheet and income statement accounts.
- Demonstrate appropriate concepts of managerial accounting.

# Business Administration MBA, Cybersecurity Emphasis

## Admission Requirements

The admissions decision is based on a combination of factors. Consideration is given to a candidate's academic record, scores on the Graduate Management Admissions Test (GMAT), work and leadership experience, a personal narrative on the application form and recommendation letters.

Applicants are generally required to submit Graduate Management Admissions Test (GMAT) scores. A waiver of GMAT requirement may be requested if applicants meet certain criteria. Please see petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

## Degree Requirements

Depending on the student's previous background, programs will require a minimum of 30 hours. Coursework must be completed within a maximum six-year period. At least 2/3 of coursework must be taken while enrolled as an MBA candidate at UMSL.

All students must satisfy the following requirements in professional written and oral communication, business law and ethics/ and social responsibility, economics, and business statistics. The Graduate Business Office in collaboration with department chairs will determine whether a student satisfies these requirements. In general:

The Professional and Written Communications skills requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5100

The Business Law and Ethics/Social Responsibility requirements can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5900

The Economics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5000
- Completion of Economics boot camp

The Statistics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of SCMA 5300
- Completion of Statistics boot camp

## Assurance of Learning

All MBA students are required to participate in the BUS AD 6991 Graduate Business Assessment Testing class during their last semester. This learning assessment course is not for credit.

### Business Core (18 credit hours)

The following courses or their equivalents are required of all degree candidates<sup>1</sup>.

ACCTNG 5400	Financial and Managerial Accounting	3
FINANCE 6500	Financial Management	3
INFSYS 5800	Management Information Systems	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
SCMA 5310	Supply Chain Strategies	3

<sup>1</sup> Students with prior business degrees take advanced courses in each of the functional areas listed in the Business Core, as advised by the Graduate Business Advisors assigned to the students. Based on a formal review and evaluation by the Graduate Business Programs Office, students may be granted waivers in the Business Core section. Waivers depend on the applicability of, and performance in, prior coursework. Regardless of the number of courses waived, all students must complete at least 30 credit hours to earn the MBA degree.

Strategic Management Required (3 credit hours)

Take one of the following<sup>2</sup>:

BUS AD 6990	Strategy Formulation and Implementation	3
INTL BUS 5289	International Business Strategies	3
MGMT 4614	Entrepreneurship/Small Business Management	3

<sup>2</sup> Students with a non-business undergraduate degree are required to take BUS AD 6990 to satisfy the Strategic Management requirement.

## Electives (9 credit hours)

Students may choose to pursue an Emphasis Area to satisfy the 9 credit hour Electives requirement **or** pursue an MBA with no emphasis area. No course may be used for more than one emphasis area. If no emphasis area is chosen, students have the flexibility to customize their MBA by choosing from a large collection of elective graduate courses within the College of Business Administration, in consultation with their Graduate Business academic advisor.

## Emphasis Area Requirements

Master of Business Administration (MBA) students seeking an emphasis in Cybersecurity must complete a minimum of 9 hours of approved Cybersecurity electives beyond INFSYS 5800 (INFSYS 5800 does not count toward the emphasis in Cybersecurity). A maximum of 15 hours in any functional area will count toward degree requirements. Only courses that are substantially different from courses taken for credit in a student's undergraduate program will be acceptable.

List of approved Cybersecurity electives for the emphasis:

INFSYS 6828	Principles of Information Security	3
INFSYS 6836	Management of Data Networks and Security	3
INFSYS 6858	Advanced Cybersecurity Concepts	3
INFSYS 6862	Artificial Intelligence Applications for Business and Cybersecurity	3
INFSYS 6864	Applied Cryptography for Business Applications	3
INFSYS 6868	Software Assurance	3
INFSYS 6878	Management of Information Security	3
INFSYS 6888	Capstone in Information Security	3

A maximum of 15 hours in any functional area will count toward degree requirements. Only courses that are substantially different from courses taken for credit in a student's undergraduate program will be acceptable.

# Business Administration MBA, Finance Emphasis

## Admission Requirements

The admissions decision is based on a combination of factors. Consideration is given to a candidate's academic record, scores on the Graduate Management Admissions Test (GMAT), work and leadership experience, a personal narrative on the application form and recommendation letters.

Applicants are generally required to submit Graduate Management Admissions Test (GMAT) scores. A waiver of GMAT requirement may be requested if applicants meet certain criteria. Please see petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

## Degree Requirements

Depending on the student's previous background, programs will require a minimum of 30 hours. Coursework must be completed within a maximum six-year period. At least 2/3 of coursework must be taken while enrolled as an MBA candidate at UMSL.

All students must satisfy the following requirements in professional written and oral communication, business law and ethics/ and social responsibility, economics, and business statistics. The Graduate Business Office in collaboration with department chairs will determine whether a student satisfies these requirements. In general:

The Professional and Written Communications skills requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5100

The Business Law and Ethics/Social Responsibility requirements can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5900

The Economics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5000
- Completion of Economics boot camp

The Statistics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of SCMA 5300
- Completion of Statistics boot camp

## Assurance of Learning

All MBA students are required to participate in the BUS AD 6991 Graduate Business Assessment Testing class during their last semester. This learning assessment course is not for credit.

### Business Core (18 credit hours)

The following courses or their equivalents are required of all degree candidates<sup>1</sup>.

ACCTNG 5400	Financial and Managerial Accounting	3
FINANCE 6500	Financial Management	3
INFSYS 5800	Management Information Systems	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
SCMA 5310	Supply Chain Strategies	3

<sup>1</sup> Students with prior business degrees take advanced courses in each of the functional areas listed in the Business Core, as advised by the Graduate Business Advisors assigned to the students. Based on a formal review and evaluation by the Graduate Business Programs Office, students may be granted waivers in the Business Core section. Waivers depend on the applicability of, and performance in, prior coursework. Regardless of the number of courses waived, all students must complete at least 30 credit hours to earn the MBA degree.

Strategic Management Required (3 credit hours)

Take one of the following<sup>2</sup>:

BUS AD 6990	Strategy Formulation and Implementation	3
INTL BUS 5289	International Business Strategies	3
MGMT 4614	Entrepreneurship/Small Business Management	3

<sup>2</sup> Students with a non-business undergraduate degree are required to take BUS AD 6990 to satisfy the Strategic Management requirement.

## Electives (9 credit hours)

Students may choose to pursue an Emphasis Area to satisfy the 9 credit hour Electives requirement **or** pursue an MBA with no emphasis area. No course may be used for more than one emphasis area. If no emphasis area is chosen, students have the flexibility to customize their MBA by choosing from a large collection of elective graduate courses within the College of Business Administration, in consultation with their Graduate Business academic advisor.

## Emphasis Area Requirements

Master of Business Administration (MBA) students seeking an emphasis in Finance must complete a minimum of 9 hours of Finance electives beyond FINANCE 6500 (FINANCE 6500 does not count toward the emphasis in Finance). A maximum of 15 hours in any functional area will count toward degree requirements. Only courses that are substantially different from courses taken for credit in a student's undergraduate program will be acceptable.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate knowledge of core business content in accounting, finance, information systems, supply chain analytics, management, and marketing.
- Apply core business content and principles for effective business decision making.
- Demonstrate analytical skills to solve business problems and evaluate the conditions of corporations and markets.

- Effectively communicate business insights using oral and written formats.
- Identify legal/ethical issues and implications, and make informed decisions.
- Expand leadership skills to effectively engage with stakeholders in a professional manner.
- Demonstrate a global mindset needed to effectively navigate the interconnected nature of today's business environment.
- Understand the technology governance role of the Chief Information Officer.
- Appreciate the impacts of IT on organizations, society, and the global economy.
- Prioritize and propose managerial practices to develop and deploy technological innovations that produce business advantage.
- Apply the core financial concepts, principles, and theories in valuation and wealth maximization.
- Demonstrate critical thinking and problem-solving skills to analyze data for informed decision-making.
- Apply analytic tools and modern technologies in solving real-world financial problems.

## Business Administration MBA, Information Systems Emphasis

### Admission Requirements

The admissions decision is based on a combination of factors. Consideration is given to a candidate's academic record, scores on the Graduate Management Admissions Test (GMAT), work and leadership experience, a personal narrative on the application form and recommendation letters.

Applicants are generally required to submit Graduate Management Admissions Test (GMAT) scores. A waiver of GMAT requirement may be requested if applicants meet certain criteria. Please see petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

### Degree Requirements

Depending on the student's previous background, programs will require a minimum of 30 hours. Coursework must be completed within a maximum six-year period. At least 2/3 of coursework must be taken while enrolled as an MBA candidate at UMSL.

All students must satisfy the following requirements in professional written and oral communication, business law and ethics/ and social responsibility, economics, and business statistics. The Graduate Business Office in collaboration with department chairs will determine whether a student satisfies these requirements. In general:

The Professional and Written Communications skills requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5100

The Business Law and Ethics/Social Responsibility requirements can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5900

The Economics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5000
- Completion of Economics boot camp

The Statistics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of SCMA 5300
- Completion of Statistics boot camp

### Assurance of Learning

All MBA students are required to participate in the BUS AD 6991 Graduate Business Assessment Testing class during their last semester. This learning assessment course is not for credit.

### Business Core (18 credit hours)

The following courses or their equivalents are required of all degree candidates<sup>1</sup>.

ACCTNG 5400	Financial and Managerial Accounting	3
FINANCE 6500	Financial Management	3
INFSYS 5800	Management Information Systems	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
SCMA 5310	Supply Chain Strategies	3

<sup>1</sup> Students with prior business degrees take advanced courses in each of the functional areas listed in the Business Core, as advised by the Graduate Business Advisors assigned to the students. Based on a formal review and evaluation by the Graduate Business Programs Office, students may be granted waivers in the Business Core section. Waivers depend on the applicability of, and performance in, prior coursework. Regardless of the number of courses waived, all students must complete at least 30 credit hours to earn the MBA degree.

Strategic Management Required (3 credit hours)

Take one of the following<sup>2</sup>:

BUS AD 6990	Strategy Formulation and Implementation	3
INTL BUS 5289	International Business Strategies	3
MGMT 4614	Entrepreneurship/Small Business Management	3

<sup>2</sup> Students with a non-business undergraduate degree are required to take BUS AD 6990 to satisfy the Strategic Management requirement.

### Electives (9 credit hours)

Students may choose to pursue an Emphasis Area to satisfy the 9 credit hour Electives requirement **or** pursue an MBA with no emphasis area. No course may be used for more than one emphasis area. If no emphasis area is chosen, students have the flexibility to customize their MBA by choosing from a large collection of elective graduate courses within the College of Business Administration, in consultation with their Graduate Business academic advisor.



## Emphasis Area Requirements

Master of Business Administration (MBA) students seeking an emphasis in Information Systems and Technology must complete a minimum of 9 hours of Information Systems and Technology electives beyond INFSYS 5800 (INFSYS 5800 does not count toward the emphasis in Information Systems and Technology). A maximum of 15 hours in any functional area will count toward degree requirements. Only courses that are substantially different from courses taken for credit in a student's undergraduate program will be acceptable.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate knowledge of core business content in accounting, finance, information systems, supply chain analytics, management, and marketing.
- Apply core business content and principles for effective business decision making.
- Demonstrate analytical skills to solve business problems and evaluate the conditions of corporations and markets.
- Effectively communicate business insights using oral and written formats.
- Identify legal/ethical issues and implications, and make informed decisions.
- Expand leadership skills to effectively engage with stakeholders in a professional manner.
- Demonstrate a global mindset needed to effectively navigate the interconnected nature of today's business environment.
- Understand the technology governance role of the Chief Information Officer.
- Appreciate the impacts of IT on organizations, society, and the global economy.
- Prioritize and propose managerial practices to develop and deploy technological innovations that produce business advantage.

## Business Administration MBA, International Business Emphasis

### Admission Requirements

The admissions decision is based on a combination of factors. Consideration is given to a candidate's academic record, scores on the Graduate Management Admissions Test (GMAT), work and leadership experience, a personal narrative on the application form and recommendation letters.

Applicants are generally required to submit Graduate Management Admissions Test (GMAT) scores. A waiver of GMAT requirement may be requested if applicants meet certain criteria. Please see petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

### Degree Requirements

Depending on the student's previous background, programs will require a minimum of 30 hours. Coursework must be completed within a maximum six-year period. At least 2/3 of coursework must be taken while enrolled as an MBA candidate at UMSL.

All students must satisfy the following requirements in professional written and oral communication, business law and ethics/ and social

responsibility, economics, and business statistics. The Graduate Business Office in collaboration with department chairs will determine whether a student satisfies these requirements. In general:

The Professional and Written Communications skills requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5100

The Business Law and Ethics/Social Responsibility requirements can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5900

The Economics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5000
- Completion of Economics boot camp

The Statistics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of SCMA 5300
- Completion of Statistics boot camp

## Assurance of Learning

All MBA students are required to participate in the BUS AD 6991 Graduate Business Assessment Testing class during their last semester. This learning assessment course is not for credit.

### Business Core (18 credit hours)

The following courses or their equivalents are required of all degree candidates<sup>1</sup>.

ACCTNG 5400	Financial and Managerial Accounting	3
FINANCE 6500	Financial Management	3
INFSYS 5800	Management Information Systems	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
SCMA 5310	Supply Chain Strategies	3

<sup>1</sup> Students with prior business degrees take advanced courses in each of the functional areas listed in the Business Core, as advised by the Graduate Business Advisors assigned to the students. Based on a formal review and evaluation by the Graduate Business Programs Office, students may be granted waivers in the Business Core section. Waivers depend on the applicability of, and performance in, prior coursework. Regardless of the number of courses waived, all students must complete at least 30 credit hours to earn the MBA degree.

Strategic Management Required (3 credit hours)

Take one of the following<sup>2</sup>:

BUS AD 6990	Strategy Formulation and Implementation	3
INTL BUS 5289	International Business Strategies	3

MGMT 4614	Entrepreneurship/Small Business Management	3	leadership experience, a personal narrative on the application form and recommendation letters.
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<sup>2</sup> Students with a non-business undergraduate degree are required to take BUS AD 6990 to satisfy the Strategic Management requirement.

## Electives (9 credit hours)

Students may choose to pursue an Emphasis Area to satisfy the 9 credit hour Electives requirement or pursue an MBA with no emphasis area. No course may be used for more than one emphasis area. If no emphasis area is chosen, students have the flexibility to customize their MBA by choosing from a large collection of elective graduate courses within the College of Business Administration, in consultation with their Graduate Business academic advisor.

## Emphasis Area Requirements

Master of Business Administration (MBA) students seeking an emphasis in International Business must complete a minimum of 9 credits from International Business courses or courses approved by the director of the International Business Institute. A maximum of 15 hours in any functional area will count toward degree requirements. Only courses that are substantially different from courses taken for credit in a student's undergraduate program will be acceptable.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate knowledge of core business content in accounting, finance, information systems, supply chain analytics, management, and marketing.
- Apply core business content and principles for effective business decision making.
- Demonstrate analytical skills to solve business problems and evaluate the conditions of corporations and markets.
- Effectively communicate business insights using oral and written formats.
- Identify legal/ethical issues and implications, and make informed decisions.
- Expand leadership skills to effectively engage with stakeholders in a professional manner.
- Demonstrate a global mindset needed to effectively navigate the interconnected nature of today's business environment.
- Apply cultural knowledge in implementing and adapting management techniques in a foreign market.
- Evaluate and provide solutions for legal/ethical issues across country markets.
- Propose and criticize alternative strategic options and make specific recommendations for multinational firms.

# Business Administration MBA, International Program

## Admission Requirements

The admissions decision is based on a combination of factors. Consideration is given to a candidate's academic record, scores on the Graduate Management Admissions Test (GMAT), work and

Applicants are generally required to submit Graduate Management Admissions Test (GMAT) scores. A waiver of GMAT requirement may be requested if applicants meet certain criteria. Please see petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

## Degree Requirements

Depending on the student's previous background, programs will require a minimum of 30 hours. Coursework must be completed within a maximum six-year period. At least 2/3 of coursework must be taken while enrolled as an MBA candidate at UMSL.

All students must satisfy the following requirements in professional written and oral communication, business law and ethics/ and social responsibility, economics, and business statistics. The Graduate Business Office in collaboration with department chairs will determine whether a student satisfies these requirements. In general:

The Professional and Written Communications skills requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5100

The Business Law and Ethics/Social Responsibility requirements can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5900

The Economics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5000
- Completion of Economics boot camp

The Statistics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of SCMA 5300
- Completion of Statistics boot camp

## Assurance of Learning

All MBA students are required to participate in the BUS AD 6991 Graduate Business Assessment Testing class during their last semester. This learning assessment course is not for credit.

## Business Core (18 credit hours)

The following courses or their equivalents are required of all degree candidates<sup>1</sup>.

ACCTNG 5400	Financial and Managerial Accounting	3
FINANCE 6500	Financial Management	3
INFSYS 5800	Management Information Systems	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
SCMA 5310	Supply Chain Strategies	3

<sup>1</sup> Students with prior business degrees take advanced courses in each of the functional areas listed in the Business Core, as advised by the Graduate Business Advisors assigned to the students. Based on a formal review and evaluation by the Graduate Business Programs Office, students may be granted waivers in the Business Core section. Waivers depend on the applicability of, and performance in, prior coursework. Regardless of the number of courses waived, all students must complete at least 30 credit hours to earn the MBA degree.

Strategic Management Required (3 credit hours)

Take one of the following<sup>2</sup>:

BUS AD 6990	Strategy Formulation and Implementation	3
INTL BUS 5289	International Business Strategies	3
MGMT 4614	Entrepreneurship/Small Business Management	3

<sup>2</sup> Students with a non-business undergraduate degree are required to take BUS AD 6990 to satisfy the Strategic Management requirement.

## Electives (9 credit hours)

Students may choose to pursue an Emphasis Area to satisfy the 9 credit hour Electives requirement **or** pursue an MBA with no emphasis area. No course may be used for more than one emphasis area. If no emphasis area is chosen, students have the flexibility to customize their MBA by choosing from a large collection of elective graduate courses within the College of Business Administration, in consultation with their Graduate Business academic advisor.

## International MBA Program

An international version of the MBA program also exists as an alternative to the Flex MBA program. This program is a two-year, full-time program. Students take courses the first year outside the U.S. at a partner university and then take courses the second year on the University of Missouri–St. Louis campus.

## Degree Requirements

All participants in the International MBA program must meet the same general and core requirements as those in the Flex MBA program. In addition, the International MBA program may entail an internship (outside the U.S. for Americans and in the U.S. for all others). The program also requires proficiency in the language spoken at the destination university. Coursework at the partner-schools is typically in English.

## Learning Outcomes

**Upon completion of the program, graduates will be able to:**

- Demonstrate knowledge of core business content in accounting, finance, information systems, supply chain analytics, management, and marketing.
- Apply core business content and principles for effective business decision making.
- Demonstrate analytical skills to solve business problems and evaluate the conditions of corporations and markets.
- Effectively communicate business insights using oral and written formats.

- Identify legal/ethical issues and implications, and make informed decisions.
- Expand leadership skills to effectively engage with stakeholders in a professional manner.
- Demonstrate a global mindset needed to effectively navigate the interconnected nature of today's business environment.

# Business Administration MBA, Management Emphasis

## Admission Requirements

The admissions decision is based on a combination of factors. Consideration is given to a candidate's academic record, scores on the Graduate Management Admissions Test (GMAT), work and leadership experience, a personal narrative on the application form and recommendation letters.

Applicants are generally required to submit Graduate Management Admissions Test (GMAT) scores. A waiver of GMAT requirement may be requested if applicants meet certain criteria. Please see petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

## Degree Requirements

Depending on the student's previous background, programs will require a minimum of 30 hours. Coursework must be completed within a maximum six-year period. At least 2/3 of coursework must be taken while enrolled as an MBA candidate at UMSL.

All students must satisfy the following requirements in professional written and oral communication, business law and ethics/ and social responsibility, economics, and business statistics. The Graduate Business Office in collaboration with department chairs will determine whether a student satisfies these requirements. In general:

The Professional and Written Communications skills requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5100

The Business Law and Ethics/Social Responsibility requirements can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5900

The Economics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5000
- Completion of Economics boot camp

The Statistics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of SCMA 5300
- Completion of Statistics boot camp

## Assurance of Learning

All MBA students are required to participate in the BUS AD 6991 Graduate Business Assessment Testing class during their last semester. This learning assessment course is not for credit.

### Business Core (18 credit hours)

The following courses or their equivalents are required of all degree candidates<sup>1</sup>.

ACCTNG 5400	Financial and Managerial Accounting	3
FINANCE 6500	Financial Management	3
INFSYS 5800	Management Information Systems	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
SCMA 5310	Supply Chain Strategies	3

<sup>1</sup> Students with prior business degrees take advanced courses in each of the functional areas listed in the Business Core, as advised by the Graduate Business Advisors assigned to the students. Based on a formal review and evaluation by the Graduate Business Programs Office, students may be granted waivers in the Business Core section. Waivers depend on the applicability of, and performance in, prior coursework. Regardless of the number of courses waived, all students must complete at least 30 credit hours to earn the MBA degree.

Strategic Management Required (3 credit hours)

Take one of the following<sup>2</sup>:

BUS AD 6990	Strategy Formulation and Implementation	3
INTL BUS 5289	International Business Strategies	3
MGMT 4614	Entrepreneurship/Small Business Management	3

<sup>2</sup> Students with a non-business undergraduate degree are required to take BUS AD 6990 to satisfy the Strategic Management requirement.

## Electives (9 credit hours)

Students may choose to pursue an Emphasis Area to satisfy the 9 credit hour Electives requirement or pursue an MBA with no emphasis area. No course may be used for more than one emphasis area. If no emphasis area is chosen, students have the flexibility to customize their MBA by choosing from a large collection of elective graduate courses within the College of Business Administration, in consultation with their Graduate Business academic advisor.

## Emphasis Area Requirements

Master of Business Administration (MBA) students seeking an emphasis in Management must complete a minimum of 9 hours of Management electives beyond MGMT 5600 (MGMT 5600 does not count toward the emphasis in Management). A maximum of 15 hours in any functional area will count toward degree requirements. Only courses that are substantially different from courses taken for credit in a student's undergraduate program will be acceptable.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate knowledge of core business content in accounting, finance, information systems, supply chain analytics, management, and marketing.
- Apply core business content and principles for effective business decision making.
- Demonstrate analytical skills to solve business problems and evaluate the conditions of corporations and markets.
- Effectively communicate business insights using oral and written formats.
- Identify legal/ethical issues and implications, and make informed decisions.
- Expand leadership skills to effectively engage with stakeholders in a professional manner.
- Demonstrate a global mindset needed to effectively navigate the interconnected nature of today's business environment.
- Understand the processes involved in attracting, selecting, training, motivating, and retaining employees.
- Apply modern leadership theories to facilitate individual and group performance and motivation.
- Understand the impact of organizational processes on stakeholders within and outside of organizations.

## Business Administration MBA, Marketing Emphasis

### Admission Requirements

The admissions decision is based on a combination of factors. Consideration is given to a candidate's academic record, scores on the Graduate Management Admissions Test (GMAT), work and leadership experience, a personal narrative on the application form and recommendation letters.

Applicants are generally required to submit Graduate Management Admissions Test (GMAT) scores. A waiver of GMAT requirement may be requested if applicants meet certain criteria. Please see petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

### Degree Requirements

Depending on the student's previous background, programs will require a minimum of 30 hours. Coursework must be completed within a maximum six-year period. At least 2/3 of coursework must be taken while enrolled as an MBA candidate at UMSL.

All students must satisfy the following requirements in professional written and oral communication, business law and ethics/ and social responsibility, economics, and business statistics. The Graduate Business Office in collaboration with department chairs will determine whether a student satisfies these requirements. In general:

The Professional and Written Communications skills requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5100



The Business Law and Ethics/Social Responsibility requirements can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5900

The Economics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5000
- Completion of Economics boot camp

The Statistics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of SCMA 5300
- Completion of Statistics boot camp

## Assurance of Learning

All MBA students are required to participate in the BUS AD 6991 Graduate Business Assessment Testing class during their last semester. This learning assessment course is not for credit.

### Business Core (18 credit hours)

The following courses or their equivalents are required of all degree candidates<sup>1</sup>.

ACCTNG 5400	Financial and Managerial Accounting	3
FINANCE 6500	Financial Management	3
INFSYS 5800	Management Information Systems	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
SCMA 5310	Supply Chain Strategies	3

<sup>1</sup> Students with prior business degrees take advanced courses in each of the functional areas listed in the Business Core, as advised by the Graduate Business Advisors assigned to the students. Based on a formal review and evaluation by the Graduate Business Programs Office, students may be granted waivers in the Business Core section. Waivers depend on the applicability of, and performance in, prior coursework. Regardless of the number of courses waived, all students must complete at least 30 credit hours to earn the MBA degree.

Strategic Management Required (3 credit hours)

Take one of the following<sup>2</sup>:

BUS AD 6990	Strategy Formulation and Implementation	3
INTL BUS 5289	International Business Strategies	3
MGMT 4614	Entrepreneurship/Small Business Management	3

<sup>2</sup> Students with a non-business undergraduate degree are required to take BUS AD 6990 to satisfy the Strategic Management requirement.

## Electives (9 credit hours)

Students may choose to pursue an Emphasis Area to satisfy the 9 credit hour Electives requirement **or** pursue an MBA with no emphasis area. No course may be used for more than one emphasis area. If no emphasis

area is chosen, students have the flexibility to customize their MBA by choosing from a large collection of elective graduate courses within the College of Business Administration, in consultation with their Graduate Business academic advisor.

## Emphasis Area Requirements

Master of Business Administration (MBA) students seeking an emphasis in Marketing must complete MKTG 5701 and 6 additional hours of Marketing electives beyond MKTG 5700 (MKTG 5700 does not count toward the emphasis in Marketing). A maximum of 15 hours in any functional area will count toward degree requirements. Only courses that are substantially different from courses taken for credit in a student's undergraduate program will be acceptable.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate knowledge of core business content in accounting, finance, information systems, supply chain analytics, management, and marketing.
- Apply core business content and principles for effective business decision making.
- Demonstrate analytical skills to solve business problems and evaluate the conditions of corporations and markets.
- Effectively communicate business insights using oral and written formats.
- Identify legal/ethical issues and implications, and make informed decisions.
- Expand leadership skills to effectively engage with stakeholders in a professional manner.
- Demonstrate a global mindset needed to effectively navigate the interconnected nature of today's business environment.
- Develop, analyze, and evaluate strategic and tactical marketing plans and programs and to assess marketing performance.
- Demonstrate proficiency in digital marketing, social media marketing and analytics.
- Describe how marketers can design and adapt their campaigns and strategies based on the study of consumer behavior.

# Business Administration MBA, Professional Program

## Admission Requirements

The admissions decision is based on a combination of factors. Consideration is given to a candidate's academic record, scores on the Graduate Management Admissions Test (GMAT), work and leadership experience, a personal narrative on the application form and recommendation letters.

Applicants are generally required to submit Graduate Management Admissions Test (GMAT) scores. A waiver of GMAT requirement may be requested if applicants meet certain criteria. Please see petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

## Degree Requirements

Depending on the student's previous background, programs will require a minimum of 30 hours. Coursework must be completed within a maximum

six-year period. At least 2/3 of coursework must be taken while enrolled as an MBA candidate at UMSL.

All students must satisfy the following requirements in professional written and oral communication, business law and ethics/ and social responsibility, economics, and business statistics. The Graduate Business Office in collaboration with department chairs will determine whether a student satisfies these requirements. In general:

The Professional and Written Communications skills requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5100

The Business Law and Ethics/Social Responsibility requirements can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5900

The Economics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of BUS AD 5000
- Completion of Economics boot camp

The Statistics requirement can be satisfied by **any one of the following**:

- Evidence of prior coursework
- Completion of SCMA 5300
- Completion of Statistics boot camp

## Assurance of Learning

All MBA students are required to participate in the BUS AD 6991 Graduate Business Assessment Testing class during their last semester. This learning assessment course is not for credit.

### Business Core (18 credit hours)

The following courses or their equivalents are required of all degree candidates<sup>1</sup>.

ACCTNG 5400	Financial and Managerial Accounting	3
FINANCE 6500	Financial Management	3
INFSYS 5800	Management Information Systems	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
SCMA 5310	Supply Chain Strategies	3

<sup>1</sup> Students with prior business degrees take advanced courses in each of the functional areas listed in the Business Core, as advised by the Graduate Business Advisors assigned to the students. Based on a formal review and evaluation by the Graduate Business Programs Office, students may be granted waivers in the Business Core section. Waivers depend on the applicability of, and performance in, prior coursework. Regardless of the number of courses waived, all students must complete at least 30 credit hours to earn the MBA degree.

Strategic Management Required (3 credit hours)

Take one of the following<sup>2</sup>:

BUS AD 6990	Strategy Formulation and Implementation	3
INTL BUS 5289	International Business Strategies	3
MGMT 4614	Entrepreneurship/Small Business Management	3

<sup>2</sup> Students with a non-business undergraduate degree are required to take BUS AD 6990 to satisfy the Strategic Management requirement.

## Electives (9 credit hours)

Students may choose to pursue an Emphasis Area to satisfy the 9 credit hour Electives requirement **or** pursue an MBA with no emphasis area. No course may be used for more than one emphasis area. If no emphasis area is chosen, students have the flexibility to customize their MBA by choosing from a large collection of elective graduate courses within the College of Business Administration, in consultation with their Graduate Business academic advisor.

## Professional MBA Program

A weekend-based Internet-enhanced version of the MBA program exists as an alternative to the traditional part-time evening program. This program is a 42 credit hour program for professionals with busy work or travel schedules. Students meet on campus monthly, with the remainder of the interaction between instructor and students taking place online. Students proceed through the program as part of a cohort and complete the requirements for the degree in less than two years.

The first 24 hours of the Internet-based program consist of the core courses required in the Flex program plus BUS AD 5100 Managerial Communication. The remaining 18 hours consist of the following courses:

ACCTNG 5401	Financial Reporting And Analysis	3
FINANCE 6590	Seminar in Finance	3
INFSYS 6891	Seminar in Information Systems	3
INTL BUS 5289	International Business Strategies	3
or BUS AD 6990	Strategy Formulation and Implementation	
SCMA 6395	Seminar in Logistics and Operations Management	3
MKTG 5795	Seminar in Marketing	3

An international trip of 7 to 12 days is a degree requirement and takes place during the second year of the program.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate knowledge of core business content in accounting, finance, information systems, supply chain analytics, management, and marketing.
- Apply core business content and principles for effective business decision making.
- Demonstrate analytical skills to solve business problems and evaluate the conditions of corporations and markets.
- Effectively communicate business insights using oral and written formats.
- Identify legal/ethical issues and implications, and make informed decisions.

- Expand leadership skills to effectively engage with stakeholders in a professional manner.
- Demonstrate a global mindset needed to effectively navigate the interconnected nature of today's business environment.

## Business Administration Minor

### General Requirements

- All minors are 15 credit hours or 5 courses, including business core courses.
- Students must attain a 2.0 grade point average for all courses in the minor.
- Students must attain a minimum grade of C- in each course included in the minor.
- All courses in the minor must be on a graded basis.
- A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.
- One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.
- A minor may be added for up to two years following completion of the baccalaureate degree

### Specific Requirements for the Minor

This minor is available only to students seeking a baccalaureate degree outside the College of Business Administration.

Select five of the following: 15

ACCTNG 2400	Fundamentals of Financial Accounting
BUS AD 2900	Legal Environment of Business
FINANCE 3500	Financial Management
INFSYS 1800	Computers and Information Systems
SCMA 3301	Introduction to Supply Chain Management
MGMT 3600	Management and Organizational Behavior
MKTG 3700	Basic Marketing

Total Hours 15

## Business Intelligence Graduate Certificate

The Graduate Certificate in Business intelligence (BI) prepares students to support better business decision-making by providing internal data and external data in a useful and usable format. Using BI, decision makers are able to examine the value of business processes and products while watching for competitive opportunities in the marketplace. BI technologies provide historical, descriptive, predictive, and prescriptive views of business operations. The BI Certificate blends analytics and information technology in a unique program during which students work on industry datasets and learn to appreciate the difficulties of large-scale, unstructured data as well as the need for nuanced solutions.

This 12 credit hour certificate program also counts toward the 30 credit hour Master of Science in Information Systems and Technology degree program requirements. Students may choose to combine this certificate

with other courses and/or certificates to obtain the Master of Science in Information Systems and Technology degree.

### Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

### Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs.

#### Required Courses

INFSYS 6830	Data Programming for Business Intelligence	3
INFSYS 6833	Decision Support Systems for Business Intelligence	3

#### Electives

Choose two of the following courses: 6

INFSYS 6849	Data Warehouse Design and Implementation
INFSYS 6851	Practicum in Business Intelligence
INFSYS 6860	Data Integration
INFSYS 6862	Artificial Intelligence Applications for Business and Cybersecurity
SCMA 6345	Business Analytics and Data Mining
SCMA 6350	Management Science Methods

Total Hours 12

The required courses may be substituted with other courses with the approval of the Chair of the Information Systems and Technology Department.

#### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Apply contemporary data programming techniques
- Structure and visualize data in useful and usable formats for business insights
- Utilize business intelligence technologies to provide historical, descriptive, predictive, and prescriptive views of business operations
- Communicate business intelligence insights to stakeholders

## Business PhD, Logistics and Supply Chain Management Emphasis

### Admissions Requirements

Admission decisions are made on the basis of past academic record, intellectual ability, GMAT or GRE scores, and career commitment. Applications are accepted from students who have baccalaureate or graduate degrees. Past graduate work may be credited toward degree requirements where appropriate. Applicants must submit:

- Official academic transcripts
- Official GMAT or GRE results in fields approved by the College of Business Administration.
- Three letters of recommendation (at least two from individuals with earned doctorates).
- A statement of objectives for the course of study.

Applications will be accepted beginning in Fall 2019, with an application deadline for all materials, including a GMAT or GRE exam score, of Feb 3, 2020.

## Graduate Assistantships

Stipends for research and teaching assistantships (20 hours per week) are awarded on a competitive basis. Educational fees are waived for graduate assistants.

## Degree Requirements

The Ph.D. in the College of Business Administration requires a minimum of 69 course credit hours and a minimum of 6 dissertation credit hours beyond the baccalaureate degree. To ensure sufficient background for doctoral-level courses, students must demonstrate appropriate competence in quantitative reasoning, which is evidenced through completion of ECON 4105 and BUS AD 5000 or their equivalent. Students must also demonstrate appropriate competence in managerial communication, which is evident through completion of BUS AD 5100 or equivalent to be determined by the Ph.D. Coordinator.

## Course Requirements

The Ph.D. in Business Administration has a common set of requirements in three areas: Business & Research Foundation (Section I), Supporting Field (Section II), and Other Requirements (Section IV). Requirements specific to the area of emphasis are in Section III.

### I. Business & Research Foundation Requirement: 27 credit hours (9 courses)

Students are required to take: <sup>1</sup>

INFSYS 5800	Management Information Systems	3
SCMA 5300	Statistical Analysis for Management Decisions	3
BUS AD 5900	Law, Ethics and Business	3
ACCTNG 5400	Financial and Managerial Accounting	3
FINANCE 6500	Financial Management	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
SCMA 5320	Production and Operations Management	3
BUS AD 7300	Management of Supply Chains	3
<b>Total Hours</b>		<b>27</b>

<sup>1</sup> The first eight courses INFSYS 5800, SCMA 5300, BUS AD 5900, ACCTNG 5400, FINANCE 6500, MGMT 5600, MKTG 5700, SCMA 5320 will normally be waived if students had the courses as part of an UMSL MBA, MS in IS, or MAcc degree, or had equivalent graduate course work at an institution approved by the Graduate Business Programs Office and the Ph.D. Coordinator.

### II. Supporting Field Requirement (9 credit hours)

Students must take 9 credit hours of graduate-level courses beyond foundation course work in a supporting field approved by the Ph.D. Coordinator. Supporting fields may include courses within or outside the College of Business Administration and are designed in consultation with the Ph.D. Coordinator.

### III. Emphasis Area Requirements

#### Logistics & Supply Chain Management (LSCM) Emphasis

The Logistics & Supply Chain Management emphasis requirement includes 33 credit hours.

Students are required to take the following six courses:

SCMA 6330	Business Logistics Systems	3
SCMA 6350	Management Science Methods	3
SCMA 7381	International Supply Chain Management	3
SCMA 7390	Research Seminar in LSCM	3
SCMA 7393	Special Topics in LSCM	3
MKTG 5770	Supply Chain Management Strategy	3

And select at least one of the following: 3

Students are required to take 12 credit hours (four courses) (not included elsewhere) from the list of approved elective courses for the LSCM emphasis. 12

SCMA 6331	Logistics and Supply Chain Operational Modeling	
SCMA 6332	Logistics and Supply Chain Strategic Modeling	

**Total Hours 33**

### IV. Other Requirements

- Upon completion of coursework, students are advanced to candidacy by successfully completing a comprehensive examination in their area of emphasis and a supporting field examination in their chosen area. Students admitted to the program with a relevant master's degree should pass the comprehensive examination and the supporting field examination within three years of admission to the Ph.D. program. Students admitted to the program with an undergraduate business degree should pass the comprehensive examination and the supporting field examination within four years of admission to the Ph.D. program. Students admitted to the program with an undergraduate degree outside of business should pass the comprehensive examination and the supporting field examination within five years of admission to the Ph.D. program. In these cases, prior coursework will be evaluated for equivalency to Section I course requirements. Exceptions may be made, contingent on approval by the Ph.D. Coordinator.
- Students will be evaluated annually for satisfactory progress. Students deemed not to be making adequate progress are subject to the policies of the College of Business Administration regarding continuation of their assistantship. Students deemed not to be making adequate progress are subject to the policies of the Graduate School and the College of Business Administration regarding probation and dismissal from the program.



- Students are required to take a minimum of 6 dissertation credit hours and to defend a dissertation proposal within one year of advancement to candidacy.
- The following requirements are to be completed before or after admission to candidacy:
  - Students are required to present one paper at a regional, national, or international conference.
  - Students are required to submit one paper, approved by his/her dissertation advisor, to a refereed journal.
- At least two semesters of supervised teaching in the College of Business Administration are required of all doctoral students.
- Students are required to demonstrate competency in teaching during the first year in which they teach in the College of Business Administration. This requirement may be met by successfully completing one or more courses.
- The degree is awarded upon successful completion and defense of the Ph.D. dissertation and satisfaction of all Graduate School requirements. The dissertation must be defended within three years of approval of a Ph.D. dissertation proposal.

## Character and Citizenship Education Graduate Certificate

The three program goals of the Character and Citizenship Education (CCE) graduate certificate program are: (a) the understanding of theory and research in citizenship education as it relates to civic participation, concepts of democracy, the democratic purposes of education, and the development of civic identity and political thinking, attitudes, and engagement as well as the competence to apply this knowledge to analysis and design of practical programs in citizenship education; (b) the understanding of character development and character education in childhood and adolescence, including the empirical and conceptual study of the nature of how moral character develops, as well as how it can be fostered in schools by school reform, curriculum development, professional development, and practical pedagogical methods; and (c) the understanding of the connections between character and citizenship development and education.

The Sanford N. McDonnell Professor of Character Education and the Teresa M. Fischer Professor of Citizenship Education serve as program directors.

### Admission Requirements

Requirements for admission to the CCE certificate program are current good standing in an UMSL graduate program or all three of the following:

1. Undergraduate degree with a GPA of 3.0 or better
2. Two letters of recommendation with at least one from a current or former college-level instructor
3. Two-page personal statement explaining the applicant's personal and professional goal

The CCE certificate may be pursued as a stand-alone credential or in conjunction with the Master's Degree in Education and/or the Ph.D. in Education. With advance planning, all 18 credit hours from the CCE certificate can be applied to these degrees. Completion of the CCE certificate, however, does not guarantee acceptance into any of those degree programs, which requires a separate application.

### Credit Requirements

A minimum of 18 credit hours of graduate course work is required for the graduate certificate. Twelve of these hours must consist of the four core courses in character and citizenship education. A minimum of six additional hours are to be chosen from the list of electives. At least twelve hours must be completed in residence at UMSL.

#### Core

ED PSY 6217	Foundations of Citizenship Education	3
ED PSY 6417	Current Perspectives on Citizenship Education <sup>1</sup>	3
ED PSY 6445	Character Education and Development	3
ED PSY 6450	Advanced Methods in Character Education <sup>1</sup>	3

#### Electives

Choose 6 hours from the following list of courses offered at the College of Education and the College of Arts and Sciences (with departmental permission) 6

ED PSY 6111	Educational Psychology	
ED PSY 6115	Personality and Social Development	
ED PSY 6222	Advanced Studies in Child and Adolescent Development	
ED PSY 6310	Psychology of Learning Processes	
ED REM 6730	Educational Program Development and Evaluation	
P P ADM 6340	Seminar in City Administration	
PHIL 5530	Seminar in Social and Political Philosophy	
PHIL 5538	Seminar in Ethical Theory	
POL SCI 6430	Proseminar in American Politics	
POL SCI 6450	Proseminar in Comparative Politics	
POL SCI/P P ADM 6470	Proseminar in Urban Politics	
PSYCH 5468	Seminar: Cognitive Processes <sup>2</sup>	
TCH ED 6200	Building Character and Competence with Diverse Learners	

Total Hours 18

<sup>1</sup> Course-embedded capstone assessments occur in ED PSY 6417 and ED PSY 6450.

<sup>2</sup> Course instructor approval required.

## Chemistry BA

The St. Louis metropolitan area has long been a major center for industrial chemistry, and in the past decade it has also become vibrant in life sciences research and development. A bachelor's degree in chemistry provides a student with the professional training needed to contribute to this dynamic industry. The B.A. degree provides a well-rounded academic background and includes a language requirement. Students who earn this degree are well prepared for a career in the chemical industry, graduate work in the chemical sciences, health sciences, medicine, business or law.

### General Education Requirements

Students must satisfy the university and college general education requirements (p. 51). Courses in chemistry may be used to meet the university's science and mathematics area requirement. The college's

foreign language requirement fulfills the departmental requirements for B.A. candidates. B.S. degree candidates are not required to take a foreign language; however, the American Chemical Society (ACS) states that the study of a foreign language is recommended, especially for students planning to pursue graduate studies in chemistry.

## Satisfactory/Unsatisfactory Restrictions

Chemistry majors may not take required chemistry, mathematics, or physics courses on a satisfactory/unsatisfactory basis.

## Declaring the Chemistry Major

Students seeking to major in chemistry are first designated as 'pre-chemistry majors' until they have completed both CHEM 1111 and CHEM 1121 or equivalent courses. Upon successful completion of CHEM 1111 and CHEM 1121 with grades of C or better, students will be allowed to declare chemistry as their major. Each of these courses must be completed successfully within two attempts.

## Related Area Requirements

### Bachelor of Arts and Bachelor of Science in Chemistry

Candidates for both degrees must also complete:

MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
PHYSICS 2111	Physics: Mechanics and Heat	4
PHYSICS 2111L	Mechanics and Heat Laboratory	1
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	4
PHYSICS 2112L	Electricity, Magnetism, and Optics Laboratory	1
Total Hours		25

This degree is intended primarily for preprofessional students in health science and related areas, as well as prelaw students interested in patent law. Candidates must complete the following chemistry courses:

CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
CHEM 1121	Introductory Chemistry II	5
CHEM 2223	Quantitative Analysis in Chemistry	3
CHEM 2612	Organic Chemistry I	3
CHEM 2622	Organic Chemistry II	3
CHEM 2633	Organic Chemistry Laboratory	2
CHEM 3022	Introduction to Chemical Literature	1
CHEM 3312	Physical Chemistry I: Thermodynamics and Kinetics	3
CHEM 3322	Physical Chemistry II: Quantum Chemistry and Spectroscopy	3
CHEM 3333	Physical Chemistry Laboratory I	2
CHEM 3412	Basic Inorganic Chemistry	2
CHEM 4897	Seminar in Chemistry	1

Select one of the following:

CHEM 3643	Advanced Organic Chemistry Laboratory
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CHEM 4233	Laboratory in Instrumental Analysis	
CHEM 4343	Physical Chemistry Laboratory II	
CHEM 4433	Inorganic Chemistry Laboratory	
CHEM 4733	Biochemistry Laboratory	
Total Hours		33

No more than 45 hours in chemistry may be applied toward the degree. Each chemistry major must present a seminar and pass a comprehensive examination during the senior year. At least 12 credits at the 3000 level or higher must be completed at UMSL. The Department of Chemistry and Biochemistry may require students to pass a tracking test in order to enroll in the next level course, provided this or an equivalent test is administered to all students seeking to enroll in that course.

## Bachelor of Arts in Chemistry with a Biochemistry Certificate

The university offers a certificate program for science majors who are interested in careers in biochemistry. This is an interdisciplinary program that involves additional courses in biochemistry and biology. In addition to the usual requirements for the B.A. degree in chemistry, the student must take the following courses:

Chemistry		
CHEM 4712	Biochemistry	3
CHEM 4722	Advanced Biochemistry	3
CHEM 4733	Biochemistry Laboratory	2
CHEM 4772	Physical Biochemistry	3
Biology		
BIOL 1831	Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L)	5
BIOL 2012	Genetics	3
BIOL 3622	Cell Biology	3
BIOL 4602	Molecular Biology	3
Total Hours		25

At least 12 hours at the 3000 level or above must be completed at UMSL.

Students may obtain a minor in biology by adding BIOL 1821 to the curriculum described above. The Biology department also offers a certificate in biochemistry.

## B.S. Ed. in Secondary Education with Emphasis in Chemistry

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Chemistry with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education.

*Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate proficiency at an in-depth level in organic chemistry and physical chemistry.
- Apply appropriate concepts and investigative and quantitative methods as used in all sub-disciplines of chemistry research.
- Critically evaluate existing scientific studies to integrate and apply that body of knowledge to the design of studies to test specific hypotheses addressing unsolved problems in the chemical and life sciences.
- Use computers and the required scientific software in data acquisition, processing, presentation or analysis, including statistical and regression analysis.
- Demonstrate basic skills associated with safely performing and properly documenting laboratory experiments in chemistry following a broad introduction of commonly used equipment and procedures.
- Demonstrate the ability to work either independently or as a part of a small team.
- Identify the need for information, procure the information from relevant scientific literature publications and databases, properly cite the information, and critically evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias.
- Effectively communicate orally, visually and in writing about the processes of the chemical sciences and the results of scientific inquiry.
- Follow ethical practices in research, experimental interpretation, presentation, citation and application of research.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 CHEM 1121	5
CHEM 1000		1 MATH 1800	5
CHEM 1111		5 EXPLORE - Humanities and Fine Arts	3
ENGL 1100		3 EXPLORE – Social Sciences	3
MATH 1035		2	
CORE- US History & American Government		3	
	15		16

Second Year			
Fall	Hours	Spring	Hours
CHEM 2223		3 CHEM 2622	3
CHEM 2612		3 CHEM 2633	2
MATH 1900		5 CHEM 3412	2
CORE - Communication Proficiency		3 MATH 2000	5
		EXPLORE - Humanities and Fine Arts	3
	14		15

Third Year			
Fall	Hours	Spring	Hours
CHEM 3312		3 CHEM 3322	3
PHYSICS 2111		4 CHEM 3333	2
PHYSICS 2111L		1 PHYSICS 2112	4
Foreign Language 1001		5 PHYSICS 2112L	1
EXPLORE - Social Sciences		3 Foreign Language 1002	5
	16		15

Fourth Year			
Fall	Hours	Spring	Hours
CHEM 3022		1 CHEM 4897	2
CHEM 3643 or 4343		2 EXPLORE - Social Sciences	3
Foreign Language 2101		3 EXPLORE - Humanities and Fine Arts	3
ENGL 3160		3 Elective or minor	3
Cultural Diversity Requirement		3 Elective or minor	3
Elective or minor		3	
	15		14

Total Hours: 120

- <sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical full-time student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Chemistry BS

The St. Louis metropolitan area has long been a major center for industrial chemistry, and in the past decade it has also become vibrant in life sciences research and development. A bachelor's degree in chemistry provides a student with the professional training needed to contribute to this dynamic industry. The B.S. degree is THE professional degree in chemistry, and students who earn the B.S. degree are well prepared for a career in the chemical industry, graduate work in the chemical sciences, medicine, business or law. The department provides opportunities for undergraduates to become involved in ongoing research projects.

## General Education Requirements

Students must satisfy the university and college general education requirements (p. 51). Courses in chemistry may be used to meet the university's science and mathematics area requirement. The college's foreign language requirement fulfills the departmental requirements for B.A. candidates. B.S. degree candidates are not required to take a foreign language: however, the American Chemical Society (ACS) states that the study of a foreign language is recommended, especially for students planning to pursue graduate studies in chemistry.

## Satisfactory/Unsatisfactory Restrictions

Chemistry majors may not take required chemistry, mathematics, or physics courses on a satisfactory/unsatisfactory basis.

## Declaring the Chemistry Major

Students seeking to major in chemistry are first designated as 'pre-chemistry majors' until they have completed both CHEM 1111 and CHEM 1121 or equivalent courses. Upon successful completion of CHEM 1111 and CHEM 1121 with grades of C or better, students will be allowed to declare chemistry as their major. Each of these courses must be completed successfully within two attempts.

## Related Area Requirements

### Bachelor of Arts and Bachelor of Science in Chemistry

Candidates for both degrees must also complete:

MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
PHYSICS 2111	Physics: Mechanics and Heat	4
PHYSICS 2111L	Mechanics and Heat Laboratory	1
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	4
PHYSICS 2112L	Electricity, Magnetism, and Optics Laboratory	1
Total Hours		25

### Bachelor of Science in Chemistry

This degree may be taken as a terminal degree by students intending to become professional chemists or for preparation for graduate work in chemistry or biochemistry. Students may choose to specialize in chemistry or biochemistry.

#### Core Courses

CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
CHEM 1121	Introductory Chemistry II	5
CHEM 2223	Quantitative Analysis in Chemistry	3
CHEM 2612	Organic Chemistry I	3
CHEM 2622	Organic Chemistry II	3
CHEM 2633	Organic Chemistry Laboratory	2
CHEM 3022	Introduction to Chemical Literature	1
CHEM 3312	Physical Chemistry I: Thermodynamics and Kinetics	3
CHEM 3322	Physical Chemistry II: Quantum Chemistry and Spectroscopy	3
CHEM 3333	Physical Chemistry Laboratory I	2
CHEM 3412	Basic Inorganic Chemistry	2
CHEM 4897	Seminar in Chemistry	2

Select one of the following:

CHEM 3643	Advanced Organic Chemistry Laboratory	
CHEM 4233	Laboratory in Instrumental Analysis	
CHEM 4343	Physical Chemistry Laboratory II	

CHEM 4433	Inorganic Chemistry Laboratory	
CHEM 4733	Biochemistry Laboratory	
Total Hours		34

## Chemistry Option

In addition to the requirements above, the following chemistry courses are required:

CHEM 3643	Advanced Organic Chemistry Laboratory	2
CHEM 4212	Instrumental Analysis	3
CHEM 4233	Laboratory in Instrumental Analysis	2
CHEM 4343	Physical Chemistry Laboratory II	2
CHEM 4412	Advanced Inorganic Chemistry	3
CHEM 4433	Inorganic Chemistry Laboratory	2
CHEM 4612	Introduction to Macromolecular, Supramolecular, and Nanoscale Chemistry	1
CHEM 4712	Biochemistry	3
Total Hours		18

No more than 45 hours in chemistry may be applied toward the degree. Each chemistry major must present a seminar and pass a comprehensive examination during the senior year. At least 12 credits at the 3000 level or higher must be completed at UMSL. The Department of Chemistry and Biochemistry may require students to pass a tracking test in order to enroll in the next level course, provided this or an equivalent test is administered to all students seeking to enroll in that course.

## Biochemistry Option

In addition to the requirements above, the following chemistry and biology courses are required:

#### Chemistry

CHEM 3643	Advanced Organic Chemistry Laboratory	2
CHEM 4212	Instrumental Analysis	3
CHEM 4233	Laboratory in Instrumental Analysis	2
CHEM 4612	Introduction to Macromolecular, Supramolecular, and Nanoscale Chemistry	1
CHEM 4712	Biochemistry	3
CHEM 4722	Advanced Biochemistry	3
CHEM 4733	Biochemistry Laboratory	2
Select one of the following:		3

CHEM 4772	Physical Biochemistry	
CHEM 4774	Introduction to Bioinformatics	
CHEM 3905	Chemical Research (3 credits)	
BIOL 4905	Research (3 credits)	

#### Biology

BIOL 1831	Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L)	
BIOL 2012	Genetics	
BIOL 3622	Cell Biology	

Total Hours		19
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If either research option is chosen, the project must be in biochemistry and must include a written final report submitted to the Department of Chemistry and Biochemistry.

## B.S. Ed. in Secondary Education with Emphasis in Chemistry

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Chemistry with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

- B.S. degree students will demonstrate a clear understanding of the essential principles of the five foundational areas of chemistry and be able to apply them to solve chemical problems. The foundational areas of chemistry are specified as analytical, organic, inorganic, physical and biochemistry and include both the study of small molecules and macromolecules. B.A. degree students do not need to meet this outcome in biochemistry. Demonstrating understanding and application at the foundational level requires a thorough comprehension of basic chemical concepts from the introductory course sequence including stoichiometry, states of matter, molecular structure and bonding, thermodynamics, equilibria and kinetics. B.S. degree graduates will demonstrate proficiency in at least four of the foundational areas at an in-depth level. B.A. degree graduates will demonstrate proficiency at an in-depth level in organic chemistry and physical chemistry.
- Students will apply appropriate concepts and investigative and quantitative methods as used in all sub-disciplines of chemistry research.
- Students will critically evaluate existing scientific studies to integrate and apply that body of knowledge to the design of studies to test specific hypotheses addressing unsolved problems in the chemical and life sciences.
- Students will use computers and the required scientific software in data acquisition, processing, presentation or analysis, including statistical and regression analysis.

- Students will demonstrate basic skills associated with safely performing and properly documenting laboratory experiments in chemistry following a broad introduction of commonly used equipment and procedures. B.S. degree graduates will demonstrate skills in performing laboratory experiments using advanced and specialized instrumentation related to the areas of chemistry that are studied in depth. Students will demonstrate the ability to work either independently or as a part of a small team.
- Students will be able to identify the need for information, procure the information from relevant scientific literature publications and databases, properly cite the information, and critically evaluate reliability, validity, accuracy, authority, timeliness, and point of view or bias.
- Students will effectively communicate orally, visually and in writing about the processes of the chemical sciences and the results of scientific inquiry.
- Students will follow ethical practices in research, experimental interpretation, presentation, citation and application of research.

## Sample Four Year Plan Chemistry BS

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003		1 CHEM 1121	5
CHEM 1000		1 MATH 1800	5
CHEM 1111		5 CORE - Communication Proficiency	3
ENGL 1100		3 EXPLORE -Social Sciences	3
MATH 1035	2		
CORE - US History and Government	3		
	15		16
Second Year			
Fall	Hours	Spring	Hours
CHEM 2223		3 CHEM 2622	3
CHEM 2612		3 CHEM 2633	2
MATH 1900		5 CHEM 3412	2
EXPLORE - Humanities and Fine Arts		3 MATH 2000	5
EXPLORE - Social Sciences		3 EXPLORE - Humanities and Fine Arts	3
	17		15
Third Year			
Fall	Hours	Spring	Hours
CHEM 3022		1 CHEM 3322	3
CHEM 3312		3 CHEM 3333	2
CHEM 4712		3 PHYSICS 2112	4
PHYSICS 2111		4 PHYSICS 2112L	1
PHYSICS 2111L		1 ENGL 3160	3
Cultural Diversity Requirement		3 EXPLORE - Social Sciences	3
	15		16
Fourth Year			
Fall	Hours	Spring	Hours
CHEM 3643		2 CHEM 3905	1
CHEM 3905		1 CHEM 4233	2
CHEM 4212		3 CHEM 4433	2
CHEM 4343		2 CHEM 4612	1
CHEM 4412		3 CHEM 4897	2
EXPLORE - Humanities and Fine Arts		3 Elective or minor	3
		Elective or minor	1
	14		12
Total Hours: 120			

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Chemistry BS, Biochemistry Track

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 CHEM 1121	5
CHEM 1000		1 MATH 1800	5
CHEM 1111		5 CORE – Communicating Proficiency	3
ENGL 1100		3 EXPLORE - Social Sciences	3
MATH 1035		2	
CORE - US History and American Government		3	
	15		16

### Second Year

Fall	Hours	Spring	Hours
CHEM 2223		3 CHEM 2622	3
CHEM 2612		3 CHEM 2633	2
MATH 1900		5 CHEM 3412	2
EXPLORE - Humanities and Fine Arts		3 MATH 2000	5
EXPLORE - Social Sciences		3 EXPLORE - Humanities and Fine Arts	3
	17		15

### Third Year

Fall	Hours	Spring	Hours
CHEM 3312		3 CHEM 3322	3
CHEM 4712		3 CHEM 3333	2
CHEM 4733		2 PHYSICS 2112	4
PHYSICS 2111		4 PHYSICS 2112L	1
PHYSICS 2111L		1 ENGL 3160	3
Cultural Diversity Requirement		3	
	16		13

### Fourth Year

Fall	Hours	Spring	Hours
BIOL 1831		5 BIOL 2012	3
CHEM 3022		1 CHEM 3905	3
CHEM 3643		2 CHEM 4233	2
CHEM 3905		1 CHEM 4612	1
CHEM 4212		3 CHEM 4722	3
EXPLORE - Humanities and Fine Arts		3 CHEM 4897	2
		EXPLORE - Social Sciences	3
	15		17

Total Hours: 124

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Chemistry Minor

### Requirements for the Minor

Students may earn a minor in chemistry by completing the following program. The following five courses are required:

CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
CHEM 1121	Introductory Chemistry II	5
CHEM 2223	Quantitative Analysis	3
CHEM 2612	Organic Chemistry I	3
CHEM 2633	Organic Chemistry Laboratory	2
Select one of the following:		2-3
CHEM 2622	Organic Chemistry II	
CHEM 3312	Physical Chemistry I	
CHEM 3412	Basic Inorganic Chemistry	
CHEM/BIOL 4712	Biochemistry	
Total Hours		20-21

Courses, which are prerequisites to subsequent courses in the minor, may not be taken on a satisfactory/ unsatisfactory basis. A GPA of at least 2.0 is required for the courses presented for the minor. At least three courses toward the minor must be completed at UMSL.

## Chemistry MS

### Admission Requirements

Individuals with at least the equivalent of the B.A. degree in the natural sciences may be admitted to the Graduate School as candidates for the M.S. degree or as precandidates for the Ph.D. degree in chemistry. A student in the M.S. program may request to transfer to the Ph.D. program by petition to the department.

The department admissions committee considers applicants' grade point averages and normally requires above-average performance in all areas of chemistry as well as physics and mathematics, or other evidence of high aptitude for graduate work in chemistry. Applicants' GRE scores, letters of recommendation, and academic programs are also considered. In some cases the committee may require successful completion of undergraduate course work as a condition of enrollment as a regular student.

Students with bachelor's degrees in fields other than chemistry may be admitted to pursue graduate studies in chemistry, but they must make up background deficiencies, usually by taking undergraduate course work.

### Financial Support

Teaching assistantships are available to qualified applicants. Research assistantships and fellowships are available for advanced students. Departmental support is not normally available beyond the fifth year in the program. For further information, contact the Department of Chemistry & Biochemistry Graduate Admissions.

### Preliminary Advisement

Students who have been admitted for graduate work in chemistry will be contacted by the Director of Graduate Studies in order to develop a tentative plan of study which takes into consideration the student's background and interests. Entering students are required to demonstrate

proficiency at the undergraduate level in four areas of chemistry (biochemistry, organic, inorganic, physical, and analytical).

Proficiency may be demonstrated in one of the following ways:

- Outstanding performance in recent undergraduate course work.
- Satisfactory performance in standardized placement examinations. These examinations are given twice a year, approximately one week before the beginning of the fall and winter semesters.
- Successful completion of assigned course work.

The ultimate choice of whether students may enroll in the M.S. or Ph.D. degree programs resides with the chemistry faculty.

## Degree Requirements

Within two years of initial enrollment, candidates for the M.S. degree in chemistry must demonstrate proficiency at the undergraduate level in four of the following five areas: biochemistry, organic, inorganic, physical, and analytical chemistry.

A minimum of 30 hours is required, normally including 3 hours in CHEM 6897 Chemistry Colloquium. No more than 3 hours in CHEM 6897 may be applied toward the 30 credit hours.

## Distribution Requirement

Students may choose to focus their coursework efforts in one of four broadly defined subdiscipline areas (biochemistry, inorganic, organic, or physical chemistry). At least 6 hours of chemistry coursework in one (or more) sub-disciplines(s) outside of their major emphasis area must be completed. The following courses do not fulfill the distribution requirement:

CHEM 4212	Instrumental Analysis	3
CHEM 4233	Laboratory in Instrumental Analysis	2
CHEM 4302	Survey of Physical Chemistry with Applications to the Life Sciences	3
CHEM 4343	Physical Chemistry Laboratory II	2
CHEM 4412	Advanced Inorganic Chemistry	3
CHEM 4433	Inorganic Chemistry Laboratory	2
CHEM 4712	Biochemistry	3
CHEM 4733	Biochemistry Laboratory	2

## Master of Science in Chemistry with Thesis

Students selecting this option must be enrolled full-time for at least two consecutive semesters. During this time, students are expected to enroll in CHEM 6905, Graduate Research in Chemistry, and conduct their thesis research. A maximum of 12 hours of may be applied toward the required 30 hours. At least 9 hours must be at the 5000 level, excluding CHEM 6905. A maximum of 9 hours in 3000 level or above courses outside the department may be accepted if students receive prior approval of their advisers and the Director of Graduate Studies. Students are expected to follow all other general requirements of the Graduate School regarding master's degree and thesis requirements.

## Master of Science without Thesis

Unlike the thesis option, students need not be enrolled full-time. Of the required 30 hours, 15 credits must be at the 5000 level. A maximum of 6 credits of CHEM 6905, Graduate Research in Chemistry, may be included in place of 4000 level courses; a maximum of 12 hours taken in 3000

level or above courses outside the department may be accepted with prior approval of the Director of Graduate Studies.

## Master of Science Degrees for Doctoral Students

Doctoral students may receive a Master's degree in their program for work completed towards the doctoral degree. To receive a Master's degree, doctoral students must complete 30 credit hours of courses, with at least 15 of these credit hours in courses numbered at or above the 5000 level. No more than 3 hours in CHEM 6897, 3 hours from a combination of CHEM 6487, CHEM 6687, CHEM 6787, CHEM 6812, CHEM 6822 and CHEM 6832, and 6 hours of CHEM 6905 may be applied.

There are no distribution requirements for the Master's degree for Doctoral students.

The non-dissertation courses presented for the M.S. degree may not include any of the following courses:

CHEM 4212	Instrumental Analysis	3
CHEM 4233	Laboratory in Instrumental Analysis	2
CHEM 4302	Survey of Physical Chemistry with Applications to the Life Sciences	3
CHEM 4343	Physical Chemistry Laboratory II	2
CHEM 4412	Advanced Inorganic Chemistry	3
CHEM 4433	Inorganic Chemistry Laboratory	2
CHEM 4712	Biochemistry	3
CHEM 4733	Biochemistry Laboratory	2

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate an advanced conceptual understanding of several chemistry sub-disciplines including organic, inorganic, physical, biological and analytical chemistry
- Demonstrate an understanding of important principles that underlie techniques used in chemical and biochemical research, thereby possessing the ability to analyze and interpret data, and make conclusions.
- Explain phenomena by means of accepted chemical principles, theories or laws in particular areas of the chemical sciences with a high degree of sophistication.
- Demonstrate knowledge of chemical nomenclature, structure, and function and be able to effectively communicate this information to both scientists and the public.
- Formulate hypotheses based on an advanced knowledge of chemistry and the current published literature.
- Demonstrate a mastery of literature resources and published findings in chemistry for the preparation of papers, reports, or summaries within a particular subfield of chemistry.

## Chemistry MS, Professional Science Emphasis

### Admission Requirements

Individuals with at least the equivalent of the B.A. degree in the natural sciences may be admitted to the Graduate School as candidates for the M.S. degree or as precandidates for the Ph.D. degree in chemistry. A

student in the M.S. program may request to transfer to the Ph.D. program by petition to the department.

The department admissions committee considers applicants' grade point averages and normally requires above-average performance in all areas of chemistry as well as physics and mathematics, or other evidence of high aptitude for graduate work in chemistry. Applicants' GRE scores, letters of recommendation, and academic programs are also considered. In some cases the committee may require successful completion of undergraduate course work as a condition of enrollment as a regular student.

Students with bachelor's degrees in fields other than chemistry may be admitted to pursue graduate studies in chemistry, but they must make up background deficiencies, usually by taking undergraduate course work.

## Financial Support

Teaching assistantships are available to qualified applicants. Research assistantships and fellowships are available for advanced students. Departmental support is not normally available beyond the fifth year in the program. For further information, contact the Department of Chemistry & Biochemistry Graduate Admissions.

## Preliminary Advisement

Students who have been admitted for graduate work in chemistry will be contacted by the Director of Graduate Studies in order to develop a tentative plan of study which takes into consideration the student's background and interests. Entering students are required to demonstrate proficiency at the undergraduate level in four areas of chemistry (biochemistry, organic, inorganic, physical, and analytical).

Proficiency may be demonstrated in one of the following ways:

- Outstanding performance in recent undergraduate course work.
- Satisfactory performance in standardized placement examinations. These examinations are given twice a year, approximately one week before the beginning of the fall and winter semesters.
- Successful completion of assigned course work.

The ultimate choice of whether students may enroll in the M.S. or Ph.D. degree programs resides with the chemistry faculty.

## Degree Requirements

This option requires a minimum of 32 hours, of which 16 credit hours must be at or above the 5000 level. Students must take 21 credit hours of chemistry, 9 hours in business, and 2 credits hours of internship or practicum. A maximum of 3 credits of CHEM 6897 may be applied toward the required minimum of number of chemistry credits (21 hours).

The courses presented for the Master's degree (professional science emphasis) may not include any of the following:

CHEM 4212	Instrumental Analysis	3
CHEM 4233	Laboratory in Instrumental Analysis	2
CHEM 4302	Survey of Physical Chemistry with Applications to the Life Sciences	3
CHEM 4343	Physical Chemistry Laboratory II	2
CHEM 4412	Advanced Inorganic Chemistry	3
CHEM 4433	Inorganic Chemistry Laboratory	2
CHEM 4712	Biochemistry	3
CHEM 4733	Biochemistry Laboratory	2

CHEM 6487	Problem Seminar in Inorganic Chemistry	1
CHEM 6687	Problem Seminar in Organic Chemistry	1-3
CHEM 6787	Problem Seminar in Biochemistry	1
CHEM 6812	Introduction to Graduate Study in Chemistry	1
CHEM 6822	Introduction to Graduate Research in Chemistry	1
CHEM 6905	Graduate Research in Chemistry	1-10

## Emphasis Area Requirements

### Elective Courses in Business (9 credit hours required)

MGMT 3623	Industrial and Organizational Psychology	3
BUS AD 5000	Economics for Managers	3
BUS AD 5100	Managerial Communication	3
MGMT 5600	Managing People in Organizations	3
MKTG 5700	Contemporary Marketing Concepts	3
BUS AD 5900	Law, Ethics and Business	3

### Required Internship or Practicum (2 credit hours required)

CHEM 5798 or CHEM 5799	Practicum in Science in Business Internship in Science in Business	2
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There are no distribution requirements for the Masters in Chemistry (Professional Science Emphasis).

## Chemistry PhD

### Admission Requirements

Individuals with at least the equivalent of the B.A. degree in the natural sciences may be admitted to the Graduate School as candidates for the M.S. degree or as precandidates for the Ph.D. degree in chemistry. A student in the M.S. program may request to transfer to the Ph.D. program by petition to the department.

The department admissions committee considers applicants' grade point averages and normally requires above-average performance in all areas of chemistry as well as physics and mathematics, or other evidence of high aptitude for graduate work in chemistry. Applicants' GRE scores, letters of recommendation, and academic programs are also considered. In some cases the committee may require successful completion of undergraduate course work as a condition of enrollment as a regular student.

Students with bachelor's degrees in fields other than chemistry may be admitted to pursue graduate studies in chemistry, but they must make up background deficiencies, usually by taking undergraduate course work.

## Financial Support

Teaching assistantships are available to qualified applicants. Research assistantships and fellowships are available for advanced students. Departmental support is not normally available beyond the fifth year in the program. For further information, contact the Department of Chemistry & Biochemistry Graduate Admissions.



## Preliminary Advisement

Students who have been admitted for graduate work in chemistry will be contacted by the Director of Graduate Studies in order to develop a tentative plan of study which takes into consideration the student's background and interests. Entering students are required to demonstrate proficiency at the undergraduate level in four areas of chemistry (biochemistry, organic, inorganic, physical, and analytical).

Proficiency may be demonstrated in one of the following ways:

- Outstanding performance in recent undergraduate course work.
- Satisfactory performance in standardized placement examinations. These examinations are given twice a year, approximately one week before the beginning of the fall and winter semesters.
- Successful completion of assigned course work.

The ultimate choice of whether students may enroll in the M.S. or Ph.D. degree programs resides with the chemistry faculty.

## Doctoral Degree Requirements

Within one year of initial enrollment, incoming doctoral students must demonstrate proficiency in four of the following five areas: biochemistry, organic, inorganic, physical, and analytical chemistry. A minimum of 60 credit hours is required, including research hours.

## Comprehensive Exam Committee

Before the end of the second regular semester of study, the doctoral student and his/her research advisor will select a comprehensive exam committee. The student should prepare Graduate School form D-1, which should be signed by the research advisor and the Director of Graduate Studies, and filed with the graduate school.

In the Department of Chemistry & Biochemistry, the comprehensive exam committee also serves as a mentoring committee for the student. The committee will meet with the student at the end of each spring semester to review progress in coursework and research. A written report summarizing their assessment and recommendations will be provided to the student and the Director of Graduate Studies.

## Comprehensive Examinations

Each student seeking the Ph.D. degree must successfully complete a comprehensive examination prior to advancement to candidacy. The comprehensive exam is typically taken when formal coursework has been completed, but it must be completed before the start of the fifth regular semester.

The comprehensive exam consists of writing an original research proposal and an oral defense that will be evaluated by the student's committee. The student will select a topic that is not directly related to the expected research area. The research advisor must approve the topic. The specific format for the proposal is described in the Department of Chemistry & Biochemistry Handbook of Graduate Studies.

## Dissertation Proposal

Doctoral students must prepare and defend a Dissertation Proposal before the student has completed the equivalent of 6 regular semesters of full-time study. The proposal should be defended within six months following successful completion of the Comprehensive Examination.

The Dissertation Proposal includes both a written and oral component. Both components will be evaluated by the student's Comprehensive Examination committee. The written proposal will be submitted to the Comprehensive Examination committee and will be presented as a seminar to the Department. After the seminar, the student will defend the proposal before the Comprehensive Examination committee.

## Advancement to Candidacy

In addition to general Graduate School requirements for advancement to candidacy, students must complete the following:

1. 18 hours of non-dissertation work.

**This may not include:**

CHEM 4212	Instrumental Analysis	3
CHEM 4233	Laboratory in Instrumental Analysis	2
CHEM 4302	Survey of Physical Chemistry with Applications to the Life Sciences	3
CHEM 4343	Physical Chemistry Laboratory II	2
CHEM 4412	Advanced Inorganic Chemistry	3
CHEM 4433	Inorganic Chemistry Laboratory	2
CHEM 4712	Biochemistry	3
CHEM 4733	Biochemistry Laboratory	2
CHEM 6487	Problem Seminar in Inorganic Chemistry	1
CHEM 6687	Problem Seminar in Organic Chemistry	1-3
CHEM 6787	Problem Seminar in Biochemistry	1
CHEM 6812	Introduction to Graduate Study in Chemistry	1
CHEM 6822	Introduction to Graduate Research in Chemistry	1
CHEM 6897	Chemistry Colloquium	1

At least 9 of the 18 credits of non-dissertation coursework must be at the 5000 level. Courses in areas other than chemistry may be included with prior departmental approval.

2. Successfully pass a Comprehensive Examination.
3. Successfully present and defend a dissertation proposal.
4. Submit the proposal for approval to the Graduate School.
5. Be in good standing.

## Seminar Requirement

Students must enroll in CHEM 6897, Chemistry Colloquium, each semester they are in residence. In their final semester in the program, each student will present an "exit seminar" to the Department describing the results of their dissertation research.

## Dissertation

One copy of the dissertation must be submitted upon completion of the graduate research problem.

## Probation and Dismissal

Students are dismissed from the Ph.D. program if they fail to pass their Comprehensive Examination or otherwise fail to meet the academic

and professional standards set forth by the Graduate School and the Department of Chemistry and Biochemistry.

## Child Advocacy Studies Minor

### Minor in Child Advocacy Studies

The undergraduate minor in Child Advocacy Studies (CAST) is an interdisciplinary program requiring 15 credits of training in Child Advocacy Studies. The CAST minor encompasses a group of courses focused on children, youth, and traumatic stress. The CAST minor is appropriate for students who want to explore working in a variety of professional settings with children and adolescents, many of whom may have experienced trauma.

Most courses required by the minor in Child Advocacy Studies have prerequisites. Some students may satisfy prerequisites by virtue of their prior curriculum. When this is not the case, students are responsible for satisfying the prerequisites. All required courses must be taken in residence at UM-St. Louis.

#### Required courses:

PSYCH/CAST 3290	Traumatic Stress in Childhood and Adolescence <sup>1</sup>	3
PSYCH/SOC WK/CAST 4398	Child Maltreatment: A Multidisciplinary Approach <sup>1</sup>	3
CAST 4498	Forensic Investigation of Child Abuse	3
or CAST 4598	Child Abuse Assessment and Intervention	

#### Electives 6

##### Please choose two of the following:

CAST 4498	Forensic Investigation of Child Abuse (if course not used above)	
CAST 4598	Child Abuse Assessment and Intervention (if course not used above)	
CRIMIN 2251	Youth Gangs	
CRIMIN 3230	Crime Prevention	
CRIMIN 3270	Juvenile Justice and Delinquency	
CRIMIN/GS 4330	Violence Against Women	
CRIMIN 4350	Victimology	
CNS ED 3200	Interpersonal Skills in Helping Relationships	
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	
ECH ED 3350	Family and Professional Partnerships within School/Community	
GS 2102	Introduction to Gender Studies	
GS/SOC WK 4610	Intimate Partner Violence	
POL SCI 2260	Law, Politics and Society	
PSYCH 2200	Drugs and Behavior	
PSYCH 2270	Developmental Psychology: Infancy, Childhood and Adolescence	
PSYCH/GS 3232	Psychology of Trauma	
PSYCH 3340	Clinical Problems of Childhood	
PSYCH 4305	Developmental Psychology: Cognitive Development of Children	

SOC 4312	Sociology of Wealth and Poverty
SOC 4356	Sociology of Education
SOC WK 4110	Social Work Practice with Individuals, Families, and Groups
SOC WK 4620	Substance-Related and Addictive Disorders

Total Hours 15

### Learning Outcomes

- Demonstrate the ethical behavior and values of their discipline in the context of traumatic stress.
- Integrate the current fund of traumatic stress knowledge into their professional role.
- Generate effective responses to traumatic stress and child maltreatment using trauma-informed decision-making processes.
- Create trauma-sensitive relationships with diverse consumers.
- Interact effectively with professionals across multiple disciplines.
- Communicate effectively with the community about traumatic stress and child maltreatment.

## Child Advocacy Studies Undergraduate Certificate

The undergraduate Certificate Program in Child Advocacy Studies (CAST) is an interdisciplinary program requiring 19 credits of training in Child Advocacy Studies. The CAST certificate encompasses a group of courses focused on children, youth, and traumatic stress capped by a field experience. The CAST certificate is appropriate for students who want to specialize in working in a variety of professional settings with children and adolescents, many of whom may have experienced trauma.

Most courses required by the Certificate Program in Child Advocacy Studies have prerequisites. Some students may satisfy prerequisites by virtue of their prior curriculum. When this is not the case, students are responsible for satisfying the prerequisites. All students must take at least one course outside their home department. All required courses must be taken in residence at UM-St. Louis.

#### Required courses

PSYCH/SOC WK/CAST 4398	Child Maltreatment: A Multidisciplinary Approach	3
CAST 4498	Forensic Investigation of Child Abuse	3
CAST 4598	Child Abuse Assessment and Intervention	3

#### Electives 6

##### Please choose two of the following:

CNS ED 3200	Interpersonal Skills in Helping Relationships	
CRIMIN 2251	Youth Gangs	
CRIMIN 3230	Crime Prevention	
CRIMIN 3270	Juvenile Justice and Delinquency	
CRIMIN/GS 4330	Violence Against Women	
CRIMIN 4350	Victimology	
ECH ED 3350	Family and Professional Partnerships within School/Community	

ED PSY 2212	Child and Adolescent Development
ED PSY 3312	Psychology of Learning, Instruction, and Assessment
GS 2102	Introduction to Gender Studies
GS/SOC WK 4610	Intimate Partner Violence
PSYCH 2200	Drugs and Behavior
PSYCH 2270	Developmental Psychology: Infancy, Childhood and Adolescence
PSYCH 3232	Psychology of Trauma
PSYCH/CAST 3290	Traumatic Stress in Childhood and Adolescence <sup>1</sup>
PSYCH 3340	Clinical Problems of Childhood
PSYCH 4305	Developmental Psychology: Cognitive Development of Children
SOC 4312	Sociology of Wealth and Poverty
SOC 4356	Sociology of Education
SOC WK 4110	Social Work Practice with Individuals, Families, and Groups
SOC WK 4620	Substance-Related and Addictive Disorders

### Field Experience Options <sup>1</sup> 3

A field experience in a child-related field, approved and supervised by the student's home department, is the final part of the certificate. All required CAST courses should be completed, though concurrent enrollment in one CAST course is permitted. Additionally, students must receive prior approval from the CAST program director.

CAST 4698	Internship in Child Advocacy Studies
CRIMIN 3280	Internship in Criminology and Criminal Justice
EDUC 4989	Internship I
GS 4353	Internship in Gender Studies
SOC 4385	Internship in Sociology
SOC WK 4800/4850	Supervised Field Experience in Social Work I

### Seminar 1

CAST 4700	Field Education Seminar in Child Advocacy Studies
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Total Hours 19

<sup>1</sup> Simultaneous enrollment in a CAST seminar is required for all disciplines.

## Learning Outcomes

Upon completion of the program, certificate earners should be able to:

- Demonstrate the ethical behavior and values of their discipline in the context of traumatic stress.
- Integrate the current fund of knowledge about traumatic stress into their professional role.
- Generate effective responses to traumatic stress and child maltreatment using trauma-informed decision-making processes.
- Create trauma-sensitive relationships with diverse consumers.
- Use knowledge to increase consumer access to trauma-informed services.

- Formulate service strategies that reduce the impact of trauma and promote well-being.
- Interact effectively with professionals across multiple disciplines.
- Produce trauma-sensitive written and verbal communication consistent with discipline standards.
- Recommend trauma-informed policy changes within their work setting.

## Civil Engineering BSCIE

### Admission

Students are admitted to the upper-division program after they have completed an acceptable pre-engineering program. The pre-engineering program can be taken at University of Missouri-St. Louis or at community colleges in the area. Normally, admission is granted to persons who have completed the pre-engineering program with a minimum grade point average of 2.75 over all their mathematics, chemistry, physics, and introductory (statics and dynamics) engineering courses. Students with less than a 2.75 grade point average, but at least a C, in all their science, engineering and mathematics courses may be admitted on a conditional basis.

For more information, please contact the program advisor at (314) 516-7018.

### Degree Requirements

A program of 132 semester hours is required for the Bachelor of Science in Civil Engineering.

Majors must complete the University General Education (p. 51) and Graduation (p. 19) requirements, the Pre-Engineering Requirements, the Core Engineering Requirements, and Major Requirements.

A minimum grade of C- is necessary to meet the prerequisite requirement for any course.

### General Education and Graduation Requirements

The following courses fulfill general education and graduation requirements and are required of Civil Engineering majors:

PHIL 2259	Engineering Ethics	3
PHIL 3380	Philosophy of Science	3
HIST 1001	American Civilization to 1865 (MOTR HIST 101)	3
or HIST 1002	American Civilization 1865 to Present (MOTR HIST 102)	
Three additional Social Science courses <sup>1</sup>		9
Total Hours		18

<sup>1</sup> One course must meet the Cultural Diversity requirement, and one course must meet the engineering Valuing Skill requirement. Humanities and social sciences electives must meet both the University of Missouri-St. Louis General Education Requirements and the Humanities and Social Sciences Requirements of the Joint Undergraduate Engineering Program. Check with your advisor for details.

## Pre-Engineering Requirements

Students seeking to major in engineering are first designated as 'Undeclared with an interest in Engineering majors' until they have completed Math 1800 Analytical Geometry & Calculus I. Upon successful completion of Math 1800 with a grade of C or better, students will be allowed to declare pre-engineering as their major. Math 1800 must be completed successfully within two attempts.

MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
MATH 2020	Introduction to Differential Equations	3
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
GEOL 1001	General Geology	3
PHYSICS 2111	Physics: Mechanics and Heat	4
PHYSICS 2111L	Mechanics and Heat Laboratory	1
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	4
PHYSICS 2112L	Electricity, Magnetism, and Optics Laboratory	1
ENGR 2310	Statics	3
ENGR 2320	Dynamics	3
ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
Total Hours		45

## Engineering Core Requirements

CMP SCI 1250	Introduction to Computing	3
J E COMM 2000	Engineering Studio I	1
ENGL 3130	Technical Writing	3
Total Hours		7

## Civil Engineering Major Requirements

J C ENGR 2160	Surveying	3
J C ENGR 1430	Introduction to Engineering Design: CAD & GIS	2
J C ENGR 3210	Computer Methods of Engineering Analysis	2
J C ENGR 3410	Structural Analysis	3
J C ENGR 3420	Structural Design	3
J C ENGR 3360	Civil Engineering Materials Lab	1
J C ENGR 3430	Civil Engineering Design CAD & GIS	2
J C ENGR 3460	Transportation Engineering	3
J C ENGR 3760	Hydraulic Engineering	3
J C ENGR 4190	Soil Mechanics	3
J C ENGR 4200	Soil Exploration and Testing	1
J C ENGR 4600	Highway and Traffic Engineering	3
J C ENGR 4640	Foundation Engineering	3
J C ENGR 4670	Structural Design Projects	3
or J C ENGR 4910	Hydrology and Hydraulic Design Project	
J C ENGR 4730	Construction Operations and Management	3
J C ENGR 4740	Economic Decisions in Engineering	3

J C ENGR 4950	Fundamentals of Civil Engineering Review	1
J C ENGR 4990	Senior Civil Engineering Seminar	1
J M ENGR 2410	Mechanics of Deformable Bodies	3
J M ENGR 3360	Material Science for J C ENGR	3
J M ENGR 3700	Fluid Mechanics	3
J M ENGR 3721	Fluid Mechanics Laboratory	1
MATH 1320	Introduction to Probability and Statistics	3
Civil Engineering Electives		6
Total Hours		62

## Graduation Requirements

In addition to the requirements of the University of Missouri-St. Louis that apply to all candidates for undergraduate degrees, the student must earn a minimum campus grade point average of 2.0 and a minimum grade point average of 2.0 for all engineering courses attempted at the University of Missouri-St. Louis.

### Sample Graduation Plans

#### Water Resources/Environmental Engineering Track- Four Year Plan

First Year					
Fall	Hours	Spring	Hours	Summer	Hours
MATH 1800		5 MATH 1900		5 MATH 2000	5
CHEM 1111		5 PHYSICS 2111		4 ENGR 2310	3
ENGL 1100		3 PHYSICS 2111L		1	
ENGR 1010 <sup>1</sup>		1 GEOL 1001		3	
		HIST 1001 or 1002		3	
		14			8
					16
					8
Second Year					
Fall	Hours	Spring	Hours	Summer	Hours
ENGR 2320		3 J C ENGR 2160		3 J C ENGR 3360	1
MATH 2020		3 J C ENGR 3210		2 J M ENGR 3360	3
PHYSICS 2112		4 J E COMM 2000		1 EXPLORE - Social Sciences	3
PHYSICS 2112L		1 J M ENGR 2410		3	
EXPLORE – Social Sciences <sup>2</sup>		3 J M ENGR 3700		3	
		CMP SCI 1250		3	
		14			7
					15
					7
Third Year					
Fall	Hours	Spring	Hours		
J C ENGR 1430		2 J C ENGR 3420		3	
J C ENGR 3410		3 J C ENGR 3430		2	
J C ENGR 4600		3 J C ENGR 3760		3	
J C ENGR 4740		3 J C ENGR 4190		3	
MATH 1320		3 J C ENGR 4200		1	
J M ENGR 3721		1 PHIL 2259		3	
		15			15
Fourth Year					
Fall	Hours	Spring	Hours		
J C ENGR 3520		3 J C ENGR 3460		3	
J C ENGR 4640		3 J C ENGR 4910		3	
J C ENGR 4730		3 J C ENGR 4950		1	
J C ENGR 4830		3 ENGL 3130		3	
J C ENGR 4990		1 PHIL 3380		3	



EXPLORE - Social Sciences	3
<b>13</b>	<b>16</b>

Total Hours: 133

- <sup>1</sup> Course does not count toward 132 credit hours for degree.
- <sup>2</sup> Course should also satisfy the Cultural Diversity Requirement.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

### Water Resources/Environmental Engineering Track- Five Year Plan

**First Year**

Fall	Hours	Spring	Hours
MATH 1800	5	MATH 1900	5
CHEM 1111	5	GEOL 1001	3
ENGL 1100	3	HIST 1001 or 1002	3
ENGR 1010 <sup>1</sup>	1	EXPLORE - Social Sciences <sup>2</sup>	3
<b>14</b>	<b>14</b>		

**Second Year**

Fall	Hours	Spring	Hours
MATH 2000	5	MATH 2020	3
PHYSICS 2111	4	PHYSICS 2112	4
PHYSICS 2111L	1	PHYSICS 2112L	1
PHIL 2259	3	ENGR 2310	3
EXPLORE - Social Sciences	3	PHIL 3380	3
		EXPLORE - Social Sciences	3
<b>16</b>	<b>17</b>		

**Third Year**

Fall	Hours	Spring	Hours	Summer	Hours
J E COMM 2000	1	J C ENGR 2160	3	J M ENGR 3360	3
J M ENGR 2410	3	J C ENGR 3210	2	J C ENGR 3360	1
J M ENGR 1413	2	J C ENGR 3460	3		
ENGR 2320	3	J M ENGR 3700	3		
CMP SCI 1250	3	MATH 1320	3		
<b>12</b>	<b>14</b>		<b>4</b>		

**Fourth Year**

Fall	Hours	Spring	Hours
J C ENGR 3410	3	J C ENGR 3420	3
J M ENGR 3721	1	J C ENGR 3430	2
J C ENGR 4600	3	J C ENGR 3760	3
J C ENGR 4740	3	J C ENGR 4190	3
ENGL 3130	3	J C ENGR 4200	1
<b>13</b>	<b>12</b>		

**Fifth Year**

Fall	Hours	Spring	Hours
J C ENGR 4830	3	J C ENGR 4910	3
J C ENGR 3520	3	J C ENGR 4950	1
J C ENGR 4990	1		
J C ENGR 4640	3		
J C ENGR 4730	3		
<b>13</b>	<b>4</b>		

Total Hours: 133

- <sup>1</sup> Course does not count toward 132 credit hours for degree
- <sup>2</sup> Course should also satisfy the Cultural Diversity Requirement.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

### Structural Engineering Track - Four Year Plan

**First Year**

Fall	Hours	Spring	Hours	Summer	Hours
MATH 1800	5	MATH 1900	5	MATH 2000	5
CHEM 1111	5	PHYSICS 2111	4	ENGR 2310	3
ENGL 1100	3	PHYSICS 2111L	1		
ENGR 1010 <sup>1</sup>	1	GEOL 1001	3		
		HIST 1001 or 1002	3		
<b>14</b>	<b>16</b>		<b>8</b>		

**Second Year**

Fall	Hours	Spring	Hours	Summer	Hours
MATH 2020	3	J E COMM 2000	1	J M ENGR 3360	3
PHYSICS 2111	4	CMP SCI 1250	3	J C ENGR 3360	1
PHYSICS 2111L	1	J C ENGR 2160	3	EXPLORE - Social Sciences	3
ENGR 2320	3	J M ENGR 2410	3		
EXPLORE - Social Sciences <sup>2</sup>	3	J C ENGR 3210	2		
		J M ENGR 3700	3		
<b>14</b>	<b>15</b>		<b>7</b>		

**Third Year**

Fall	Hours	Spring	Hours
J C ENGR 1430	2	J C ENGR 3420	3
J C ENGR 3410	3	J C ENGR 3430	2
J C ENGR 4600	3	J C ENGR 3760	3
J C ENGR 4740	3	J C ENGR 4190	3
MATH 1320	3	J C ENGR 4200	1
		PHIL 2259	3
<b>14</b>	<b>15</b>		

**Fourth Year**

Fall	Hours	Spring	Hours
J C ENGR 4360	3	J C ENGR 3460	3
J C ENGR 4640	3	J C ENGR 4660	3
J C ENGR 4730	3	J C ENGR 4670	3
J C ENGR 4990	1	J C ENGR 4950	1
J M ENGR 3721	1	PHIL 3380	3
ENGL 3130	3	EXPLORE - Social Sciences	3
<b>14</b>	<b>16</b>		

Total Hours: 133

- <sup>1</sup> Course does not count toward 132 credit hours for the degree.
- <sup>2</sup> Course should also satisfy the Cultural Diversity Requirement.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

**Structural Engineering Track - Five Year Plan**

First Year			
Fall	Hours	Spring	Hours
MATH 1800	5	MATH 1900	5
CHEM 1111	5	GEOL 1001	3
ENGL 1100	3	HIST 1001 or 1002	3
ENGR 1010 <sup>1</sup>	1	EXPLORE - Social Sciences <sup>2</sup>	3
		14	14

Second Year			
Fall	Hours	Spring	Hours
MATH 2000	5	MATH 2020	3
PHYSICS 2111	4	PHYSICS 2112	4
PHYSICS 2111L	1	PHYSICS 2112L	1
PHIL 2259	3	ENGR 2310	3
EXPLORE - Social Sciences	3	PHIL 3380	3
		EXPLORE - Social Sciences	3
		16	17

Third Year					
Fall	Hours	Spring	Hours	Summer	Hours
J E COMM 2000	1	J C ENGR 2160	3	J M ENGR 3360	3
J M ENGR 2410	3	J C ENGR 3210	2	J C ENGR 3360	1
J M ENGR 1413	2	J C ENGR 3460	3		
ENGR 2320	3	J M ENGR 3700	3		
CMP SCI 1250	3	MATH 1320	3		
		12	14		4

Fourth Year			
Fall	Hours	Spring	Hours
J C ENGR 3410	3	J C ENGR 3420	3
J M ENGR 3721	1	J C ENGR 3430	2
J C ENGR 4600	3	J C ENGR 3760	3
J C ENGR 4740	3	J C ENGR 4190	3
ENGL 3130	3	J C ENGR 4200	1
		13	12

Fifth Year			
Fall	Hours	Spring	Hours
J C ENGR 4630	3	J C ENGR 4660	3
J C ENGR 4990	1	J C ENGR 4670	3
J C ENGR 4640	3	J C ENGR 4950	1
J C ENGR 4730	3		
		10	7

Total Hours: 133

<sup>1</sup> Course does not count toward 132 credit hours for degree.  
<sup>2</sup> Course should also satisfy the Cultural Diversity Requirement.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

**Civil Engineering Minor**

**Minor in Civil Engineering**

Admission to the Joint Engineering program is required. A minimum of 18 credit hours in Joint Civil Engineering courses and Engineering courses are required.

**Required Courses**

ENGR 2310	Statics	3
J M ENGR 2410	Mechanics of Deformable Bodies	3
J M ENGR 3700	Fluid Mechanics	3

**Take at least three courses from one of the tracks below: 9**

Structures		
J C ENGR 2160	Surveying	
J M ENGR 3360	Material Science for J C ENGR	
J C ENGR 3410	Structural Analysis	
J C ENGR 3420	Structural Design	
J C ENGR 4630	Design of Steel Structures	
J C ENGR 4660	Advanced Design of Concrete Structures	

Water Resources/Environmental		
J C ENGR 3520	Water and Wastewater Treatment	
J C ENGR 3760	Hydraulic Engineering	
J C ENGR 4830	Fundamentals of Surface Water Hydrology and Environmental Engineering	
J C ENGR 4740	Economic Decisions in Engineering	

Transportation		
J C ENGR 2160	Surveying	
J C ENGR 3460	Transportation Engineering	
J C ENGR 4600	Highway and Traffic Engineering	

Geotechnical		
GEOL 1001	General Geology	
J C ENGR 2160	Surveying	
J M ENGR 3360	Material Science for J C ENGR	
J C ENGR 4190	Soil Mechanics	
J C ENGR 4640	Foundation Engineering	
J C ENGR 4740	Economic Decisions in Engineering	

Construction Management		
J C ENGR 2160	Surveying	
J C ENGR 4720	Legal Aspects of Construction	
J C ENGR 4730	Construction Operations and Management	
J C ENGR 4740	Economic Decisions in Engineering	

Total Hours 18

**Communication BA**

The BA in Communication is a flexible degree program that students can tailor to meet personal, professional, or academic goals through elective courses in interpersonal, mass, strategic, and visual communication. Students explore how messages are constructed, delivered, and perceived by audiences. Whether the intent is to inform, influence, or entertain, students will use research and theory to improve message effectiveness and achieve desired outcomes in interpersonal and mass-mediated communication. In addition, students can find a creative outlet in courses that focus on content creation and its consequences and significance.

Students majoring in communication must complete a minimum of 36 credit-hours in communication courses. Students may complete either a general communication degree or they may select one of four different

emphasis areas as a focus for their studies: Interpersonal Communication, Mass Communication, Applied Visual Communication, or Strategic Communication. To complete the degree with one of these emphases, the student must complete the 21 credit-hour core and at least 15 hours of electives from within the selected emphasis area. In addition, the skills and knowledge applied in the required Practicum/Internship should be consistent with the selected emphasis area. Students seeking a general communication degree must complete the 21 credit-hour core and can select elective courses from any combination of the emphasis areas.

## General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). The college's foreign language requirement may be taken in any language. Communication courses may not be taken on a satisfactory/unsatisfactory basis.

## Degree Requirements

At least 18 credit hours must be taken at UMSL. Furthermore, at least 12 credit hours of the communication courses completed must be numbered 3000-4999 for students seeking a general communication degree, as well as for students pursuing an emphasis area. All students must earn a C or better in each of the required core courses of the major and maintain a 2.0 grade point average in all of the courses applied to the communication degree.

### Required Courses

COMM 1030	Interpersonal Communication I (MOTR COMM 120)	3
COMM 1050	Introduction to Mass Communication	3
COMM 2231	Communication in the Organization	3
COMM 2332	Intercultural Communication	3
COMM 2235	Professional Communication	3
COMM 3330	Research Methods in Communication I	3
COMM 4920 or COMM 4950	Practicum in Applied Communication Internship in Applied Communication	3
Total Hours		21

## Learning Outcomes

- Adapt communication strategies to different situations and audiences
- Evaluate and interpret media, information, and data effectively
- Produce high-quality communications
- Apply interpersonal skills to a variety of situations, audiences, and professional environments
- Use communication theories to take diverse perspectives and excel in a variety of professional environments
- Evolve with changing technologies

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 COMM 2231	3
ENGL 1100	3	EXPLORE - Math and Sciences	3
COMM 1030	3	EXPLORE - Humanities and Fine Arts	3
COMM 1050	3	EXPLORE - Humanities and Fine Arts	3

CORE - Mathematics Proficiency	3	Elective or minor	3
CORE - US History & Government	3		
		16	15

### Second Year

Fall	Hours	Spring	Hours
COMM 2235	3	COMM 2332	3
EXPLORE - Math and Sciences	3	EXPLORE - Humanities and Fine Arts	3
CORE - Information Literacy	3	EXPLORE - Math and Sciences	3
Foreign Language 1001	5	Foreign Language 1002	5
		14	14

### Third Year

Fall	Hours	Spring	Hours
COMM 3330	3	COMM 3000 level elective	3
ENGL 3100	3	COMM Elective, Any Level	3
Foreign Language 2101	3	Elective 2000-level or higher	3
Cultural Diversity Course	3	Elective 2000-level or higher	3
Elective or minor	3	Elective or minor	3
		15	15

### Fourth Year

Fall	Hours	Spring	Hours
COMM 1950	1	COMM 4920 or 4950	3
COMM 3XXX Elective	3	COMM Elective, Any Level	3
COMM Elective, Any Level	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
Elective or minor	3		
		16	15

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Communication BA, Applied Visual Communication Emphasis

This emphasis area covers digital audiovisual media production, helping students master the art of telling stories and effectively communicating information through digital media. Students receive practical instruction in areas such as camera work, location shooting, digital video editing, directing, and performance for the camera, typically in small, applied skills courses. This coursework is complemented by instruction in areas such as interpersonal, intercultural, and professional communication that help students gain jobs, advance in the workplace, and better connect with diverse audiences.

## Career Outlook

New graduates often enter this career path as video editors or camera operators. According the U.S. Bureau of Labor Statistics, employment in these occupations is expected to grow faster than average, in part because of increasing demand for audio-visual media on internet-only platforms such as streaming services. The job outlook for more experienced positions in the field, such as producers and directors, is also robust. Successful alumni have gone

Students majoring in communication must complete a minimum of 36 credit-hours in communication courses. Students may complete either a general communication degree or they may select one of four different emphasis areas as a focus for their studies: Interpersonal Communication, Mass Communication, Applied Visual Communication, or Strategic Communication. To complete the degree with one of these emphases, the student must complete the 21 credit-hour core and at least 15 hours of electives from within the selected emphasis area. In addition, the skills and knowledge applied in the required Practicum/Internship should be consistent with the selected emphasis area. Students seeking a general communication degree must complete the 21 credit-hour core and can select elective courses from any combination of the emphasis areas.

### General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). The college's foreign language requirement may be taken in any language. Communication courses may not be taken on a satisfactory/unsatisfactory basis.

### Degree Requirements

At least 18 credit hours must be taken at UMSL. Furthermore, at least 12 credit hours of the communication courses completed must be numbered 3000-4999 for students seeking a general communication degree, as well as for students pursuing an emphasis area. All students must earn a C or better in each of the required core courses of the major and maintain a 2.0 grade point average in all of the courses applied to the communication degree.

#### Required Courses

COMM 1030	Interpersonal Communication I (MOTR COMM 120)	3
COMM 1050	Introduction to Mass Communication	3
COMM 2231	Communication in the Organization	3
COMM 2332	Intercultural Communication	3
COMM 2235	Professional Communication	3
COMM 3330	Research Methods in Communication I	3
COMM 4920	Practicum in Applied Communication	3
or COMM 4950	Internship in Applied Communication	
Total Hours		21

### Emphasis Area Requirements

The applied visual communication emphasis area offers hands-on learning related to media production, focusing on developing skills to convey information and tell stories through time-based digital media. 15 credits are needed.

Choose five of the following courses:

MEDIA ST 1070	Introduction to Cinema
MEDIA ST 2113	Media Production I
THEATR 2020	Acting for the Camera
MEDIA ST 2210	Video Production I
MEDIA ST 3310	Video Production II
MEDIA ST 3313	Advanced Video Editing
MEDIA ST 2225	Live Events Media
MEDIA ST 3113	Media Production II

THEATR 4020	Directing for the Camera	
Total Hours		15

### Learning Outcomes

- Recognize and apply the fundamental principles of effective visual communication
- Design, implement, and critique media content based on appropriate production, design, and aesthetic principles
- Light, block and record digital video footage in studio and location settings
- Edit digital footage into a coherent narrative or persuasive message, including the addition of titles and graphic effects
- Produce work that contributes knowledge and creativity with effective communication skills in all forms of media: written, visual, and oral
- Effectively work in groups as both leaders and collaborators

### Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 COMM 2231	3
COMM 1030	3	EXPLORE: Mathematics & Life/Natural Sciences	3
COMM 1050	3	EXPLORE: Humanities & Fine Arts	3
ENGL 1100	3	EXPLORE: Humanities & Fine Arts	3
CORE: Mathematics Proficiency	3	Elective or minor	3
CORE: US History & Government	3		
		16	15
Second Year			
Fall	Hours	Spring	Hours
COMM 2235		3 COMM 2332	3
CORE: Information Literacy	3	EXPLORE: Humanities & Fine Arts	3
EXPLORE: Humanities & Fine Arts	3	EXPLORE: Mathematics & ILife/Natural Sciences	3
FGN LANG 1001	5	FGN LANG 1002	5
		14	14
Third Year			
Fall	Hours	Spring	Hours
COMM 3330		3 COMM XXXX: Applied Visual Communication Emphasis Course	3
ENGL 3100	3	COMM XXXX: Applied Visual Communication Emphasis Course	3
FGN LANG 2102	3	COMM XXXX: Applied Visual Communication Emphasis Course	3
Cultural Diversity Requirement	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
		15	15
Fourth Year			
Fall	Hours	Spring	Hours
COMM 1950		1 COMM 4920 or 4950	3
COMM XXXX: Applied Visual Communication Emphasis Course	3	Elective or minor	3
COMM XXXX: Applied Visual Communication Emphasis Course	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
Elective or minor	3		
		16	15
Total Hours: 120			



<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Communication BA, Interpersonal Communication Emphasis

The Interpersonal Communication emphasis area focuses on communication processes in personal relationships. Students in this emphasis area will master the ability to communicate meaningfully with colleagues, clients, and loved ones in a variety of settings. Strong interpersonal skills are needed in almost any type of job and can truly transform your career and your life. Our faculty members are actively engaged in research and our students benefit from first-hand knowledge not currently offered at other institutions. Many faculty members have been recognized for excellence or innovation in teaching.

Students majoring in communication must complete a minimum of 36 credit-hours in communication courses. Students may complete either a general communication degree or they may select one of four different emphasis areas as a focus for their studies: Interpersonal Communication, Mass Communication, Applied Visual Communication, or Strategic Communication. To complete the degree with one of these emphases, the student must complete the 21 credit-hour core and at least 15 hours of electives from within the selected emphasis area. In addition, the skills and knowledge applied in the required Practicum/Internship should be consistent with the selected emphasis area. Students seeking a general communication degree must complete the 21 credit-hour core and can select elective courses from any combination of the emphasis areas.

### General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). The college's foreign language requirement may be taken in any language. Communication courses may not be taken on a satisfactory/unsatisfactory basis.

### Degree Requirements

At least 18 credit hours must be taken at UMSL. Furthermore, at least 12 credit hours of the communication courses completed must be numbered 3000-4999 for students seeking a general communication degree, as well as for students pursuing an emphasis area. All students must earn a C or better in each of the required core courses of the major and maintain a 2.0 grade point average in all of the courses applied to the communication degree.

#### Required Courses

COMM 1030	Interpersonal Communication I (MOTR COMM 120)	3
COMM 1050	Introduction to Mass Communication	3
COMM 2231	Communication in the Organization	3
COMM 2332	Intercultural Communication	3
COMM 2235	Professional Communication	3
COMM 3330	Research Methods in Communication I	3

COMM 4920	Practicum in Applied Communication	3
or COMM 4950	Internship in Applied Communication	
Total Hours		21

### Emphasis Area Requirements

The interpersonal emphasis area focuses on communication between individuals and the impact of verbal and nonverbal communication on personal relationships. 15 credits are needed.

Up to six credit hours of Special Topics Courses, Directed Readings courses, and Supervised Research courses offered by the Communication and Media Department can be applied to the emphasis area if the specific topic of the course is relevant to the emphasis area.

Choose five of the following courses:

COMM 1369	Introduction to Health Communication	
COMM 2230	Small Group Communication (MOTR COMM 125)	
COMM 2240	Persuasive Communication	
COMM 3130	Communication in Family, Dating, and Marriage	
COMM 3337	Male/Female Communication	
COMM 3368	Advanced Health Communication	
COMM 4500	Seminar in Fundamental Communication Theory	
COMM 4650	Seminar in Fundamental Interpersonal Communication Theory	
Total Hours		15

### Learning Outcomes

- Explore the roles that communication plays in personal and professional relationships
- Evaluate situations and apply interpersonal communication strategies that will be effective to achieve one's goals
- Apply theories and models of interpersonal communication phenomena to complex, real-life experiences
- Recognize and adapt to different cultures and perspectives
- Sharpen one's self- and other-awareness in order to successfully navigate conflict, manage teamwork, and enhance interpersonal relationships

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 COMM 2231	3
COMM 1030	3	EXPLORE - Mathematics & Life/ Natural Sciences	3
COMM 1050	3	EXPLORE - Humanities & Fine Arts	3
ENGL 1100	3	EXPLORE - Humanities & Fine Arts	3
CORE - Mathematics Proficiency	3	Elective or minor	3
CORE - US History & Government	3		
		16	15
Second Year			
Fall	Hours	Spring	Hours
COMM 2235		3 COMM 2332	3
CORE - Information Literacy	3	EXPLORE - Humanities & Fine Arts	3

EXPLORE - Mathematics & Natural Sciences	3	EXPLORE - Mathematics & Natural Sciences	3
FGN LANG 1001	5	FGN LANG 1002	5
14		14	
<b>Third Year</b>			
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>
COMM 3330	3	COMM XXXX: Interpersonal Communication Emphasis Course	3
ENGL 3100	3	COMM XXXX: Interpersonal Communication Emphasis Course	3
FGN LANG 2101	3	COMM XXXX: Interpersonal Communication Emphasis Course	3
Cultural Diversity	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
15		15	
<b>Fourth Year</b>			
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>
COMM 1950	1	COMM 4920	3
COMM XXXX: Interpersonal Communication Emphasis Course	3	Elective or minor	3
COMM XXXX: Interpersonal Communication Emphasis Course	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
Elective or minor	3		
16		15	

Total Hours: 120

INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

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## Communication BA, Mass Communication Emphasis

This emphasis area focuses on forms of communication that seek to reach broad audiences, such as news, movies, entertainment programming, video games, advertising, and social media. Courses address business strategies behind these forms of mass communication, how they are created, and how they affect individuals and society. Students pursuing this emphasis area gain a deeper understanding of some of the most fascinating and influential institutions in today's society

Students majoring in communication must complete a minimum of 36 credit-hours in communication courses. Students may complete either a general communication degree or they may select one of four different emphasis areas as a focus for their studies: Interpersonal Communication, Mass Communication, Applied Visual Communication, or Strategic Communication. To complete the degree with one of these emphases, the student must complete the 21 credit-hour core and at least 15 hours of electives from within the selected emphasis area. In addition, the skills and knowledge applied in the required Practicum/Internship should be consistent with the selected emphasis area. Students seeking a general communication degree must complete the 21 credit-hour core and can select elective courses from any combination of the emphasis areas.

## General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). The college's foreign language requirement may be taken in any language. Communication courses may not be taken on a satisfactory/unsatisfactory basis.

## Degree Requirements

At least 18 credit hours must be taken at UMSL. Furthermore, at least 12 credit hours of the communication courses completed must be numbered 3000-4999 for students seeking a general communication degree, as well as for students pursuing an emphasis area. All students must earn a C or better in each of the required core courses of the major and maintain a 2.0 grade point average in all of the courses applied to the communication degree.

### Required Courses

COMM 1030	Interpersonal Communication I (MOTR COMM 120)	3
COMM 1050	Introduction to Mass Communication	3
COMM 2231	Communication in the Organization	3
COMM 2332	Intercultural Communication	3
COMM 2235	Professional Communication	3
COMM 3330	Research Methods in Communication I	3
COMM 4920	Practicum in Applied Communication	3
or COMM 4950	Internship in Applied Communication	
<b>Total Hours</b>		<b>21</b>

## Emphasis Area Requirements

The Mass Communication emphasis area focuses on the effects of mass media and the processes through which users create, distribute, and interpret these messages. 15 credits are needed.

Up to six credit hours of Special Topics Courses, Directed Readings courses, and Supervised Research courses offered by the Communication and Media Department can be applied to the emphasis area if the specific topic of the course is relevant to the emphasis area.

Choose five of the following courses:

MEDIA ST 1070	Introduction to Cinema	
COMM 1369	Introduction to Health Communication	
MEDIA ST 2235	Media Theory	
COMM 3355	Dangerous Messages	
MEDIA ST 3355	Media Law and Regulation	
MEDIA ST 3356	Global Media Systems and Trends	
COMM 3368	Advanced Health Communication	
COMM 4500	Seminar in Fundamental Communication Theory	
COMM 4700	Seminar in Fundamental Mass Communication Theory	
<b>Total Hours</b>		<b>15</b>

## Learning Outcomes

- Learn how media industries, such as television, film, video games, radio, recorded music, and advertising, function as businesses and as forms of creative expression
- Understand how the growth of digital technology and social media have affected and changed media industries
- Appreciate how media content plays a role in socialization and learning
- Explore ways in which media content and technologies impact people's behaviors, thoughts, and emotions
- Recognize the various ways individuals interact with media, what needs media fulfill for them, and how this affects their experience with media

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 COMM 2231	3
COMM 1030		3 EXPLORE: Mathematics & Natural Sciences	3
COMM 1050		3 EXPLORE: Humanities & Fine Arts	3
ENGL 1100		3 EXPLORE: Humanities & Fine Arts	3
CORE: Mathematics Proficiency		3 Elective or minor	3
CORE: US History & Government		3	
	16		15
Second Year			
Fall	Hours	Spring	Hours
COMM 2235		3 COMM 2332	3
CORE: Information Literacy		3 EXPLORE: Humanities and Fine Arts	3
EXPLORE: Mathematics & Natural Sciences		3 EXPLORE: Math & Sciences	3
FGN LANG 1001		5 FGN LANG 1002	5
	14		14
Third Year			
Fall	Hours	Spring	Hours
COMM 3330		3 COMM XXXX: Mass Communication Emphasis Course	3
ENGL 3100		3 COMM XXXX: Mass Communication Emphasis Course	3
FGN LAN 2101		3 COMM XXXX: Mass Communication Emphasis Course	3
Cultural Diversity		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		15
Fourth Year			
Fall	Hours	Spring	Hours
COMM 1950		1 COMM 4920	3
COMM XXXX: Mass Communication Emphasis Course		3 Elective or minor	3
COMM XXXX: Mass Communication Emphasis Course		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3	
	16		15
Total Hours: 120			

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in*

*the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Communication BA, Strategic Communication Emphasis

Strategic Communication aims to persuade and inform. Corporations, nonprofits, government agencies, and small businesses use strategic communication tactics to deliver messages to the public in order to encourage individuals to take action. It is an interdisciplinary approach that can incorporate elements from public relations, advertising, health, and organizational communication. Courses in this emphasis area target the skills students need to communicate with audiences through writing, content development, and strategic messaging. Professions that may apply strategic communication principles include advertising, public relations or any profession that communicates with the public for a specific purpose.

Students majoring in communication must complete a minimum of 36 credit-hours in communication courses. Students may complete either a general communication degree or they may select one of four different emphasis areas as a focus for their studies: Interpersonal Communication, Mass Communication, Applied Visual Communication, or Strategic Communication. To complete the degree with one of these emphases, the student must complete the 21 credit-hour core and at least 15 hours of electives from within the selected emphasis area. In addition, the skills and knowledge applied in the required Practicum/Internship should be consistent with the selected emphasis area. Students seeking a general communication degree must complete the 21 credit-hour core and can select elective courses from any combination of the emphasis areas.

## General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). The college's foreign language requirement may be taken in any language. Communication courses may not be taken on a satisfactory/unsatisfactory basis.

## Degree Requirements

At least 18 credit hours must be taken at UMSL. Furthermore, at least 12 credit hours of the communication courses completed must be numbered 3000-4999 for students seeking a general communication degree, as well as for students pursuing an emphasis area. All students must earn a C or better in each of the required core courses of the major and maintain a 2.0 grade point average in all of the courses applied to the communication degree.

### Required Courses

COMM 1030	Interpersonal Communication I (MOTR COMM 120)	3
COMM 1050	Introduction to Mass Communication	3
COMM 2231	Communication in the Organization	3
COMM 2332	Intercultural Communication	3
COMM 2235	Professional Communication	3
COMM 3330	Research Methods in Communication I	3
COMM 4920	Practicum in Applied Communication	3

or COMM 4950	Internship in Applied Communication	
Total Hours		21

### Emphasis Area Requirements

The strategic communication emphasis area deals with public and inter-organizational communication intended to serve a specific company goal or purpose. It is an interdisciplinary emphasis that can incorporate areas from public relations, advertising, and organizational communication. 15 credits are needed.

Up to six credit hours of Special Topics Courses, Directed Readings courses, and Supervised Research courses offered by the Communication and Media Department can be applied to the emphasis area if the specific topic of the course is relevant to the emphasis area.

Choose five of the following courses:

MEDIA ST 1100	Introduction to Advertising	
COMM 1150	Introduction to Public Relations	
COMM 1369	Introduction to Health Communication	
MEDIA ST 2080	Advertising Copywriting	
COMM 2180	Public Relations Writing	
MEDIA ST 2180	Introduction to News Writing	
COMM 2240	Persuasive Communication	
MEDIA ST 3025	Current Issues in Strategic Communication	
COMM 3150	Crisis, Disaster, and Risk Communication	
MEDIA ST 3150	Feature Writing	
MEDIA ST 3338	Advertising Technique	
COMM 3355	Dangerous Messages	
MEDIA ST 3355	Media Law and Regulation	
COMM 3368	Advanced Health Communication	
COMM 3370	Social Media in Public Relations	
COMM 4100	Communication Campaigns	
COMM 4500	Seminar in Fundamental Communication Theory	
COMM 4600	Seminar in Fundamental Organizational Communication Theory	
<b>Total Hours</b>		<b>15</b>

### Learning Outcomes

- Create high-quality print, digital, and video products
- Design high-impact messages tailored to specific audiences
- Learn the fundamental skills necessary to be competitive in the ever-changing communication field
- Interpret and apply strategic communication principles to design, research, and plan strategic communication campaigns
- Compose written materials in a clear and concise format following the appropriate style utilizing the best communication channel
- Create ethically sound, legally and socially responsible strategic communication tactics

### Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 COMM 2231	3
COMM 1030		3 EXPLORE: Mathematics & Life/Natural Sciences	3
COMM 1050		3 EXPLORE: Humanities & Fine Arts	3
ENGL 1100		3 EXPLORE: Humanities & Fine Arts	3
CORE: Mathematics Proficiency		3 Elective or minor	3
CORE: US History & Government		3	
		16	15
Second Year			
Fall	Hours	Spring	Hours
COMM 2235		3 COMM 2332	3
CORE: Information Literacy		3 EXPLORE: Humanities & Fine Arts	3
EXPLORE: Mathematics & Life/Natural Sciences		3 EXPLORE: Mathematics & Life/Natural Sciences	3
FGN LANG 1001		5 FGN LANG 1002	5
		14	14
Third Year			
Fall	Hours	Spring	Hours
COMM 3330		3 COMM XXXX: Strategic Communication Emphasis Course	3
ENGL 3100		3 COMM XXXX: Strategic Communication Emphasis Course	3
FGN LANG 2101		3 COMM XXXX: Strategic Communication Emphasis Course	3
Cultural Diversity Requirement		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
		15	15
Fourth Year			
Fall	Hours	Spring	Hours
COMM 1950		1 COMM 4920	3
COMM XXXX: Strategic Communication Emphasis Course		3 Elective or minor	3
COMM XXXX: Strategic Communication Emphasis Course		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3	
		16	15
Total Hours: 120			

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

### Communication BA/MA Dual Degree Program

The 2+3 Combined BA/MA program in Communication provides an opportunity for students of recognized academic ability and educational maturity to complete the requirements for both degrees in 5 years of full-time study. When all the requirements of the B.A./M.A. program



have been completed, students will be awarded both the B.A. and M.A. degrees.

The combined program requires a minimum of 135 credit hours of which at least 30 must be at the graduate level. In qualifying for the BA, students must meet all University and College requirements.

Student should apply to the Department for admission to the 2+3 combined degree program in Communication during the semester they will complete 60 undergraduate credit hours. A cumulative grade point average of 3.25 or higher and three letters of recommendation from faculty are required. Students will be admitted to the 2+3 program under provisional status until they have completed 15 hours in that program with a grade point average of 3.0 or higher. After completion of the provisional period, with the recommendation of the Graduate Director, students can be granted full admission into the 2+3 program. Students must maintain a grade point average of 3.0 or higher throughout the combined program. Students who officially withdraw from the Combined Program who have successfully completed all the requirements for the B.A. degrees will be awarded the B.A. degree.

### Core Requirements for the Communication BA Major

COMM 1030	Interpersonal Communication I (MOTR COMM 120)	3
COMM 1050	Introduction to Mass Communication	3
COMM 2231	Communication in the Organization	3
COMM 2235	Professional Communication	3
COMM 2332	Intercultural Communication	3
COMM 3330	Research Methods in Communication I	3
COMM 4950 or COMM 4920	Internship in Applied Communication Practicum in Applied Communication	3

### Core Requirements for the Communication MA

COMM 6500	Seminar in Communication Theory	3
COMM 6510	Advanced Communication Research Methods I	3
Choose 3 from the following:		9
COMM 6600	Seminar in Strategic Communication in Organizations	
COMM 6630	Seminar in Interpersonal Communication	
COMM 6700	Seminar in Mass Communication	
COMM 6800	Seminar in Health Communication	

All of the Masters coursework must be taken under graduate status. However, with advance permission (Graduate Form C-1), students may take up to 6 credit hours of 5000/6000 level courses while still classified as an undergraduate. No 4000-level courses taken as an undergraduate may be applied to the Master's degree. This means all combined section classes must be taken as graduate courses in order to count for the graduate degree. These 6 hours will be treated by the Graduate School as "undergraduate status" and they may be counted toward a master's degree. Up to 15 credit hours of graduate courses can be applied to the undergraduate degree.

## Communication MA

### Admission Requirements

Applicants must have a baccalaureate in communication or a related discipline by the end of the semester in which they apply. The minimum cumulative GPA required for regular admission to the graduate program in communication is 3.25 on a 4-point scale. In addition, three letters of recommendation, at least two of which address the applicant's potential to succeed in graduate studies in communication, are also required. Finally, international students who are non-native speakers of English must obtain a TOEFL iBT score of 100 to be considered for admission. Applicants with GPAs that do not meet the admission criterion may elect to submit other materials, such as scores on the Graduate Record Exam (GRE), to offset these deficiencies. Contact the Graduate Program Director for more information.

### Degree Requirements

The MA in Communication requires either 30 or 36 credit hours of coursework, depending on the exit project. Candidates approved for a thesis or internship will complete at least 30 semester hours of approved study, at least 21 of which must be taken in courses offered by the department. Candidates completing the non-thesis, non-internship option must complete 36 semester hours of approved study, 27 of which must be taken in courses offered by the department. However, students who choose this option may be eligible to waive up to 6 hours if justified by prior coursework or professional experience. Please contact the Graduate Program Coordinator for additional details.

All students complete a 15 credit-hour core. This includes two required courses focusing on the fundamental theories and basic research methods within the field. To complete the core, students will select at least three of four 'applications' courses dealing with communication processes within a particular context.

### Required Courses:

COMM 6500	Seminar in Communication Theory	3
COMM 6510	Advanced Communication Research Methods I	3
Choose three of the following four applications courses:		9
COMM 6600	Seminar in Strategic Communication in Organizations	
COMM 6630	Seminar in Interpersonal Communication	
COMM 6700	Seminar in Mass Communication	
COMM 6800	Seminar in Health Communication	

Total Hours 15

Students who choose the internship or thesis option must identify a prospective committee, including a chairperson and two additional committee members, who will consult in development of an appropriate exit project. The expectation for each internship varies by project and committee, but submission of an essay in which the coursework and internship experiences are integrated is typically required. Internship exit projects and theses must be approved by the student's committee and assigned a grade by the advisor. Students who complete a thesis or internship must complete no less than a 3 hour internship or 6 credit hour thesis.

## Communication Minor

Coursework for a minor in Communication consists of 15 semester hours of the core requirements for the major. Credit hours in and/or COMM 3395 may be substituted for credit hours listed below with written consent of the communication department chairperson.

### Core Requirements:

COMM 1030	Interpersonal Communication I (MOTR COMM 120)	3
COMM 1050	Introduction to Mass Communication	3
COMM 2231	Communication in the Organization	3
COMM 2332	Intercultural Communication	3
COMM 3330	Research Methods in Communication I	3
Total Hours		15

At least 9 of the 15 hours required for the minor must be taken at UMSL.

Students must earn at least a C for all communication courses applied to the minor. A minimum GPA of 2.5 is required in the minor.

## Community College Leadership Graduate Certificate

Effective Fall 2019, The Community College Leadership Graduate Certificate will no longer be accepting applications

### Certificate Requirements

The certificate program will allow participating candidates to develop skills and knowledge through completing the 18 hour curriculum outlined in the following section:

HIGHERED 6430	The Community College (Taught by UMSL Faculty - Entry Level course)	3
HIGHERED 6431	Community College Leadership (Taught by UMSL Faculty )	3
EDUL 5559	Current Issues in the Community College (Taught by UMKC Faculty)	3
EDUL 5553	Supervising and Managing People (Taught by UMKC Faculty)	3
Elective (Can be taken from either institution or an approved elective from the student's home institution)		3
Select one of the following (Capstone Experience):		3
HIGHERED 6900	Internship (UMSL)	
EDUL 5571	Internship in Higher Education (UMKC)	
Total Hours		18

## Computer Programming Education Undergraduate Certificate

The undergraduate certificate in Computer Programming Education is an 18 credit hour program. It is designed to provide secondary school science teachers with training needed to implement a range of computer

programming related courses in their schools. A minimum GPA of 2.5 is required for admission.

A minimum of four courses must be taken in residence in the Department of Mathematics and Computer Science at UMSL. Courses may be substituted with the permission of the program director.

### Core Courses

CMP SCI 1250	Introduction to Computing	3
CMP SCI 2250	Programming and Data Structures	3
CMP SCI 2261	Object-Oriented Programming	3
ED TECH 3420	Computer Programming and Pedagogy	1-3

### Electives 6

Choose two of the following:

CMP SCI 2700	Computer Organization and Architecture	
CMP SCI 2750	System Programming and Tools	
CMP SCI 3010	Web Programming	
CMP SCI 3702	Cyber Threats and Defense	
CMP SCI 4010	Advanced Web Development with Java	
CMP SCI 4011	Web Development with Advanced JavaScript	
CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	
CMP SCI 4220	Introduction to iOS Programming and Apps	
CMP SCI 4222	iOS Apps	
CMP SCI 4610	Database Management Systems	
INFSYS 3844	Developing Business Applications in .NET	
Total Hours		18

## Computer Programming Undergraduate Certificate

The undergraduate certificate in Computer Programming is a five-course (15 credit hour) program. It is designed to provide a quick, yet broad training in technologies leading to secure and interesting careers in computer programming or education. Students majoring or minoring in Computer Science may not earn this certificate. A minimum GPA of 2.5 is required for admission.

A minimum of three courses must be taken from UMSL. Courses may be substituted with the permission of the certificate coordinator. For more information, students can contact the department chair or email [info@arch.edu](mailto:info@arch.edu).

### Required Courses

CMP SCI 1250	Introduction to Computing	3
CMP SCI 2250	Programming and Data Structures	3
CMP SCI 2261	Object-Oriented Programming	3

### Electives

Choose two of the following courses: 6

CMP SCI 2700	Computer Organization and Architecture	
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CMP SCI 2750	Linux Environment and Programming
CMP SCI 3010	Web Programming
CMP SCI 3130	Design and Analysis of Algorithms
CMP SCI 3702	Introduction to Cyber Threats and Defense
CMP SCI 4010	Advanced Web Development with Java
CMP SCI 4011	Web Development with Advanced JavaScript
CMP SCI 4020	Introduction to Android Apps: Android Fundamentals
CMP SCI 4200	Python for Scientific Computing and Data Science
CMP SCI 4220	Introduction to iOS Programming and Apps
CMP SCI 4222	iOS Apps
CMP SCI 4610	Database Management Systems
INFSYS 3844	Developing Business Applications in .NET
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Total Hours	15

## Computer Science BS

The BS in Computer Science is designed for those interested in software and computer systems on the technical side. Graduating seniors can find fulfilling careers in many related areas such as cybersecurity, networks, Internet programming, software and mobile apps development, data science, AI, graphics, or pursue additional graduate studies in computer science or in a more specialized area. Some courses are available online, and the entire program can be completed in the evening.

### General Education Requirements

All department majors must satisfy the university and appropriate school or college general education requirements (p. 51). All mathematics courses may be used to meet the university's general education breadth of study requirement in natural sciences and mathematics.

### Satisfactory/Unsatisfactory Restrictions

All department majors may not take mathematical sciences or related area courses on a satisfactory/unsatisfactory basis. Students considering graduate study should consult with their advisers about taking work on a satisfactory/unsatisfactory basis.

### Degree Requirements

All courses of the department presented to meet the degree requirements must be completed with a grade of C- or better. At least four courses numbered 3000 or above must be taken in residence. Students must have a 2.0 grade point average in the mathematical sciences courses completed.

Students enrolling in introductory mathematics courses should check the prerequisites to determine if a satisfactory score on the Mathematics Placement Test is necessary. Placement into introductory courses assumes a mastery of two years of high school algebra.

A minimum grade of C- is required to meet the prerequisite requirement for any course except with permission of the department.

Note: Courses that are prerequisites for higher-level courses may not be taken for credit or quality points if the higher-level course has been satisfactorily completed.

Many students are qualified, as a result of having studied calculus in high school, to begin their major with MATH 1900, Analytic Geometry and Calculus II, or MATH 2000, Analytic Geometry and Calculus III. These students are urged to consult with the department before planning their programs. Credit for MATH 1800, Analytic Geometry and Calculus I, will be granted to those students who complete MATH 1900 with a grade of C- or better.

Similarly, students who are ready to begin their computer science studies with CMP SCI 2250, Programming and Data Structures, will be granted credit for CMP SCI 1250, Introduction to Computing, once they complete CMP SCI 2250 with a grade of C- or better.

## Declaring the Computer Science Major

Students seeking to major in computer science are first designated as "pre-computer science majors" until they have completed CMP SCI 2750 or equivalent course. Upon successful completion of this course with a grade of C- or better, students will be allowed to declare computer science as their major. This course must be completed successfully within two attempts.

## Degree Requirements in Computer Science

Candidates for the B. S. Computer Science degree must complete the following work:

### 1) Computer Science Core

CMP SCI 1250	Introduction to Computing	3
CMP SCI 2250	Programming and Data Structures	3
CMP SCI 2261	Object-Oriented Programming	3
CMP SCI 2700	Computer Organization and Architecture	3
CMP SCI 2750	System Programming and Tools	3
CMP SCI 3010	Web Programming	3
CMP SCI 3130	Design and Analysis of Algorithms	3
CMP SCI 4250	Programming Languages	3
CMP SCI 4280	Program Translation	3
CMP SCI 4500	Introduction to the Software Profession	3
CMP SCI 4760	Operating Systems	3

### 2) Computer Science Electives

Select five more elective computer science courses, numbered above 3000. 15

### 3) Mathematics and Statistics

MATH 1320	Introduction to Probability and Statistics	3
MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2450	Elementary Linear Algebra	3
MATH 3000	Discrete Structures	3

### 4) Additional Skills

ENGL 3130	Technical Writing	3
Total Hours		70

There are no related area requirements for majors in Computer Science

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Apply logical reasoning, algorithmic and mathematical principles, and computer science theory to understand and solve a wide variety of computational problems
- Analyze computing problems, their size and scope, and input-output requirements
- Analyze, evaluate, and compare alternative solutions to computing problems, with particular reference to computational complexity, scalability, and usability
- Compare multiple general-purpose programming languages and select and use the appropriate languages for specific applications
- Design, implement (code) and document solutions to computational problems
- Create software systems following specific design and performance requirements within practical constraints
- Implement Internet applications on client and server sides
- Work effectively in teams to design, implement and evaluate solutions to computational problems
- Effectively communicate computer science concepts and solutions, verbally and in writing
- Recognize and promote the professional, social, ethical and legal issues and responsibilities in the computing / software profession

## Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 CMP SCI 1250	3
ENGL 1100	3	MATH 1800	5
MATH 1030	3	CORE – US History & Government	3
MATH 1035	2	EXPLORE – Social Sciences	3
EXPLORE – Humanities & Fine Arts	3	EXPLORE – Humanities & Fine Arts	3
EXPLORE – Social Sciences	3		
15		17	

### Second Year

Fall	Hours	Spring	Hours
CMP SCI 2250	3	CMP SCI 2261	3
CMP SCI 2700	3	CMP SCI 2750	3
MATH 1320	3	CMP SCI 3010	3
MATH 1900	5	MATH 3000	3
EXPLORE – Humanities and Fine Arts	3	CORE – Communication Proficiency	3
17		15	

### Third Year

Fall	Hours	Spring	Hours
CMP SCI 3130	3	CMP SCI 4760	3
CMP SCI 4250	3	CMP SCI 3000+ level elective	3
CMP SCI XXXX Elective Course	3	CMP SCI 3000+ level elective	3
MATH 2450	3	EXPLORE – Social Sciences	3
ENGL 3130	3	Elective or minor	2
15		14	

### Fourth Year

Fall	Hours	Spring	Hours
CMP SCI 4500	3	CMP SCI 4280	3
CMP SCI 3000+ level elective	3	CMP SCI 3000+ level elective	3
Cultural Diversity Requirement	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
Elective or minor	3		
15		12	

Total Hours: 120

- 1 INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Computer Science BS/MS Dual Degree Program

### BS and MS Dual Degree in Computer Science

The Integrated BS/MS ('2+3') dual degree program involves dual credit for qualified undergraduate Computer Science students. It allows the students to concurrently earn credit for some graduate courses while working on their undergraduate degree, reducing the total hours needed for the subsequent MS degree by up to 12 credit hours.

#### Entry Requirements

Undergraduate majors can apply for provisional admission to this program if:

1. They have completed at least 60 credit hours of coursework.
2. Their overall GPA is 3.0 or higher.
3. Non-CS majors must at the same time become CS majors.

Upon acceptance to the program in the provisional status, the student continues to work toward his/her undergraduate degree in computer science.

After completion of a minimum of 90 hours and no more than 30 hours away from the undergraduate degree, a provisionally admitted student applies for formal admission to the graduate program. At this point, the student must meet the entry requirements for admission to the M.S. degree in Computer Science.

#### Degree Requirements

After acceptance into the program, the student continues to complete his/her undergraduate degree. The student is reclassified as a graduate student from the next semester and must pay graduate fees. The student will be assigned a graduate adviser to help optimize the transition to the graduate program. The student continues taking the undergraduate courses but is also allowed to take courses reserved for graduate students. The student completes all the courses to fulfill the requirements to complete his/her M.S. degree in Computer Science – but must also complete the undergraduate requirements. Up to 12 credit hours can



be counted towards both the undergraduate and graduate degrees, substantially reducing the hours needed to complete the graduate program by itself.

A student may file for and receive the undergraduate degree at any time when all the requirements are completed, before or in the same semester in which the Master's degree is completed. A student must still complete all the requirements to get a B.S. degree, regardless of whether the student files for the degree or not. A student may choose to finish the studies just with a B.S.

## Computer Science Minor

All courses presented for this minor must be completed with a grade of C- or better.

The requirements for the minor are:

CMP SCI 1250	Introduction to Computing	3
CMP SCI 2250	Programming and Data Structures	3
Select three additional computer science courses numbered 2000 or above.		9
<hr/>		
Total Hours		15

A minimum of two computer science courses numbered above 2000 must be taken in residence in the Department of Mathematics and Computer Science at UMSL.

### Learning Outcomes

Upon completion of a Minor in Computer Science at the University of Missouri St. Louis, students will be able to:

- Identify and interpret the basic computational issues in problem solving
- Apply the tools and techniques necessary for programming practice
- Use at least two general-purpose programming languages for solving computational problems
- Design, implement (code) and document solutions to computational problems

## Computer Science MS

### Admission Requirements

Applicants must meet the general graduate admission requirements of the Graduate School, described in the UMSL Bulletin. Students are considered for admission to the graduate program in Computer Science only after they have formally applied for admission through the Graduate School. Applications are completed on-line. Additional requirements are listed below.

Applicants must demonstrate significant proficiency in computer science by showing competence (demonstrating related academic or professional experience) in the following areas. Courses in parentheses are UMSL recommended undergraduate courses that would satisfy the requirements.

1. Programming skills in C or C++ and Java (CMP SCI 1250 or CMP SCI 2250, and CMP SCI 2261)
2. Proficiency with Object-Oriented concepts and terminology (CMP SCI 2261)

3. Proficiency with dynamic data structures (CMP SCI 2250)
4. Proficiency with computer organization, architecture, or assembly level programming (CMP SCI 2700)
5. Proficiency with design and time/space analysis of algorithms (CMP SCI 3130)
6. Familiarity with Unix/Linux/OSX and with command-line processing, file system and permissions, shell and script programming (CMP SCI 2750)

Students must also have satisfactorily completed mathematics courses equivalent to the following UMSL courses:

1. One semester of calculus (MATH 1800)
2. A course in discrete mathematics (MATH 3000)
3. An elementary course in probability or statistics (MATH 1320)

An applicant missing some of the above requirements may be admitted on restricted status if there is strong supportive evidence in other areas. Such restricted students would have to take the suggested courses for the missing requirements or otherwise demonstrate proficiency. Special regulations of the Graduate School that apply to students on restricted status are described in the UMSL Bulletin.

### Degree Requirements

Students choose one of the following options.

1. Traditional Computer Science option
2. Certificate option

Students must complete the following common requirements and additional specific requirements specific to the chosen option.

Candidates for the M.S. degree in Computer Science must complete 30 credit hours of course work in CMP SCI, subject to the Graduate School regulations. Up to 6 hours can be completed outside CMP SCI in a related field, based on student's interests, with permission of the Graduate Director. Up to 9 graduate credit hours can be transferred into the program.

At least 18 credit hours must be numbered 5000 or above, and at least 3 credit hours must be at the 6000-level (research courses or thesis). All courses numbered below 5000 must be completed with a grade of at least B-.

All students must complete the following core courses

CMP SCI 4250	Programming Languages	3
CMP SCI 5130	Advanced Data Structures and Algorithms	3
CMP SCI 5500	Software Engineering	3
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Total Hours		9

Students having prior similar courses may apply for a waiver if the course was passed at the undergraduate level (students will replace the core course with another) or credit if the course was passed at the graduate level. Students may also request a waiver based on demonstrated similar experience or a combination of courses and experience.

Students may choose to write an M.S. thesis under the direction of a faculty member in the Department of Mathematics and Computer Science (CMP SCI 6900). A student writing an M.S. thesis must defend the

thesis in an oral exam administered by a committee of three department members which includes the thesis director.

Additionally, students must attend at least five different seminars or colloquium presentations in the department prior to applying for graduation.

## Traditional Computer Science Option

This option allows students to complete a traditional computer science graduate program. In addition to the common core requirements, students must also complete the following courses as part of the minimum 30 hours:

CMP SCI 4760	Operating Systems	3
CMP SCI 5700	Computer Systems	3

## Certificate Option

This option is for students interested in a very specific area of study as indicated by a certificate. In addition to the common core requirements, students must complete any of the graduate certificates in the department as part of the minimum 30 hours.

For a list of current certificates visit the Mathematics and Department page in the University Bulletin.

For further information about our Graduate Degrees in Mathematics and Computer Science, financial aid, and the regulations of the Graduate School, see our [page on advanced degrees](#).

## Computing Technology BS

The B.S. in computing technology favors exposure to a wide variety of tools and technologies over the traditional computer science background. This degree is designed for those interested in broad and deep computing education but without some traditional advanced courses. It is meant for those who want to focus more on technologies and transition to fulfilling careers, or those interested in future graduate study in an area related to computer science.

## General Education Requirements

All department majors must satisfy the university and appropriate school or college general education requirements (p. 51). All mathematics courses may be used to meet the university's general education breadth of study requirement in natural sciences and mathematics.

## Satisfactory/Unsatisfactory Restrictions

All department majors may not take mathematical sciences or related area courses on a satisfactory/unsatisfactory basis. Students considering graduate study should consult with their advisers about taking work on a satisfactory/unsatisfactory basis.

## Degree Requirements

All courses of the department presented to meet the degree requirements must be completed with a grade of C- or better. At least four courses numbered 3000 or above must be taken in residence. Students must have a 2.0 grade point average in the mathematical sciences courses completed.

Students enrolling in introductory mathematics courses should check the prerequisites to determine if a satisfactory score on the Mathematics

Placement Test is necessary. Placement into introductory courses assumes a mastery of two years of high school algebra.

A minimum grade of C- is required to meet the prerequisite requirement for any course except with permission of the department.

Note: Courses that are prerequisites for higher-level courses may not be taken for credit or quality points if the higher-level course has been satisfactorily completed.

Many students are qualified, as a result of having studied calculus in high school, to begin their major with MATH 1900, Analytic Geometry and Calculus II, or MATH 2000, Analytic Geometry and Calculus III. These students are urged to consult with the department before planning their programs. Credit for MATH 1800, Analytic Geometry and Calculus I, will be granted to those students who complete MATH 1900 with a grade of C- or better.

Similarly, students who are ready to begin their computer science studies with CMP SCI 2250, Programming and Data Structures, will be granted credit for CMP SCI 1250, Introduction to Computing, once they complete CMP SCI 2250 with a grade of C- or better.

Candidates for the B. S. Computing Technology degree must complete the following courses:

### Core

CMP SCI 1000	Computer Science Experiences	1
CMP SCI 1250	Introduction to Computing	3
CMP SCI 2250	Programming and Data Structures	3
CMP SCI 2261	Object-Oriented Programming	3
CMP SCI 2700	Computer Organization and Architecture	3
CMP SCI 2750	Linux Environment and Programming	3
CMP SCI 3010	Web Programming	3
CMP SCI 3702	Introduction to Cyber Threats and Defense	3
or CMP SCI 3780	Software Security	
CMP SCI 4010	Advanced Web Development with Java	3
CMP SCI 4500	Introduction to the Software Profession	3
CMP SCI 4610	Database Management Systems	3
INFSYS 3844	Developing Business Applications in .NET	3
INFSYS 3868	Secure Software Development	3

### Computer Science Electives

Select six more elective computer science courses, numbered 3000 and above. (May use up to two information system courses as part of this requirement with permission of the department chair.) 18

### Mathematics and Statistics

MATH 1320	Introduction to Probability and Statistics	3
MATH 3000	Discrete Structures	3
MATH 1100	Basic Calculus	3-5
or MATH 1800	Analytic Geometry and Calculus I	

### Additional Skills

ENGL 3130	Technical Writing	3
Total Hours		67-69

There are no related area requirements for majors in Computing Technology.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Apply algorithmic principles to solve a variety of computational problems
- Analyze computing problems, their size and scope, and input-output requirements
- Compare alternative solutions to computing problems
- Use multiple general-purpose programming languages for solving computational problems
- Design, implement (code) and document solutions to computational problems, especially for business applications
- Design, evaluate, and manage information technology infrastructure in an organization
- Create secure software systems that meet specified needs
- Work effectively in teams to design and implement solutions to computational problems
- Effectively communicate computing technology concepts and solutions, verbally and in writing
- Recognize and promote the professional, social, ethical and legal issues and responsibilities in the computing / software profession

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 CMP SCI 1250	3
ENGL 1100	3	MATH 1800	5
MATH 1030	3	CORE - American History and Government	3
MATH 1035	2	EXPLORE - Humanities and Fine Arts	3
EXPLORE - Humanities and Fine Arts	3	EXPLORE - Social Sciences	3
EXPLORE - Social Sciences	3		
		15	17

Second Year			
Fall	Hours	Spring	Hours
CMP SCI 2250		3 CMP SCI 2261	3
CMP SCI 2700		3 CMP SCI 2750	3
MATH 1320		3 CMP SCI 3010	3
MATH 3000		3 CORE - Communication Proficiency	3
Cultural Diversity Course		3 EXPLORE - Social Sciences	3
		15	15

Third Year			
Fall	Hours	Spring	Hours
CMP SCI 4010		3 CMP SCI 3702	3
CMP SCI 3000-level course		3 INFSYS 3868	3
INFSYS 3844		3 CMP SCI or INFSYS 3000-level course	3
ENGL 3130		3 EXPLORE - Humanities and Fine Arts	3
Elective or minor		3 Elective or minor	3
		Elective or minor	3
		15	18

Fourth Year			
Fall	Hours	Spring	Hours
CMP SCI 4610		3 CMP SCI 4500	3

CMP SCI or INFSYS 3000-level course	3 CMP SCI 3000-level course	3
CMP SCI 3000-level course	3 CMP SCI 3000-level course	3
Elective or minor	3 Elective or minor	3
Elective or minor	3 Elective or minor	1
		15
		13

Total Hours: 123

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Conservation Biology Undergraduate Certificate

The Certificate in Conservation Biology is a multidisciplinary program of study integrating theoretical and applied topics associated with conservation biology. The certificate is intended for undergraduate students with majors in biology or in any other field who wish to develop a specialization in conservation. The certificate is offered by the Department of Biology in cooperation with the departments of Anthropology, Economics, History, Philosophy, and Political Science. Building on a core curriculum, students can elect courses from these departments to complete their requirements. Regularly enrolled undergraduates at UMSL or individuals with baccalaureate degrees who wish to receive a Certificate in Conservation Biology are eligible to participate in the conservation certificate program. To participate, students should design their program in consultation with their regular academic advisor and the Biology faculty professor of record for the certificate program. Guidelines for admission to the certificate program are also available. Individuals with baccalaureate degrees who are interested in this certificate must apply to the university as unclassified undergraduates. The certificate requires completion of 21 credit hours, outlined below. Students should consult the Bulletin with regard to prerequisites for any of the courses listed here.

### Core Courses

Biology		
BIOL 2102	Ecology	3
BIOL 3202	Conservation Biology	3
BIOL 3203	Conservation Biology Laboratory	2
BIOL 4299	Practicum in Conservation	2

### Electives

The remaining 11 credits must be selected from courses listed below. Five credits must be taken from within biology and 6 credits outside biology, from at least two departments.

#### Anthropology

ANTHRO 2120	Native Peoples of North America
ANTHRO 2132	Archaeology of North America
ANTHRO 3228	People and Plants

#### Biology

BIOL 4102	Behavioral Ecology
BIOL 4182	Population Biology

BIOL 4192	Applications of Geographic Information Systems
BIOL 4245	Field Biology
BIOL 4402	Ornithology
BIOL 4403	Ornithology Laboratory
BIOL 4422	Entomology
BIOL 4423	Entomology Laboratory
BIOL 4501	Flowering Plant Families: Phylogeny and Diversification
<b>Economics</b>	
ECON 4550	Natural Resource Economics
ECON 3500	The Economics of Government Spending and Taxation
ECON 4160	Geospatial Analysis in the Social Sciences
ECON 4170	Fundamentals of Cost-Benefit Analysis
<b>History</b>	
HIST 3000	Special Topics in History
<b>Political Science</b>	
POL SCI 3480	Environmental Policy
POL SCI 3850	International Organizations and Global Problem-Solving
Total Hours	21

## Learning Outcomes

Upon successful completion of the Conservation Biology Certificate program, students will be able to:

- Demonstrate knowledge of the principles of evolution, and wildlife and conservation biology and how they are used to manage wildlife and solve environmental problems
- Integrate aspects of social, political, and economic sciences to recognize and solve problems related to biological conservation
- Design conservation biology focused experiments and research protocols
- Collect field data using best-practice procedures
- Analyze conservation data and present evidence to scientific and lay audiences
- Synthesize conservation plans that incorporate traditional knowledge and diverse perspectives
- Apply research findings to the practical realities of managing regulated species

## Corporate Controllership Graduate Certificate

### Program Description

The Graduate Certificate in Corporate Controllership provides students with the skills to succeed in corporate financial management. Topics emphasized include cost behavior and control, budgeting, forecasting, financial analysis, and business analytics.

## Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

## Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs. All 12 credit hours taken as part of this certificate transfer to the MBA degree program.

### Required Course

ACCTNG 5411	Cost Systems Analysis	3
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### Electives

Select three of the following courses: 9

ACCTNG 5412	Graduate Topics in Management Accounting: Controllership
ACCTNG 4441	Advanced Federal Income Tax: Business Taxation
ACCTNG 5443/ INFSYS 6833	Decision Support Systems for Business Intelligence
ACCTNG 5444/ SCMA 6345	Business Analytics and Data Mining

Total Hours 12

## Corporate Financial Reporting Graduate Certificate

The Graduate Certificate in Corporate Financial Reporting is designed for individuals seeking expertise in corporate accounting and financial reporting. This certificate is ideal for persons ultimately seeking positions such as Manager of Financial Reporting, Chief Accounting Officer, Director of Investor Relations, and Chief Financial Officer.

## Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

## Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs.

All 12 credit hours taken as part of this certificate transfer to the MBA degree program.

### Required Courses

ACCTNG 4401	Financial Accounting and Reporting III	3
ACCTNG 4402	Financial Accounting and Reporting IV	3
ACCTNG 5402 or ACCTNG 5406	Professional Accounting Research Research and Professional Writing in Accounting	3

### Elective

Select one of the following courses: 3

ACCTNG 5403	Graduate Topics in Financial Accounting
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ACCTNG 5412	Graduate Topics in Management Accounting: Controllership
ACCTNG 5451	Accounting and Auditing in Governmental and Not-for-Profit Entities
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Total Hours	12

## Counseling MEd, Clinical Mental Health Emphasis

### Mission

The Clinical Mental Health Counseling Program of the Department of Education Sciences and Professional Programs prepares professional counselors, including mental health, career, addictions, couples/family, and child and adolescent counselors, to serve the mental health needs of culturally diverse individuals, groups, couples, and families in need. The program's outreach extends to schools, colleges and universities, community based organizations, business and industry, as well as independent practice. The program strives to develop a culturally diverse student population and to draw students from local, regional, national, and international locations.

### Purpose

The M.Ed. in Clinical Mental Health Counseling program prepares clinical mental health counselors for positions in community colleges, universities, employment agencies, vocational rehabilitation agencies, probation and parole work, juvenile detention, alcoholism and drug abuse clinics, career planning and placement centers, community mental health agencies, family and children services, and various federally funded public service projects. Additionally, graduates are employed in career development, and business and industry positions, especially in training and personnel areas. Others have moved into roles calling for research and evaluation skills. The program is designed to fulfill entry-level program standards of preparation. It also is intended to enable program graduates to apply for the Missouri License for Professional Counselors.

### Admission

In addition to meeting the general admission requirements of the Graduate School, applicants to the M.Ed. must complete the program supplemental application, have two completed references on file, have an undergraduate GPA of 3.0, and upon admission will take CNS ED 6010, Theories of Counseling, in their first semester. Admissions will be conducted twice a year. The deadlines for application are March 1 for the fall semester and October 1 for the spring semester.

Since it is the objective of the counseling faculty to identify students with low potential for competent practice as early as possible and to initiate the necessary procedures for dealing with such students, faculty of the counseling program reserve the right to review students at any stage of their coursework. A U (Unsatisfactory) in any clinical course or any grade less than a B- in these core counseling courses will automatically trigger a review process by the Counseling Review Board.

CNS ED 6010	Theories of Counseling
CNS ED 6020	Ethical and Professional Issues in Counseling
CNS ED 6060	Helping-Relationship Skills
CNS ED 6270	School Counseling Practicum
CNS ED 6280	School Counseling Field Experience

CNS ED 6370	Clinical Mental Health Counseling Practicum I
CNS ED 6380	Clinical Mental Health Counseling Field Experience

The Counseling Review Board process, however initiated, may result in the termination of the student's degree program or other required or recommended remedies to address deficiencies judged by the Counseling Review Board as related to the skills that are essential to the development of competent and ethical practices as a professional counselor.

Students admitted to the M.Ed. degree programs in counseling as "restricted graduate students" (see the "graduate study" rules in this Bulletin) must attain a 3.0 GPA in the 12 hours of course work at UMSL. Restricted students must include the following courses in the first 12 hours of coursework: CNS ED 6010: Theories of Counseling and CNS ED 6020: Ethical and Professional Issues in Counseling. A student on restricted status earning any grade less than a B- in either of these courses but still maintaining a 3.0 GPA, will be allowed to repeat the course one time and must earn a grade of B- or better to be fully admitted.

### Master of Education: Emphasis in Clinical Mental Health Counseling

The clinical mental health counseling emphasis prepares professionals for work in community settings, universities, and businesses. Graduates are eligible for the Missouri Licensed Professional Counselor and National Certified Counselor credentials.

### Core Curriculum (CNS ED)

CNS ED 6010	Theories of Counseling	3
CNS ED 6020	Ethical and Professional Issues in Counseling	3
CNS ED 6030	Foundations for Multicultural Counseling	3
CNS ED 6040	Group Procedures in Counseling	3
CNS ED 6050	Individual Inventory	3
CNS ED 6060	Helping-Relationship Skills	3
CNS ED 6070	Psychopathology and Diagnosis	3
CNS ED 6300	Foundations of Clinical Mental Health Counseling	3
CNS ED 6370	Clinical Mental Health Counseling Practicum I	3
CNS ED 6380	Clinical Mental Health Counseling Field Experience	6
CNS ED 6400	Career Information and Development	3
CNS ED 6500	Introduction to Systems Theory for Couples and Family Counseling	3
CNS ED 6700	Introduction to Addictive Behaviors and Addiction Counseling	3
One course from the advanced multicultural cognate which includes:		3
CNS ED 6810	Integrating Religion and Spirituality in Counseling	
CNS ED 6820	Counseling Women Toward Empowerment	
CNS ED 6830	Counseling African American Clients	

CNS ED 6840	Counseling Sexual and Gender Minorities	
CNS ED 6850	Social Class and Poverty Issues In Counseling	
CNS ED 6860	Human Sexuality in Counseling	

#### Psychological Foundations and Human Development

The following course is required:

ED PSY 6210	Life-Span: Individual and Family Development	3
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#### Educational Research and Evaluation Methods

The following course is required:

ED REM 6710	Educational Research Methods and Design	3
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#### Electives and Area of Specialization 9

Electives and coursework in an area of specialization should be selected in consultation with the adviser. Areas of specialization are not required but may be chosen. They include career counseling, addictions/substance abuse counseling, child and adolescent counseling, couples and family counseling, and others.

Comprehensive Examination (Capstone Experience) <sup>1</sup>

**Total Hours 60**

<sup>1</sup> Please consult with the Department office for requirements and dates of this examination.

\* Pending Faculty Senate C&I approval.

## Learning Outcomes

The Master of Education in Counseling programs prepare professionals to work in educational settings - elementary, middle, or high schools - as school counselors or in clinical settings - clinics, community mental health centers, or private practice - as clinical mental health counselors. Counselors have professional preparation in the theory and practice of counseling, treatment planning, and career development.

The candidate learning outcomes of the school and clinical mental health counseling programs are to:

Be prepared to function effectively and ethically as counselors in a variety of professional settings which includes school, community, and clinical mental health settings.

1. Be self-aware and sensitive to their clients as people who exist in the context of different cultures and races and people who are potentially at risk.
2. Be able to flexibly and skillfully construct and apply theory and techniques to fit the changing needs of clients both individually and in groups, within school, community, and/or clinical mental health settings.
3. Be proficient with the understanding and human relations skills necessary to consult as part of a team effort, within a school, community, and/or mental health setting.
4. Be prepared to help individuals meet developmental concerns and needs both individually and in a variety of developmental group programs, within a school, community, or clinical mental health setting.

5. Be knowledgeable about career development and the use of appraisal instruments and test interpretation and their impact on individual planning.
6. Be knowledgeable about research methods and research literature.
7. Value developing professional expertise as a lifelong process.

## Counseling MEd, Elementary Emphasis

### Mission

The School Counseling Program of the Department of Education Sciences and Professional Programs prepares professional school counselors to serve the academic, career, and personal/social needs of culturally diverse students in the elementary, middle, and secondary schools. The Counseling Program strives to develop a culturally diverse student population and to draw students from local, regional, national, and international locations.

### Purpose

The M.Ed. in School Counseling degree prepares students to work as school counselors in public or private elementary, middle, or high school settings. Preparation is designed to enable students to deliver counseling services to schools and their extended communities. Students are trained to apply principles of learning, human development, counseling, research, and measurement within the schools. The program is approved by the Missouri Department of Elementary and Secondary Education. Students wishing to receive Missouri certification in Elementary School Counseling or Secondary School Counseling must complete all required courses. Students not possessing a teaching certificate must complete additional coursework to complete their certification requirements.

### Admission

In addition to meeting the general admission requirements of the Graduate School, applicants to the M.Ed. must complete the program supplemental application, have two completed references on file, have an undergraduate GPA of 3.0, and upon admission will take CNS ED 6010, Theories of Counseling, in their first semester. Admissions will be conducted twice a year. The deadlines for application are March 1 for the fall semester and October 1 for the spring semester.

Since it is the objective of the counseling faculty to identify students with low potential for competent practice as early as possible and to initiate the necessary procedures for dealing with such students, faculty of the counseling program reserve the right to review students at any stage of their coursework. A U (Unsatisfactory) in any clinical course or any grade less than a B- in these core counseling courses will automatically trigger a review process by the Counseling Review Board.

CNS ED 6010	Theories of Counseling
CNS ED 6020	Ethical and Professional Issues in Counseling
CNS ED 6060	Helping-Relationship Skills
CNS ED 6270	School Counseling Practicum
CNS ED 6280	School Counseling Field Experience
CNS ED 6370	Clinical Mental Health Counseling Practicum I

CNS ED 6380 Clinical Mental Health Counseling  
Field Experience

The Counseling Review Board process, however initiated, may result in the termination of the student's degree program or other required or recommended remedies to address deficiencies judged by the Counseling Review Board as related to the skills that are essential to the development of competent and ethical practices as a professional counselor.

Students admitted to the M.Ed. degree programs in counseling as "restricted graduate students" (see the "graduate study" rules in this Bulletin) must attain a 3.0 GPA in the 12 hours of course work at UMSL. Restricted students must include the following courses in the first 12 hours of coursework: CNS ED 6010: Theories of Counseling and CNS ED 6020: Ethical and Professional Issues in Counseling. A student on restricted status earning any grade less than a B- in either of these courses but still maintaining a 3.0 GPA, will be allowed to repeat the course one time and must earn a grade of B- or better to be fully admitted.

The courses listed below meet the coursework requirements for the M.Ed. degree, state certification as a school counselor, and licensing as a professional counselor:

#### Counselor Education

CNS ED 6010	Theories of Counseling	3
CNS ED 6020	Ethical and Professional Issues in Counseling	3
CNS ED 6030	Foundations for Multicultural Counseling	3
CNS ED 6040	Group Procedures in Counseling	3
CNS ED 6050	Individual Inventory	3
CNS ED 6060	Helping-Relationship Skills	3
CNS ED 6200	Foundations of School Counseling	3
CNS ED 6270	School Counseling Practicum	3
CNS ED 6280	School Counseling Field Experience	6
CNS ED 6400	Career Information and Development	3
CNS ED 6600	Theories and Techniques of Counseling Children and Adolescents	3
or CNS ED 6610	Introduction to Play Therapy	
CNS ED 6630	Career Development in K-12 Schools	3
CNS ED 6730	Counseling for Loss, Crisis, and Trauma	3

#### Psychological Foundations and Human Development

ED PSY 6222	Advanced Studies in Child and Adolescent Development	3
or ED PSY 6210	Life-Span: Individual and Family Development	
ED PSY 6532	Psychoeducational Differences	3

#### Educational Research and Evaluation Methods

ED REM 6710	Educational Research Methods and Design	3
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#### Electives

Nine credit hours from CNS ED or related courses, such as:		9
ED PSY 6545	Consultation in Schools and Related Settings	

CNS ED 6410	Advanced Career Development	
CNS ED 6500	Introduction to Systems Theory for Couples and Family Counseling	
CNS ED 6510	Marriage Counseling and Enrichment	
CNS ED 6620	Advanced Play Therapy	
CNS ED 6700	Introduction to Addictive Behaviors and Addiction Counseling	
CNS ED 6810	Integrating Religion and Spirituality in Counseling	
CNS ED 6220	Counseling Individuals with Disabilities	
CNS ED 6830	Counseling African American Clients	
CNS ED 6840	Counseling Sexual and Gender Minorities	
CNS ED 6850	Social Class and Poverty Issues in Counseling	
CNS ED 6870	Counseling and Cultural Competence in a Global Society	
Comprehensive Exam (Capstone Experience) <sup>1</sup>		
Total Hours		60

<sup>1</sup> Please consult with the Department office for requirements and dates of this examination.

## State Certification

Although not a degree requirement, a passing score on the relevant examinations required by the Missouri Department of Elementary and Secondary Education is also required for state certification as a school counselor and must be achieved before the student can be recommended by the Counseling Program for such certification. In addition, students who do not hold a state certification as a teacher must also take the following courses in addition to their M.Ed. in School Counseling program in order to be recommended by the Counseling Program as a school counselor.

SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3
SPEC ED 6412	Psychology of Exceptional Children	3
ED PSY 6030	Instruction, Learning, and Assessment	3
or TCH ED 5310	Instructional Design	

## Learning Outcomes

The Master of Education in Counseling programs prepare professionals to work in educational settings - elementary, middle, or high schools - as school counselors or in clinical settings - clinics, community mental health centers, or private practice - as clinical mental health counselors. Counselors have professional preparation in the theory and practice of counseling, treatment planning, and career development.

The candidate learning outcomes of the school and clinical mental health counseling programs are to:

1. Be prepared to function effectively and ethically as counselors in a variety of professional settings which includes school, community, and clinical mental health settings.

2. Be self-aware and sensitive to their clients as people who exist in the context of different cultures and races and people who are potentially at risk.
3. Be able to flexibly and skillfully construct and apply theory and techniques to fit the changing needs of clients both individually and in groups, within school, community, and/or clinical mental health settings.
4. Be proficient with the understanding and human relations skills necessary to consult as part of a team effort, within a school, community, and/or mental health setting.
5. Be prepared to help individuals meet developmental concerns and needs both individually and in a variety of developmental group programs, within a school, community, or clinical mental health setting.
6. Be knowledgeable about career development and the use of appraisal instruments and test interpretation and their impact on individual planning.
7. Be knowledgeable about research methods and research literature.
8. Value developing professional expertise as a lifelong process.

the necessary procedures for dealing with such students, faculty of the counseling program reserve the right to review students at any stage of their coursework. A U (Unsatisfactory) in any clinical course or any grade less than a B- in these core counseling courses will automatically trigger a review process by the Counseling Review Board.

CNS ED 6010	Theories of Counseling
CNS ED 6020	Ethical and Professional Issues in Counseling
CNS ED 6060	Helping-Relationship Skills
CNS ED 6270	School Counseling Practicum
CNS ED 6280	School Counseling Field Experience
CNS ED 6370	Clinical Mental Health Counseling Practicum I
CNS ED 6380	Clinical Mental Health Counseling Field Experience

The Counseling Review Board process, however initiated, may result in the termination of the student's degree program or other required or recommended remedies to address deficiencies judged by the Counseling Review Board as related to the skills that are essential to the development of competent and ethical practices as a professional counselor.

Students admitted to the M.Ed. degree programs in counseling as "restricted graduate students" (see the "graduate study" rules in this Bulletin) must attain a 3.0 GPA in the 12 hours of course work at UMSL. Restricted students must include the following courses in the first 12 hours of coursework: CNS ED 6010: Theories of Counseling and CNS ED 6020: Ethical and Professional Issues in Counseling. A student on restricted status earning any grade less than a B- in either of these courses but still maintaining a 3.0 GPA, will be allowed to repeat the course one time and must earn a grade of B- or better to be fully admitted.

The courses listed below meet the course work requirements for the M.Ed. degree, state certification, and licensing as a professional counselor:

**Counselor Education**

CNS ED 6010	Theories of Counseling	3
CNS ED 6020	Ethical and Professional Issues in Counseling	3
CNS ED 6030	Foundations for Multicultural Counseling	3
CNS ED 6040	Group Procedures in Counseling	3
CNS ED 6050	Individual Inventory	3
CNS ED 6060	Helping-Relationship Skills	3
CNS ED 6200	Foundations of School Counseling	3
CNS ED 6270	School Counseling Practicum	3
CNS ED 6280	School Counseling Field Experience	6
CNS ED 6400	Career Information and Development	3
CNS ED 6600	Theories and Techniques of Counseling Children and Adolescents	3
or CNS ED 6610	Introduction to Play Therapy	
CNS ED 6630	Career Development in K-12 Schools	3
CNS ED 6730	Counseling for Loss, Crisis, and Trauma	3

**Psychological Foundations and Human Development**

## Counseling MEd, Secondary Emphasis

### Mission

The School Counseling Program of the Department of Education Sciences and Professional Programs prepares professional school counselors to serve the academic, career, and personal/social needs of culturally diverse students in the elementary, middle, and secondary schools. The Counseling Program strives to develop a culturally diverse student population and to draw students from local, regional, national, and international locations.

### Purpose

The M.Ed. in School Counseling degree prepares students to work as school counselors in public or private elementary, middle, or high school settings. Preparation is designed to enable students to deliver counseling services to schools and their extended communities. Students are trained to apply principles of learning, human development, counseling, research, and measurement within the schools. The program is approved by the Missouri Department of Elementary and Secondary Education. Students wishing to receive Missouri certification in Elementary School Counseling or Secondary School Counseling must complete all required courses. Students not possessing a teaching certificate must complete additional coursework to complete their certification requirements.

### Admission

In addition to meeting the general admission requirements of the Graduate School, applicants to the M.Ed. must complete the program supplemental application, have two completed references on file, have an undergraduate GPA of 3.0, and upon admission will take CNS ED 6010, Theories of Counseling, in their first semester. Admissions will be conducted twice a year. The deadlines for application are March 1 for the fall semester and October 1 for the spring semester.

Since it is the objective of the counseling faculty to identify students with low potential for competent practice as early as possible and to initiate



ED PSY 6222	Advanced Studies in Child and Adolescent Development	3
or ED PSY 6210	Life-Span: Individual and Family Development	
ED PSY 6532	Psychoeducational Differences	3
<b>Educational Research and Evaluation Methods</b>		
ED REM 6710	Educational Research Methods and Design	3
<b>Electives</b>		
Nine credit hours from CNS ED or related courses such as:		9
ED PSY 6445	Character Education and Development	
CNS ED 6410	Advanced Career Development	
CNS ED 6500	Introduction to Systems Theory for Couples and Family Counseling	
CNS ED 6510	Marriage Counseling and Enrichment	
CNS ED 6700	Introduction to Addictive Behaviors and Addiction Counseling	
CNS ED 6810	Integrating Religion and Spirituality in Counseling	
CNS ED 6820	Counseling Women Toward Empowerment	
CNS ED 6830	Counseling African American Clients	
CNS ED 6840	Counseling Sexual and Gender Minorities	
CNS ED 6850	Social Class and Poverty Issues in Counseling	
Comprehensive Examination (Capstone Experience) <sup>1</sup>		
Total Hours		60

<sup>1</sup> Please consult with the Department office for requirements and dates of this examination.

## State Certification

Although not a degree requirement, a passing score on the relevant examinations required by the Missouri Department of Elementary and Secondary Education is also required for state certification as a school counselor and must be achieved before the student can be recommended by the Counseling Program for such certification. In addition, students who do not hold a state certification as a teacher must also take the following courses in addition to their M.Ed. in School Counseling program in order to be recommended by the Counseling Program as a school counselor.

SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3
SPEC ED 6412	Psychology of Exceptional Children	3
ED PSY 6030	Instruction, Learning, and Assessment	3
or TCH ED 5310	Instructional Design	

## Learning Outcomes

The Master of Education in Counseling programs prepare professionals to work in educational settings - elementary, middle, or high schools - as school counselors or in clinical settings - clinics, community mental health centers, or private practice - as clinical mental health counselors.

Counselors have professional preparation in the theory and practice of counseling, treatment planning, and career development.

The candidate learning outcomes of the school and clinical mental health counseling programs are to:

- Be prepared to function effectively and ethically as counselors in a variety of professional settings which includes school, community, and clinical mental health settings.
- Be self-aware and sensitive to their clients as people who exist in the context of different cultures and races and people who are potentially at risk.
- Be able to flexibly and skillfully construct and apply theory and techniques to fit the changing needs of clients both individually and in groups, within school, community, and/or clinical mental health settings.
- Be proficient with the understanding and human relations skills necessary to consult as part of a team effort, within a school, community, and/or mental health setting.
- Be prepared to help individuals meet developmental concerns and needs both individually and in a variety of developmental group programs, within a school, community, or clinical mental health setting.
- Be knowledgeable about career development and the use of appraisal instruments and test interpretation and their impact on individual planning.
- Be knowledgeable about research methods and research literature.
- Value developing professional expertise as a lifelong process.

## Creative Writing MFA

### Master of Fine Arts in Creative Writing

The application process is identical to that for the master of arts degree, with these exceptions: there is one annual deadline for all applications, Feb. 15; a writing sample is required (15-20 poems or 20-40 pages of fiction); the GRE test is required only if the applicant seeks financial aid or a teaching assistantship.

In addition to the Graduate School requirements, students must complete at least 39 hours, 30 of which must be in 5000-level courses. Nine hours may be taken in 4000-level courses approved by the department and Graduate School. Students will specialize in one genre, poetry or fiction. They must complete the following course work: 15 hours of workshops, three hours of literary journal editing (ENGL 5190), 3 hours of either ENGL 5170 or ENGL 5180 depending on specialization (fiction writers take ENGL 5170 and poets take ENGL 5180), 3 hours thesis (ENGL 6000). Total designated hours, 24. Any of the following can make up the remaining 15 hours, but we especially recommend the first three:

1. ENGL 5180 for fiction writers and ENGL 5170 for poets, the opposite of the students' specialization.
2. A contemporary literature class offered by the MFA program or the MA program
3. A composition theory course, recommended mainly for those who want to teach later
4. another workshop

5. ENGL 5190, literary journal editing, a second time
6. Any other graduate level class in literature, linguistics, or composition offered by the Department of English
7. 5200-MFA readings course, or an independent study-IF you can find someone to work with you.
8. Up to 3 (9 hours) of 4000 level undergrad lit or linguistics classes offered by the Department of English, recommended especially for those without an English background.
9. One three hour class outside the Department of English, at least a 4000 level, and with all needed permissions from both departments that will enhance the student's writing.

Complete information may be found in The Master of Fine Arts in Creative Writing, available from the English department.

## Creative Writing Undergraduate Certificate

### Requirements

Students earn the Certificate in Creative Writing by completing 18 hours in selected writing courses with a grade point average of 3.0 or better. Twelve of the 18 hours must be taken at the University of Missouri-St. Louis. Courses may not be taken on a satisfactory/unsatisfactory basis.

Students in the creative writing emphasis produce original fiction or poetry. Courses in creative nonfiction, editing, feature writing and copywriting may also be taken for this emphasis.

Students should choose courses for the certificate with the guidance of the Writing Certificate Coordinator. Students electing ENGL 4890 as part of the certificate should meet with the coordinator to arrange the internship.

To receive this certificate, the student must take 18 hours chosen from the courses listed below, including a Capstone course.

Select at least two of the following courses (at least one must be a 4000-level course):

ENGL 3030	Improving on the Blank Page: Writing Poetry	6
ENGL 3040	Lying to Tell a Truth: Writing Fiction	
ENGL 4130	A Machine Made of Words: Writing Your Best Poems	
ENGL 4140	Polishing Your Stories: Producing a Publishable Short Story	
ENGL 4895	Editing 'Litmag	

#### 2000-level Courses

Students may take no more than two 2000-level courses.

ENGL 2040	Fiction Writing Jumpstart	3
ENGL 2330	Poetry: The Greatest Hits	3
ENGL 2340	Introduction to Drama	3

#### Additional upper-level Creative Writing Courses

ENGL 3030	Improving on the Blank Page: Writing Poetry	3
ENGL 3040	Lying to Tell a Truth: Writing Fiction	3
ENGL 3090	Turning the Kaleidoscope: How We Look at Texts	3
ENGL 3100	Junior-Level Writing	3

ENGL 4130	A Machine Made of Words: Writing Your Best Poems	3
ENGL 4140	Polishing Your Stories: Producing a Publishable Short Story	3
ENGL 4160	Special Topics in Writing	3
ENGL 4890	Writing Internship	3
ENGL 4892	Independent Writing Project	3
ENGL 4895	Editing 'Litmag	3

#### Professional Writing Courses

Students are encouraged to take at least one professional writing course, but no more than two.

ENGL/MEDIA ST 2080	Advertising Copywriting	3
ENGL/MEDIA ST 3150	Feature Writing	3
ENGL 4860	Editing and the Production Process	3

### Capstone Course

Students may use ENGL 4895, ENGL 4890, ENGL 4140, or ENGL 4130 as their capstone course. If ENGL 4890 is used, it will be an internship in literary publishing, feature writing, or advertising copywriting. To use ENGL 4130 or ENGL 4140, the student must obtain the teacher's permission and do extra work in the course. The Editing Litmag course, ENGL 4895, may also be used as the final course for this certificate.

When the student has completed requirements for the certificate, the coordinator will notify the university registrar and the college from which the student will graduate. Upon the student's graduation, completion of the Creative Writing Certificate will be noted on the official transcript and a certificate will be mailed to the student's residence. Students who have graduated before completing the Creative Writing Certificate will receive the certificate in the mail and will have the certificate entered on their official transcripts.

### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Identify and execute particular techniques of the genre, such as characterization, plot, dialogue, metaphor, meter, and rhyme
- Improve, sharpen, and extend these techniques in their own writing through revision
- Demonstrate practice in multiple creative writing genres
- Reflect on their own work in the context of literary traditions and aesthetic points of view
- Possess the ability to critically read and analyze the work of others
- Incorporate constructive criticism into the revising process
- Provide critical feedback to other writers during their creative process
- Experiment with literary traditions to break tradition
- Explain how different genres inform and intersect with one another
- Pursue ideas, techniques, and forms that are outside their comfort zone
- Demonstrate how professional publishing and editing functions, including how and where to send their work for publication
- Market their skills set as creative writers for employment

# Criminology and Criminal Justice BS

The interdisciplinary curricula unify a body of knowledge from criminology, social science, law, public administration, and corrections, and provide the student with an understanding of the assumptions, values, and processes of the system of justice. Many pre-law students choose criminology and criminal justice as an undergraduate major because of the excellent preparation offered for law school.

## General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). Foreign language proficiency is not required, although students are encouraged to take foreign language courses. Majors may not take the following courses on a satisfactory/unsatisfactory basis: criminology and criminal justice courses; SOC 3220, Quantitative Techniques in Sociology; or SOC 3230, Research Methods. Additionally, substitutions approved by departmental advisers for these courses may not be taken on a satisfactory/unsatisfactory basis.

## Declaring the Criminology and Criminal Justice Major

Students must complete the following courses before declaring the major:

CRIMIN 1100	Introduction to Criminology and Criminal Justice	3
CRIMIN 1110	Theories of Crime	3
CRIMIN 2210	Research Methods in Criminology and Criminal Justice	3
CRIMIN 2220	Statistical Analysis in Criminology and Criminal Justice <sup>1</sup>	4

<sup>1</sup> Students must successfully complete CRIMIN 2220 with a grade of C- or better within three attempts.

## Degree Requirements

Courses used to fulfill the social science or state requirements may not be taken from courses in the major. Students may register for 3000-5000 level courses only after completing ENGL 3100 (Advanced Expository Writing).

Students may register for 3000-5000 level courses only after prerequisites have been satisfied or after obtaining a signature from the adviser in criminology and criminal justice or consent of the instructor.

Criminology majors may not take course numbers 1100, 2260, or 3345 offered through UM-Independent Studies to fulfill degree requirements in the major.

## Core Curriculum

Bachelor of Science in Criminology and Criminal Justice candidates must complete the core curriculum listed below:

### Core Curriculum

The following courses in criminology and criminal justice are required: 22

CRIMIN 1100	Introduction to Criminology and Criminal Justice
CRIMIN 1110	Theories of Crime

CRIMIN 1120	Criminal Law	
CRIMIN 2130	Criminal Justice Policy	
CRIMIN 2210	Research Methods in Criminology and Criminal Justice	
CRIMIN 2220	Statistical Analysis in Criminology and Criminal Justice	
CRIMIN 4390	Seminar in Criminology and Criminal Justice	
Select one of the following:		3
CRIMIN 2240	Policing	
CRIMIN 2250	Courts	
CRIMIN 2260	Corrections	
Select one of the following courses in Criminology and Criminal Justice:		3
CRIMIN 3305	Crime and Justice in a Globalized World	
CRIMIN 4325	Gender, Crime, and Justice	
CRIMIN 4330	Violence Against Women	
CRIMIN 4340	Race, Crime, and Justice	
Select three additional CRIMIN courses at the 3000, 4000, or 5000 level:		9
Total Hours		37

Candidates must earn a minimum grade of (C-) in the following courses: CRIMIN 2220 Statistical Analysis in Criminology and Criminal Justice, and CRIMIN 4390 Seminar in Criminology and Criminal Justice.

Candidates must also have a cumulative grade point average of 2.0 or better in the major.

## Credit for Police Officer Certified Police Academy Training

Credit may be allowed for individuals certified as law enforcement officers in the states of Missouri and Illinois, as well as certified Federal law enforcement officers/agents for police academy training. Consideration may be given to individuals certified as law enforcement officers/agents from other states on a case-by-case evaluation. Individuals who qualify as certified law enforcement officers/agents may receive up to 15 hours of credit for Criminology and Criminal Justice (CCJ) coursework awarded at the discretion of the CCJ department faculty. To count toward a degree, the credit granted must be appropriate to the student's curriculum.

## Expected Learning Outcomes

- Students will demonstrate critical thinking to reflect a depth, breadth and integration of knowledge in the key areas of criminology and criminal justice, law, theory, research methods, statistics, and criminal justice policy.
- Students will demonstrate an understanding of the three areas of the criminal justice system: policing, courts, and corrections.
- Students will analyze the role that class, race, gender and culture play in crime and criminal justice.
- Students will be able to evaluate and report research findings and data in a professional and ethical manner.
- Graduates will be able to formulate and assess research questions, recognize the need for information and the knowledge to procure that information from relevant scholarly literature and

databases, design research projects grounded in theory and scholarship, and evaluate data critically.

- Graduates will be able to build upon internship and service-learning experiences to apply theory into practice in the public and private sectors.

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 CRIMIN 1110	3
CRIMIN 1100		3 CRIMIN 1120	3
ENGL 1100		3 EXPLORE - Mathematics and Natural Sciences	3
CORE - Mathematics Proficiency		3 EXPLORE - Humanities and Fine Arts	3
CORE - Communication Proficiency		3 Elective or minor	3
EXPLORE - Humanities and Fine Arts		3	
	16		15

### Second Year

Fall	Hours	Spring	Hours
CRIMIN 2130		3 CRIMIN 2240, 2250, or 2260	3
CRIMIN 2210		3 CRIMIN 2220	4
EXPLORE - Humanities and Fine Arts		3 EXPLORE - Mathematics and Life/Natural Sciences	3
EXPLORE - Mathematics and Life/Natural Sciences		3 CORE - US History and Government	3
Elective or minor		3 Elective or minor	1
	15		14

### Third Year

Fall	Hours	Spring	Hours
CRIMIN 3000+ level course		3 CRIMIN 3000+level course	3
ENGL 3100		3 Elective or minor	3
Cultural Diversity Requirement		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		15

### Fourth Year

Fall	Hours	Spring	Hours
CRIMIN 3000+ level course		3 CRIMIN 4390	3
Elective or minor		3 CRIMIN 3000+ level course	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		15

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Criminology and Criminal Justice BS/MA Dual Degree Program

The Department of Criminology and Criminal Justice offers a 2+3 degree program that allows students to simultaneously earn their BS and their MA in Criminology and Criminal Justice in as few as 10 semesters. The BS

and MA degrees are conferred at the same time, upon completion of the 2+3 program. Students in the 2+3 program will complete the MA through coursework. The master's thesis option is not available for 2+3 degree program students.

The combined program requires a minimum of 138 credit hours, 30 of which must be taken in graduate status. Students accepted to the 2+3 degree program will be permitted to count up to 12 credit hours at the 4000-level or higher toward both the BS and MA degrees. 4000-level courses used toward the MA degree typically require additional graduate-level work. The remaining 18 credit hours must be at the 5000/6000 level.

Any 4000-level course taken before graduate status is conferred will apply to the undergraduate requirements only unless given prior permission from the Graduate School (up to 6 credits). Students are encouraged to work closely with the Undergraduate and 2+3 Program Directors to ensure that required courses are timed appropriately.

## Eligibility

Students will need to have fulfilled the core curriculum requirements (p. 400) prior to applying for the 2+3 program, with the exception of CRIMIN 4390 (Seminar in Criminology and Criminal Justice).

### Junior/Senior Year Courses (taken in graduate status)

CRIMIN 4390	Seminar in Criminology and Criminal Justice	3
	Any three 4000-level CRIMIN courses that is taught by a member of the Graduate Faculty	9
Total Hours		12

### Final Year Courses

Fall		
CRIMIN 6400	Proseminar	3
CRIMIN 6405	Methods	3
CRIMIN 5415	Foundations of Criminological Theory	3
Spring		
CRIMIN 6410	Statistical Applications in Criminology and Criminal Justice	3
Any two 6000-level electives in CRIMIN		6
Total Hours		18

NOTE: A student must obtain permission from the 2+3 Program Director to take a 4000-level course and 6000-level course as two separate courses when they have the same name (e.g., CRIMIN 4350 Victimology and CRIMIN 6448 Victimology).

## Admission

Admission to the 2+3 Program is a two-step process.

### Provisional Admission

Applicants are considered for provisional admission if they meet the following four criteria:

1. earned 60 hours as an undergraduate
2. completed the core curriculum requirements for the Criminology and Criminal Justice major, with the exception of CRIMIN 4390
3. have a minimum GPA of 3.0, with a B or better in CRIMIN 2220 (Statistics) and CRIMIN 2210 (Research Methods)



- have met with both the Undergraduate and 2+3 Directors in CRIMIN. Second semester seniors will not be considered for the 2+3 degree program.

The 2+3 Program Director, in consultation with the Undergraduate Director, will determine whether the student can apply for provisional status. Courses taken in provisional status do not count towards the 30 credit hours needed for the 2+3 degree. Therefore, it is recommended to apply for provisional status as a junior, preferably in the first semester of junior year.

## Formal Admission

Applicants are considered for formal admission to the graduate school each semester after being granted provisional status. Thus, students should meet with the 2+3 Program Director each semester.

Applicants are considered for formal admission if they meet the following four criteria:

- earned at least 90 hours as an undergraduate;
- have a minimum GPA of 3.0 since being granted provisional status;
- submitted at least one letter of recommendation from an UMSL Criminology and Criminal Justice professor; and
- have met with the 2+3 Program Director in Criminology and Criminal Justice.

The 2+3 Program Director, in consultation with the Undergraduate Director, will determine whether the student can apply for formal admission. Final decisions concerning formal admission are made by the Program Director in consultation with the Graduate School. Students admitted at this stage are conferred graduate status and may take courses intended for graduate credit at this time. Students in graduate status are required to pay graduate student tuition fees.

Both the Bachelor's and Master's degrees will be awarded at the end of the 2+3 program. Formal 2+3 Program students must maintain a cumulative GPA of 3.0 or higher throughout the 30 credit hours of the combined program. Students may resign from the 2+3 Program and apply for the Bachelor's degree. However, once the Bachelor's degree is awarded, the benefit of "double counting" courses will be lost. Any course used to meet a degree requirement for an undergraduate degree cannot be applied to a subsequent Master's degree.

# Criminology and Criminal Justice MA

The department offers a Master of Arts degree in Criminology and Criminal Justice, which provides students with advanced theoretical and methodological training for research and management careers in criminal justice.

## Admission Requirements

The minimum GPA for regular admission to graduate study is 3.0 on a 4-point scale and students are expected to begin their course of study in the Fall semester. Admission is competitive.

## Degree Requirements

The M.A. in Criminology and Criminal Justice requires the completion of 30 credit hours, at least 21 of which are required to be in courses housed in the Department of Criminology and Criminal Justice. 12 of these hours

represent the core of the curriculum. Students may choose between a thesis and nonthesis course of study. Students whose cumulative GPAs fall below 3.0 after 9 or more hours of work will be placed on probation and given one semester to raise their cumulative GPAs to at least the 3.0 threshold.

## Expected Learning Outcomes

- Develop a comprehensive understanding of the theories, methods and substance of issues in criminology and criminal justice and demonstrate an ability to synthesize knowledge in these areas.
- Develop a comprehensive understanding of interdisciplinary underpinnings (e.g., from sociology, psychology, political science, economics) of criminology and criminal justice issues and policies.
- Develop critical thinking and communication skills through the application of criminological theory and social science research methods.
- Develop a comprehensive understanding of the structure and functioning of the fundamental institutions (e.g., legislatures, police, punishment, supervisory) that are part of criminal justice systems.
- Develop comprehensive understanding of the role of research and its application for informing policies about criminal justice issues.

## Plan of Study

- Required Coursework (12 hours)

CRIMIN 5415	Foundations of Criminological Theory (core)	3
CRIMIN 6400	Proseminar (core)	3
CRIMIN 6405	Methods (core)	3
CRIMIN 6410	Statistical Applications in Criminology and Criminal Justice (core)	3

- Three additional Criminology and Criminal Justice seminars at the 6000 level (9; non-core)
- Electives (9 hours)  
Nine elective hours of coursework are required; some or all of these credits may be earned in Criminology and Criminal Justice 6000 level seminars not counted toward the 21 hour requirement. Students may take a maximum of two 4000-level courses in partial fulfillment of this requirement but they must have the prior approval of the Graduate Committee. All electives taken outside the College of Arts and Sciences also must receive prior approval of the Graduate Committee.

## Transfer Courses

Transfer courses are evaluated for acceptance on a case-by-case basis subject to the rules and regulations of the Graduate School. A maximum of 10 credit hours earned at other institutions can be credited toward the UMSL M.A. degree in Criminology and Criminal Justice.

## Learning Outcomes

### Without Thesis

Upon completion of the program, graduates will be able to:

- Demonstrate a thorough understanding of theory, methods, and substantive literature of criminology and criminal justice, and the interconnections between social theory, research, and policy
- Demonstrate a thorough understanding of the research methods of criminology and criminal justice

- Demonstrate a thorough understanding of the structure and functioning of the fundamental institutions (e.g., legislatures, police, punishment, supervisory) that are part of criminal justice system
- Analyze the role that social structure (e.g. race, class, gender, etc.) plays in crime and criminal justice
- Assess research questions, recognize the need for information and the knowledge to procure that information from relevant scholarly literature and databases, design research projects grounded in theory and scholarship, and evaluate data critically
- Be knowledgeable users of scientific research related to a wide range of criminology and criminal justice issues

**With Thesis**

Upon completion of the program, graduates will be able to:

- Demonstrate a thorough understanding of theory, methods, and substantive literature of criminology and criminal justice, and the interconnections between social theory, research, and policy
- Analyze the role that social structure (e.g. race, class, gender, etc.) plays in crime and criminal justice
- Formulate and assess research questions, recognize the need for information and the knowledge to procure that information from relevant scholarly literature and databases, design research projects grounded in theory and scholarship, and evaluate data critically
- Use scientific research related to a wide range of criminology and criminal justice issues
- Apply scientific research methods to produce original, theoretically relevant, and socially important criminological research
- Conduct research in accordance with the highest ethical standards and scientific integrity
- Effectively translate and communicate scientific findings effectively, in both oral and written forms

**Criminology and Criminal Justice Minor**

**Requirements for the Minor**

The minor has been designed to ground students in the basics of criminology and criminal justice.

All minor candidates must take:	3
CRIMIN 1100	Introduction to Criminology and Criminal Justice
The candidate must then select two of the following:	6
CRIMIN 1110	Theories of Crime
CRIMIN 1120	Criminal Law
CRIMIN 2130	Criminal Justice Policy
Candidates must then complete 6 hours of criminology and criminal justice course work at the 2000 level or above.	6
<hr/> Total Hours	<hr/> 15

If used for the minor, candidates must earn a minimum grade of (C-) in the following courses: CRIMIN 2220 Statistical Analysis in Criminology and Criminal Justice, and CRIMIN 4390 Seminar in Criminology and Criminal Justice

Candidates must also have a cumulative grade point average of 2.0 or better in the minor. None of the courses may be taken on a satisfactory/unsatisfactory (s/u) basis.

**Expected Learning Outcomes**

A Minor in Criminology and Criminal Justice (CCJ) will expose students to some of the same learning outcomes as the BA, thereby providing a foundation for pursuit of the BA if desired. The Minor in CCJ will also offer students the opportunity to advance their current criminology or criminal justice careers or pursue a new or more advanced career path.

- Students will be able to describe the structure and functioning of the fundamental institutions (e.g., police, courts, corrections) that comprise the criminal justice system in the United States.
- Students will be able to define basic laws, legal concepts, constitutional requirements, and legal procedures relevant to criminal justice professionals in the United States.
- Students will critically assess and evaluate contemporary issues and research in criminology and criminal justice.
- Students will be able to define and explain the major criminological and criminal justice theories, thereby helping them to better understand causes of crime and criminal behavior.
- Students will actively apply their theoretical knowledge and academic skills by formulating basic research hypotheses, conducting basic criminological research, and completing academic writing assignments and exams.

**Criminology and Criminal Justice PhD**

**Ph.D. Program in Criminology and Criminal Justice**

**Eligibility**

Undergraduate applicants must have a baccalaureate degree or expect one by the end of the academic year in which they apply. Applicants must have a grade point average of 3.0 or greater (on a scale of A = 4.0) for the last 60 hours of undergraduate work. Admission is competitive.

Graduate applicants who have or will have a master's degree must have a grade point average of 3.0 or greater (on a scale of A = 4.0) for their graduate course work.

**Application**

To consider an applicant for admission, the Department of Criminology and Criminal Justice must have transcripts, three letters of recommendations, GRE scores, statement of purpose, and a writing sample. Applicants with master's degrees should include a chapter of their thesis. International students whose native language is not English are required to submit scores from the TOEFL examination.

**Amount of Course Work**

Sixty post-baccalaureate hours of graduate work are required for the Ph.D. More than half of these hours must be completed in residence. A minimum of six credit hours of dissertation research (CRIMIN 7499) are required. Students may enroll for dissertation credits (CRIMIN 7499) only when all other degree requirements have been completed.

**Required Courses**

CRIMIN 5415	Foundations of Criminological Theory	3
CRIMIN 6400	Proseminar	3
CRIMIN 6405	Methods	3
CRIMIN 6410	Statistical Applications in Criminology and Criminal Justice	3
CRIMIN 6420	Contemporary Criminal Theories	3
CRIMIN 6450	Criminal Justice Process and Policy	3
CRIMIN 6465	Qualitative Research Design	3
CRIMIN 6470	Quantitative Research Design	3
CRIMIN 6471	Evaluating Criminal Justice Interventions	3
CRIMIN 6480	Multivariate Statistics in Criminology	3

**Area Courses** 9

At least nine hours beyond those required must be taken at the 5000-level or higher within the CCJ Department.

**Electives** 9

Three additional courses beyond the above requirements are taken as elective courses.

**Qualifying Examination**

Graduate students in the Ph.D. program do not become recognized as Ph.D. candidates until they have passed the qualifying examination. The goals of the qualifying examination are to assess the student's familiarity with substantive literature, theory and methods of criminology and criminal justice and to evaluate the student's intellectual imagination and ability to apply knowledge to broad criminological questions.

Further information about the qualifying exam is available from the department.

**The Dissertation**

The dissertation is required of all Ph.D. candidates and demonstrates the student's scholarly expertise. The dissertation process formally begins when all other requirements of the Ph.D. program have been met. The dissertation committee assists in selecting and developing the research problem and evaluates the student's work on that problem.

**Learning Outcomes**

Upon completion of the program, graduates will be able to:

- Demonstrate a mastery of theory, methods, and substantive literature of criminology and criminal justice, and the interconnections between social theory, research, and policy
- Analyze the role that social structure (e.g. race, class, gender, etc.) plays in crime and criminal justice
- Critically synthesize and analyze the nature, scope, and determinants of major criminological problems and identify gaps for further inquiry
- Independently apply scientific research methods and empirical analyses to produce high-quality original, theoretically relevant, and socially important criminological research
- Conduct independent high-quality research in accordance with the highest ethical standards and scientific integrity
- Effectively translate and communicate scientific findings effectively, in both oral and written forms

- Demonstrate knowledge of the profession needed for a successful research and/or teaching career in criminology and criminal justice

**Criminology and Criminal Justice Undergraduate Certificate**

Effective Fall 2019, the Criminology and Criminal Justice Certificate will no longer be accepting applications.

**Certificate in Criminology and Criminal Justice**

The certificate in Criminology and Criminal Justice is designed to provide students information about criminal behavior and the criminal justice system to advance current careers, prepare for a new career paths, or earn valuable credit toward a Bachelor's degree. Students will gain a solid foundation about career relevant topics that include: policing, security, victim services, juvenile justice, law, social services, and corrections.

**Required Coursework**

The certificate consists of 6 courses for a total of 18 hours met through completing four blocks of study.

**Block One**

All students must complete the following course:		
CRIMIN 1100	Introduction to Criminology and Criminal Justice	3

**Block Two** 3

Select at least one of the following three courses:		
CRIMIN 1110	Theories of Crime	
CRIMIN 1120	Criminal Law	
CRIMIN 2130	Criminal Justice Policy	

**Block Three** 3

Select at least one of the following three courses:		
CRIMIN 2240	Policing	
CRIMIN 2250	Courts	
CRIMIN 2260	Corrections	

**Block Four** 6

Select at least two Criminology and Criminal Justice courses at the 3000 level or higher with the exception of CRIMIN 3280		
One additional CRIMIN course		3

Total Hours		18
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**Expected Learning Outcomes**

The Certificate in Criminology and Criminal Justice (CCJ), which is three more hours than the Minor, provides students the opportunity to identify and select more advanced (higher level) courses than required for the Minor, thereby allowing students the opportunity to grasp a more comprehensive theoretical understanding of crime and responses to it.

Students earning a Certificate in CCJ Students will have greater latitude, than provided by the Minor, to select courses that focus in specific areas in CCJ. This includes courses that address subjects such as: criminal justice policy; the role and experience of the victim; the role that race, gender and/or culture play in crime and criminal behavior; focusing on specific forms of criminal behavior (e.g., violent, property, drug, computer...).

- Students will acquire knowledge to employ critical thinking skills when evaluating issues in criminology and criminal justice
- Students will be able to describe the structure and functioning of the fundamental institutions (e.g., police, courts, corrections) that comprise the criminal justice system in the United States.
- Students will critically assess and evaluate contemporary issues and research in criminology and criminal justice.
- Students will be able to draw on relevant criminological theory and assess the application of such theory to the complexity of crime analysis.
- Students earning a Certificate in CCJ will be able to develop an assessment plan for an academic major or program and/or assist them in selecting a career path.
- Students earning a Certificate in CCJ will explore and focus on specific advanced areas of crime and criminal justice that are appropriate for graduate school preparation and career advancement.

CMP SCI 2750	System Programming and Tools	3
INFSYS 3848	Introduction to Information Security	3
or CMP SCI 3702	Cyber Threats and Defense	
INFSYS 3868	Secure Software Development	3
INFSYS 3878	Information Security Risk Management and Business Continuity	3
CMP SCI 4700	Computer Forensics	3
CMP SCI 4732	Introduction to Cryptography for Computer Security	3
<b>Total Hours</b>		<b>33</b>

## Cybersecurity BS, Computer Science Emphasis

### Bachelor of Science (B.S.) in Cybersecurity

#### Degree Requirements

Students must choose one of the following emphasis areas at the time of application for admission.

- Computer Science (CS) Emphasis (total 120 credit hours)
- Information Systems (IS) Emphasis (total 123 credit hours)

Degree requirements vary depending on the chosen emphasis area (see common and emphasis area required courses and credit hours below).

#### General Education Requirements

Students must satisfy the university general education requirements. (p. 51) Many of the courses for the degree may be used to fulfill general education requirements. There is no foreign language requirement for this degree.

#### Satisfactory/Unsatisfactory Option

Courses required for the major may not be taken on a satisfactory/unsatisfactory basis.

#### Required Courses

The degree requires 33 credit hours of core coursework applicable to both emphasis areas. Emphasis specific required courses are listed below. Please see 4-year degree plans for recommend course sequences within each emphasis.

#### Required Core Courses

ENGL 3120	Business Writing	3
or ENGL 3130	Technical Writing	
CMP SCI 1250	Introduction to Computing	3
CMP SCI 2250	Programming and Data Structures	3
CMP SCI 2261	Object-Oriented Programming	3
CMP SCI 2700	Computer Organization and Architecture	3

### Computer Science Emphasis

In addition to the 33 credit hours of core required coursework, the B.S. Cybersecurity degree with Computer Science emphasis requires 42-44 credit hours of emphasis specific course work. Thus, candidates for the B.S. in Cybersecurity degree with Computer Science emphasis must complete a major program of 75-77 (33 core + 42-44 emphasis specific) credit hours of required courses.

For the Computer Science emphasis all general degree requirements from the College of Arts and Science apply.

MATH 1320	Introduction to Probability and Statistics	3
MATH 1100	Basic Calculus	3-5
or MATH 1800	Analytic Geometry and Calculus I	
MATH 3000	Discrete Structures	3
CMP SCI 3010	Web Programming	3
CMP SCI 3130	Design and Analysis of Algorithms	3
CMP SCI 3780	Software Security	3
CMP SCI 4730	Computer Networks and Communications	3
CMP SCI 4750	Introduction to Cloud Computing	3
CMP SCI 4760	Operating Systems	3
CMP SCI 4782	Information Security	3
CMP SCI 4794	Introduction to Security of IoT Systems	3

#### Electives (choose 3 from following) 9

PHIL 1160	Critical Thinking (MOTR PHIL 101)	
PHIL 2254	Business Ethics	
CRIMIN 1100	Introduction to Criminology and Criminal Justice	
CRIMIN 3310	Computers in Criminal Justice	
CMP SCI 3990	Undergraduate Internship in Computer Science	
CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	
CMP SCI 4220	Introduction to iOS Programming and Apps	
CMP SCI 4222	iOS Apps	
CMP SCI 4300	Introduction to Artificial Intelligence	
CMP SCI 4500	Introduction to the Software Profession	
CMP SCI 4610	Database Management Systems	
CMP SCI 4792	Mobile and Ubiquitous Computing	



INFSYS 3858	Advanced Security and Information Systems	
INFSYS 3898	Seminar in Information Systems	
Other electives upon approval of Computer Science department chair		
Total Hours		42-44

### Information Systems Emphasis

In addition to the 33 credit hours of core required coursework, the B.S. Cybersecurity degree with Information Systems emphasis requires 75 credit hours of emphasis specific coursework (48 general business + 27 program specific). Thus, candidates for the B.S. in Cybersecurity degree with Information Systems emphasis must complete a program of 108 (33 core + 75 emphasis specific) credit hours of required courses.

For the Information Systems emphasis all general degree requirements from the College of Business Administration apply.

INFSYS 3820	Introduction to Systems Administration	3
INFSYS 3842	Data Networks and Security	3
INFSYS 3806	Managerial Applications of Object-Oriented Programming I	3
INFSYS 3815	Object-Oriented Applications in Business	3
INFSYS 3845	Database Management Systems	3
INFSYS 3858	Advanced Security and Information Systems	3
SCMA 4347	Introduction to Project Management	3
<b>Major Specific Electives (choose 2 from following)</b>		<b>6</b>
BUS AD 3090	Internship in Business Administration	
INFSYS 3830	Data Programming	
INFSYS 3862	Artificial Intelligence Applications for Business	
INFSYS 3864	Applied Cryptography for Business	
INFSYS 3898	Seminar in Information Systems <sup>1</sup>	
CMP SCI 4782	Information Security	
CMP SCI 4750	Introduction to Cloud Computing	
SCMA 3345	Predictive Analytics and Data Mining	
SCMA 4350	Prescriptive Analytics and Optimization	
SCMA 3376/MKTG 3776	Transportation Security and Risk	
Other electives upon approval of Information Systems department chair		
Total Hours		27

<sup>1</sup> If course is offered and topic is approved by the Information Systems department chair

### Learning Outcomes

1. Understand and Describe the Confidentiality, Integrity, and Availability security objectives and key security principles that enable the development of security mechanisms
2. Demonstrate an understanding of physical, data link, network, transport, and application layers of data networking and identify potential information security pitfalls at each layer

3. Describe important secure software development principles and common web application security vulnerabilities
4. Describe common applications of cryptographic, network, application, and systems security defense mechanisms to improve information security
5. Understand the role of systematic information security risk management in fostering information security within organizations and the role of management and control frameworks such as NIST Special Publications and ISO 27000 series standards in doing so.

### Sample Four Year Plan

First Year					
Fall	Hours	Spring	Hours		
INTDSC 1003 <sup>1</sup>		1 CMP SCI 1250		3	
ENGL 1100		3 MATH 1800		5	
MATH 1030		3 CORE - US History and Government		3	
MATH 1035		2 EXPLORE - Humanities and Fine Arts		3	
EXPLORE - Humanities and Fine Arts		3 EXPLORE - Social Sciences		3	
EXPLORE - Social Sciences		3			
		15			17
Second Year					
Fall	Hours	Spring	Hours		
CMP SCI 2250		3 CMP SCI 2261		3	
CMP SCI 2700		3 CMP SCI 2750		3	
MATH 1320		3 CMP SCI 3010		3	
MATH 3000		3 INFSYS 3848		3	
EXPLORE - Humanities and Fine Arts		3 CORE - Communication Proficiency		3	
		15			15
Third Year					
Fall	Hours	Spring	Hours	Summer	Hours
CMP SCI 3130		3 CMP SCI 3702		3 CMP SCI 4732	3
CMP SCI 3780		3 CMP SCI XXXX Computer Science Elective		3	
CMP SCI 4730		3 CMP SCI XXXX Computer Science Elective		3	
INFSYS 3878		3 INFSYS 3868		3	
ENGL 3130		3 EXPLORE - Social Sciences		3	
		15			15
					3
Fourth Year					
Fall	Hours	Spring	Hours		
CMP SCI 4700		3 CMP SCI 4782		3	
CMP SCI 4750		3 CMP SCI 4760		3	
CMP SCI 4794		3 Cultural Diversity Requirement		3	
CMP SCI 3XXX Computer Science Elective		3 Elective or minor		3	
					1
		12			13
Total Hours: 120					

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

# Cybersecurity BS, Information Systems Emphasis

## Bachelor of Science (B.S.) in Cybersecurity

### Degree Requirements

Students must choose one of the following emphasis areas at the time of application for admission.

- Computer Science (CS) Emphasis (total 120 credit hours)
- Information Systems (IS) Emphasis (total 123 credit hours)

Degree requirements vary depending on the chosen emphasis area (see common and emphasis area required courses and credit hours below).

### General Education Requirements

Students must satisfy the university general education requirements. (p. 51) Many of the courses for the degree may be used to fulfill general education requirements. There is no foreign language requirement for this degree.

### Satisfactory/Unsatisfactory Option

Courses required for the major may not be taken on a satisfactory/unsatisfactory basis.

### Required Courses

The degree requires 33 credit hours of core coursework applicable to both emphasis areas. Emphasis specific required courses are listed below. Please see 4-year degree plans for recommend course sequences within each emphasis.

### Required Core Courses

ENGL 3120 or ENGL 3130	Business Writing Technical Writing	3
CMP SCI 1250	Introduction to Computing	3
CMP SCI 2250	Programming and Data Structures	3
CMP SCI 2261	Object-Oriented Programming	3
CMP SCI 2700	Computer Organization and Architecture	3
CMP SCI 2750	System Programming and Tools	3
INFSYS 3848 or CMP SCI 3702	Introduction to Information Security Cyber Threats and Defense	3
INFSYS 3868	Secure Software Development	3
INFSYS 3878	Information Security Risk Management and Business Continuity	3
CMP SCI 4700	Computer Forensics	3

CMP SCI 4732	Introduction to Cryptography for Computer Security	3
Total Hours		33

### Computer Science Emphasis

In addition to the 33 credit hours of core required coursework, the B.S. Cybersecurity degree with Computer Science emphasis requires 42-44 credit hours of emphasis specific course work. Thus, candidates for the B.S. in Cybersecurity degree with Computer Science emphasis must complete a major program of 75-77 (33 core + 42-44 emphasis specific) credit hours of required courses.

For the Computer Science emphasis all general degree requirements from the College of Arts and Science apply.

MATH 1320	Introduction to Probability and Statistics	3
MATH 1100 or MATH 1800	Basic Calculus Analytic Geometry and Calculus I	3-5
MATH 3000	Discrete Structures	3
CMP SCI 3010	Web Programming	3
CMP SCI 3130	Design and Analysis of Algorithms	3
CMP SCI 3780	Software Security	3
CMP SCI 4730	Computer Networks and Communications	3
CMP SCI 4750	Introduction to Cloud Computing	3
CMP SCI 4760	Operating Systems	3
CMP SCI 4782	Information Security	3
CMP SCI 4794	Introduction to Security of IoT Systems	3

### Electives (choose 3 from following) 9

PHIL 1160	Critical Thinking (MOTR PHIL 101)	
PHIL 2254	Business Ethics	
CRIMIN 1100	Introduction to Criminology and Criminal Justice	
CRIMIN 3310	Computers in Criminal Justice	
CMP SCI 3990	Undergraduate Internship in Computer Science	
CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	
CMP SCI 4220	Introduction to iOS Programming and Apps	
CMP SCI 4222	iOS Apps	
CMP SCI 4300	Introduction to Artificial Intelligence	
CMP SCI 4500	Introduction to the Software Profession	
CMP SCI 4610	Database Management Systems	
CMP SCI 4792	Mobile and Ubiquitous Computing	
INFSYS 3858	Advanced Security and Information Systems	
INFSYS 3898	Seminar in Information Systems	
Other electives upon approval of Computer Science department chair		

Total Hours		42-44
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## Information Systems Emphasis

In addition to the 33 credit hours of core required coursework, the B.S. Cybersecurity degree with Information Systems emphasis requires 75 credit hours of emphasis specific coursework (48 general business + 27 program specific). Thus, candidates for the B.S. in Cybersecurity degree with Information Systems emphasis must complete a program of 108 (33 core + 75 emphasis specific) credit hours of required courses.

For the Information Systems emphasis all general degree requirements from the College of Business Administration apply.

INFSYS 3820	Introduction to Systems Administration	3
INFSYS 3842	Data Networks and Security	3
INFSYS 3806	Managerial Applications of Object-Oriented Programming I	3
INFSYS 3815	Object-Oriented Applications in Business	3
INFSYS 3845	Database Management Systems	3
INFSYS 3858	Advanced Security and Information Systems	3
SCMA 4347	Introduction to Project Management	3
<b>Major Specific Electives (choose 2 from following)</b>		<b>6</b>
BUS AD 3090	Internship in Business Administration	
INFSYS 3830	Data Programming	
INFSYS 3862	Artificial Intelligence Applications for Business	
INFSYS 3864	Applied Cryptography for Business	
INFSYS 3898	Seminar in Information Systems <sup>1</sup>	
CMP SCI 4782	Information Security	
CMP SCI 4750	Introduction to Cloud Computing	
SCMA 3345	Predictive Analytics and Data Mining	
SCMA 4350	Prescriptive Analytics and Optimization	
SCMA 3376/MKTG 3776	Transportation Security and Risk	
Other electives upon approval of Information Systems department chair		
Total Hours		27

<sup>1</sup> If course is offered and topic is approved by the Information Systems department chair

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Analyze a complex cybersecurity problem and apply principles of cybersecurity and business decision making to identify potential solutions.
- Design, implement, and evaluate a cybersecurity-based solution to meet a given set of cybersecurity and business requirements.
- Communicate cybersecurity issues effectively in a variety of professional contexts.
- Recognize professional responsibilities and make informed judgments in cybersecurity practice based on legal and ethical principles.
- Function effectively as a member of a team engaged in activities appropriate to the cybersecurity discipline.

- Apply security principles and practices to maintain business operations in the presence of risks and threats.

## Sample Four Year Plan

First Year					
Fall	Hours	Spring	Hours	Summer	Hours
INTDSC 1003 <sup>1</sup>	1	MATH 1100	3	MATH 1105	3
MATH 1030	3	ECON 1001	3		
ENGL 1100	3	PHIL 1160	3		
CRIMIN 1100	3	EXPLORE - Humanities and Fine Arts (non-Philosophy course)	3		
INFSYS 2800	3	CMP SCI 1250	3		
PHIL 2254	3				
		16		15	
3					
Second Year					
Fall	Hours	Spring	Hours	Summer	Hours
ACCTNG 2400	3	ACCTNG 2410	3	ENGL 3120	3
ECON 1002	3	BUS AD 2900	3		
INFSYS 3806	3	CMP SCI 2261	3		
SCMA 3300	3	COMM 2240	3		
CMP SCI 2250	3	INFSYS 3820	3		
		15		15	
3					
Third Year					
Fall	Hours	Spring	Hours	Summer	Hours
SCMA 3301	3	FINANCE 3500	3		
MGMT 3600	3	MKTG 3700	3		
CMP SCI 2700	3	MATH 3000	3		
CMP SCI 2750	3	INFSYS 3845	3		
INFSYS 3842	3	INFSYS 3848	3		
		15		15	
3					
Fourth Year					
Fall	Hours	Spring	Hours	Summer	Hours
INFSYS 3868	3	MGMT 4219	3		
INFSYS 3815	3	CMP SCI 4700	3		
CMP SCI 4732	3	SCMA 4347	3		
INFSYS 3858	3	INFSYS 3878	3		
Cybersecurity elective	3	Cybersecurity elective	3		
		15		15	
Total Hours: 127					

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Cybersecurity Graduate Certificate

Information security is currently one of the most critical issues facing individuals, organizations, governments, and society. Media reports are replete with breaches of information security and the adverse consequences for all stakeholders involved. Thus, demand for professionals who understand the managerial and technical aspects of information security is growing. However, security is a rather broad field and includes a plethora of interconnected sub-specialties. Students or professionals seeking an entry into this field are often overwhelmed by

its vastness. Further, since security is both a management issue and a technological issue, it is critical that students think about it from both perspectives and develop skills at their intersection.

This multidisciplinary certificate program is designed for students from diverse backgrounds who wish to get a foundation in information security. Given its flexible structure, it allows students to pursue either more technical courses throughout their program or have a mixture of technical and non-technical courses to match their interests and skill-sets.

The University of Missouri-St. Louis holds the prestigious **National Center of Academic Excellence in Cyber Defense Education (CAE-CDE)** designation granted by the National Security Agency and the U.S. Department of Homeland Security. We are currently one of only two institutions that hold such a designation in the state of Missouri and the only CAE-CDE in the Saint Louis region. UMSL also holds an additional CAE-CDE designation in the **Security Policy Development and Compliance** focus area.

For more information, please visit <http://cybersecurity.umsl.edu> or contact the program directors at [cybersecurity@umsl.edu](mailto:cybersecurity@umsl.edu).

## Admissions Requirements

Applicants must meet the following program admission requirements in addition to the general requirements of the Graduate School.

By the time of enrollment, prospective students must have obtained a baccalaureate degree or the equivalent from an accredited college or university. A minimum GPA of 3.0 on a 4.0 scale is required to be considered for regular admission. This GPA is higher than the minimum for the Graduate School. An undergraduate GPA below 3.0 will be considered on an individual basis for restricted admission. Applicants must demonstrate proficiency in college algebra or the equivalent. Graduate coursework also will be taken into consideration.

Applicants must obtain three letters of recommendation. The letters should be from those who are familiar with your professional and/or academic skills. At least one of the letters must be from a current or former college-level instructor. Written letters of recommendation must accompany the downloadable recommendation forms from the Graduate School. These materials should be sent by the letter writer directly to the Cybersecurity program director of either Computer Science or Information Systems.

Applicants must submit official transcripts to the graduate admissions office documenting the baccalaureate degree and all other prior college and graduate-level coursework completed.

For more information on the program and contact information please visit [cybersecurity.umsl.edu](http://cybersecurity.umsl.edu).

### Certificate Requirements

The Graduate Certificate in Cybersecurity is a six-course (18 credit hours) multidisciplinary program housed in the Graduate School. It is designed to help students from all backgrounds achieve a foundation in information security. It provides students the flexibility to focus on technical and/or managerial aspects of computer, software, network, and information security. With primary courses offered by Computer Science and Information Systems departments, the program also allows students to choose from a range of electives based on student interests. This certificate serves a broad group of managers, technical specialists, and professionals with a bachelor's degree. A prior background in information security is not required to enter this program.

### Requirements

All students must take three required courses and three electives (at least one elective course must be in Computer Science)

#### Required Courses

INFSYS 6828	Principles of Information Security	3
CMP SCI 4730	Computer Networks and Communications	3
or INFSYS 6836	Management of Data Networks and Security	
CMP SCI 5782	Advanced Information Security	3
or INFSYS 6858	Advanced Cybersecurity Concepts	
<b>Electives</b>		
Choose three of the following (at least one must be a CMP SCI course):		9
CMP SCI 4700	Computer Forensics	
CMP SCI 4780	Computer and Network Security	
CMP SCI 4792	Mobile and Ubiquitous Computing	
CMP SCI 5020	Android Apps: Android Fundamentals	
CMP SCI 5222	Advanced iOS Apps	
CMP SCI 5732	Cryptography for Computer Security	
CMP SCI 5750	Cloud Computing	
CMP SCI 5794	Security of IoT Systems	
INFSYS 6868	Software Assurance	
INFSYS 6878	Management of Information Security	
Total Hours		18

Students may substitute the above courses with other courses upon approval by the graduate program director of either the Computer Science or Information Systems Department. In all cases, 18 hours are needed to complete the Graduate Certificate in Cybersecurity.

A maximum of two (2) 4000-level courses can be taken as part of the graduate certificate. A minimum of four courses must be taken in residence at UMSL. Students may not receive both the Undergraduate and the Graduate Certificate in Cybersecurity.

For more information, students can contact the program directors at [cybersecurityUMSL@umsl.edu](mailto:cybersecurityUMSL@umsl.edu).

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- apply fundamental security principles and formal security models to solve problems in cybersecurity
- develop, maintain, and update an organization's information security policies to meet security and compliance requirements
- select and execute appropriate security mechanisms to implement security policies of an organization
- communicate cybersecurity issues effectively to a range of audiences and work effectively in a team environment

## Cybersecurity Minor

### General Requirements



- All minors are 15 credit hours or 5 courses, including business core courses.
- Students must attain a 2.0 grade point average for all courses in the minor.
- Students must attain a minimum grade of C- in each course included in the minor.
- All courses in the minor must be on a graded basis.
- A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.
- One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.
- A minor may be added for up to two years following completion of the baccalaureate degree

## Specific Requirements for the Minor

The Undergraduate Minor in Cybersecurity is a five-course (15 credit hours) program. It is designed to help students from all backgrounds achieve a foundation in Cybersecurity. It provides students the flexibility to focus on technical and/or managerial aspects of Cybersecurity. The program also allows students to choose from a range of electives based on student interests. This minor serves a broad group of managers, technical specialists, and professionals enrolled in any baccalaureate degree at UMSL. A prior background in information security is not required to enter this program. This minor may be added for up to two years following completion of the baccalaureate degree.

**Requirements:** All students must take four required courses and one elective.

### Required

INFSYS 3842	Data Networks and Security	3
INFSYS 3848	Introduction to Information Security	3
INFSYS 3858	Advanced Security and Information Systems	3
INFSYS 3878	Information Security Risk Management and Business Continuity	3

### Elective 3

Choose one of the following:

INFSYS 3868	Secure Software Development
CMP SCI 4700	Computer Forensics
CMP SCI 4780	Computer and Network Security

Total Hours 15

Students may substitute the above courses with other courses upon approval by the Chair of the Information Systems department. In all cases, 15 hours are needed to complete the Undergraduate Minor in Cybersecurity. A minimum of four courses must be taken in residence at UMSL.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Analyze a complex cybersecurity problem and apply principles of cybersecurity and business decision making to identify potential solutions.
- Design, implement, and evaluate a cybersecurity-based solution to meet a given set of cybersecurity and business requirements.

- Describe professional responsibilities and make informed judgments in cybersecurity practice based on legal and ethical principles.
- Communicate with a wide range of audiences about critical challenges and solutions related to cybersecurity.
- Function effectively as a member of a team engaged in activities appropriate to the cybersecurity discipline.

# Cybersecurity MS, Computer Science Emphasis

## Admission Requirements

Applicants must have at least a bachelor's degree, preferably in cybersecurity, computer science, information systems, or a related area. Applicants with bachelor's degrees outside of specified areas must demonstrate significant proficiency by showing competence (proving related academic or professional experience, or taking a test) in the following areas. Courses in parenthesis are UMSL courses that can be used to fulfill the requirement.

1. Programming skills in C/C++ and Java with at least three college semesters or comparable experience (CMP SCI 1250; CMP SCI 2250 and CMP SCI 2261, or INFSYS 3806 and INFSYS 3816)
2. Proficiency with computer organization, architecture, or assembly level programming (CMP SCI 2700)
3. Familiarity with Unix/Linux/OSX and with command-line scripting with tools (CMP SCI 2750)

Students must also have satisfactorily completed mathematics courses equivalent to the following UMSL courses:

1. Survey Calculus or Calculus I (MATH 1100 or MATH 1800)
2. An elementary course in probability or statistics (MATH 1320)
3. A course in discrete mathematics (MATH 3000)

A student missing some of the above requirements may be admitted on restricted status if there is strong supportive evidence in other areas. The student will have to take the missing courses, or otherwise demonstrate proficiency. Special regulations of the Graduate School that apply to students on restricted status are described in the UMSL Bulletin.

### Entrance examinations

- The Graduate Record Examination (GRE) General Test is required only to apply for an assistantship (see <http://www.gre.org/ttindex.html>).
- International students are required to document English proficiency by providing scores from an internationally accepted standardized examination before a decision is made on admission.

## Coursework

Candidates for the M.S. in Cybersecurity with Computer Science emphasis must complete 30 credit-hours of graduate coursework, subject to the Graduate School regulations. Of these, at least 18 hours must be numbered 5000 or above. All courses numbered below 5000 must be completed with grades of at least B-. Outside computer science and information systems, up to 6 hours of related course work is allowed upon permission of the Graduate Director.

CMP SCI 4730	Computer Networks and Communications	3
CMP SCI 4760	Operating Systems	3

CMP SCI 5702	Cyber Threats and Defense	3
CMP SCI 5732	Cryptography for Computer Security	3
CMP SCI 5782	Advanced Information Security	3
CMP SCI 5888	Cybersecurity Capstone <sup>1</sup>	3

**Electives (Choose four courses. At least two must be from Computer Science) 12**

CMP SCI 4700	Computer Forensics	
CMP SCI 5750	Cloud Computing	
CMP SCI 5792	Mobile Computing, Networking, and Security	
CMP SCI 5794	Security of IoT Systems	
INFSYS 6858	Advanced Cybersecurity Concepts	
INFSYS 6868	Software Assurance	
INFSYS 6878	Management of Information Security	
Other electives upon approval of Computer Science department chair		

Total Hours 30

<sup>1</sup> A student is allowed to work on three credit-hours of Master's Thesis (CMP SCI 6900) in place of Cybersecurity Capstone (CMP SCI 5888)

## Cybersecurity MS, Information Systems Emphasis

Students must meet all general University of Missouri-St. Louis Graduate School admission and degree requirements.

Students must choose one of the following emphasis areas at the time of application for admission:

1. Information Systems Emphasis or
2. Computer Science Emphasis

Degree requirements vary depending on the chosen emphasis area.

Applicants must meet the general graduate admission requirements of the Graduate School, described in the UMSL catalog. Students are considered for admission to the graduate program in Cybersecurity only after they have formally applied for admission through the [Graduate School](#). [Applications](#) may be completed on-line.

Additional emphasis specific requirements are listed below.

### Admission Requirements

In addition to Graduate School admission requirements, the following requirements apply.

Applicants must have an undergraduate degree with a minimum cumulative GPA of 3.0. Students whose GPAs are between 2.75 and 2.9 may be admitted under a restricted status within the terms specified by the Graduate School.

Prior to entry, students must demonstrate competence in the following areas (through prior course work or professional experience) or take coursework at UMSL to fulfill the entry requirements.

- Business Statistics (similar to undergraduate course SCMA 3300). Students without a background in statistics could take SCMA 5300 as a graduate student to fulfill this requirement.

- At least one semester of computer programming coursework or application development work experience (similar to undergraduate courses INFSYS 3806 or INFSYS 3844). Students without programming background can take either INFSYS 6805 or INFSYS 6806 as a graduate student to fulfill this requirement.

### Entrance examinations

- The Graduate Management Admission Test (GMAT) is not required for admission. However, it may be used by students when their overall GPA is below 3.0 to strengthen their application.
- International students are required to document English proficiency by providing scores from an internationally accepted standardized examination before a decision is made on admission

## Coursework

Candidates for the M.S. in Cybersecurity with Information Systems Emphasis must complete 30 credit hours of graduate coursework subject to Graduate School requirements.

### Required Courses

INFSYS 6820	Systems and IT Infrastructure	3
INFSYS 6836	Management of Data Networks and Security	3
INFSYS 6828	Principles of Information Security	3
INFSYS 6858	Advanced Cybersecurity Concepts	3
INFSYS 6868	Software Assurance	3
INFSYS 6878	Management of Information Security	3
INFSYS 6847	Project Management	3
INFSYS 6888	Capstone in Information Security	3

### Electives (select 2 from following) 6

CMP SCI 5732	Cryptography for Computer Security	
CMP SCI 5750	Cloud Computing	
MGMT 5600	Managing People in Organizations	
INFSYS 5890	Graduate Internship in Information Systems	
INFSYS 5899	Individual Research in Information Systems <sup>1</sup>	
INFSYS 6818	Management of Software Testing	
INFSYS 6891	Seminar in Information Systems <sup>1</sup>	
INFSYS 6860	Data Integration	
Other electives upon approval of Information Systems department chair		

Total Hours 30

<sup>1</sup> Topic must be approved by Information Systems department chair

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Apply fundamental security principles and formal security models to solve many complex problems in cybersecurity.
- Develop, maintain, and update an organization's information security policies to meet security and compliance requirements.
- Select and execute appropriate security mechanisms to implement security policies of an organization.

- Evaluate and maintain information systems for secure and reliable operations by employing appropriate risk management strategies.
- Communicate cybersecurity issues effectively to a range of audiences.
- Function effectively as a leader or member of a team engaged in activities appropriate to the cybersecurity discipline.

## Cybersecurity Undergraduate Certificate

### Certificate Requirements

The Undergraduate Certificate in Cybersecurity is a six-course (18 credit hours) interdisciplinary studies program. It is designed to help students from all backgrounds achieve a foundation in information security. It provides students the flexibility to focus on technical and/or managerial aspects of computer, software, network, and information security. With primary courses offered by Computer Science and Information Systems departments, the program also allows students to choose from a range of electives based on student interests. This certificate serves a broad group of managers, technical specialists, and professionals with or without a bachelor's degree. A prior background in information security is not required to enter this program. A minimum GPA of 2.5 is required for admission.

#### Requirements

All students must take three required courses and three electives (at least one elective must be in Computer Science)

#### Required Courses

INFSYS 3848	Introduction to Information Security	3
CMP SCI 4730	Computer Networks and Communications	3
or INFSYS 3842	Data Networks and Security	
CMP SCI 4782	Information Security	3
or INFSYS 3858	Advanced Security and Information Systems	

#### Electives

Choose three of the following (at least one must be a CMP SCI course):

CMP SCI 3702	Introduction to Cyber Threats and Defense	
CMP SCI 3780	Software Security	
CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	
CMP SCI 4222	iOS Apps	
CMP SCI 4700	Computer Forensics	
CMP SCI 4732	Introduction to Cryptography for Computer Security	
CMP SCI 4750	Introduction to Cloud Computing	
CMP SCI 4780	Computer and Network Security	
CMP SCI 4792	Introduction to Mobile Computing, Networking, and Security	
CMP SCI 4794	Introduction to Security of IoT Systems	
INFSYS 3868	Secure Software Development	

INFSYS 3878	Information Security Risk Management and Business Continuity	
Total Hours		18

Students may substitute the above courses with other courses upon approval by the program adviser in either the Computer Science or Information Systems department. In all cases, 18 hours are needed to complete the Undergraduate Certificate in Cybersecurity. A minimum of four courses must be taken in residence at UMSL. Students may not receive both the Undergraduate and the Graduate Certificate in Cybersecurity.

For more information, students can contact the program directors at [cybersecurityUMSL@umsl.edu](mailto:cybersecurityUMSL@umsl.edu).

### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Analyze a cybersecurity problem and apply principles of cybersecurity and business decision making to identify potential solutions
- Design, implement, and evaluate a cybersecurity-based solution to meet a given set of cybersecurity and business requirements
- Describe professional responsibilities and make informed judgments in cybersecurity practice based on legal and ethical principles
- Function effectively as a member of a team engaged in activities appropriate to the cybersecurity discipline

## Data Science Graduate Certificate

The graduate certificate in Data Science is a four-course (12 credit hour) program. It provides skills, both statistical and computational, and technologies for the growing and popular fields involving data science and analysis. All students must take two required courses and two electives.

A minimum of three courses must be taken from UMSL. A maximum of two courses can be used from the 4000-level. Courses may be substituted with the permission of the certificate coordinator. For more information, students can contact the department chair or email [info@arch.umsl.edu](mailto:info@arch.umsl.edu).

#### Required Courses

CMP SCI 4200	Python for Scientific Computing and Data Science	3
CMP SCI 5340	Machine Learning	3
CMP SCI 5342	Data Mining	3

#### Elective Courses

Choose one of the following:

CMP SCI 5320	Evolutionary Computation	
CMP SCI 5370	Biological Data Science	
CMP SCI 5390	Deep Learning	
MATH 4005	Exploratory Data Analysis with R	
MATH 4200	Mathematical Statistics I	
MATH 4210	Mathematical Statistics II	
MATH 4220	Bayesian Statistical Methods	

Total Hours		12
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# Data Science Undergraduate Certificate

## Certificate Requirements

The undergraduate certificate in Data Science is a five-course (15 credit hour) program. It provides skills, both statistical and computational, and technologies for the growing and popular fields involving data science and analysis. A student pursuing this certificate can choose from one of the two tracks, the computational track or the statistical track. Each track consists of three required courses (9 credit hours) and two additional elective courses (6 credit hours).

### Computational Track

#### Required Courses

CMP SCI 4200	Python for Scientific Computing and Data Science	3
CMP SCI 4340	Introduction to Machine Learning	3
CMP SCI 4342	Introduction to Data Mining	3

#### Electives

Choose two of the following courses:		6
CMP SCI 4030	Introduction to Intelligent Web	
CMP SCI 4300	Introduction to Artificial Intelligence	
CMP SCI 4320	Introduction to Evolutionary Computation	
CMP SCI 4370	Introduction to Biological Data Science	
CMP SCI 4390	Introduction to Deep Learning	
MATH 4005	Exploratory Data Analysis with R	
MATH 4090	Introduction to High-dimensional Data Analysis	
MATH 4200	Mathematical Statistics I	
MATH 4210	Mathematical Statistics II	
MATH 4220	Bayesian Statistical Methods	
MATH 4225	Introduction to Statistical Computing	
MATH 4250	Introduction to Statistical Methods in Learning and Modeling	
MATH 4260	Introduction to Stochastic Processes	
Total Hours		15

### Statistical Track

#### Required Courses

MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3
MATH 4250	Introduction to Statistical Methods in Learning and Modeling	3
or CMP SCI 4340	Introduction to Machine Learning	

#### Electives

Choose two of the following courses:		6
CMP SCI 4030	Introduction to Intelligent Web	
CMP SCI 4200	Python for Scientific Computing and Data Science	
CMP SCI 4300	Introduction to Artificial Intelligence	
CMP SCI 4320	Introduction to Evolutionary Computation	

CMP SCI 4340	Introduction to Machine Learning (if course not used above)	
CMP SCI 4342	Introduction to Data Mining	
CMP SCI 4370	Introduction to Biological Data Science	
CMP SCI 4390	Introduction to Deep Learning	
MATH 4005	Exploratory Data Analysis with R	
MATH 4090	Introduction to High-dimensional Data Analysis	
MATH 4220	Bayesian Statistical Methods	
MATH 4225	Introduction to Statistical Computing	
MATH 4250	Introduction to Statistical Methods in Learning and Modeling (if course not used above)	
MATH 4260	Introduction to Stochastic Processes	
Total Hours		15

A minimum of three courses must be taken from UMSL. Courses may be substituted with the permission of the certificate coordinator. For more information, contact the department chair or email [info@arch.umsl.edu](mailto:info@arch.umsl.edu).

## Learning Outcomes

Upon completion the program, certificate earners will be able to:

- Identify, interpret, and manage the computational issues involved in the handling of large volumes of data
- Apply algorithmic principles and statistical theories to analyze data-sets
- Build and evaluate data-based models
- Apply machine learning techniques to data-mining problems

## Digital and Social Media Marketing Graduate Certificate

The Graduate Certificate in Digital and Social Media Marketing is designed to provide a focused, intensive study of the applications of digital and social media marketing management within organizations. Topics include web analytics, search engine optimization, paid search techniques, user experience, social media applications and best practices, content management and creation, video production and podcasting. Based on course selection, they can further their knowledge in CRM techniques including Salesforce and Hubspot as well as LinkedIn B2B marketing strategies or advanced Facebook advertising. This certificate is suitable for those seeking their MBA or those with an undergraduate degree who are working professionals seeking to gain experience in this exciting and complex field.

All 12 credit hours taken as part of this certificate transfer to the MBA degree program.

## Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.



## Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs.

### Required Courses

MKTG 5721	Digital Marketing Strategies and Measurement	3
MKTG 5722	Social Media Marketing Strategy	3
MKTG 5731	Special Seminars in Digital and Social Media Marketing	3

### Electives

Choose one of the following courses:		3
MKTG 5700	Contemporary Marketing Concepts	
MKTG 5710	Consumer Motivation and Behavior	
MKTG 5733	Customer Relationship Management Strategies	

Total Hours		12
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## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Assess the role and practice of marketing within an organization, including theoretical and applied aspects of the marketing discipline (MKTG 5700)
- demonstrate fluency in digital marketing technologies such as web analytics, search engine optimization and paid search techniques (MKTG 5721)
- design and measure the effectiveness of social marketing campaigns leveraging social networks to develop social media content to meet specific marketing objectives (MKTG 5722)
- examine advanced customer relationship marketing techniques to reach new audiences and refine marketing campaigns (MKTG 5733).

## Digital Marketing Communications Minor

This minor in Digital Marketing Communications is a **15-hour** program designed to provide a focused, intensive study of the applications of digital and social media marketing communications, advertising and branding within organizations. This program serves marketing managers who want to understand a true integrated marketing and communication approach to sales, brand management, promotion, and consumer behavior.

### General Requirements

- All minors are 15 credit hours or 5 courses, including business core courses.
- Students must attain a 2.0 grade point average for all courses in the minor.
- Students must attain a minimum grade of C- in each course included in the minor.
- All courses in the minor must be on a graded basis.
- A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.
- One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.

- A minor may be added for up to two years following completion of the baccalaureate degree

## Specific Requirements for the Minor

To obtain this minor, students must successfully complete the following four “core” marketing courses.

### Required Courses:

MKTG 3700	Basic Marketing	3
MKTG 3720	Management of Promotion	3
MKTG 3721	Introduction to Digital Marketing Strategies	3
MKTG 3722	Introduction to Social Media Marketing	3

### Electives: 3

Choose one of the following courses:

MKTG 3731	Digital and Social Media Marketing Lab (Internship)	
MKTG 3740	Marketing Analysis	
MKTG 3790	Internship in Marketing	

Total Hours		15
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## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Develop knowledge of the general digital industry landscape.
- Elaborate new online consumer behaviors made possible by digital technologies and identify firms' strategies to cope with the new behaviors.
- Perform analysis of digital marketing strategies.
- Develop problem-solving skills using digital measurement and analytics.

## Doctor of Business Administration (DBA)

### Admission Requirements

Candidates must be committed to a rigorous program of study requiring periodic residence at the University of Missouri-St. Louis College of Business Administration as well as substantial reading and academic inquiry throughout the program. Applicants are expected to hold an MBA or other relevant advanced degree from an acceptable academic institution and to have ten years of significant professional and/or senior level management experience with high levels of responsibility. In exceptional cases, individuals without an advanced degree but other forms of advanced education and substantial managerial experience may be considered; other experience or qualifications may also compensate for less than 10 years of professional or managerial experience. Applicants must submit

- Most recent transcript(s). Scanned transcripts will be sufficient for the preliminary application. Official Transcripts in sealed envelopes will be required for final acceptance.
- Résumé or Curriculum Vitae (C.V.)
- Names and contact information of two people who can provide insights into the applicant's academic potential and ability to think critically.

- Two essays (Statement of Commitment & Statement of Research Interest)

For more information and application deadlines, please go to <http://dba.umsl.edu>.

### Degree Requirements

The DBA in the College of Business Administration requires completion of 60 credit hours. To ensure sufficient background for doctoral-level courses, students must demonstrate appropriate competence in quantitative reasoning, which is evidenced through completion of BUS AD 7301 and BUS AD 7109 or their equivalent to be determined by the DBA Director.

### Course Requirements

Students are required to take:

BUS AD 7301	Statistical Modeling	1-3
BUS AD 7100	Scientific Inquiry in Business	1-3
BUS AD 7101	Quantitative Research Methods I in Business Administration	3
BUS AD 7102	Qualitative Research Methods I in Business Administration	3
BUS AD 7103	Quantitative Research Methods II in Business Administration	3
BUS AD 7104	Qualitative Research Methods II in Business Administration	3
BUS AD 7109	Doctoral Foundations Seminar	1-3
BUS AD 7300	Management of Supply Chains	2
BUS AD 7400	The Role of Accounting Information in Firms and Markets	2
BUS AD 7500	Finance Theory and Applications Seminar	2
BUS AD 7600	Managing Talent for Strategic Advantage	2
BUS AD 7700	Contemporary Marketing Intelligence and Decision Making	2
BUS AD 7800	Management of Sustaining and Disruptive Information Technologies	2
BUS AD 7105	Special Topics in Business Administration (two semesters)	4
BUS AD 7106	Strategic Business Analysis	2
BUS AD 7107	Capstone Project Research in Business Administration	6
BUS AD 7108	Research Practicum in Business Administration (three semesters)	18
Total Hours		57-63

### Other Requirements

Students will be evaluated annually for satisfactory progress. Students deemed not to be making adequate progress are subject to the policies of the Graduate School and the College of Business Administration regarding probation and dismissal from the program.

### Learning Outcomes

Upon completion of the program, graduates should be able to:

- Design research studies based on sound methodological considerations
- Exhibit expertise in a stream of academic research
- Apply theory to address business problems
- Apply advanced quantitative methods to conduct original research
- Apply advanced qualitative methods to conduct original research
- Communicate research findings in both oral and written formats in a public forum
- Develop pedagogical skills for disseminating information in educational settings

## Doctor of Education (Ed.D.)

The Ed.D. in Educational Practice degree is designed for educational practitioners interested in: (1) leading critical analyses of existing problems of practice and (2) proposing solutions to those problems of practice that can be assessed for effectiveness. Students are admitted to a learning community of practice, under the mentorship of a faculty team that focuses on an area of educational practice (theme).

Students seeking the Ed.D. degree are expected to meet the Graduate School's (p. 243) relevant practitioner doctoral degree requirements and procedures.

### Degree requirements

<b>1. Learning Community of Practice Seminars</b>		<b>15-20</b>
EDUC 7600	Learning Community of Practice I	
EDUC 7610	Learning Community of Practice II	
EDUC 7620	Learning Community of Practice III	
EDUC 7630	Learning Community of Practice IV	
EDUC 7640	Learning Community of Practice V	
EDUC 7650	Learning Community of Practice VI	
<b>2. Laboratory of Practice</b>		
EDUC 7889	Laboratory of Practice	3
<b>3. Required Common Courses</b>		
EDUC 7215	Data Analysis for Educational Practitioners	1
EDUC 7395	Research Proposal Development for Educational Practitioners	1
EDUC 7605	Scholarship of Teaching and Learning in Educational Practice	2
EDUC 7615	Evaluation of Educational Programs	2
EDUC 7625	Building Socially Just and Ethical Educational Communities	2
EDUC 7710	Research Methods and Design for Educational Practitioners	3
ED REM 7781	Qualitative Methods in Educational Research I	3
<b>4. Tools Courses</b>		
EDUC 7310	Integrating Technology in Learning for Educational	1
EDUC 7325	Grant Writing for Educational Practitioners	1
<b>5. Specialization</b>		<b>30-60</b>
Courses in an area of specialization (can include Master's or Education Specialist work)		

**6. Dissertation in Practice**

EDUC 7998	Dissertation in Practice Research	8
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**Total:** minimum 80 hours, post-bacclaureate

**Learning Outcomes**

Upon completion of the program, graduates will be able to:

- Design solutions to complex problems of practice related to educational practices that are equitable, ethical, and socially just.
- Construct and apply educational practice knowledge to make a positive difference in the lives of individuals, families, organizations, or communities.
- Demonstrate effective collaboration and communication skills when working with diverse communities and building partnerships.
- Integrate practical and research knowledge with systemic and systematic inquiry in educational practice.
- Create solutions to problems of practice by generating, transforming, and using professional knowledge and practices related to educational practice.
- Take part in and develop communities of practice highlighting their value and function.
- Implement change in their professional practice and within educational practice organizations using critical reflective practice.

**Early Childhood Education BSEd**

Undergraduate educator preparation is both engaging and innovative. Our high quality undergraduate educator preparation programs are designed around research-based scholarship and practical community-based contexts. To prepare our undergraduate students as the highest quality educators for our region, we contribute to and harness the resources of our deep community partnerships. The community-based experiences broaden candidates' understanding of their own identity as educators as well as enhancing their ability to build relationships, extend their skills, and understand family/community dynamics and interactions.

The Bachelor of Science in Education (B.S.Ed.) in Early Childhood Education prepares those who desire to teach birth through grade 3. Students electing this program will work directly with young children as a part of the professional courses offered. The curriculum provides learning background, applied knowledge, and best practice interventions for children of diverse populations who demonstrate varied abilities and levels of developmental growth.

Early Childhood Education with an emphasis in Early Childhood Special Education can be achieved with courses satisfactorily completed in this program of study. The core courses are combined with the emphasis area in Early Childhood Special Education. Please see the degree requirements listed below.

**General Education Requirements**

B.S.Ed. degree candidates must complete the following General Education courses (p. 51) required by the College of Education and the Missouri Department of Elementary and Secondary Education..

**Core Areas:****First Year Writing**

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
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or HIST 1111	Reacting to the Past	
<b>Math Proficiency</b>		
MATH 1030	College Algebra (MOTR MATH 130)	3
<b>Communication Proficiency</b>		
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	
<b>Information Literacy</b>		
ED TECH 2230	Information Literacy	3
<b>American History and Government</b>		
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
<b>Explore Areas:</b>		
<b>Humanities and Fine Arts</b>		
ART ED 2179	Visual Art Activities for Elementary School	3
MUS ED 2770	An Introduction to Music for the Elementary School Teacher	3
Additional Course in Humanities or Fine Arts		
<b>Social Science</b>		
ED PSY 2212	Child and Adolescent Development	3
GEOG 1001	Introduction to Geography (MOTR GEOG 101)	3
or GEOG 1002	World Regions (MOTR GEOG 101)	
HIST 1001	American Civilization to 1865 (MOTR HIST 101)	3
or HIST 1002	American Civilization 1865 to Present (MOTR HIST 102)	
<b>Math and Life/Natural Sciences</b>		
BIOL 1012	General Biology (MOTR BIOL 100)	3
GEOL 1001	General Geology	4
Additional course in Chemistry OR Physics OR combines Chemistry/Physics		

**Related Area Requirements**

MATH 1150	Structure of Mathematical Systems I	3
MATH 2510	Structure of Mathematical Systems II	3
ECON 1052	Microeconomics for the School Curriculum	3
ATM SCI 1001	Elementary Meteorology	4
or ASTRON 1001	Cosmic Evolution Introductory Astronomy (MOTR ASTR 100)	
HLTH PE 3432	Teaching Health and Physical Education in Elementary Schools	3
ENGL 3100	Junior-Level Writing	3

**Program Requirements**

All students must complete the program requirements as well as the emphasis area courses.

Professional education courses must be completed with a grade point average of 3.0 and no grade lower than a C.

**Note:** Beginning with those students graduating in May, 2017 and receiving teacher certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

Students must pass the relevant exit test to receive the B.S.Ed. degree.

### Introduction to Education

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1

### Level I: Education in Community Contexts

TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2

### Level II: Teaching and Learning Across Context and Clinical Experiences

ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
ELE ED 3338	Teaching Elementary Literacy in Inclusive Settings: Literacy Assessment and Learning	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
TCH ED 3212	Sociolinguistics and Communication in the Classroom	3
ECH ED 3302	Introduction to Inclusive Early Childhood Education	3
ECH ED 3332	Literacy, Learning and Instruction for the Young Child	3
ECH ED 3350	Family and Professional Partnerships within School/Community	3

### Level III: Instructional Application in Studio Schools

ELE ED 3339	Teaching Elementary Literacy in Inclusive Settings: Literacy Instruction and Learning	4
ELE ED 4246	Teaching Elementary Mathematics in Inclusive Settings I	3
ELE ED 4342	Teaching Elementary Mathematics in Inclusive Settings II	3
SPEC ED 4323	Classroom Management and Positive Behavioral Supports in Inclusive Educational Settings	3

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.

- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Early Childhood Education BSEd, Special Education Emphasis

Undergraduate educator preparation is both engaging and innovative. Our high quality undergraduate educator preparation programs are designed around research-based scholarship and practical community-based contexts. To prepare our undergraduate students as the highest quality educators for our region, we contribute to and harness the resources of our deep community partnerships. The community-based experiences broaden candidates' understanding of their own identity as educators as well as enhancing their ability to build relationships, extend their skills, and understand family/community dynamics and interactions.

The Bachelor of Science in Education (B.S.Ed.) in Early Childhood Education prepares those who desire to teach birth through grade 3. Students electing this program will work directly with young children as a part of the professional courses offered. The curriculum provides learning background, applied knowledge, and best practice interventions for children of diverse populations who demonstrate varied abilities and levels of developmental growth.

Early Childhood Education with an add-on Early Childhood Special Education can be achieved with courses satisfactorily completed in this program of study. The core courses are combined with the emphasis area in Early Childhood Special Education. Please see the degree requirements listed below.

### General Education Requirements

B.S.Ed. degree candidates must complete the following General Education courses (p. 51) required by the College of Education and the Missouri Department of Elementary and Secondary Education..

#### Core Areas:

##### First Year Writing

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
or HIST 1111	Reacting to the Past	

##### Math Proficiency

MATH 1030	College Algebra (MOTR MATH 130)	3
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##### Communication Proficiency

EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	

##### Information Literacy

ED TECH 2230	Information Literacy	3
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<b>American History and Government</b>		
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3

**Explore Areas:**

<b>Humanities and Fine Arts</b>		
ART ED 2179	Visual Art Activities for Elementary School	3
MUS ED 2770	An Introduction to Music for the Elementary School Teacher	3
Additional Course in Humanities or Fine Arts		3

**Social Science**

ED PSY 2212	Child and Adolescent Development	3
GEOG 1001	Introduction to Geography (MOTR GEOG 101)	3
or GEOG 1002	World Regions (MOTR GEOG 101)	
HIST 1001	American Civilization to 1865 (MOTR HIST 101)	3
or HIST 1002	American Civilization 1865 to Present (MOTR HIST 102)	

**Math and Life/Natural Sciences**

BIOL 1012	General Biology (MOTR BIOL 100)	3
GEOL 1001	General Geology	4
Additional course in Chemistry OR Physics OR combines Chemistry/Physics		3

**Related Area Requirements**

MATH 1150	Structure of Mathematical Systems I	3
MATH 2510	Structure of Mathematical Systems II	3
ECON 1052	Microeconomics for the School Curriculum	3
ATM SCI 1001	Elementary Meteorology	4
or ASTRON 1001	Cosmic Evolution Introductory Astronomy (MOTR ASTR 100)	
HLTH PE 3432	Teaching Health and Physical Education in Elementary Schools	3
ENGL 3100	Junior-Level Writing	3

**Program Requirements**

All students must complete the program requirements as well as the emphasis area courses.

Professional education courses must be completed with a grade point average of 3.0 and no grade lower than a C.

**Note:** Beginning with those students graduating in May, 2017 and receiving teacher certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

Students must pass the relevant exit test to receive the B.S.Ed. degree.

**Introduction to Education**

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1

<b>Level I: Education in Community Contexts</b>		
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2

<b>Level II: Teaching and Learning Across Context and Clinical Experiences</b>		
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
ELE ED 3338	Teaching Elementary Literacy in Inclusive Settings: Literacy Assessment and Learning	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
TCH ED 3212	Sociolinguistics and Communication in the Classroom	3
ECH ED 3302	Introduction to Inclusive Early Childhood Education	3
ECH ED 3332	Literacy, Learning and Instruction for the Young Child	3
ECH ED 3350	Family and Professional Partnerships within School/Community	3

**Level III: Instructional Application in Studio Schools**

ELE ED 3339	Teaching Elementary Literacy in Inclusive Settings: Literacy Instruction and Learning	4
ELE ED 4246	Teaching Elementary Mathematics in Inclusive Settings I	3
ELE ED 4342	Teaching Elementary Mathematics in Inclusive Settings II	3
SPEC ED 4323	Classroom Management and Positive Behavioral Supports in Inclusive Educational Settings	3

**Emphasis Area Requirements**

All candidates must enroll in a program that includes levels I, II, and III course work above in the College of Education. In addition, students must complete the following Early Childhood/Early Childhood Special Education courses:

ECH ED 3303	Curriculum and Practice Laboratory: Infant/Toddler	1
ECH ED 3304	Curriculum and Practice Laboratory: Preschool	1
ECH ED 3313	Curriculum and Practice: Infant/Toddler	2
ECH ED 3314	Curriculum and Practice: Preschool Education	2
ECH ED 4317	Implementation, Evaluation, and Assessment in Early Childhood Education	3
ECH ED 4348	The Acquisition of Mathematical and Science Concepts	3
SPEC ED 4315	Language and Communication of Children with Special Needs	3

ECH ED 4989	Practicum I: Early Childhood Education/Early Childhood Special Education Site Based Experience	3
ECH ED 4990	Practicum II: Early Childhood Education/Early Childhood Special Education Site Based Experience	12

**Total for the B.S.Ed. in Early Childhood:** minimum of 132 hours

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Economics BA

Nearly every decision which a person, business, or government makes involves trade-offs, and so, falls under the purview of economic analysis. In coursework for the Economics BA, students learn to think analytically and apply their knowledge to a broad range of topics such as property rights, environmental regulation, labor markets, and government regulation. Students also study the economy as a whole and explore the sources of growth, recessions, and inflation, as well as government policies designed to influence the economy. The study of economics is an excellent way to learn how to apply analytical skills to a range of interesting questions and problems.

### General Education Requirements

All undergraduate economics majors must meet the university and college general education requirements (p. 51). Candidates for the B.A. degree may take any foreign language to meet this requirement. Candidates for the B.S. degree take mathematics and quantitative courses instead of the foreign language requirement. Courses in economics may be used to meet the university social sciences requirement.

### Satisfactory/Unsatisfactory Option

Courses outside the major field and ECON 1001, Principles of Microeconomics, and ECON 1002, Principles of Macroeconomics, may be taken on a satisfactory/unsatisfactory basis.

## Prerequisites

All prerequisites for economics courses must be completed with a C- or better.

## Degree Requirements

Candidates for the B.A. degree must take at least 33, but no more than 45, hours in economics. At least 27 hours must be above the 2000 level. All core courses for the major must be completed with a grade of C- or better.

The following core courses are required:

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
ECON 2800 or ECON 3800	History of American Economic Development History Of Economic Thought	3
ECON 3001	Intermediate Microeconomics	3
ECON 3002	Intermediate Macroeconomics	3
ECON 3100	Economic Statistics	3

## Departmental Honors

A student may earn departmental honors with a GPA of 3.6 in economics and the recommendation of the department.

## Complementary Areas of Study

The department encourages all majors to develop breadth in related disciplines. Course work and minors are available in a number of areas such as business administration, computer science, statistics, and political science. In addition, courses offered by the department are required for the B.S. in Actuarial Science (p. 311) and help satisfy the prerequisites for courses required for the Certificate in Actuarial Studies (p. 313) (p. 313) and have been approved by the Society of Actuaries (SOA) to satisfy the VEE requirements in Economics. Students should check with their advisers for recommendations concerning courses in these areas. The department suggests the following supplemental course work for students interested in pursuing doctoral-level graduate work in economics or careers in general business. It also encourages all students to obtain work experience by enrolling in the Internship in Applied Economics (ECON 4990).

## General Business Preparation

It is recommended that students interested in pursuing careers in business also take:

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
FINANCE 3500	Financial Management	3
MKTG 3700	Basic Marketing	3

## Learning Outcomes

- Use economic reasoning to interpret and evaluate social, political and economic arguments, and policies.
- Use mathematical methods to construct and analyze economic models and to analyze and interpret economic phenomena.

- Understand key market institutions such as property rights and contracts and economic organizations such as the Federal Reserve System and the International Monetary Fund and apply this knowledge to analyze economic behavior and evaluate public policy.
- Identify the causes and consequences of poverty and prosperity across and within societies.
- Predict changes in key macroeconomic variables in response to changes in social, political, and economic policy as well as non-economic events such as terrorist attacks, natural disasters, and changes in consumer confidence.
- Use basic statistical methods and statistical software to interpret and analyze economic data and relationships.
- Acquire a historical perspective through knowledge of the development of the U.S. economy and its key institutions.

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 ECON 1001	3
MATH 1030		3 MATH 1100 (or EXPLORE Mathematics & Life/Natural Sciences)	3
ENGL 1100		3 Foreign Language 1002	5
Foreign Language 1001		5 EXPLORE – Humanities & Fine Arts	3
CORE – Communication Proficiency		3 CORE – Information Literacy	3
	15		17

### Second Year

Fall	Hours	Spring	Hours
ECON 1002		3 ECON 3001	3
Foreign Language 2101		3 ECON 2000+ level elective	3
EXPLORE – Humanities and Fine Arts		3 EXPLORE – Humanities and Fine Arts	3
EXPLORE – Mathematics and Life/Natural Sciences		3 EXPLORE – Mathematics and Life/Natural Sciences	3
EXPLORE - Social Sciences		3 Cultural Diversity Requirement	3
	15		15

### Third Year

Fall	Hours	Spring	Hours
ECON 2800		3 ECON 3002	3
ECON 3100		3 ECON 2000+ level Course	3
ENGL 3100		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		15

### Fourth Year

Fall	Hours	Spring	Hours
ECON 2000+ level elective		3 ECON 2000+ level courses	3
ECON 2000+ level elective		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	1
	15		13

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are*

*encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Economics BS

Nearly every decision a person, business, or government makes involves trade-offs and can fall under the purview of economic analysis. In coursework for the Economics BS, students develop analytical and quantitative skills and apply their knowledge to a range of topics such as economic modeling, financial markets, and market analysis. Students also study the economy as a whole and analyze the sources of growth, recessions, and inflation, as well as government policies. The study of economics is an excellent way to learn how to apply analytical and quantitative skills to a range of interesting economic problems.

## General Education Requirements

All undergraduate economics majors must meet the university and college general education requirements (p. 51). Candidates for the B.A. degree may take any foreign language to meet this requirement. Candidates for the B.S. degree take mathematics and quantitative courses instead of the foreign language requirement. Courses in economics may be used to meet the university social sciences requirement.

## Satisfactory/Unsatisfactory Option

Courses outside the major field and ECON 1001, Principles of Microeconomics, and ECON 1002, Principles of Macroeconomics, may be taken on a satisfactory/unsatisfactory basis.

## Prerequisites

All prerequisites for economics courses must be completed with a C- or better.

## Degree Requirements

Candidates for the B.S. degree must complete at least 36, but no more than 50, hours in economics. At least 30 hours must be at or above the 2000 level. All core courses for the major must be completed with a grade of C- or better.

The following core courses are required:

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
ECON 3001	Intermediate Microeconomics	3
ECON 3002	Intermediate Macroeconomics	3
ECON 3100	Economic Statistics	3
ECON 4100	Introduction to Econometrics	4
MATH 1800	Analytic Geometry and Calculus I (strongly recommended) <sup>1</sup>	3-5
or MATH 1100	Basic Calculus	
Select two of the following quantitative courses:		6-8

ECON 4030	Managerial Economics
ECON 4040	Analysis of Business Cycles
ECON 4110	Applied Econometrics
ECON 4120	Time Series Econometrics for Economics and Finance
ECON 4130	Business and Economic Forecasting

ECON 4150	Mathematical Economics
ECON 4160	Geospatial Analysis in the Social Sciences
ECON 4170	Fundamentals of Cost-Benefit Analysis
Mathematics courses numbered 1900 or above with consent of advisor <sup>1</sup>	

<sup>1</sup> Note: mathematics courses used for this requirement do **not** count towards the 36 hours in economics requirement

## Departmental Honors

A student may earn departmental honors with a GPA of 3.6 in economics and the recommendation of the department.

## Complementary Areas of Study

The department encourages all majors to develop breadth in related disciplines. Course work and minors are available in a number of areas such as business administration, computer science, statistics, and political science. In addition, courses offered by the department are required for the B.S. in Actuarial Science (p. 311) and help satisfy the prerequisites for courses required for the Certificate in Actuarial Studies (p. 313) and have been approved by the Society of Actuaries (SOA) to satisfy the VEE requirements in Economics. Students should check with their advisers for recommendations concerning courses in these areas. The department suggests the following supplemental course work for students interested in pursuing doctoral-level graduate work in economics or careers in general business. It also encourages all students to obtain work experience by enrolling in the Internship in Applied Economics (ECON 4990) .

## Graduate School Preparation

It is recommended that students considering doctoral-level graduate work in economics also take:

MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
MATH 2020	Introduction to Differential Equations	3
MATH 2450	Elementary Linear Algebra	3
MATH 4100	Real Analysis I	3
MATH 4200	Mathematical Statistics I	3

## Learning Outcomes

- Use economic reasoning to interpret and evaluate social, political and economic arguments, and policies.
- Use mathematical methods to construct and analyze economic models and to analyze and interpret economic phenomena.
- Understand key market institutions such as property rights and contracts and economic organizations such as the Federal Reserve System and the International Monetary Fund and apply this knowledge to analyze economic behavior and evaluate public policy.
- Identify the causes and consequences of poverty and prosperity across and within societies.
- Predict changes in key macroeconomic variables in response to changes in social, political, and economic policy as well as non-economic events such as terrorist attacks, natural disasters, and changes in consumer confidence.

- Estimate, analyze, and interpret economic relationships using appropriate regression analysis techniques applied to economic data for use in business and policy applications.
- Write a research paper that employs sound economic reasoning and economic data that demonstrates the ability to model and interpret regression analysis of an economic relationship.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003		1 ECON 1001	3
ENGL 1100		3 MATH 1800 or 1100	5
MATH 1045		5 EXPLORE – Humanities and Fine Arts	3
CORE – Communication Proficiency		3 CORE – Information Literacy	3
EXPLORE – Humanities & Fine Arts		3 EXPLORE - Social Sciences	3
		15	17
Second Year			
Fall	Hours	Spring	Hours
ECON 1002		3 ECON 3001	3
CORE – US History & Government		3 ECON 2000+ course	3
EXPLORE – Math & Natural Sciences		3 Elective or minor	3
EXPLORE – Humanities & Fine Arts		3 Elective or minor	3
Cultural Diversity Requirement		3 Elective or minor	3
		15	15
Third Year			
Fall	Hours	Spring	Hours
ECON 3100		3 ECON 4100	4
ECON 3002		3 ECON 2000+ course	3
ENGL 3100		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3	
		15	13
Fourth Year			
Fall	Hours	Spring	Hours
ECON 4XXX quantitative course		3 ECON 4XXX quantitative course	3
ECON 2000+ level course		3 ECON 2000+ level course	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
		15	15
Total Hours: 120			

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 26 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Economics BS/MA Dual Degree Program

The B.S./M.A. (also known as the “2+3”) program is an accelerated program that allows students to complete a B.S. and a M.A. in economics in five years. The program allows students to apply 12 of the M.A. credit hours towards the B.S., reducing the overall required hours for the two



degrees from the standard 150 (120 for the B.S. plus 30 for the M.A.) to 138 hours.

The M.A. in Economics requires 30 credit hours; at least 21 hours must be completed in residence.

The following 3 courses (9 credit hours) are required:

ECON 5001	Microeconomic Analysis	3
ECON 5002	Macroeconomic Analysis	3
ECON 5100	Econometric Theory and Methods	3

In addition, 21 credit hours of electives must be completed. At most, six of these credit hours may be economics courses at the 4000 level (excluding ECON 4100 and ECON 4150 which cannot be utilized as part of the M.A. degree); all other electives must be at the 5000 level or higher.

Of the 30 hours taken in the M.A. program, 12 of these hours (per the approval of the Graduate Director) will also count toward the undergraduate B.S. requirements. All other requirements for the B.S. degree remain in effect.

## Admission Requirements

Applicants must have completed between 60 and 108 credit hours. Applicants must have a minimum G.P.A. of 3.0 (both overall and in economics courses) and must be nominated by a full-time regular economics faculty member. Applicants must have completed all of the general education requirements as well as college algebra (or a higher level mathematics course), introductory microeconomics and introductory macroeconomics. Those accepted with fewer than 90 semester credit hours are accepted only on a provisional basis. Once the student has completed 90 semester hours of coursework (typically including ECON 3001, ECON 3002, ECON 3100, ECON 3200, MATH 1800, and preferably ECON 4100) with a satisfactory G.P.A. (minimum G.P.A. of 3.0 overall and in economics courses) the provisional status is dropped.

It is recommended that applicants apply when they have completed 90 credit hours; further, it is recommended that applicants should complete intermediate microeconomics (ECON 3001) and/or introductory econometrics (ECON 4100) before applying.

## Awarding of Degree

Both degrees (the B.S. and M.A.) will be awarded when all requirements for the entire program have been completed. In other words, the B.S. and M.A. degrees will be simultaneously awarded at the completion of study.

Students who officially withdraw from the B.S./M.A. Dual Degree Program in Economics and who have successfully completed all of the requirements for the B.S. degree will be awarded the B.S. degree.

# Economics MA

## Admission Requirements

An undergraduate major in economics is not required for acceptance into the program. Application for admission may be submitted at any time, although class work formally begins in late August, mid-January, and mid-June. Candidates must meet the general admission requirements of the Graduate School, submit GRE scores (Advanced Economics optional), and submit two letters of recommendation from persons qualified to judge the candidate's potential for success in the program.

The admissions decision is based on the applicant's academic transcript, GRE scores, letters of recommendation, and a personal narrative on the application form.

## Degree Requirements

The M.A. in Economics requires 30 credit hours; at least 21 hours must be completed in residence.

Candidates need not have an undergraduate degree in economics. However, students are expected to have taken intermediate micro- and macro-economics, mathematical economics, and introductory econometrics prior to the beginning of the core curriculum. Students that do not have these courses will take these courses first; credits earned in these courses do not count towards the 30 hours required for the MA.

## Required Core Courses

The following courses or their equivalents are required for the M.A. in Economics. Students with previous education in economics or business may waive some of these courses.

ECON 5001	Microeconomic Analysis	3
ECON 5002	Macroeconomic Analysis	3
ECON 5100	Econometric Theory and Methods	3

## Electives

Candidates must complete at least 21 hours of electives. A maximum of 6 hours of economics electives may be taken at the 4000 level. With the approval of the graduate coordinator, students may take up to 9 hours of graduate courses outside the Department of Economics. In particular, students interested in business economics may take up to three approved graduate business courses for their electives.

## Departmental Honors

A student may earn departmental honors with a GPA of 3.75 in all required courses for the M.A. degree and the recommendation of the department.

## Complementary Areas of Study

Students with a public policy focus can complete the M.A. in Economics and the Public Policy Administration (PPA) Graduate Certificate in Policy and Program Evaluation (PPE) (p. 579). It is possible to earn the Certificate without any additional coursework beyond what is required for the M.A. alone.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Interpret and analyze economic models and assess their validity.
- Use theoretical and empirical tools to design effective business and government policies.
- Use econometric methods to interpret and analyze economic data, to assess the empirical validity of economic propositions, to evaluate policies, and to help inform business decisions.
- Develop at least one topic area of expertise through familiarity with the relevant scholarly and professional literatures, policy issues, institutions, and current data trends.
- Develop at least one methodological area of expertise through the acquisition of the theoretical and empirical tools needed to understand scholarly and professional contributions to the

literature to facilitate lifelong professional development and refinement of expertise.

- Write a professional quality research paper.
- Develop sufficient proficiency in the use of theoretical and empirical tools and in understanding of economic institutions to excel in a Ph.D. program.

## Economics MA, Business Economics Emphasis

### Admission Requirements

An undergraduate major in economics is not required for acceptance into the program. Application for admission may be submitted at any time, although class work formally begins in late August, mid-January, and mid-June. Candidates must meet the general admission requirements of the Graduate School, submit GRE scores (Advanced Economics optional), and submit two letters of recommendation from persons qualified to judge the candidate's potential for success in the program.

The admissions decision is based on the applicant's academic transcript, GRE scores, letters of recommendation, and a personal narrative on the application form.

### Degree Requirements

Like the General Option of the Economics MA, the Business Economics option requires 30 credit hours. Subject to approval from the Director of Graduate Studies, as many as nine credit hours may be waived based on previously completed graduate education. Independent of any waived courses, the 30 credit-hour program must be completed within a six-year period. A minimum of 21 credit hours must be completed while enrolled in the MA program at UMSL.

#### Required Courses

ECON 5001	Microeconomic Analysis	3
ECON 5002	Macroeconomic Analysis	3
ECON 5100	Econometric Theory and Methods	3

#### Electives 21

##### Financial Economics Electives (Choose 3 courses)

ECON 5120	Advanced Topics in Time Series Econometrics
ECON 5200	Monetary Theory and Policy
ECON 5210	Financial Markets
ECON 5300	International Trade
ECON 5301	International Monetary Analysis

##### Finance Electives (Choose 2 or 3 courses)

FINANCE 6500	Financial Management
FINANCE 6520	Security Analysis
FINANCE 6521	Financial Forensics: The Science of Derivatives
FINANCE 6580	International Financial Management

##### Other Electives (choose 1 or 2 courses)

Any Economics 5000-level course not used above and approved by the Department Director of Graduate Studies	
Any Economics 4000-level elective approved by Department Director of Graduate Studies	

Total Hours

30

## Departmental Honors

A student may earn departmental honors with a GPA of 3.75 in all required courses for the M.A. degree and the recommendation of the department.

## Complementary Areas of Study

Students with a public policy focus can complete the M.A. in Economics and the Public Policy Administration (PPA) Graduate Certificate in Policy and Program Evaluation (PPE) (p. 579). It is possible to earn the Certificate without any additional coursework beyond what is required for the M.A. alone.

## Economics Minor

Candidates for a minor in economics must take a minimum of 15 hours in economics.

The following courses are required:

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3

For the remaining 9 hours, 3 hours must be at or above the 2000 level and 6 hours must be at or above the 3000 level. It is recommended that students take ECON 3001, Intermediate Economic Theory: Microeconomics and/or ECON 3002, Intermediate Economic Theory: Macroeconomics. ECON 3100, Economic Statistics, cannot be counted towards the economics minor if the student has also taken SCMA 3300 or the equivalent.

A GPA of 2.0 or better is required for courses presented for the minor. The satisfactory/ unsatisfactory (s/u) option may be applied to ECON 1001 and only.

## Learning Outcomes

- Apply the concepts of choice and opportunity cost to basic situations involving scarcity, and be able to clearly identify feasible choices.
- Understand supply, demand, and how markets operate and be able to identify welfare outcomes for consumers and producers.
- Understand the determination of the growth and short-run fluctuations of an economy.
- Appraise how government policies, monetary policies and fiscal policies in particular, affect output, unemployment, inflation and growth.

## Education Administration EdS

### Education Specialist (Ed.S.) in Education Administration

The Education Specialist Degree (Ed.S.) in Education Administration is a logical extension of the UMSL M.Ed. in Education Administration and is designed to prepare administrators to serve in school settings from Kindergarten to grade twelve and central office administration. The Ed.S. in Education Administration requires at least sixty (60) graduate credit hours of a planned program and may include no more than thirty-six (36) credit hours of an approved NCATE accredited master's degree. One-half (15 credit hours) must be completed within the COE after being admitted

to the Ed.S. program. As constituted, the minimum course requirements for the Ed.S. in Education Administration collaterally meets the academic standards for both Elementary and Secondary career continuous school administrator certification in Missouri. To be recommended for the Missouri School Superintendent certificate, students must complete at least a minimum of six (6) additional hours, depending on the courses taken for the Ed.S., for a total of sixty-six (66) hours above the baccalaureate.

## Admission Standards

To be admitted to the Ed.S. in Education Administration program students must meet the following criteria:

1. Be admitted without qualification to the UMSL Graduate School;
3. Have a graduate grade point average of at least 3.25 on a scale of 4.00.
4. Have on file at least three (3) recommendations including the following: one (1) from an educator presently occupying a position equal or similar to that which the applicant aspires upon completing the Ed.S., one (1) from a university professors with direct knowledge of the applicant's graduate degree work, and one (1) from someone other than a member of the applicant's family who can comment on the applicant's character.
5. Students already possessing a master's degree from an NCATE accredited institution may transfer those credit hours into the Ed.S. degree program; however, at least twenty-four (24) credit hours must be completed after acceptance into the program.

## Degree Program

There are three (3) phases to this degree program. Phase 1.00 must be completed by students not possessing a UMSL M.Ed. in Education Administration and those wanting to transfer appropriate grade courses from other NCATE institutions. Phase 2.00 applies to those students meeting all of the requirements in Phase 1.00. There are two (2) sections to Phase 2.00--- Section 2.10 Technical Aspects of Education Administration and Section 2.20 Human Aspects of Education Administration. Courses in these two sections may be taken simultaneously. There are two (2) sections to Phase 3.00--- Section 3.10 Writing Exit Requirements and Section 3.20 Examination Exit Requirements. Both sections must be completed no sooner than one (1) semester before completing all degree requirements. Students seeking the superintendent certification must complete ten (10) specifically required courses.

### Phase 1.00 Elementary and Secondary School Education Emphases

#### 1.10 Contexts Core:

ED ADM 6201	Knowledge Contexts of Education Administration and Policy	3
ED ADM 6202	Race and Culture in Educational Reform and Policy	3
ED ADM 6203		3
ED ADM 6204	Economic Contexts of Education	3
ED ADM 6205	Legal Contexts of Education	3

#### 1.20 Research/Change Core:

ED REM 6707	Classroom Measurement and Evaluation <sup>1</sup>	3
ED ADM 6301	Education Policy Analysis <sup>2</sup>	3

ED ADM 6503	Organizational Change in Education	3
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#### 1.30 School Specialization Core

Select 1.31 or 1.32 listed below:		12
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##### 1.31 Elementary School Administration:

ED ADM 6302	Elementary School Administration	
ED ADM 6401	School Staff Development and Supervision	
ELE ED 6411	Curriculum Leadership Elementary Programs	
ED ADM 6900	Internship (3 credit hours) <sup>2</sup>	

##### 1.32 Secondary School Administration:

ED ADM 6304	Secondary School Administration	
ED ADM 6401	School Staff Development and Supervision	
SPEC ED 6415	The Law and Special Education	
ED ADM 6900	Internship (3 credit hours) <sup>2</sup>	

Total Hours		36
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<sup>1</sup> Required if student had no equivalent course at the undergraduate level

<sup>2</sup> This course must be taken within the last nine (9) semester hours of completion of Phase 1.00

## Phase 2.00

### Section 2.10 Technical Aspects of Education Administration

At least 12 graduate semester hours are required from the following list of recommended courses: <sup>1</sup>		12
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ED ADM 6303	Middle School Administration	
ED ADM 6305	School District Administration	
ED ADM 6407	School Staff Development & Supervision- Special Ed Administration	
ED ADM 6501	Principles of Public School Finance in Missouri	
ED ADM 6502	School Buildings and Sites	
ELE ED 6411	Curriculum Leadership Elementary Programs	
ED ADM 6315	Middle School Educational Philosophy	
SEC ED 6415	Curriculum Leadership in Education	
SEC ED 6420	Improving Teaching and Learning	
ED ADM 6306	Special Education Administration	
ED TECH 5340	Selection and Utilization of Educational Multimedia	
ED TECH 6449	Using Technology in Administration Processes	
ED REM 6709		3

### Section 2.20 Human Aspects of Education Administration

At least 12 graduate semester hours are required from the following list of recommended courses: <sup>1</sup>		12
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ED ADM 6307	Integrated Curriculum for Special Education Administrators	
ED ADM 6317	Supervision and The Middle School Child	
ED ADM 6402	School Personnel Administration	

ED ADM 6403	Problems in School Public Relations	
ED ADM 6404	Collective Negotiations in Education Organizations	
ED ADM 6602	Programming in Community and Adult Education	
ED FND 6422	Analysis of Cultural Literacies	
ED PSY 6225	The Psychology of Adolescence	
ED ADM 6900	Internship (School District Level, 3 credit hours)	
ED ADM 6900	Internship (Special Education Setting, 3 credit hours)	
Total Hours		27

<sup>1</sup> Other courses must be approved by the student's advisor and ELAPS department chairperson.

TOTAL Education Specialist Degree in Education Administration.....  
60 (inclusive of a maximum of 36 credit hours from an M.Ed. in education administration.)

### Phase 3.00 Writing Exit Requirements

#### Section 3.10 Writing Requirements

At least two (2) months before the completion of all course work for the degree, each student must present to the ELAPS Department K-12 Regular faculty Ed.S. Writing Committee a scholarly paper on a topic approved by the student's academic advisor. The paper submitted may be original in that it has been written especially for this requirement or it may be a more comprehensive version of a paper written for a class taken after being admitted to the Ed.S. program. The paper must conform to the writing standards found in the booklet PS K-12 Writing Requirements-Form and Style.

## Education Minor

A minor in education consists of 18 hours of course work. A total of 15 hours must be taken at or above the 2000 level including at least 2 courses at or above the 3000 level from the following curricular designations: ART ED, ECH ED, ED PSY, ED TECH, EDUC, ELE ED, MUS ED, PHYS ED, SEC ED, SPEC ED, and TCH ED. In addition, a 3 hour capstone course must be selected from the following:

ECH ED 4989	Practicum I: Early Childhood Education/Early Childhood Special Education Site Based Experience	3
EDUC 4989	Internship I	3
ELE ED 4989	Practicum I: Elementary/Special Education Site-Based Experience	3
ELE ED 4992	Practicum I: Elementary/Special Education/TESOL Site Based Experience	3
ELE ED 4994	Practicum I: Elementary/TESOL Site Based Experience	3
MID ED 4989	Practicum I: Middle Level Education Site Based Experience	3
SEC ED 4989	Practicum I: Site-Based Experience	3

All courses in the minor must be passed with a grade of C- or better. Candidates must have a cumulative grade point average of 2.0 or better in the minor. Courses taken on a satisfactory/unsatisfactory basis may not be

applied to the minor. At least 9 hours must be taken while in residence at UMSL.

## Education PhD, Counseling Emphasis

### Admission Requirements

In addition to meeting the application and admissions requirements of the Graduate School, students must submit:

- Three letters of recommendation (at least two from individuals with earned doctorates, preferably prior instructors).
- A copy of a paper you have written on a scholarly topic, as a writing sample.
- A professional resume.
- Evidence of above-average academic records. A GPA of 3.5 or higher is preferred.
- GRE scores. Quantitative and verbal scores at or above the 50th percentile are preferred. An analytical writing score of 4.0 or higher is preferred.
- Answers to these three questions (limit responses to 300 words or less per question), sent to CounselingDocApps@umsl.edu:
  - How do you envision the UMSL doctoral program preparing you to meet your career goals?
  - What are your experiences working with diverse populations and what you have learned from these experiences?
  - What personal qualities do you possess that relate to your interest in doctoral education in counseling?

Admission is competitive, and a favorable vote of an admission interview committee, composed of faculty in the emphasis area, is required.

### Degree Program

- Coursework: A minimum of 60 credit hours is required beyond the Master's degree, including 6 hours of dissertation research. A minimum of 42 of these hours must be completed in residence.
- Dissertation: All students must defend orally a written dissertation proposal to their dissertation committee. A dissertation embodying the results of original research must be accepted by the dissertation committee and the Graduate School.

### Admission Application

To ensure time for review and decision, applicants should submit the Graduate School application, college transcripts, and any program-specific materials (e.g. supplemental application, letters of recommendation, etc.) well in advance of the **December 1st deadline**. Please note that unofficial transcripts can be uploaded with the Graduate School application to expedite admissions decisions; however, official transcripts must be received directly from all prior institutions attended before regular admission to any program will be granted. In addition, applicants are urged to request transcripts and letters or recommendation two weeks before completing the online application. Consideration of applications cannot be undertaken until all materials are available.

### Degree Requirements

Students in the Counseling emphasis area complete the following requirements:



<b>Research Methods (21 hours)</b>		
ED REM 6710	Educational Research Methods and Design <sup>1</sup>	3
CNS ED 7020	Seminar in Counseling Research	3
CNS ED 7025	Advanced Counseling Research	3
ED REM 7771	Quantitative Research Methods I	3
ED REM 7781	Qualitative Methods in Educational Research I	3
One of the following:		3
ED REM 7772	Quantitative Research Methods II	
ED REM 7782	Qualitative Methods in Educational Research II	
One of the following:		3
ED REM 6730	Educational Program Development and Evaluation	
ED REM 7772	Quantitative Research Methods II (if not taken above)	
ED REM 7782	Qualitative Methods in Educational Research II (if not taken above)	
<b>Counseling Core (57 hours)</b>		
CNS ED 6010	Theories of Counseling <sup>1</sup>	3
CNS ED 6020	Ethical and Professional Issues in Counseling <sup>1</sup>	3
CNS ED 6030	Foundations for Multicultural Counseling <sup>1</sup>	3
CNS ED 6040	Group Procedures in Counseling <sup>1</sup>	3
CNS ED 6050	Individual Inventory <sup>1</sup>	3
CNS ED 6270	School Counseling Practicum <sup>1</sup>	3
or CNS ED 6370	Clinical Mental Health Counseling Practicum I	
CNS ED 6280	School Counseling Field Experience <sup>1</sup>	6
or CNS ED 6380	Clinical Mental Health Counseling Field Experience	
CNS ED 6400	Career Information and Development <sup>1</sup>	3
CNS ED 6410	Advanced Career Development	3
CNS ED 7000	Advanced Theories and Practice of Counseling	6
CNS ED 7010	Advanced Multicultural Counseling	3
CNS ED 7030	Counselor Education and Supervision of Individuals and Groups	6
CNS ED 7075	Teaching, Learning, and Technology in Counselor Education	3
ED PSY 6210	Life-Span: Individual and Family Development <sup>1</sup>	3
Electives		6
<b>Internship</b>		
CNS ED 7780	Doctoral Internship	6
<b>Dissertation Research</b>		
EDUC 7999	Dissertation Research	6
<b>Total Hours</b>		<b>90</b>

<sup>1</sup> These courses are normally part of a master's program. Equivalent graduate coursework may count as transfer credit toward the degree with approval of the Ph.D. program.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate and apply the ethical and culturally relevant practice of counseling
- Be adept at conceptualizing clients using theory and integrating theory and research into counseling practice
- Demonstrate skills in the process and practice of clinical supervision and consultation, including the use of theory, assessment, gatekeeping, and ethical and culturally relevant strategies
- Develop skills in teaching, including course design, assessment, andragogy, differentiation, and gatekeeping.
- Demonstrate the ethical practice of conducting rigorous and intentionally designed counseling research.
- Develop and refine scholarship skills through advanced qualitative and quantitative coursework to be able to disseminate findings through professional presentations or publications
- Demonstrate abilities to serve as leaders in the field and advocates for the profession, for clients, and with marginalized populations to stand up against issues of systemic inequity

## Education PhD, Educational Leadership and Policy Studies Emphasis

### Admission and General Requirements

In addition to meeting the application and admissions requirements of the Graduate School, students must submit:

- Three letters of recommendation (at least two from individuals with earned doctorates, preferably prior instructors).
- An original essay.
- A professional resume.
- Evidence of above-average academic records. A GPA of 3.5 or higher is preferred.
- GRE scores. Quantitative and verbal scores at or above the 50th percentile are preferred. An analytical writing score of 4.0 or higher is preferred.

Admission is competitive, and a favorable vote of an admission interview committee, composed of faculty in the emphasis area, is required.

### Degree Program

- Coursework: A minimum of 60 credit hours is required beyond the Master's degree, including 6 hours of dissertation research. A minimum of 42 of these hours must be completed in residence. For students who have not completed a Master's degree, a minimum of 90 hours, postbaccalaureate, is required, including 6 hours of dissertation research (the Graduate School's residency requirement applies). Students in the Counseling emphasis area complete the following requirements: a minimum 90 hours, postbaccalaureate, including 12 hours of dissertation research (the Graduate School's residency requirement applies).

- Dissertation: All students must defend orally a written dissertation proposal to their dissertation committee. A dissertation embodying the results of original research must be accepted by the dissertation committee and the Graduate School.

## Admission Application

To ensure time for review and decision, applicants should submit the Graduate School application, college transcripts, and any program-specific materials (e.g. supplemental application, letters of recommendation, etc.) well in advance of the **December 1st deadline**. Please note that unofficial transcripts can be uploaded with the Graduate School application to expedite admissions decisions; however, official transcripts must be received directly from all prior institutions attended before regular admission to any program will be granted. In addition, applicants are urged to request transcripts and letters or recommendation two weeks before completing the online application. Consideration of applications cannot be undertaken until all materials are available.

## Degree Requirements

Students in the Teaching-Learning Processes, Educational Leadership and Policy Studies, and Educational Psychology emphasis areas complete the following requirements.

### 1. Research Methods 15-18

Students in the Teaching –Learning Processes, Educational Leadership and Policy Studies, and Educational Psychology emphasis areas should complete the following research methods courses (or equivalent).

ED REM 6735	Statistical Analysis for Education Research (Prerequisite)
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ED REM 6750	Advanced Research Design in Education
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Plus any three methods courses from the following:

ED REM 7771	Quantitative Research Methods I
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ED REM 7772	Quantitative Research Methods II
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ED REM 7781	Qualitative Methods in Educational Research I
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ED REM 7782	Qualitative Methods in Educational Research II
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This sequence totals 15 hours of methods courses. Remaining hours can be completed with other ED REM courses numbered 6000 or higher or research courses in another curriculum.

### 2. Program Area of Study to Develop Discipline Knowledge (as determined by student, advisor, and program) 24-26

### 3. Core courses 10-14

EDUC 7490	Directed Readings in the Education Research Literature	1-3
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EDUC 7050	The Research Process I: Framing Research Questions in Education Research	3
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EDUC 7605	Scholarship of Teaching and Learning in Educational Practice	2
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EDUC 7625	Building Socially Just and Ethical Educational Communities	3
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Electives		2-4
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### 4. Dissertation Proposal Writing

EDUC 7950	Preparation for Writing the Dissertation Proposal	1-3
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## 5. Dissertation

EDUC 7999	Dissertation Research	6
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## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Access, critically examine, and use theoretically informed literature in human development, the science of learning, and sociocultural factors that explain variation in learning and developmental pathways.
- Examine and apply complex interrelationships that affect issues of diversity, equity and social justice from multiple and cross-disciplinary perspectives to teaching and learning processes contexts.
- Formulate questions, increase knowledge, use statistics intelligently, and make ethical decisions integrating multiple perspectives using reason, evidence, and teaching and learning processes contexts.
- Analyze, categorize, and evaluate qualitative, quantitative, and/or mixed methods approaches within an education context.
- Design and produce rigorous research projects as an independent scholar using qualitative, quantitative, and/or mixed methods approaches.
- Apply and demonstrate leadership skills to promote community engagement or civic action to benefit the public good related to teaching and learning processes settings.
- Communicate effectively and engage with others constructively across contexts, languages, and media.

## Education PhD, Educational Psychology Emphasis

### Admission and General Requirements

In addition to meeting the application and admissions requirements of the Graduate School, students must submit:

- Three letters of recommendation (at least two from individuals with earned doctorates, preferably prior instructors).
- An original essay.
- A professional resume.
- Evidence of above-average academic records. A GPA of 3.5 or higher is preferred.
- GRE scores. Quantitative and verbal scores at or above the 50th percentile are preferred. An analytical writing score of 4.0 or higher is preferred.

Admission is competitive, and a favorable vote of an admission interview committee, composed of faculty in the emphasis area, is required.

### Degree Program

- Coursework: A minimum of 60 credit hours is required beyond the Master's degree, including 6 hours of dissertation research. A minimum of 42 of these hours must be completed in residence. For students who have not completed a Master's degree, a minimum of 90 hours, postbaccalaureate, is required, including 6 hours of dissertation research (the Graduate School's residency requirement applies). Students in the Counseling emphasis area complete the following requirements: a minimum 90 hours, postbaccalaureate, including 12 hours of dissertation research (the Graduate School's residency requirement applies).

- Dissertation: All students must defend orally a written dissertation proposal to their dissertation committee. A dissertation embodying the results of original research must be accepted by the dissertation committee and the Graduate School.

## Admission Application

To ensure time for review and decision, applicants should submit the Graduate School application, college transcripts, and any program-specific materials (e.g. supplemental application, letters of recommendation, etc.) well in advance of the **December 1st deadline**. Please note that unofficial transcripts can be uploaded with the Graduate School application to expedite admissions decisions; however, official transcripts must be received directly from all prior institutions attended before regular admission to any program will be granted. In addition, applicants are urged to request transcripts and letters or recommendation two weeks before completing the online application. Consideration of applications cannot be undertaken until all materials are available.

## Degree Requirements

Students in the Teaching-Learning Processes, Educational Leadership and Policy Studies, and Educational Psychology emphasis areas complete the following requirements.

### 1. Research Methods 15-18

Students in the Teaching –Learning Processes, Educational Leadership and Policy Studies, and Educational Psychology emphasis areas should complete the following research methods courses (or equivalent).

ED REM 6735	Statistical Analysis for Education Research (Prerequisite)
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ED REM 6750	Advanced Research Design in Education
-------------	---------------------------------------

Plus any three methods courses from the following:

ED REM 7771	Quantitative Research Methods I
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ED REM 7772	Quantitative Research Methods II
-------------	----------------------------------

ED REM 7781	Qualitative Methods in Educational Research I
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ED REM 7782	Qualitative Methods in Educational Research II
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This sequence totals 15 hours of methods courses. Remaining hours can be completed with other ED REM courses numbered 6000 or higher or research courses in another curriculum.

### 2. Program Area of Study to Develop Discipline Knowledge 24-26 (as determined by student, advisor, and program)

### 3. Core courses 10-14

EDUC 7490	Directed Readings in the Education Research Literature	1-3
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EDUC 7050	The Research Process I: Framing Research Questions in Education Research	3
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EDUC 7605	Scholarship of Teaching and Learning in Educational Practice	2
-----------	--	---

EDUC 7625	Building Socially Just and Ethical Educational Communities	3
-----------	--	---

Electives		2-4
-----------	--	-----

### 4. Dissertation Proposal Writing

EDUC 7950	Preparation for Writing the Dissertation Proposal	1-3
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## 5. Dissertation

EDUC 7999	Dissertation Research	6
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## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Access, critically examine, and use theoretically informed literature in educational administration, educational leadership, education policy, reform, and practice.
- Examine and apply complex interrelationships that affect issues of diversity, equity and social justice from multiple and cross-disciplinary perspectives to educational leadership and policy studies contexts.
- Formulate questions, increase knowledge, use statistics intelligently, and make ethical decisions integrating multiple perspectives using reason, evidence, and educational leadership and policy studies contexts.
- Analyze, categorize, and evaluate qualitative, quantitative, and/or mixed methods approaches within an education context.
- Design and produce rigorous research projects as an independent scholar using qualitative, quantitative, and/or mixed methods approaches.
- Apply and demonstrate leadership skills to promote community engagement or civic action to benefit the public good related to educational leadership and policy studies settings.
- Communicate effectively and engage with others constructively across contexts, languages, and media.

# Education PhD, Teaching-Learning Process Emphasis

## Admission and General Requirements

In addition to meeting the application and admissions requirements of the Graduate School, students must submit:

- Three letters of recommendation (at least two from individuals with earned doctorates, preferably prior instructors).
- An original essay.
- A professional resume.
- Evidence of above-average academic records. A GPA of 3.5 or higher is preferred.
- GRE scores. Quantitative and verbal scores at or above the 50th percentile are preferred. An analytical writing score of 4.0 or higher is preferred.

Admission is competitive, and a favorable vote of an admission interview committee, composed of faculty in the emphasis area, is required.

## Degree Program

- Coursework: A minimum of 60 credit hours is required beyond the Master's degree, including 6 hours of dissertation research. A minimum of 42 of these hours must be completed in residence. For students who have not completed a Master's degree, a minimum of 90 hours, postbaccalaureate, is required, including 6 hours of dissertation research (the Graduate School's residency requirement applies). Students in the Counseling emphasis area complete the following requirements: a minimum 90 hours, postbaccalaureate, including 12 hours of dissertation research (the Graduate School's residency requirement applies).

- Dissertation: All students must defend orally a written dissertation proposal to their dissertation committee. A dissertation embodying the results of original research must be accepted by the dissertation committee and the Graduate School.

## Admission Application

To ensure time for review and decision, applicants should submit the Graduate School application, college transcripts, and any program-specific materials (e.g. supplemental application, letters of recommendation, etc.) well in advance of the **December 1st deadline**. Please note that unofficial transcripts can be uploaded with the Graduate School application to expedite admissions decisions; however, official transcripts must be received directly from all prior institutions attended before regular admission to any program will be granted. In addition, applicants are urged to request transcripts and letters or recommendation two weeks before completing the online application. Consideration of applications cannot be undertaken until all materials are available.

## Degree Requirements

Students in the Teaching-Learning Processes, Educational Leadership and Policy Studies, and Educational Psychology emphasis areas complete the following requirements.

### 1. Research Methods 15-18

Students in the Teaching –Learning Processes, Educational Leadership and Policy Studies, and Educational Psychology emphasis areas should complete the following research methods courses (or equivalent).

ED REM 6735	Statistical Analysis for Education Research (Prerequisite)
-------------	--

ED REM 6750	Advanced Research Design in Education
-------------	---------------------------------------

Plus any three methods courses from the following:

ED REM 7771	Quantitative Research Methods I
-------------	---------------------------------

ED REM 7772	Quantitative Research Methods II
-------------	----------------------------------

ED REM 7781	Qualitative Methods in Educational Research I
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ED REM 7782	Qualitative Methods in Educational Research II
-------------	--

This sequence totals 15 hours of methods courses. Remaining hours can be completed with other ED REM courses numbered 6000 or higher or research courses in another curriculum.

### 2. Program Area of Study to Develop Discipline Knowledge (as determined by student, advisor, and program) 24-26

### 3. Core courses 10-14

EDUC 7490	Directed Readings in the Education Research Literature	1-3
-----------	--	-----

EDUC 7050	The Research Process I: Framing Research Questions in Education Research	3
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EDUC 7605	Scholarship of Teaching and Learning in Educational Practice	2
-----------	--	---

EDUC 7625	Building Socially Just and Ethical Educational Communities	3
-----------	--	---

Electives		2-4
-----------	--	-----

### 4. Dissertation Proposal Writing

EDUC 7950	Preparation for Writing the Dissertation Proposal	1-3
-----------	---	-----

## 5. Dissertation

EDUC 7999	Dissertation Research	6
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## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Access, critically examine, and use theoretically informed literature in human development, the science of learning, and sociocultural factors that explain variation in learning and developmental pathways.
- Examine and apply complex interrelationships that affect issues of diversity, equity and social justice from multiple and cross-disciplinary perspectives to teaching and learning processes contexts.
- Formulate questions, increase knowledge, use statistics intelligently, and make ethical decisions integrating multiple perspectives using reason, evidence, and teaching and learning processes contexts.
- Analyze, categorize, and evaluate qualitative, quantitative, and/or mixed methods approaches within an education context.
- Design and produce rigorous research projects as an independent scholar using qualitative, quantitative, and/or mixed methods approaches.
- Apply and demonstrate leadership skills to promote community engagement or civic action to benefit the public good related to teaching and learning processes settings.
- Communicate effectively and engage with others constructively across contexts, languages, and media.

## Educational Administration MEd, Community Education Emphasis

The M.Ed. in Administration, Community Education will not be accepting applications for the 2020-2021 Academic Year due to curricular revisions.

## Master of Education: Educational Administration with Emphasis in Community Education

This is a 32-credit hour program for students interested in Community Education.

Competencies/Expectations/Outcomes that all students must demonstrate to complete the program successfully:

- School Administrator candidates in the College of Education are held to the Interstate School Leaders Licensure Consortium's Standards for School Leaders (ISLLC)
- A school administrator is an educational leader who promotes the success of all students by facilitating the development, articulation, implementation, and stewardship of a vision of learning that is shared and supported by the school community.
- A school administrator is an educational leader who promotes the success of all students by advocating, nurturing, and sustaining a school culture and instructional program conducive to student learning and staff professional growth.
- A school administrator is an educational leader who promotes the success of all students by ensuring management of the organization, operations, and resources for a safe, efficient, and effective learning environment.
- A school administrator is an educational leader who promotes the success of all students by collaborating with families and community



members, responding to diverse community interests and needs, and mobilizing community resources.

- A school administrator is an educational leader who promotes the success of all students by acting with integrity, fairness and in an ethical manner.
- A school administrator is an educational leader who promotes the success of all students by understanding, responding to, and influencing the larger political, social, economic, legal and cultural context.
- A school administrator is an educational leader who promotes the effective use of technology to maximize student learning and efficiently manage school operations.

The ISLLC standards pertain to Elementary and Secondary Administration and Community Education.

## Degree Requirements

### 2.10

ED FND 6421	Philosophy of Education <sup>3</sup>	3
ED FND 6435	History of Western Education <sup>3</sup>	3
or ED FND 4330	History of American Education <sup>3</sup>	
ED ADM 6202	Race and Culture in Educational Reform and Policy	3

ED ADM 6203

### 2.20 Research Core

ED ADM 6301	Education Policy Analysis	3
ED REM 5730	Educational Statistics <sup>3</sup>	3

### 2.30 Community Education

ED ADM 6301	Education Policy Analysis	3
ED ADM 6900	Internship	6

### 2.40 School Specialization

Select 2.41 or 2.42 listed below: <sup>2</sup> 6

#### 2.41 Elementary School Administration

ED ADM 6302	Elementary School Administration	
ELE ED 6411	Curriculum Leadership Elementary Programs	

#### 2.42 Secondary School Administration

ED ADM 6304	Secondary School Administration	
SEC ED 6415	Curriculum Leadership in Education	

Total Hours 30

<sup>1</sup> Exit Requirement--Taken within the last 9 semester hours of the M.Ed. program.

<sup>2</sup> Students take either section 2.41 or section 2.42, not both sections.

<sup>3</sup> This course will not be offered in 2014-2015. Please contact the department for more information.

## Educational Administration MEd, School Administration Emphasis

### Description

The Master of Education in Education Administration with emphasis in School Administration is intended for K-12 teachers interested in the School Leadership Preparation Program. The program partially fulfills Missouri Department of Elementary and Secondary Education

requirements for licensure. This innovative curriculum is based on current research and best practices in leader development. It is designed to prepare highly effective administrators who engage in reflective practice, drive gains in student achievement and development, create equitable and efficacious school cultures, and utilize strategic planning to organize adults and continuously track progress toward goals. Participants are prepared to meet any challenge facing the school leaders of today.

Students admitted to the program become members of a cohort that begins study in the fall semester. Those who maintain enrollment complete the degree in two years.

This program consists of 36 credit hours and is rich in field experiences.

Six visits to successful schools are scheduled during the first year. The second year of the program features a 600-clock-hour field experience as a school leader. Principals in area schools and UMSL faculty members provide mentorship and coaching throughout the program. Residency assessments track progress toward the goal of becoming a highly effective leader.

### Admission

Admission to the Master of Education in Education Administration degree program is competitive. All application materials should be submitted by April 30<sup>th</sup>. Applicants are notified of the final admission decisions approximately June 15<sup>th</sup> and commence a defined, sequential course plan in the fall semester. In order to graduate in two years, students must remain with their cohort.

An undergraduate graduate point average (GPA) of 2.75 in the major and overall, and if applicable a graduate GPA of 3.0, are required. To apply, potential students must:

- Complete an Application to the Graduate School (found through links on the UMSL home page, [www.umsl.edu](http://www.umsl.edu))
- Have transcripts of all prior work in higher education sent to the Graduate Admissions Office
- Complete and submit a Supplemental Application to the M.Ed. in Education Administration. The Supplemental Application and list of accompanying materials can be located on the program web page, [coe.umsl.edu](http://coe.umsl.edu)

Review of applications is a three-stage process ending with an interview.

## Degree Program

### First Year Fall Term

ED ADM 6701	Leadership for Equity <sup>1</sup>	3
ED ADM 6702	Supervision in Education Organizations <sup>1</sup>	3

### First Year Winter Intersession

ED ADM 6703	Vision and Mission I <sup>1</sup>	3
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### First Year Spring Term

ED ADM 6704	Data-Driven Instruction and Team Leadership I <sup>1</sup>	3
ED ADM 6705	School Culture I <sup>1</sup>	3

### First Year Summer Term

ED ADM 6706	Diagnostic and Strategic Planning <sup>1</sup>	3
ED ADM 6707	Supervision of Instruction II <sup>1</sup>	3

### Second Year Fall Term

ED ADM 6708	School Culture II: Equity and Cultural Competence <sup>1</sup>	2
ED ADM 6709	School Law and Regulation <sup>1</sup>	3
ED ADM 6710	Residency I <sup>1</sup>	3
<b>Second Year Spring Term</b>		
ED ADM 6711	Data-Driven Instruction and Team Leadership II <sup>1</sup>	3
ED ADM 6712	Management of Organizational Systems <sup>1</sup>	3
ED ADM 6713	Residency II <sup>1</sup>	2

<sup>1</sup> Pending Faculty Senate approval.

Candidates must take all courses in sequence. Courses are offered only in the semesters indicated. As a sequential program, prerequisites for any semester are all courses offered in the previous semesters. Courses cannot be taken out of sequence.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Develop and implement a vision for a school in order to guide the learning of all students. (Visionary Leadership)
- Promote effective instructional practices, utilize effective assessments, and ensure professional growth among school faculty. (Instructional Leadership)
- Implement operational systems, oversee personnel, and ensure equitable and strategic use of resources. (Managerial Leadership)
- Interact professionally with students, staff, family, and community, respecting and embracing diversity and inclusion. (Relational Leader)
- Actively engage in reflective practice and apply new knowledge and understanding in order to drive appropriate change. (Innovative Leadership)

## Educational Psychology MEd

The Department of Education Sciences and Professional Programs provides training in the theory, research, and practice of the psychological mechanisms underlying teaching, learning, and human development of students as well as the related school processes and structures. The department also specializes in educational research, psychoeducational assessment, and school psychology.

The M.Ed. in Educational Psychology is a flexible degree that allows candidates to tailor the program curriculum to meet individual interests and career goals. The degree is not associated with any particular position or career; rather it is intended to enhance current performance in a variety of educational and community-based settings and roles, to facilitate advancement within one's current position, and to prepare candidates for other advanced degrees in education or psychology. The M.Ed. in Educational Psychology degree consists of 30 hours of graduate coursework in the following areas:

- Foundations (15 hours)
- Electives (12 hours)
- Capstone Experience (3 hours)

The foundations courses consist of 6 hours of study regarding the educational and psychological foundations, 3 hours of human

development, and 6 hours of educational research and evaluation methods. The specific courses chosen within each category, the electives, and capstone experience will vary according to the candidate's interests.

## Admissions Requirements

Admissions requirements include an earned baccalaureate degree from an accredited college or university with an overall grade point average of 3.0 or higher, a completed UMSL Graduate School Application Form, official transcripts from all colleges and universities attended, and two letters of recommendation.

## Curriculum (30 hours)

### Foundations

Educational and Psychological Foundations 6  
Choose two of the following:

ED PSY 6030 Instruction, Learning and Assessment

ED PSY 6111 Educational Psychology

ED PSY 6530 Foundations of School Psychology <sup>1</sup>

Human Development 3

Choose one of the following:

ED PSY 6210 Life-Span: Individual and Family Development

ED PSY 6215 Psychology of Early Childhood Development

ED PSY 6222 Advanced Studies in Child and Adolescent Development

ED PSY 6226 Mental Health and Development of Children and Youth

Educational Research and Evaluation Methods 6

Choose two of the following:

ED REM 6735 Statistical Analysis for Education Research

ED REM 6710 Educational Research Methods and Design

ED REM 6750 Advanced Research Design in Education

ED REM 6730 Educational Program Development and Evaluation

ED REM 6719 Advanced Psychoeducational Assessment and Intervention <sup>1</sup>

**Electives 12**

12 Hours of graduate-level courses in any combination of the following curricular areas: <sup>2</sup>

Educational Psychology (ED PSY)

Educational Research and Evaluation Methods (ED REM)

Educational Technology (ED TECH)

Other curricular areas (with consent of advisor, maximum of 6 hours) <sup>3</sup>

**Capstone Experience 3**

Choose one of the following:

ED PSY 6590 School Psychology Practicum I <sup>1</sup>

ED REM 6732 Advanced Educational Program Development and Evaluation

ED PSY 6990 Internship

EDUC 6998	Thesis Research <sup>2</sup>	
<b>Total Hours</b>		<b>30</b>

- <sup>1</sup> Admission to School Psychology Program required
- <sup>2</sup> Candidates choosing Thesis Research will have 9 hours of Electives and 6 hours for the Capstone.
- <sup>3</sup> Up to 6 hours from other disciplines may be chosen in consultation with an advisor.

## Educational Studies BES, Early Childhood Emphasis

The Bachelor of Educational Studies (BES) is perfect for students excited about education, but looking for challenges outside the traditional classroom. The BES will prepare you for a career as an educator in many agencies. Many institutions emphasize informal learning and many different settings. Employers at these institutions are eager to hire people who have training and relevant experience in education, management, marketing, and technology. This degree is designed to be a creative, flexible, and inter-disciplinary bachelor's degree that emphasizes practical skills in multiple settings.

### General Education Requirements

Students follow the University's General Education Requirements (p. 51), Mathematical Skills, Advanced Expository Writing, American History and Government, and Cultural Diversity Requirements. Due to prerequisites of required courses all students must take PSYCH 1003 and POL SCI 1100. Students pursuing the Exercise Science emphasis area must take BIOL 1012, BIOL 1013, and MATH 1030.

### Foundations (Required Courses)

TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
EDUC 2002	Social Entrepreneurship	3
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
ED PSY 2212	Child and Adolescent Development	3
or CNS ED 3200	Interpersonal Skills in Helping Relationships	
PHY ED 2136	Facilities Management	3
EDUC 3170	Grant Proposal Writing for Educators	3
ED FND 3251	Black Americans in Education	3
THEATR 3362	Storytelling	3
MKTG 3721	Introduction to Digital Marketing Strategies	3
ED TECH 4302	Educational Technology Instruction in Educational Agencies	3
or ED TECH 4436	Computer-Mediated Teaching and Learning in Education	
ED FND 4330	History of American Education through the Lens of Social Justice	3
<b>Total Hours</b>		<b>32</b>

## Emphasis Area Requirements

### Required Courses

ECH ED 3302	Introduction to Inclusive Early Childhood Education	3
ECH ED 3303	Curriculum and Practice Laboratory: Infant/Toddler	1
ECH ED 3304	Curriculum and Practice Laboratory: Preschool	1
ECH ED 3313	Curriculum and Practice: Infant/Toddler	2
ECH ED 3314	Curriculum And Practice: Preschool Education	2
ECH ED 3332	Literacy, Learning and Instruction For The Young Child	3
ECH ED 3350	Family and Professional Partnerships within School/Community	3
ECH ED 4317	Implementation, Evaluation, and Assessment in Early Childhood Education	3
SPEC ED 3318	Inclusive Classrooms	3
<b>Total Hours</b>		<b>21</b>

### Clinical Experiences

EDUC 4989	Internship I	3
EDUC 4990	Internship II	6
EDUC 4991	Internship III	6

### Suggested Courses

MEDIA ST 2211	Introduction to Digital Multimedia Production	3
MEDIA ST 2222	Convergence and Digital Media	3
MGMT 3600	Management and Organizational Behavior	3
or SOC 3600	Management and Organizational Behavior	
SOC WK 2000	Social Work and Social Issues	3
HLTH PE 3380	Introduction to Nutrition for Health and Performance	3
<b>Total Hours</b>		<b>15</b>

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Engage their clients while adding diverse perspectives that articulate how difference shapes experience and human identity.
- Apply their unique understanding of social justice by addressing institutional and social barriers that limit access, equity, and achievement.
- Conduct themselves in a respectful and professional manner that views failure as an opportunity to learn, as they effectively work on multiple projects.
- Apply reasoning and critical thinking while making connections between information, data, and arguments to synthesize and interpret information, forming valid conclusions.

- Apply unique leadership, management and communication skills to articulate thoughts/ideas effectively using oral, written, nonverbal, and visual communication skills in a variety of formats and contexts.
- Apply knowledge and skills as innovative childhood educators, managers, directors, program planners, or curriculum developers to effectively manage early childhood programs.
- Demonstrate a unique application of best practices of teaching young children outside a traditional classroom setting.

## Educational Studies BES, Exercise Science and Wellness Emphasis

The Bachelor of Educational Studies (BES) is perfect for students excited about education, but looking for challenges outside the traditional classroom. The BES will prepare you for a career as an educator in many agencies. Many institutions emphasize informal learning and many different settings. Employers at these institutions are eager to hire people who have training and relevant experience in education, management, marketing, and technology. This degree is designed to be a creative, flexible, and inter-disciplinary bachelor's degree that emphasizes practical skills in multiple settings.

### General Education Requirements

Students follow the University's General Education Requirements (p. 51), Mathematical Skills, Advanced Expository Writing, American History and Government, and Cultural Diversity Requirements. Due to prerequisites of required courses all students must take PSYCH 1003 and POL SCI 1100. Students pursuing the Exercise Science emphasis area must take BIOL 1012, BIOL 1013, and MATH 1030.

### Foundations (Required Courses)

TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
EDUC 2002	Social Entrepreneurship	3
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
ED PSY 2212 or CNS ED 3200	Child and Adolescent Development Interpersonal Skills in Helping Relationships	3
PHY ED 2136	Facilities Management	3
EDUC 3170	Grant Proposal Writing for Educators	3
ED FND 3251	Black Americans in Education	3
THEATR 3362	Storytelling	3
MKTG 3721	Introduction to Digital Marketing Strategies	3
ED TECH 4302 or ED TECH 4436	Educational Technology Instruction in Educational Agencies Computer-Mediated Teaching and Learning in Education	3
ED FND 4330	History of American Education through the Lens of Social Justice	3
Total Hours		32

## Emphasis Area Requirements

### Required Courses

PHY ED 1124	Principles & Practice In 1St Aid & Cardiopulmonary Resuscitation	1
HLTH PE 3434	Teaching of Health and Wellness	4
HLTH PE 3284	Physiology of Human Exercise	3
HLTH PE 3285	Safety and Emergency Care for Health & Physical Education	3
HLTH PE 3380	Introduction to Nutrition for Health and Performance	3
HLTH PE 3280	Human Anatomy and Physiology	4
PHY ED 2134	Personal Physical Fitness	3
PHY ED 3287	Seminar in Exercise Science	3
PHY ED 3283	Kinesiology	3
PHY ED 3330	Designing Physical Activity Programs	3
PHY ED 3931	Adult Exercise Leadership	3
Total Hours		33

### Clinical Experiences

EDUC 4989	Internship I	3
EDUC 4990	Internship II	6
EDUC 4991	Internship III	6
Total Hours		15

### Suggested Courses

MEDIA ST 2211	Introduction to Digital Multimedia Production	3
MEDIA ST 2222	Convergence and Digital Media	3
GERON 4130	Interviewing Older Adults and Life Review	3
GERON 4445	Aging, Chronic Illness & Disability	3
MGMT/SOC 3600	Management and Organizational Behavior	3
Total Hours		15

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Engage their clients while adding diverse perspectives that articulate how difference shapes experience and human identity.
- Apply their unique understanding of social justice by addressing institutional and social barriers that limit access, equity, and achievement.
- Conduct themselves in a respectful and professional manner that views failure as an opportunity to learn, as they effectively work on multiple projects.
- Apply reasoning and critical thinking while making connections between information, data, and arguments to synthesize and interpret information, forming valid conclusions.
- Apply unique leadership, management and communication skills to articulate thoughts/ideas effectively using oral, written, nonverbal, and visual communication skills in a variety of formats and contexts.
- Apply wellness and exercise principles and practices needed in emergency sports and exercise regimens.



- Design unique fitness programs based on the acquired knowledge on safety, nutrition, and wellness, to benefit clients in a diverse fitness industry, including adult exercise programs.

## Educational Studies BES, Park and Museum Programs Emphasis

### General Education Requirements

Students follow the University's General Education Requirements (p. 51), Mathematical Skills, Advanced Expository Writing, American History and Government, and Cultural Diversity Requirements. Due to prerequisites of required courses all students must take PSYCH 1003 and POL SCI 1100. Students pursuing the Exercise Science emphasis area must take BIOL 1012, BIOL 1013, and MATH 1030.

### Foundations (Required Courses)

TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
EDUC 2002	Social Entrepreneurship	3
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
ED PSY 2212 or CNS ED 3200	Child and Adolescent Development Interpersonal Skills in Helping Relationships	3
PHY ED 2136	Facilities Management	3
EDUC 3170	Grant Proposal Writing for Educators	3
ED FND 3251	Black Americans in Education	3
THEATR 3362	Storytelling	3
MKTG 3721	Introduction to Digital Marketing Strategies	3
ED TECH 4302 or ED TECH 4436	Educational Technology Instruction in Educational Agencies Computer-Mediated Teaching and Learning in Education	3
ED FND 4330	History of American Education through the Lens of Social Justice	3
Total Hours		32

### Emphasis Area Requirements

Students must complete the requirements for one Academic Minor chosen in consultation with the advisor. The minor and electives in a related area must total 21 hours.

### Suggested Minors

- Anthropology (p. 320)
- Biology (p. 334)
- Environmental Studies (p. 461)
- History (p. 472)
- History of Art and Visual Culture (p. 472)
- Philosophy of Science and Technology (p. 568)

### Suggested Courses

MEDIA ST 2211	Introduction to Digital Multimedia Production	3
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MEDIA ST 2222	Convergence and Digital Media	3
MGMT 3600 or SOC 3600	Management and Organizational Behavior Management and Organizational Behavior	3
SOC WK 2000	Social Work and Social Issues	3
HLTH PE 3380	Introduction to Nutrition for Health and Performance	3
Total Hours		15

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Engage their clients while adding diverse perspectives that articulate how difference shapes experience and human identity.
- Apply their unique understanding of social justice by addressing institutional and social barriers that limit access, equity, and achievement.
- Conduct themselves in a respectful and professional manner that views failure as an opportunity to learn, as they effectively work on multiple projects.
- Apply reasoning and critical thinking while making connections between information, data, and arguments to synthesize and interpret information, forming valid conclusions.
- Apply unique leadership, management and communication skills to articulate thoughts/ideas effectively using oral, written, nonverbal, and visual communication skills in a variety of formats and contexts.
- Integrate knowledge from disciplines such as anthropology, biology, environmental studies, history and philosophy to deliver effective parks and museum programs.
- Apply knowledge of national and international policies toward land, air, and water pollution; energy use; solid and toxic waste disposal; climate change; population; biodiversity; and conservation; to deliver sustainable programs.

## Educational Studies BES, Social Entrepreneurship Emphasis

### General Education Requirements

Students follow the University's General Education Requirements (p. 51), Mathematical Skills, Advanced Expository Writing, American History and Government, and Cultural Diversity Requirements. Due to prerequisites of required courses all students must take PSYCH 1003 and POL SCI 1100. Students pursuing the Exercise Science emphasis area must take BIOL 1012, BIOL 1013, and MATH 1030.

### Foundations (Required Courses)

TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
EDUC 2002	Social Entrepreneurship	3
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
ED PSY 2212 or CNS ED 3200	Child and Adolescent Development Interpersonal Skills in Helping Relationships	3
PHY ED 2136	Facilities Management	3

EDUC 3170	Grant Proposal Writing for Educators	3
ED FND 3251	Black Americans in Education	3
THEATR 3362	Storytelling	3
MKTG 3721	Introduction to Digital Marketing Strategies	3
ED TECH 4302	Educational Technology Instruction in Educational Agencies	3
or ED TECH 4436	Computer-Mediated Teaching and Learning in Education	
ED FND 4330	History of American Education through the Lens of Social Justice	3
Total Hours		32

### Emphasis Area Requirements

#### Required Courses

ENT 1001	Introduction to Entrepreneurship	3
ENT 3040	Creativity and Systems for Innovation	3
ENT 4001	Accelerate Capstone	3

#### Elective Courses <sup>1</sup> 12

Choose four of the following courses:

MKTG 3785	Women in International Entrepreneurship	
ST ART 2285	Entrepreneurship for the Visual Arts (Entrepreneurship for the Visual Arts)	
MGMT 4614	Entrepreneurship/Small Business Management	
INTL BUS 4281	Entrepreneurship in the Global Environment	
SCMA 3301	Introduction to Supply Chain Management	
SCMA 4347	Introduction to Project Management	
Total Hours		21

<sup>1</sup> Additional entrepreneurship courses may be taken with the approval of the B.E.S. coordinator.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Engage their clients while adding diverse perspectives that articulate how difference shapes experience and human identity.
- Apply their unique understanding of social justice by addressing institutional and social barriers that limit access, equity, and achievement.
- Conduct themselves in a respectful and professional manner that views failure as an opportunity to learn, as they effectively work on multiple projects.
- Apply reasoning and critical thinking while making connections between information, data, and arguments to synthesize and interpret information, forming valid conclusions.
- Apply unique leadership, management and communication skills to articulate thoughts/ideas effectively using oral, written, nonverbal, and visual communication skills in a variety of formats and contexts.

- Apply professional skills acquired through interactions with other social entrepreneurs during field placements and conferences.
- Apply knowledge from an array of in-class and field experiences to design a unique social entrepreneurship product.

## Educational Studies BES, Youth and Adult Development Emphasis

The Bachelor of Educational Studies (BES) is perfect for students excited about education, but looking for challenges outside the traditional classroom. The BES will prepare you for a career as an educator in many agencies. Many institutions emphasize informal learning and many different settings. Employers at these institutions are eager to hire people who have training and relevant experience in education, management, marketing, and technology. This degree is designed to be a creative, flexible, and inter-disciplinary bachelor's degree that emphasizes practical skills in multiple settings.

### General Education Requirements

Students follow the University's General Education Requirements (p. 51), Mathematical Skills, Advanced Expository Writing, American History and Government, and Cultural Diversity Requirements. Due to prerequisites of required courses all students must take PSYCH 1003 and POL SCI 1100. Students pursuing the Exercise Science emphasis area must take BIOL 1012, BIOL 1013, and MATH 1030.

### Foundations (Required Courses)

TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
EDUC 2002	Social Entrepreneurship	3
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
ED PSY 2212	Child and Adolescent Development	3
or CNS ED 3200	Interpersonal Skills in Helping Relationships	
PHY ED 2136	Facilities Management	3
EDUC 3170	Grant Proposal Writing for Educators	3
ED FND 3251	Black Americans in Education	3
THEATR 3362	Storytelling	3
MKTG 3721	Introduction to Digital Marketing Strategies	3
ED TECH 4302	Educational Technology Instruction in Educational Agencies	3
or ED TECH 4436	Computer-Mediated Teaching and Learning in Education	
ED FND 4330	History of American Education through the Lens of Social Justice	3
Total Hours		32

### Emphasis Area Requirements

Students must complete the requirements for one Academic Minor chosen in consultation with the advisor. The minor and electives in a related area must total 21 hours.

## Suggested Minors

- Child Advocacy Studies (p. 375)
- Criminology and Criminal Justice (p. 403)
- Gender Studies (p. 464)
- Gerontology (p. 465)
- Public Policy Administration (p. 603)
- Social Work (p. 624)

## Suggested Courses

MEDIA ST 2211	Introduction to Digital Multimedia Production	3
MEDIA ST 2222	Convergence and Digital Media	3
MGMT/SOC 3600	Management and Organizational Behavior	3
SOC WK 2000	Social Work and Social Issues	3
HLTH PE 3380	Introduction to Nutrition for Health and Performance	3
Total Hours		15

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Engage their clients while adding diverse perspectives that articulate how difference shapes experience and human identity.
- Apply their unique understanding of social justice by addressing institutional and social barriers that limit access, equity, and achievement.
- Conduct themselves in a respectful and professional manner that views failure as an opportunity to learn, as they effectively work on multiple projects.
- Apply reasoning and critical thinking while making connections between information, data, and arguments to synthesize and interpret information, forming valid conclusions.
- Apply unique leadership, management and communication skills to articulate thoughts/ideas effectively using oral, written, nonverbal, and visual communication skills in a variety of formats and contexts.
- Integrate knowledge from disciplines such as child advocacy, gerontology, social work, and public policy administration to deliver effective youth and adult programs.
- Apply knowledge of educational theories and practice in relation to not-for-profit and non-government institutions, to deliver sustainable youth and adult programs.

# Electrical Engineering BSEE

## Admission

Students are admitted to the upper-division program after they have completed an acceptable pre-engineering program. The pre-engineering program can be taken at University of Missouri-St. Louis or at community colleges in the area. Normally, admission is granted to persons who have completed the pre-engineering program with a minimum grade point average of 2.75 over all their mathematics, chemistry, physics, and introductory (statics and dynamics) engineering courses. Students with less than a 2.75 grade point average, but at least a C, in all their science, engineering and mathematics courses may be admitted on a conditional basis.

For more information, please contact the program advisor at (314) 516-7018.

## Degree Requirements

A program of 124 semester hours is required for the Bachelor of Science in Electrical Engineering.

- Majors must complete the University General Education (p. 51) and Graduation (p. 19) requirements, the Pre-Engineering Requirements, the Core Engineering Requirements, and Major Requirements.
- Majors must first complete J E MATH 3170, Engineering Mathematics, with a minimum grade of C-.
- Majors must also complete J E ENGR 2300, Introduction to Electrical Networks, with a minimum grade of C-.
- A minimum grade of C- is necessary to meet the prerequisite requirement for any course.

## General Education and Graduation Requirements

The following courses fulfill general education and graduation requirements and are required of Electrical Engineering majors:

PHIL 2259	Engineering Ethics	3
PHIL 3380	Philosophy of Science	3
HIST 1001	American Civilization to 1865 (MOTR HIST 101)	3
or HIST 1002	American Civilization 1865 to Present (MOTR HIST 102)	
Three additional Social Science courses <sup>1</sup>		9
Total Hours		18

<sup>1</sup> One course must meet the Cultural Diversity requirement, and one course must meet the engineering Valuing Skill requirement. Humanities and social sciences electives must meet both the University of Missouri-St. Louis General Education Requirements and the Humanities and Social Sciences Requirements of the Joint Undergraduate Engineering Program. Check with your advisor for details.

## Pre-Engineering Requirements

Students seeking to major in engineering are first designated as 'Undeclared with an interest in Engineering majors' until they have completed Math 1800 Analytical Geometry & Calculus I. Upon successful completion of Math 1800 with a grade of C or better, students will be allowed to declare pre-engineering as their major. Math 1800 must be completed successfully within two attempts.

MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
MATH 2020	Introduction to Differential Equations	3
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
PHYSICS 2111	Physics: Mechanics and Heat	4
PHYSICS 2111L	Mechanics and Heat Laboratory	1
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	4

PHYSICS 2112L	Electricity, Magnetism, and Optics Laboratory	1
ENGR 2310	Statics	3
ENGR 2320	Dynamics	3
ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
<b>Total Hours</b>		<b>42</b>

### Engineering Core Requirements

CMP SCI 1250	Introduction to Computing	3
J E COMM 2000	Engineering Studio I	1
J E MATH 3170	Engineering Mathematics	4
ENGL 3130	Technical Writing	3
<b>Total Hours</b>		<b>11</b>

### Electrical Engineering Major Requirements

J CMP SC 1002	Introduction to Computing Tools: Matlab Skills	1
J E ENGR 2320	Introduction to Electronic Circuits	3
J E ENGR 2300	Introduction to Electrical Networks	3
J E ENGR 2330	Electrical and Electronic Circuits Laboratory	3
J E ENGR 2600	Introduction to Digital Logic and Computer Design	3
J E ENGR 3300	Engineering Electro Magnetic Principles	3
J E ENGR 3310	Electronics Laboratory	3
J E ENGR 3320	Power, Energy and Polyphase Circuits	3
J E ENGR 3510	Signals and Systems	3
J E ENGR 4350	Electrical Energy Laboratory	3
J E ENGR 4410/ J M ENGR 4310	Control Systems I	3
J E ENGR 4980	Electrical Engineering Design Projects	3
J E ENGR 4990	Electrical Engineering Senior Seminar	1
J E MATH 3260	Probability and Statistics for Engineering	3
J M ENGR 3200	Thermodynamics	3
Electrical Engineering Electives 3000-4990		12
<b>Total Hours</b>		<b>53</b>

### Graduation Requirements

In addition to the requirements of the University of Missouri-St. Louis that apply to all candidates for undergraduate degrees, the student must earn a minimum campus grade point average of 2.0 and a minimum grade point average of 2.0 for all engineering courses attempted at the University of Missouri-St. Louis.

## Sample Degree Plans

### Sample Four-Year Plan

First Year					
Fall	Hours	Spring	Hours		
MATH 1800	5	MATH 1900	5		
CHEM 1111	5	HIST 1001 or 1002	3		
ENGL 1100	3	EXPLORE – Social Sciences	3		
ENGR 1010	1	EXPLORE - Social Sciences	3		
				14	14
Second Year					
Fall	Hours	Spring	Hours	Summer	Hours
MATH 2000	5	MATH 2020	3	ENGR 2320	3
PHYSICS 2111	4	PHYSICS 2112	4		
PHYSICS 2111L	1	PHYSICS 2112L	1		
PHIL 2259	3	ENGR 2310	3		
EXPLORE – Social Sciences	3	PHIL 3380	3		
				16	14
Third Year					
Fall	Hours	Spring	Hours	Summer	Hours
J E ENGR 2300	3	J E ENGR 3300	3	J E ENGR 3510	3
J CMP SC 1002	1	J E ENGR 2330	3	J E ENGR Elective	3
CMP SCI 1250	3	J E ENGR 2320	3		
ENGL 3130	3	J M ENGR 3200	3		
J E MATH 3170	4	MATH 1320	3		
J E COMM 2000	1				
				15	6
Fourth Year					
Fall	Hours	Spring	Hours		
J E ENGR 4410	3	J E ENGR Elective	3		
J E ENGR elective	3	J E ENGR Elective	3		
J E ENGR 2600	3	J E ENGR 4350	3		
J E ENGR 3310	3	J E ENGR 3320	3		
		J E ENGR 4980	3		
		J E ENGR 4990	1		
				12	16
<b>Total Hours: 125</b>					

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

### Sample Five-Year Plan

First Year					
Fall	Hours	Spring	Hours		
MATH 1800	5	HIST 1001 or 1002	3		
CHEM 1111	5	MATH 1900	5		
ENGL 1100	3	EXPLORE - Humanities and Fine Arts	3		
ENGR 1010	1	EXPLORE - Social Sciences	3		
				14	14
Second Year					
Fall	Hours	Spring	Hours	Summer	Hours
PHIL 2259	3	ENGR 2310	3	ENGR 2320	3



PHYSICS 2111	4	MATH 2020	3		
PHYSICS 2111L	1	PHIL 3380	3		
MATH 2000	5	PHYSICS 2112	4		
EXPLORE - Social Sciences	3	PHYSICS 2112L	1		
	16		14		3
<b>Third Year</b>					
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>	<b>Summer</b>	<b>Hours</b>
J E ENGR 2300	3	J E ENGR 3300	3	J E ENGR 3510	3
J CMP SC 1002	1	J E ENGR 2330	3		
CMP SCI 1250	3	J E ENG 2320	3		
ENGL 3130	3	J M ENGR 3200	3		
J E MATH 3170	4				
J E COMM 2000	1				
	15		12		3
<b>Fourth Year</b>					
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>		
J E ENGR 2600	3	J E ENGR Elective	3		
J E ENGR 3310	3	J E ENGR Elective	3		
J E ENGR 4410	3	J E ENGR 3320	3		
J E ENGR Elective	3	J E ENGR 4350	3		
		J E ENGR 4990	1		
	12		13		
<b>Fifth Year</b>					
<b>Fall</b>	<b>Hours</b>				
J E ENGR 4980	3				
J E ENGR Elective	3				
MATH 1320	3				
	9				
Total Hours: 125					

## Electrical Engineering Minor

### Minor in Electrical Engineering

Admission to the Joint Engineering program is required. A minimum of 18 credit hours in Joint Electrical Engineering courses are required.

#### Required Courses:

J E ENGR 2300	Introduction to Electrical Networks	3
J E ENGR 2330	Electrical and Electronic Circuits Laboratory	3

#### Take three courses from the following list: 9

J E ENGR 2320	Introduction to Electronic Circuits	
J E ENGR 2600	Introduction to Digital Logic and Computer Design	
J E ENGR 3300	Engineering Electro Magnetic Principles	
J E ENGR 3310	Electronics Laboratory	
J E ENGR 3320	Power, Energy and Polyphase Circuits	
J E ENGR 3510	Signals and Systems	
J E ENGR 4350	Electrical Energy Laboratory	
J E ENGR 4410	Control Systems I	

#### At least one additional J E ENGR Course 3

Total Hours		18
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## Elementary and Special Education Teaching Graduate Certificate

This program of study is for individuals with a Bachelor's degree who would like to prepare for teacher certification in Elementary Education and Special Education. This graduate certificate program option leads to Missouri Initial Teacher Certification in Elementary Teaching 1-6 with an add-on in Mild/Moderate Cross-Categorical Disabilities, K-12 Special Education. These courses are also what DESE requires for the elementary and special education certifications.

### Admission Requirements for the Graduate Certificate in Elementary and Special Education School Teaching:

- A passing score on the designated Missouri Content Examination or an approved program of study
- A 2.75 or higher overall GPA
- Approved results of the Family Care Safety Registry
- A clear TB test or chest x-ray, if appropriate
- Students must meet the application deadlines set by the Graduate School

### Graduate Certificate in Elementary and Special Education (56 Credit Hours = 41 Elementary + 15 Special Education)

#### Related Area Requirements

TCH ED 6565	Enriching Learning through Multicultural Arts, Music, Physical Education and Health	1
TCH ED 6566	Cross-Curricular Connections with Multicultural Arts, Music, Physical Education and Health	1

#### Level I Courses

ED PSY 6222	Advanced Studies in Child and Adolescent Development	3
TCH ED 5310A	Instructional Design: Lesson Planning for Teachers	1

#### Level II Courses

ELE ED 6337	Teaching and Learning Literacy in the Elementary Classrooms: Teaching Reading and Writing	4
ED PSY 6030	Instruction, Learning and Assessment	3
ED TECH 6135	Technology for Preparing Inquiry-Based Teaching	1
SPEC ED 6412	Psychology of Exceptional Children	3
SPEC ED 6315	Understanding/Implementing Speech & Language Interventions that Assist Children with Special Needs	3
ELE ED 6342	Addressing the Mathematical Needs of Students	3

#### Level III Courses

SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3
SPEC ED 6342	Transition Education for Adult Life	3

ELE ED 6241	Science Content, Inquiry-Based Instruction, and Assessment: STEM-Integrated Pedagogy	2	educators for our region, we contribute to and harness the resources of our deep community partnerships. The community-based experiences broaden candidates' understanding of their own identity as educators as well as enhancing their ability to build relationships, extend their skills, and understand family/community dynamics and interactions.
ELE ED 6246	Math Content Pedagogy, Inquiry-Based Instruction, and Assessment	3	
ELE ED 6253	Teaching Social Studies through Reading, Writing, and English Language Learners	3	For their final year-long practicum, teacher candidates are immersed in Studio Schools. These partnering K-12 schools participate in our innovative, collaborative approach to educator preparation. Rather than being placed as individuals with one cooperating teacher, our candidates work with multiple teachers learning from each one, this process is supported and facilitated on-site by a specially trained UMSL clinical educator who leads a weekly seminar, conducts observations and provides candidates with regular feedback to guide their growth.
ELE ED 6338	Literacy Assessment for Guided Instruction	3	
ELE ED 5989	Practicum I: Elementary/Special Education Site-Based Experience	2	
ELE ED 5990	Practicum II: Elementary/Special Education Site Based Experience	8	
SPEC ED 6346	Reading Instruction and Intervention in Special Education	3	The focus of candidates' work is to explore challenges of student learning, envision solutions based on their research-based coursework, recent school initiatives, and carefully studied practices, and then enact innovative solutions to increase student learning. Candidates inquire deeply into how their students are learning, and use data to inform their instruction. Teacher candidates participate in all appropriate school and district professional development and school-wide activities, thereby becoming professionals who are part of the fabric of a studio school, not a just a temporary teacher candidate. Graduating educators have experienced an innovative education which prepares them for their future career as educational leaders in our region and beyond.
SPEC ED 6415	The Law and Special Education	3	
Total Hours		56	

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Elementary Education BSEd, Middle School Education Emphasis

The Bachelor of Science in Education (B.S.Ed.) in Elementary Education prepares those who desire to teach grades 1 - 6. The core courses are combined with one of three emphasis areas: **Special Education, Teaching English to Speakers of Other Languages (TESOL), or Middle School**. It is also possible to select the Special Education emphasis area and take the TESOL courses for TESOL endorsement. Please see each of the Emphasis Area Requirements listed below.

Undergraduate educator preparation is both engaging and innovative. Our high quality undergraduate educator preparation programs are designed around research-based scholarship and practical community-based contexts. To prepare our undergraduate students as the highest quality

educators for our region, we contribute to and harness the resources of our deep community partnerships. The community-based experiences broaden candidates' understanding of their own identity as educators as well as enhancing their ability to build relationships, extend their skills, and understand family/community dynamics and interactions.

For their final year-long practicum, teacher candidates are immersed in Studio Schools. These partnering K-12 schools participate in our innovative, collaborative approach to educator preparation. Rather than being placed as individuals with one cooperating teacher, our candidates work with multiple teachers learning from each one, this process is supported and facilitated on-site by a specially trained UMSL clinical educator who leads a weekly seminar, conducts observations and provides candidates with regular feedback to guide their growth.

The focus of candidates' work is to explore challenges of student learning, envision solutions based on their research-based coursework, recent school initiatives, and carefully studied practices, and then enact innovative solutions to increase student learning. Candidates inquire deeply into how their students are learning, and use data to inform their instruction. Teacher candidates participate in all appropriate school and district professional development and school-wide activities, thereby becoming professionals who are part of the fabric of a studio school, not a just a temporary teacher candidate. Graduating educators have experienced an innovative education which prepares them for their future career as educational leaders in our region and beyond.

This area of specialization in elementary education prepares students to teach in grades 5-9.

## University General Education and Graduation Requirements

B.S. Ed. degree candidates must complete the following General Education Requirements and Graduation Requirements of the University as outlined in this Bulletin.

The courses listed below fulfill general education requirements and best prepare students for advanced education coursework and licensure exams.

First Year Writing		
ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
Math Proficiency		
MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
or MATH 1030	College Algebra (MOTR MATH 130)	
Communication Proficiency		
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	
Information Literacy		
ED TECH 2230	Information Literacy	3
American History and Government		
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	
Humanities and Fine Arts		

Choose any 9 hours from at least two approved fields. Social Sciences	9
Choose any 9 hours from at least two approved fields. At least one course must meet the cultural diversity requirement. Math and Life/Natural Sciences	9
Choose any 9 hours from at least two approved fields. Junior-Level Writing	9
ENGL 3100 Junior-Level Writing	3
<b>Total Hours</b>	<b>45</b>

## Program Requirements

All students in the B.S.Ed. in Elementary Education, Middle School program are required to take the following Teacher Education courses. Each student must also select a content area and complete the required courses and certification assessments as specified by the Missouri Department of Elementary and Secondary Education.

### Note for all emphasis areas:

Professional Education courses must be completed with a grade of C or better (a grade of C- or below must be retaken).

Beginning with those students graduating in May 2017 and receiving teacher certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

Students must pass all required DESE certification assessments to receive the B.S.Ed. degree.

### Preparing for Teacher Education

The following courses must be completed prior to applying for admission to the Teacher Education Program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3

### Teacher Education Program

The following courses are completed after acceptance into the Teacher Education Program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
TCH ED 3212	Sociolinguistics and Communication in the Classroom	3
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
SPEC ED 3318	Inclusive Classrooms	3
SPEC ED 4323	Classroom Management and Positive Behavioral Supports in Inclusive Educational Settings	3
TCH ED 3310	Introduction to Methods of Teaching	3
MID ED 4315	The Middle Level School	3

TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3
SEC ED 4880	Writing for Teachers	3
In addition to the above courses, students must complete a minimum of 24 credit hours in one specific content area, as well as the appropriate methods course:		
MID ED or SEC ED 4XXX:	Methods Course in Certification Area	3
The program will culminate in the following practicum courses:		
MID ED 4989	Practicum I: Middle Level Education Site Based Experience	3
MID ED 4990	Practicum II: Middle Level Education Site Based Experience	12

**Total:** minimum 122 hours

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Elementary Education BSEd, Special Education and TESOL Emphasis

The Bachelor of Science in Education (B.S.Ed.) in Elementary Education prepares those who desire to teach grades 1 - 6. The core courses are combined with one of three emphasis areas: **Special Education, Teaching English to Speakers of Other Languages (TESOL), or Middle School**. It is also possible to select the Special Education emphasis area and take the TESOL courses for TESOL endorsement. Please see each of the Emphasis Area Requirements listed below.

Undergraduate educator preparation is both engaging and innovative. Our high quality undergraduate educator preparation programs are designed around research-based scholarship and practical community-based contexts. To prepare our undergraduate students as the highest quality educators for our region, we contribute to and harness the resources of our deep community partnerships. The community-based experiences broaden candidates' understanding of their own identity as educators as well as enhancing their ability to build relationships, extend their skills, and understand family/community dynamics and interactions.

For their final year-long practicum, teacher candidates are immersed in Studio Schools. These partnering K-12 schools participate in our innovative, collaborative approach to educator preparation. Rather than being placed as individuals with one cooperating teacher, our candidates work with multiple teachers learning from each one, this process is supported and facilitated on-site by a specially trained UMSL clinical educator who leads a weekly seminar, conducts observations and provides candidates with regular feedback to guide their growth.

The focus of candidates' work is to explore challenges of student learning, envision solutions based on their research-based coursework, recent school initiatives, and carefully studied practices, and then enact innovative solutions to increase student learning. Candidates inquire deeply into how their students are learning, and use data to inform their instruction. Teacher candidates participate in all appropriate school and district professional development and school-wide activities, thereby becoming professionals who are part of the fabric of a studio school, not a just a temporary teacher candidate. Graduating educators have experienced an innovative education which prepares them for their future career as educational leaders in our region and beyond.

The Bachelor's of Science in Elementary Education degree prepares students to teach in elementary or middle school settings. This program requires the selection and completion of required coursework in one of the following emphasis areas: Special Education; Teaching English to Speakers of Other Languages (TESOL); Special Education and TESOL; or Middle School.

## University General Education and Graduation Requirements

B.S.Ed. degree candidates must complete the following General Education Requirements (p. 51) and Graduation Requirements (p. 19) of the University as outlined in this Bulletin.

The courses listed below fulfill these requirements and best prepare students for advanced education coursework and licensure exams.

### First Year Writing

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
or HIST 1111	Reacting to the Past	

### Math Proficiency

MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
or MATH 1030	College Algebra (MOTR MATH 130)	

### Communication Proficiency

EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	

### Information Literacy

ED TECH 2230	Information Literacy	3
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### American History and Government

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	

### Humanities and Fine Arts

Choose any 9 hours from at least two approved fields.		9
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### Social Sciences

Choose any 9 hours from at least two approved fields. At least one course must meet the cultural diversity requirement.		9
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### Math and Life/Natural Sciences

Choose any 9 hours from at least two approved fields.		9
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### Junior-Level Writing

ENGL 3100	Junior-Level Writing	3
Total Hours		45

## Program Requirements

All students in the B.S.Ed. in Elementary Education program are required to take the following Teacher Education courses, as well as the required courses for the selected emphasis area. Each student must also complete all required courses and certification assessments as specified by the Missouri Department of Elementary and Secondary Education.

### Grade Requirement

Professional Education courses must be completed with a grade of C or better (a grade of C- or below must be retaken).

### GPA Requirement

Beginning with those students graduating in May 2017 who will also receive teaching certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

### Assessment Requirement

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

## Preparing for the Teacher Education Program

The following courses must be completed prior to applying for admission to the teacher education program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3
Total Hours		9

### Teacher Education Program

The following courses are completed after acceptance into the teacher education program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
TCH ED 3212	Sociolinguistics and Communication in the Classroom	3
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
SPEC ED 3318	Inclusive Classrooms	3



SPEC ED 4323	Classroom Management and Positive Behavioral Supports in Inclusive Educational Settings	3
Total Hours		13

In addition to the above courses, students must select at least one emphasis area and complete all required coursework for the emphasis area.

The program will culminate in the completion of two sequential site-based practicum experience courses.

## Emphasis Area Requirements

This emphasis area in elementary education prepares students for teaching in inclusive classrooms and for teaching English to speakers of other languages (TESOL).

All candidates must complete the Beginning Teacher Education Program and Teacher Education Program course work above in the College of Education.

Elementary education majors must also complete the following Teacher Education Program courses:

ART ED 2179	Visual Art Activities for Elementary School	3
MUS ED 2770	An Introduction to Music for the Elementary School Teacher	3
HLTH PE 3432	Teaching Health and Physical Education in Elementary Schools	3
ELE ED 3338	Teaching Elementary Literacy in Inclusive Settings: Literacy Assessment and Learning	3
ELE ED 3339	Teaching Elementary Literacy in Inclusive Settings: Literacy Instruction and Learning	4
ELE ED 4253	Teaching Elementary Social Studies in Inclusive Settings	3
ELE ED 4341	Teaching Science in Inclusive Elementary Schools	3
ELE ED 4246	Teaching Elementary Mathematics in Inclusive Settings I	3
ELE ED 4342	Teaching Elementary Mathematics in Inclusive Settings II	3

In addition, students must complete the following Special Education and TESOL courses:

SPEC ED 3349	Cross-Categorical Special Education	3
TCH ED 3210	General Linguistics in Teaching English to Speakers of Other Languages	3
TCH ED 3211	Basic Principles of Second and Foreign Language Acquisition	3
TCH ED 3213	Performance-based Assessment for TESOL	3
TCH ED 3214	Material Development and Methods for TESOL	3

TCH ED 3224	Curriculum Development for Content Teaching of English Language Learners	3
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SPEC ED 4315	Language and Communication of Children with Special Needs	3
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SPEC ED 4342	Transition Issues and Planning	3
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The program will culminate in the following practicum courses:

ELE ED 4992	Practicum I: Elementary/Special Education/TESOL Site Based Experience	3
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ELE ED 4993	Practicum II: Elementary/Special Education/TESOL Site Based Experience	12
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**Total Credit Hours: 140**

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Elementary Education BSEd, Special Education Emphasis

The Bachelor of Science in Education (B.S.Ed.) in Elementary Education prepares those who desire to teach grades 1 - 6. The core courses are combined with one of three emphasis areas: **Special Education, Teaching English to Speakers of Other Languages (TESOL), or Middle School**. It is also possible to select the Special Education emphasis area and take the TESOL courses for TESOL endorsement. Please see each of the Emphasis Area Requirements listed below.

Undergraduate educator preparation is both engaging and innovative. Our high quality undergraduate educator preparation programs are designed around research-based scholarship and practical community-based contexts. To prepare our undergraduate students as the highest quality educators for our region, we contribute to and harness the resources of our deep community partnerships. The community-based experiences broaden candidates' understanding of their own identity as educators as

well as enhancing their ability to build relationships, extend their skills, and understand family/community dynamics and interactions.

For their final year-long practicum, teacher candidates are immersed in Studio Schools. These partnering K-12 schools participate in our innovative, collaborative approach to educator preparation. Rather than being placed as individuals with one cooperating teacher, our candidates work with multiple teachers learning from each one, this process is supported and facilitated on-site by a specially trained UMSL clinical educator who leads a weekly seminar, conducts observations and provides candidates with regular feedback to guide their growth.

The focus of candidates' work is to explore challenges of student learning, envision solutions based on their research-based coursework, recent school initiatives, and carefully studied practices, and then enact innovative solutions to increase student learning. Candidates inquire deeply into how their students are learning, and use data to inform their instruction. Teacher candidates participate in all appropriate school and district professional development and school-wide activities, thereby becoming professionals who are part of the fabric of a studio school, not a just a temporary teacher candidate. Graduating educators have experienced an innovative education which prepares them for their future career as educational leaders in our region and beyond.

The Bachelor's of Science in Elementary Education degree prepares students to teach in elementary or middle school settings. This program requires the selection and completion of required coursework in one of the following emphasis areas: Special Education; Teaching English to Speakers of Other Languages (TESOL); Special Education and TESOL; or Middle School.

## University General Education and Graduation Requirements

B.S.Ed. degree candidates must complete the following General Education Requirements (p. 51) and Graduation Requirements (p. 19) of the University as outlined in this Bulletin.

The courses listed below fulfill these requirements and best prepare students for advanced education coursework and licensure exams.

### First Year Writing

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
or HIST 1111	Reacting to the Past	

### Math Proficiency

MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
or MATH 1030	College Algebra (MOTR MATH 130)	

### Communication Proficiency

EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	

### Information Literacy

ED TECH 2230	Information Literacy	3
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### American History and Government

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	

### Humanities and Fine Arts

Choose any 9 hours from at least two approved fields.	9
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### Social Sciences

Choose any 9 hours from at least two approved fields. At least one course must meet the cultural diversity requirement.	9
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### Math and Life/Natural Sciences

Choose any 9 hours from at least two approved fields.	9
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### Junior-Level Writing

ENGL 3100	Junior-Level Writing	3
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Total Hours	45
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## Program Requirements

All students in the B.S.Ed. in Elementary Education program are required to take the following Teacher Education courses, as well as the required courses for the selected emphasis area. Each student must also complete all required courses and certification assessments as specified by the Missouri Department of Elementary and Secondary Education.

### Grade Requirement

Professional Education courses must be completed with a grade of C or better (a grade of C- or below must be retaken).

### GPA Requirement

Beginning with those students graduating in May 2017 who will also receive teaching certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

### Assessment Requirement

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

### Preparing for the Teacher Education Program

The following courses must be completed prior to applying for admission to the teacher education program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3
Total Hours		9

### Teacher Education Program

The following courses are completed after acceptance into the teacher education program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
TCH ED 3212	Sociolinguistics and Communication in the Classroom	3
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
SPEC ED 3318	Inclusive Classrooms	3

SPEC ED 4323	Classroom Management and Positive Behavioral Supports in Inclusive Educational Settings	3
Total Hours		13

In addition to the above courses, students must select at least one emphasis area and complete all required coursework for the emphasis area.

The program will culminate in the completion of two sequential site-based practicum experience courses.

## Emphasis Area Requirements

This emphasis area in elementary education prepares students for teaching in inclusive classrooms.

All candidates must complete the Beginning Teacher Education Program and Teacher Education Program course work above in the College of Education.

Elementary education majors must also complete the following Teacher Education Program courses:

ART ED 2179	Visual Art Activities for Elementary School	3
MUS ED 2770	An Introduction to Music for the Elementary School Teacher	3
HLTH PE 3432	Teaching Health and Physical Education in Elementary Schools	3
ELE ED 3338	Teaching Elementary Literacy in Inclusive Settings: Literacy Assessment and Learning	3
ELE ED 3339	Teaching Elementary Literacy in Inclusive Settings: Literacy Instruction and Learning	4
ELE ED 4253	Teaching Elementary Social Studies in Inclusive Settings	3
ELE ED 4246	Teaching Elementary Mathematics in Inclusive Settings I	3
ELE ED 4341	Teaching Science in Inclusive Elementary Schools	3
ELE ED 4342	Teaching Elementary Mathematics in Inclusive Settings II	3

In addition, students must complete the following Special Education courses:

SPEC ED 3349	Cross-Categorical Special Education	3
SPEC ED 4315	Language and Communication of Children with Special Needs	3
SPEC ED 4342	Transition Issues and Planning	3

The program will culminate in the following practicum courses:

ELE ED 4989	Practicum I: Elementary/Special Education Site-Based Experience	3
ELE ED 4990	Practicum II: Elementary/Special Education Site Based Experience	12

**Total Credit Hours: 125**

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Elementary Education BSEd, TESOL Emphasis

### Elementary Education

The Bachelor of Science in Education (B.S.Ed.) in Elementary Education prepares those who desire to teach grades 1 - 6. The core courses are combined with one of three emphasis areas: **Special Education, Teaching English to Speakers of Other Languages (TESOL), or Middle School**. It is also possible to select the Special Education emphasis area and take the TESOL courses for TESOL endorsement. Please see each of the Emphasis Area Requirements listed below.

Undergraduate educator preparation is both engaging and innovative. Our high quality undergraduate educator preparation programs are designed around research-based scholarship and practical community-based contexts. To prepare our undergraduate students as the highest quality educators for our region, we contribute to and harness the resources of our deep community partnerships. The community-based experiences broaden candidates' understanding of their own identity as educators as well as enhancing their ability to build relationships, extend their skills, and understand family/community dynamics and interactions.

For their final year-long practicum, teacher candidates are immersed in Studio Schools. These partnering K-12 schools participate in our innovative, collaborative approach to educator preparation. Rather than being placed as individuals with one cooperating teacher, our candidates work with multiple teachers learning from each one, this process is supported and facilitated on-site by a specially trained UMSL clinical educator who leads a weekly seminar, conducts observations and provides candidates with regular feedback to guide their growth.

The focus of candidates' work is to explore challenges of student learning, envision solutions based on their research-based coursework, recent school initiatives, and carefully studied practices, and then enact innovative solutions to increase student learning. Candidates inquire deeply into how their students are learning, and use data to inform their instruction. Teacher candidates participate in all appropriate school and

district professional development and school-wide activities, thereby becoming professionals who are part of the fabric of a studio school, not a just a temporary teacher candidate. Graduating educators have experienced an innovative education which prepares them for their future career as educational leaders in our region and beyond.

The Bachelor's of Science in Elementary Education degree prepares students to teach in elementary or middle school settings. This program requires the selection and completion of required coursework in one of the following emphasis areas: Special Education; Teaching English to Speakers of Other Languages (TESOL); Special Education and TESOL; or Middle School.

## University General Education and Graduation Requirements

B.S.Ed. degree candidates must complete the following General Education Requirements (p. 51) and Graduation Requirements (p. 19) of the University as outlined in this Bulletin.

The courses listed below fulfill these requirements and best prepare students for advanced education coursework and licensure exams.

### First Year Writing

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
or HIST 1111	Reacting to the Past	

### Math Proficiency

MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
or MATH 1030	College Algebra (MOTR MATH 130)	

### Communication Proficiency

EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	

### Information Literacy

ED TECH 2230	Information Literacy	3
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### American History and Government

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	

### Humanities and Fine Arts

Choose any 9 hours from at least two approved fields.		9
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### Social Sciences

Choose any 9 hours from at least two approved fields. At least one course must meet the cultural diversity requirement.		9
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### Math and Life/Natural Sciences

Choose any 9 hours from at least two approved fields.		9
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### Junior-Level Writing

ENGL 3100	Junior-Level Writing	3
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Total Hours		45
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## Program Requirements

All students in the B.S.Ed. in Elementary Education program are required to take the following Teacher Education courses, as well as the required courses for the selected emphasis area. Each student must also complete

all required courses and certification assessments as specified by the Missouri Department of Elementary and Secondary Education.

## Grade Requirement

Professional Education courses must be completed with a grade of C or better (a grade of C- or below must be retaken).

## GPA Requirement

Beginning with those students graduating in May 2017 who will also receive teaching certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

## Assessment Requirement

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

## Preparing for the Teacher Education Program

The following courses must be completed prior to applying for admission to the teacher education program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3
Total Hours		9

## Teacher Education Program

The following courses are completed after acceptance into the teacher education program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
TCH ED 3212	Sociolinguistics and Communication in the Classroom	3
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
SPEC ED 3318	Inclusive Classrooms	3
SPEC ED 4323	Classroom Management and Positive Behavioral Supports in Inclusive Educational Settings	3
Total Hours		13

In addition to the above courses, students must select at least one emphasis area and complete all required coursework for the emphasis area.

The program will culminate in the completion of two sequential site-based practicum experience courses.

## Emphasis Area Requirements

This emphasis area in elementary education prepares students for teaching English to speakers of other languages (TESOL).



All candidates must complete the Beginning Teacher Education Program and Teacher Education Program course work above in the College of Education.

Elementary education majors must also complete the following Teacher Education Program courses:

ART ED 2179	Visual Art Activities for Elementary School	3
MUS ED 2770	An Introduction to Music for the Elementary School Teacher	3
HLTH PE 3432	Teaching Health and Physical Education in Elementary Schools	3
ELE ED 3338	Teaching Elementary Literacy in Inclusive Settings: Literacy Assessment and Learning	3
ELE ED 3339	Teaching Elementary Literacy in Inclusive Settings: Literacy Instruction and Learning	4
ELE ED 4341	Teaching Science in Inclusive Elementary Schools	3
ELE ED 4342	Teaching Elementary Mathematics in Inclusive Settings II	3
ELE ED 4246	Teaching Elementary Mathematics in Inclusive Settings I	3
ELE ED 4253	Teaching Elementary Social Studies in Inclusive Settings	3

In addition, students must complete the following TESOL courses:

TCH ED 3210	General Linguistics in Teaching English to Speakers of Other Languages	3
TCH ED 3211	Basic Principles of Second and Foreign Language Acquisition	3
TCH ED 3213	Performance-based Assessment for TESOL	3
TCH ED 3214	Material Development and Methods for TESOL	3
TCH ED 3224	Curriculum Development for Content Teaching of English Language Learners	3

The program will culminate in the following practicum courses:

ELE ED 4994	Practicum I: Elementary/TESOL Site Based Experience	3
ELE ED 4995	Practicum II: Elementary/TESOL Site Based Experience	12

**Total Credit Hours: 132**

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.

- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Elementary Education MEd

### Master of Education: Elementary Education

- Early Childhood emphasis
- General emphasis
- Reading emphasis

The Masters in Elementary Education is appropriate for early childhood and elementary teachers, specialists, department chairpersons, and those who work in informal or international educational settings. Candidates choose two 9 hour concentration areas that will support their personal growth and development as an educational leader. It is important that both students and advisors plan ahead to insure courses in concentration areas are taken when they are offered in the 3 year rotation schedule. Programs must be planned with the academic advisor and meet the approval of the faculty advisor, adhering to the College of Education and UMSL Graduate School policies.

Concentration area choices will appear at the end of the M.Ed. transcript.

### General Emphasis Program for ELE ED

The M.Ed. in Elementary Education consists of 15 required hours (5 courses) plus student choice of two 9 hour concentrations from the list below. The General emphasis requirements are met by (a) completing three required foundational courses (9 hrs.) toward the beginning of the M.Ed. program, (b) completing the coursework for two choice concentration areas (2\*9 hrs each), and (c) completing the two exit capstone research classes (6 hrs.) for a total of 33 hours.

Concentration areas indicate zero to three REQUIRED courses; some then offer a list of course CHOICE selections as a menu to choose your remaining hours for that concentration. ALL Concentration choices total nine hours of graduate credit.

An Elective Concentration allows students, with advisor sign-off, to construct an individualized set of target courses for 1 of their 2 concentration areas. Transfer graduate credit from another institution could also fit into this concentration choice. Finally, those who want to take 9 graduate hours in an academic content area may use the Discipline Content Area Concentration to integrate this advanced work into their M.Ed. program.

### Reading and Early Childhood Emphasis Areas for ELE ED

Students who applied to the reading or early childhood emphasis areas and wish to focus intensively (e.g. 18 hrs) in one area of expertise are required to sign up for two sequential 9 hour concentrations. Those in reading should select the Literacy I and II concentrations. Those in early childhood should select the Early Childhood I and II concentrations. Additional coursework may be required for licensure.

### 1) Required Core (9 hours)

Students are required to complete the following courses within the first 15 hours of study.

TCH ED 6010	Examining History, Community and Social Justice in Education	3
TCH ED 6020	Teacher Action, Advocacy and Leadership	3
ED PSY 6030	Instruction, Learning and Assessment	3

### 2) Required Research Course (6 hours)

These two research courses should be taken in sequence (not together) at the end of your program since the first course prepares you with the knowledge and skills to successfully complete an Action Research project in the capstone exit course. You will design and execute a piece of original practitioner research and present your findings in a public forum.

TCH ED 6909	Teacher Action Research I	3
TCH ED 6910	Teacher Action Research Capstone <sup>1</sup>	3

<sup>1</sup> This course is not offered in summer sessions.

### 3) 9 hour Concentration Choices (CHOOSE 2 or both Concentrations I & II under an emphasis option as indicated)

- Early Childhood Concentrations I and II (Option A or B)
- Curriculum and Instruction Concentration
- Literacy Concentrations I and II (Certificates in Reading and Writing available)
- Special Education Concentration
- Social Justice Issues Concentration (Social Justice in Education Certificate available)
- Leadership in Education Concentration
- STEM Concentration
- Discipline Content Area Concentration
- Elective Concentration
- Supporting Language Learners: TESOL Concentration I (DESE TESOL endorsement available under SEC ED)
- Middle School Education Concentration

### Early Childhood Education Concentration I and II (Options A & B): 9 hours each

Designed to enable candidates to further their competencies as teachers or program administrators in public and private early childhood program, early childhood education also prepares people for positions in community agencies that support families and young children. Job opportunities working with young children continue to expand. New research tools have altered our understanding of learning processes in young children with the plasticity of the brain and children's gift for inquiry in systematic ways. Language acquisition and numeracy are acquired in social communities of practice. Explore this exciting field. Concentration I is designed for those who want to increase knowledge and skills in working with young children

in school, after school, and home settings. Concentration II is geared for professionals in field.

### Early Childhood Concentration I: \*Courses offered online\*

Required Courses:

ECH ED 6412	Foundations of Early Childhood Education	3
ECH ED 6413	Educational Role of Play	3
ED PSY 6215	Psychology of Early Childhood Development	3

### Early Childhood Concentration II: Choice A: 9 hours \*Courses offered online\*

ECH ED 6321	Parent and Community Resources in Early Childhood Education	3
ECH ED 6415	Organization and Development of Early Childhood Programs	3
EDUC 6404	Seminar	1-10

### Early Childhood Special Education Concentration II: Choice B: 9 hours \*Courses are NOT offered on line\*

SPEC ED 6372	Screening and Diagnosis of Developmental Delays: Birth to 5 Years	3
SPEC ED 6462	Introduction to Early Childhood Special Education	3
SPEC ED 6463	Curriculum, Methods, and Materials for Early Childhood Special Ed	3

### Curriculum and Instruction Concentration: 9 hours

In order for all students to optimally achieve, teachers must develop integrated, standards-based, innovative curriculum delivered as engaging instruction that equips students to develop the knowledge and skills for a global society. This concentration explores common issues in curriculum design and implementation. Educators will create curriculum and design instruction for their own educational settings.

ELE ED 6411	Curriculum Leadership Elementary Programs	3
ELE ED 6422	Curriculum Design of Elementary Programs	3
ELE ED 6423	Learning Through Inquiry	3

### Literacy Concentrations I: 9 hours

Concentration I is designed for educators who want a deeper understanding of reading and writing processes across the lifespan. This area emphasizes the preparation of leaders in a wide range of school and community settings, including literacy coaches or grade-level leaders. Concentration I emphasizes cutting-edge theory, research and instructional practices in literacy education. Concentration II, for those wanting a Literacy endorsement, applies these understandings through a variety of readings, writings and experiences, both in Clinical and online settings. There are two choices for Concentration II: Writing and Reading. Students who complete Concentrations I and II in Literacy can apply these courses to a K-12 DESE reading certificate or the UMSL Graduate

Certificate in the Teaching of Writing, but additional coursework may be required.

ELE ED 6387	Literacy Acquisition and Learning for Diverse Students	3
ELE ED 6684	Instructional Strategies for Teaching Reading	3
ELE ED 6686	Analysis and Correction of Reading Disabilities	3

## Literacy Concentration II: 9 hours Choice A: Courses to complete the Reading Emphasis Certification

The M.Ed. program with emphasis in reading (literacy) is designed to enable candidates to further their competencies as teachers of reading, writing, and the other communication arts. The program also prepares them for positions as literacy coaches, reading specialists, curriculum specialists in communication arts and reading areas, consultants in areas of communication arts, and/or for further graduate study. Concentration II enables a student to earn a master's degree in education with credit towards an emphasis in reading as per requirements laid out by the Department of Elementary and Secondary Education (DESE) for special reading certification in Missouri. Students must complete the required 15 hours of M.Ed. courses, an educational psychology course, plus 18 hours of literacy courses.

ELE ED 6493	Reading Specialist Practicum I	3
ELE ED 6494	Reading Specialist Practicum II	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3

## Concentration II: 9 hours Choice B: Courses to complete the Graduate Certificate in the Teaching of Writing

### Admission

Applicants who wish to earn a Graduate Certificate in the Teaching of Writing must apply for admission to the certificate program. Applicants must have a 2.75 GPA in undergraduate coursework to be admitted. A background in K-12 or adult education is desirable.

TCH ED 6880	Gateway Writing Project	6
TCH ED 6890	Seminar in Professional Writing for Teachers	3

## Special Education Concentration: 9 hours

For educators who are not receiving a degree in Special Education, but would like to expand their understanding of Special Education law and the needs of students with cross-categorical disabilities and those with Autism Spectrum Disorders, this concentration offers coursework on the characteristics and effective strategies for teaching students with varied abilities in educational settings. Those interested in the M.Ed. in Special Education or the Graduate Certificate in Autism and Developmental Disabilities should choose concentrations in those designated programs under the Masters in Special Education or Autism Certificate links in Bulletin.

Choose three of the following:		
SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3

SPEC ED 6345	Characteristics and Education of Students with High-Incidence Disabilities	3
SPEC ED 6415	The Law and Special Education	3
SPEC ED 6437	Applied Behavior Analysis: Functional Assessment and Interventions	3

## Social Justice Issues Concentration: 9 hours

Educators need to challenge themselves to understand the variety of assets diverse students and their families bring to educational contexts. An interdisciplinary group of courses is offered for this concentration that invite personal growth and academic knowledge in the area of social justice. An emphasis on engagement and action permeates the course activities. (With completion of TCH ED 6010, TCH ED 6020 and TCH ED 6910 and 9 hours from the list below, students will meet requirements for the Social Justice in Education Certificate. (Applicants who wish to earn a Graduate Certificate in Social Justice in Education must apply for admission to the certificate program.)

Choose three of the following:

CNS ED 6820	Counseling Women Toward Empowerment	3
CNS ED 6850	Social Class and Poverty Issues In Counseling	3
ED FND 6203	Political Contexts of Education	3
GS 5053	Advanced Studies In African-American History	3
TCH ED 6230	Cross-Cultural Communication in the Classroom	3

## Leadership in Education Concentration: 9 hours

Organizations need leaders who understand the complexities of systems and working with diverse staff and families within situated communities in a dynamic and changing educational environment. Leadership skills can be taught and nurtured. This Leadership in Education concentration allows educators in various roles and career levels to apply principles of leadership to creating effective communities of practice.

Required Courses:

ED ADM 6503	Organizational Change in Education	3
Choose two of the following:		
ED FND 6200	Demographic Contexts of Education	3
ED FND 6203	Political Contexts of Education	3
ED ADM 6205	Legal Contexts of Education	3
ED ADM 6401	School Staff Development and Supervision	3

## STEM Concentration: 9 hours

Many challenges remain in the attraction and preparation of youth for the careers in fields of science, technology, engineering and mathematics (STEM). Those who teach in these areas need to continually work toward developing and implementing relevant curricula and develop new instructional strategies as well as revise and upgrade current methodology. The STEM Concentration focuses on professional development with respect to instructional research and best practices for all involved in enhancing STEM literacy.

Choose three of the following:

ELE ED 6431	STEM Instruction in Elementary Education	3
or SEC ED 6431	STEM Instruction in Secondary Education	
ED TECH 5340	Selection and Utilization of Educational Multimedia	3
ED TECH 6436	Computer-Mediated Communication in Education	3
ED TECH 6448	Technology-Supported Inquiry Learning	3
Graduate Level Science or Math course		3

### Discipline Content Area Concentration: 9 hours

Educators recognize the importance of staying current in their field of teaching. This Discipline Content Concentration allows for 9 hours of graduate level credit in a content area related to one's field of practice. This includes graduate credit in areas such as history, English, math, science, foreign language, health and PE, and art and music. Courses for this concentration need to be approved by advisors before they are included on the M-1 program form.

### Elective Concentration: 9 hours

To insure maximum flexibility in course selection to meet the individual needs of professional educator's development, this concentration represents an opportunity to select three unique courses from the various concentration areas in an eclectic and personalized way. Choices to include in this concentration need to be approved by advisors and signed off on by the program director.

### Supporting Language Learners: TESOL Concentration I: 9 hours

This concentration is designed for those who want to better understand Second Language Acquisition (SLA) and Teaching English to Speakers of Other Languages (TESOL) processes. Courses emphasize the theoretical foundations of Second Language Acquisition and TESOL and their practical application to practice. Concentration I is open to all Masters in Education students. A TESOL endorsement from DESE is available under the SEC ED M.Ed. options.

TCH ED 6210	Foundations of Teaching English to Speakers of Other Languages	3
TCH ED 6220	Principles of Second/Foreign Language Acquisition	3
TCH ED 6230	Cross-Cultural Communication in the Classroom	3

### Middle School Education Concentration: 9 hours

The concentration in middle level education is designed for graduate students who would like to further their competencies as a middle level educator.

Choose three of the following:

TCH ED 5312	Teaching Reading in the Content Areas	3
ED PSY 6222	Advanced Studies in Child and Adolescent Development	3
ED ADM 6401	School Staff Development and Supervision	3

SEC ED 6416	Curriculum Design for Educational Programs	3
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## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually and systematically reflect on professional growth to enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply advanced content and pedagogical knowledge to create authentic and deep learning experiences.
- Extend learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Create and foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Utilize equitable frameworks and inclusive practices to expertly create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Elementary Education MEd with Elementary and Special Education Teacher Certification

This program of study is for individuals with a Bachelor's degree who would like to prepare for teacher certification in Elementary Education and Special Education. This option leads to Missouri Initial Teacher Certification in Elementary Teaching 1-6 with an add-on in Mild/Moderate Cross-Categorical Disabilities, K-12 Special Education.

### Admission Requirements for the Option in Elementary Teacher Certification with an add-on in Mild/Moderate Cross-Categorical Disabilities, K-12 Special Education:

- A passing score on the designated Missouri Content Examination or an approved program of study
- A 2.75 or higher overall GPA
- Approved results of the Family Care Safety Registry
- A clear TB test or chest x-ray, if appropriate
- Students must meet the application deadlines set by The Graduate School

### Education Core Courses Required for M.Ed.

TCH ED 6010	Examining History, Community and Social Justice in Education	3
TCH ED 6200	Building Character and Competence with Diverse Learners	3
ED PSY 6030	Instruction, Learning and Assessment	3
TCH ED 6909	Teacher Action Research I	3



TCH ED 6910	Teacher Action Research Capstone	3
Total Hours		15

### Elementary and Special Education (53 Hrs.= 38 Elementary Education + 15 Special Education)

These are the courses that are required for the elementary school teaching (1-6 grades) licensure.

#### Related Area Requirements

TCH ED 6565	Enriching Learning through Multicultural Arts, Music, Physical Education and Health	1
TCH ED 6566	Cross-Curricular Connections with Multicultural Arts, Music, Physical Education and Health	1

#### Level I Courses

ED PSY 6222	Advanced Studies in Child and Adolescent Development	3
TCH ED 5310A	Instructional Design: Lesson Planning for Teachers	1

#### Level II Courses

ELE ED 6337	Teaching and Learning Literacy in the Elementary Classrooms: Teaching Reading and Writing	4
ELE ED 6342	Addressing the Mathematical Needs of Students	3
ED TECH 6135	Technology for Preparing Inquiry-Based Teaching	1
SPEC ED 6412	Psychology of Exceptional Children	3
SPEC ED 6315	Understanding/Implementing Speech and Language Interventions that Assist Children with Special Needs	3

#### Level III Courses

SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3
ELE ED 6338	Literacy Assessment for Guided Instruction	3
ELE ED 6241	Science Content, Inquiry-Based Instruction, and Assessment: STEM-Integrated Pedagogy	2
ELE ED 6246	Math Content Pedagogy, Inquiry-Based Instruction, and Assessment	3
ELE ED 6253	Teaching Social Studies through Reading, Writing, and English Language Learners	3
SPEC ED 6342	Transition Education for Adult Life	3
SPEC ED 6346	Reading Instruction and Intervention in Special Education	3
SPEC ED 6415	The Law and Special Education	3
ELE ED 5989	Practicum I: Elementary/Special Education Site-Based Experience	2
ELE ED 5990	Practicum II: Elementary/Special Education Site Based Experience	8

Total Hours		53
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## Elementary Education MEd with Elementary Teacher Certification

### Admission Requirements for the Option in Elementary Teacher Certification:

- A passing score on the designated Missouri Content Examination or an approved program of study
- A 2.75 or higher overall GPA
- Approved results of the Family Care Safety Registry
- A clear TB test or chest x-ray, if appropriate
- Students must meet the application deadlines set by the Graduate School

#### Core Courses

TCH ED 6010	Examining History, Community and Social Justice in Education	3
TCH ED 6200	Building Character and Competence with Diverse Learners	3
ED PSY 6030	Instruction, Learning and Assessment	3
TCH ED 6909	Teacher Action Research I	3
TCH ED 6910	Teacher Action Research Capstone	3
Total Hours		15

Elementary Education (38 Hrs.)

These are the courses that are required for the elementary school teaching (1-6 grades) licensure.

#### Related Area Requirements

TCH ED 6565	Enriching Learning through Multicultural Arts, Music, Physical Education and Health	1-2
TCH ED 6566	Cross-Curricular Connections with Multicultural Arts, Music, Physical Education and Health	1-2

#### Level I Courses

ED PSY 6222	Advanced Studies in Child and Adolescent Development	3
TCH ED 5310A	Instructional Design: Lesson Planning for Teachers	1

#### Level II Courses

ELE ED 6337	Teaching and Learning Literacy in the Elementary Classrooms	4
ED TECH 6135	Technology for Preparing Inquiry-Based Teaching	1
SPEC ED 6412	Psychology of Exceptional Children	3

#### Level III Courses

SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3
ELE ED 6338	Literacy Assessment for Guided Instruction	3
ELE ED 6253	Teaching Social Studies through Reading, Writing, and English Language Learners	3
ELE ED 6246	Math Content Pedagogy, Inquiry-Based Instruction, and Assessment	3

ELE ED 6241	Science Content, Inquiry-Based Instruction, and Assessment: STEM-Integrated Pedagogy	2
ELE ED 5989	Practicum I: Elementary/Special Education Site-Based Experience	2
ELE ED 5990	Practicum II: Elementary/Special Education Site Based Experience	8
Total Hours		38-40

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually and systematically reflect on professional growth to enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply advanced content and pedagogical knowledge to create authentic and deep learning experiences.
- Extend learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Create and foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Utilize equitable frameworks and inclusive practices to expertly create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Elementary Education MEd, Early Childhood Emphasis

### Master of Education: Elementary Education

- Early Childhood emphasis
- General emphasis
- Reading emphasis

The Masters in Elementary Education is appropriate for early childhood and elementary teachers, specialists, department chairpersons, and those who work in informal or international educational settings. Candidates choose two 9 hour concentration areas that will support their personal growth and development as an educational leader. It is important that both students and advisors plan ahead to insure courses in concentration areas are taken when they are offered in the 3 year rotation schedule. Programs must be planned with the academic advisor and meet the approval of the faculty advisor, adhering to the College of Education and UMSL Graduate School policies.

Concentration area choices will appear at the end of the M.Ed. transcript.

### General Emphasis Program for ELE ED

The M.Ed. in Elementary Education consists of 15 required hours (5 courses) plus student choice of two 9 hour concentrations from the list below. The General emphasis requirements are met by (a) completing three required foundational courses (9 hrs.) toward the beginning

of the M.Ed. program, (b) completing the coursework for two choice concentration areas (2\*9 hrs each), and (c) completing the two exit capstone research classes (6 hrs.) for a total of 33 hours.

Concentration areas indicate zero to three REQUIRED courses; some then offer a list of course CHOICE selections as a menu to choose your remaining hours for that concentration. ALL Concentration choices total nine hours of graduate credit.

An Elective Concentration allows students, with advisor sign-off, to construct an individualized set of target courses for 1 of their 2 concentration areas. Transfer graduate credit from another institution could also fit into this concentration choice. Finally, those who want to take 9 graduate hours in an academic content area may use the Discipline Content Area Concentration to integrate this advanced work into their M.Ed. program.

### Reading and Early Childhood Emphasis Areas for ELE ED

Students who applied to the reading or early childhood emphasis areas and wish to focus intensively (e.g. 18 hrs) in one area of expertise are required to sign up for two sequential 9 hour concentrations. Those in reading should select the Literacy I and II concentrations. Those in early childhood should select the Early Childhood I and II concentrations. Additional coursework may be required for licensure.

#### 1) Required Core (9 hours)

Students are required to complete the following courses within the first 15 hours of study.

TCH ED 6010	Examining History, Community and Social Justice in Education	3
TCH ED 6020	Teacher Action, Advocacy and Leadership	3
ED PSY 6030	Instruction, Learning and Assessment	3

#### 2) Required Research Course (6 hours)

These two research courses should be taken in sequence (not together) at the end of your program since the first course prepares you with the knowledge and skills to successfully complete an Action Research project in the capstone exit course. You will design and execute a piece of original practitioner research and present your findings in a public forum.

TCH ED 6909	Teacher Action Research I	3
TCH ED 6910	Teacher Action Research Capstone	3

<sup>1</sup> This course is not offered in summer sessions.

### 3) 9 hour Concentration Choices (CHOOSE 2 or both Concentrations I & II under an emphasis option as indicated)

- Early Childhood Concentrations I and II (Option A or B)
- Curriculum and Instruction Concentration
- Literacy Concentrations I and II (Certificates in Reading and Writing available)
- Special Education Concentration
- Social Justice Issues Concentration (Social Justice in Education Certificate available)
- Leadership in Education Concentration
- STEM Concentration
- Discipline Content Area Concentration

- i) Elective Concentration
- j) Supporting Language Learners: TESOL Concentration I (DESE TESOL endorsement available under SEC ED)
- k) Middle School Education Concentration

### Early Childhood Education Concentration I and II (Options A & B): 9 hours each

Designed to enable candidates to further their competencies as teachers or program administrators in public and private early childhood program, early childhood education also prepares people for positions in community agencies that support families and young children. Job opportunities working with young children continue to expand. New research tools have altered our understanding of learning processes in young children with the plasticity of the brain and children's gift for inquiry in systematic ways. Language acquisition and numeracy are acquired in social communities of practice. Explore this exciting field. Concentration I is designed for those who want to increase knowledge and skills in working with young children in school, after school, and home settings. Concentration II is geared for professionals in field.

### Early Childhood Concentration I: \*Courses offered online\*

Required Courses:

ECH ED 6412	Foundations of Early Childhood Education	3
ECH ED 6413	Educational Role of Play	3
ED PSY 6215	Psychology of Early Childhood Development	3

### Early Childhood Concentration II: Choice A: 9 hours \*Courses offered online\*

ECH ED 6321	Parent and Community Resources in Early Childhood Education	3
ECH ED 6415	Organization and Development of Early Childhood Programs	3
EDUC 6404	Seminar	1-10

### Early Childhood Special Education Concentration II: Choice B: 9 hours \*Courses are NOT offered on line\*

SPEC ED 6372	Screening and Diagnosis of Developmental Delays: Birth to 5 Years	3
SPEC ED 6462	Introduction to Early Childhood Special Education	3
SPEC ED 6463	Curriculum, Methods, and Materials for Early Childhood Special Ed	3

### Curriculum and Instruction Concentration: 9 hours

In order for all students to optimally achieve, teachers must develop integrated, standards-based, innovative curriculum delivered as engaging instruction that equips students to develop the knowledge and skills for a global society. This concentration explores common issues in curriculum design and implementation. Educators will create curriculum and design instruction for their own educational settings.

ELE ED 6411	Curriculum Leadership Elementary Programs	3
ELE ED 6422	Curriculum Design of Elementary Programs	3
ELE ED 6423	Learning Through Inquiry	3

### Literacy Concentrations I: 9 hours

Concentration I is designed for educators who want a deeper understanding of reading and writing processes across the lifespan. This area emphasizes the preparation of leaders in a wide range of school and community settings, including literacy coaches or grade-level leaders. Concentration I emphasizes cutting-edge theory, research and instructional practices in literacy education. Concentration II, for those wanting a Literacy endorsement, applies these understandings through a variety of readings, writings and experiences, both in Clinical and online settings. There are two choices for Concentration II: Writing and Reading. Students who complete Concentrations I and II in Literacy can apply these courses to a K-12 DESE reading certificate or the UMSL Graduate Certificate in the Teaching of Writing, but additional coursework may be required.

ELE ED 6387	Literacy Acquisition and Learning for Diverse Students	3
ELE ED 6684	Instructional Strategies for Teaching Reading	3
ELE ED 6686	Analysis and Correction of Reading Disabilities	3

### Literacy Concentration II: 9 hours Choice A: Courses to complete the Reading Emphasis Certification

The M.Ed. program with emphasis in reading (literacy) is designed to enable candidates to further their competencies as teachers of reading, writing, and the other communication arts. The program also prepares them for positions as literacy coaches, reading specialists, curriculum specialists in communication arts and reading areas, consultants in areas of communication arts, and/or for further graduate study. Concentration II enables a student to earn a master's degree in education with credit towards an emphasis in reading as per requirements laid out by the Department of Elementary and Secondary Education (DESE) for special reading certification in Missouri. Students must complete the required 15 hours of M.Ed. courses, an educational psychology course, plus 18 hours of literacy courses.

ELE ED 6493	Reading Specialist Practicum I	3
ELE ED 6494	Reading Specialist Practicum II	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3

### Concentration II: 9 hours Choice B: Courses to complete the Graduate Certificate in the Teaching of Writing

Admission

Applicants who wish to earn a Graduate Certificate in the Teaching of Writing must apply for admission to the certificate program. Applicants must have a 2.75 GPA in undergraduate coursework to be admitted. A background in K-12 or adult education is desirable.

TCH ED 6880	Gateway Writing Project	6
TCH ED 6890	Seminar in Professional Writing for Teachers	3

### Special Education Concentration: 9 hours

For educators who are not receiving a degree in Special Education, but would like to expand their understanding of Special Education law and the needs of students with cross-categorical disabilities and those with Autism Spectrum Disorders, this concentration offers coursework on the characteristics and effective strategies for teaching students with varied abilities in educational settings. Those interested in the M.Ed. in Special Education or the Graduate Certificate in Autism and Developmental Disabilities should choose concentrations in those designated programs under the Masters in Special Education or Autism Certificate links in Bulletin.

Choose three of the following:

SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3
SPEC ED 6345	Characteristics and Education of Students with High-Incidence Disabilities	3
SPEC ED 6415	The Law and Special Education	3
SPEC ED 6437	Applied Behavior Analysis: Functional Assessment and Interventions	3

### Social Justice Issues Concentration: 9 hours

Educators need to challenge themselves to understand the variety of assets diverse students and their families bring to educational contexts. An interdisciplinary group of courses is offered for this concentration that invite personal growth and academic knowledge in the area of social justice. An emphasis on engagement and action permeates the course activities. (With completion of TCH ED 6010, TCH ED 6020 and TCH ED 6910 and 9 hours from the list below, students will meet requirements for the Social Justice in Education Certificate. (Applicants who wish to earn a Graduate Certificate in Social Justice in Education must apply for admission to the certificate program.)

Choose three of the following:

CNS ED 6820	Counseling Women Toward Empowerment	3
CNS ED 6850	Social Class and Poverty Issues In Counseling	3
ED FND 6203	Political Contexts of Education	3
GS 5053	Advanced Studies In African-American History	3
TCH ED 6230	Cross-Cultural Communication in the Classroom	3

### Leadership in Education Concentration: 9 hours

Organizations need leaders who understand the complexities of systems and working with diverse staff and families within situated communities in a dynamic and changing educational environment. Leadership skills can be taught and nurtured. This Leadership in Education concentration allows educators in various roles and career levels to apply principles of leadership to creating effective communities of practice.

Required Courses:

ED ADM 6503	Organizational Change in Education	3
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Choose two of the following:

ED FND 6200	Demographic Contexts of Education	3
ED FND 6203	Political Contexts of Education	3
ED ADM 6205	Legal Contexts of Education	3
ED ADM 6401	School Staff Development and Supervision	3

### STEM Concentration: 9 hours

Many challenges remain in the attraction and preparation of youth for the careers in fields of science, technology, engineering and mathematics (STEM). Those who teach in these areas need to continually work toward developing and implementing relevant curricula and develop new instructional strategies as well as revise and upgrade current methodology. The STEM Concentration focuses on professional development with respect to instructional research and best practices for all involved in enhancing STEM literacy.

Choose three of the following:

ELE ED 6431	STEM Instruction in Elementary Education	3
or SEC ED 6431	STEM Instruction in Secondary Education	
ED TECH 5340	Selection and Utilization of Educational Multimedia	3
ED TECH 6436	Computer-Mediated Communication in Education	3
ED TECH 6448	Technology-Supported Inquiry Learning	3
	Graduate Level Science or Math course	3

### Discipline Content Area Concentration: 9 hours

Educators recognize the importance of staying current in their field of teaching. This Discipline Content Concentration allows for 9 hours of graduate level credit in a content area related to one's field of practice. This includes graduate credit in areas such as history, English, math, science, foreign language, health and PE, and art and music. Courses for this concentration need to be approved by advisors before they are included on the M-1 program form.

### Elective Concentration: 9 hours

To insure maximum flexibility in course selection to meet the individual needs of professional educator's development, this concentration represents an opportunity to select three unique courses from the various concentration areas in an eclectic and personalized way. Choices to include in this concentration need to be approved by advisors and signed off on by the program director.

### Supporting Language Learners: TESOL Concentration I: 9 hours

This concentration is designed for those who want to better understand Second Language Acquisition (SLA) and Teaching English to Speakers of Other Languages (TESOL) processes. Courses emphasize the theoretical foundations of Second Language Acquisition and TESOL and their practical application to practice. Concentration I is open to all Masters in Education students. A TESOL endorsement from DESE is available under the SEC ED M.Ed. options.



TCH ED 6210	Foundations of Teaching English to Speakers of Other Languages	3
TCH ED 6220	Principles of Second/Foreign Language Acquisition	3
TCH ED 6230	Cross-Cultural Communication in the Classroom	3

### Middle School Education Concentration: 9 hours

The concentration in middle level education is designed for graduate students who would like to further their competencies as a middle level educator.

Choose three of the following:

TCH ED 5312	Teaching Reading in the Content Areas	3
ED PSY 6222	Advanced Studies in Child and Adolescent Development	3
ED ADM 6401	School Staff Development and Supervision	3
SEC ED 6416	Curriculum Design for Educational Programs	3

### Emphasis Area Requirements

The M.Ed. program with an emphasis in early childhood education is designed to enable candidates to further their competencies as teachers or program administrators in public and private early childhood program. The program also prepares them for positions in community agencies that support families and young children. The minimum required and recommended courses are as follows. Students must complete the required Core Competencies and Capstone Course as listed above.

Required:

ECH ED 6412	Foundations of Early Childhood Education	3
ECH ED 6413	Educational Role of Play	3
ECH ED 6415	Organization and Development of Early Childhood Programs	3
Elective hours		6

Total: 33 hours

### Learning Outcomes

Upon completion of the program graduates will be able to:

- Continually and systematically reflect on professional growth to enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply advanced content and pedagogical knowledge to create authentic and deep learning experiences.
- Extend learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Create and foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.

- Utilize equitable frameworks and inclusive practices to expertly create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Elementary Education MEd, Reading Emphasis

### Emphasis in Reading

The M.Ed. program with emphasis in reading (literacy) is designed to enable candidates to further their competencies as teachers of reading, writing, and the other communication arts. The program also prepares them for positions as literacy coaches, reading specialists, curriculum specialist in communication arts and reading areas, consultants in areas of communication arts, and/or for further graduate study. The following program enables the student to earn a M.Ed. with an emphasis in Reading while fulfilling the Department of Elementary and Secondary Education's requirements for special reading certification in Missouri. Students must complete the first two levels of the Required Core, an educational psychology course, an approved educational research course, 18 hours of literacy courses, and an action research capstone course. The minimum required and recommended courses are as follows:

#### Required Core (9 hours)

TCH ED 6010	Examining History, Community and Social Justice in Education	3
TCH ED 6020	Teacher Action, Advocacy and Leadership	3
ED PSY 6030	Instruction, Learning and Assessment <sup>1</sup>	3

#### Required Research Course – Evaluation of Abilities and Achievement (3 hours)

Choose one course. Dependent on student needs and interests.		
ED REM 6707	Classroom Measurement and Evaluation	3
ED REM 6709		
ED REM 6716	Academic Assessment and Intervention	3

#### Reading Concentration (18 hours):

Required Courses		
ELE ED 6387	Literacy Acquisition and Learning for Diverse Students	3
ELE ED 6684	Instructional Strategies for Teaching Reading	3
ELE ED 6686	Analysis and Correction of Reading Disabilities	3
ELE ED 6493	Reading Specialist Practicum I	3
ELE ED 6494	Reading Specialist Practicum II	3

And at least one course from the literacy-related elective list or from the certification-related elective list below (min. 3 hrs):

Literacy Related Electives		
ELE ED 6436	Children's Literature I: Survey and Analysis	3
ELE ED 6688		3
ENGL 6880	Gateway Writing Project	3-6
TCH ED 5312	Teaching Reading in the Content Areas	4

## Capstone Course (3 hours)

ELE ED 6482	Problems and Research in Teaching Elementary School	3
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<sup>1</sup> A graduate level course in child psychology or adolescent psychology may be substituted if needed for certification.

To be recommended for Missouri Department of Elementary and Secondary Education special reading certification, teachers must have a valid Missouri teacher's certificate and two years of classroom teaching experience, and they must have had the following at either the undergraduate or graduate level: two additional courses in reading; language acquisition or development; classroom management techniques; counseling techniques (to include exceptional children and their families: child AND adolescent psychology; and testing, evaluation, and achievement. These certification requirements might be in addition to the courses listed in the program of study above. See your graduate advisor for information about these courses. M. Ed. Students needing any of the above can elect to take these courses at the graduate level where available and apply them to their concentration area.

### Certification Related Electives

CNS ED 3220	Counseling Individuals with Special Needs	3
ED PSY 6225	The Psychology of Adolescence	3
ED REM 6707	Classroom Measurement and Evaluation	3

\*Only one 4000 level course can be applied to the M.Ed.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually and systematically reflect on professional growth to enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply advanced content and pedagogical knowledge to create authentic and deep learning experiences.
- Extend learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Create and foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Utilize equitable frameworks and inclusive practices to expertly create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Elementary School Teaching Graduate Certificate

The Graduate Certificate in Elementary School Teaching prepares those with at least a bachelor's degree, who are not pursuing an M.Ed., for teaching in the Elementary classroom.

This program of study is for individuals with a Bachelor's degree who would like to prepare for teacher certification in Elementary Education. This graduate certificate program option leads to Missouri Initial Professional Teacher Certification in Elementary Teaching 1-6.

Admission Requirements for the Graduate Certificate in Elementary School Teaching:

- A passing score on the designated Missouri Content Examination or an approved program of study
- A 2.75 or higher overall GPA
- Approved results of the Family Care Safety Registry
- A clear TB test or chest x-ray, if appropriate
- Students must meet the application deadlines set by the Graduate School

#### Related Area Requirements:

TCH ED 6565	Enriching Learning through Multicultural Arts, Music, Physical Education and Health	1
TCH ED 6566	Cross-Curricular Connections with Multicultural Arts, Music, Physical Education and Health	1

#### Level I Courses

ED PSY 6222	Advanced Studies in Child and Adolescent Development	3
TCH ED 5310A	Instructional Design: Lesson Planning for Teachers	1

#### Level II Courses

ELE ED 6337	Teaching and Learning Literacy in the Elementary Classrooms	4
ED PSY 6030	Instruction, Learning and Assessment	3
ED TECH 6135	Technology for Preparing Inquiry-Based Teaching	1
SPEC ED 6412	Psychology of Exceptional Children	3

#### Level III Courses

SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3
ELE ED 6338	Literacy Assessment for Guided Instruction	3
ELE ED 6253	Teaching Social Studies through Reading, Writing, and English Language Learners	3
ELE ED 6246	Math Content Pedagogy, Inquiry-Based Instruction, and Assessment	3
ELE ED 6241	Science Content, Inquiry-Based Instruction, and Assessment: STEM-Integrated Pedagogy	2
ELE ED 5989	Practicum I: Elementary/Special Education Site-Based Experience	2
ELE ED 5990	Practicum II: Elementary/Special Education Site Based Experience	8
TCH ED 5001	Advanced Mid-Level Clinical Experience: Diverse Learners	1

Total Hours 42

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## English BA

Engaging with and changing the world starts with reading and writing your way through it. The Department of English offers classroom, research, internship, and creative opportunities that will help you critically approach and insightfully analyze the diverse texts and situations you encounter every day. From reading and discussing important literary works, to impressing people with your outstanding writing, to becoming a more critical consumer and composer of digital media, the English BA positions you to advocate for awareness and change in both professional and public spheres. English majors love words, and our department offers insight into wielding their power and using them for the greater good.

## General Education Requirements

All undergraduate english majors must meet the university and college general education requirements (p. 51).

The college's foreign language requirement may be met in any language

## Satisfactory/Unsatisfactory Option

Majors may take no more than 6 satisfactory/unsatisfactory hours in the department. Any English course may be taken on a satisfactory/unsatisfactory basis **except** the following:

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
ENGL 1110	First-Year Writing for International Students	3
ENGL 3090	Turning the Kaleidoscope: How We Look at Texts	3
ENGL 3100	Junior-Level Writing	3
ENGL 3110	Junior-Level Writing for International Students	3
ENGL 3120	Business Writing	3
ENGL 3130	Technical Writing	3
ENGL 3160	Writing in the Sciences	3

## Degree Requirements

English majors must complete at least 39, but no more than 48, hours in English exclusive of:

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
ENGL 1110	First-Year Writing for International Students	3
Junior-Level Writing Requirement		3

Students majoring in English must take one three-hour 2000-level course in each of the following areas: Literature in English, Language and Language Studies, and Creative Writing. Collectively, the three 2000-level courses introduce all majors to the intellectual work people in English Studies do, and to explore the range of skills, processes, areas of knowledge, and practices we work with and the texts we produce.

<b>Literature in English</b>		<b>3</b>
ENGL 2330	Poetry: The Greatest Hits	
ENGL 2350	Our Stories, Ourselves	
ENGL 2360	Hey, Have You Read _____?	
ENGL 2370	Drama: The Greatest Hits	
<b>Language and Writing</b>		<b>3</b>
ENGL 2400	Rhetorical Ways with Words	
ENGL 2410	Literate Lives	
ENGL 2830	Introduction to English Language Variety	
<b>Creative Writing</b>		<b>3</b>
ENGL 2020	Introduction to Creative Writing	
ENGL 2030	Poetry Writing Jumpstart	
ENGL 2040	Fiction Writing Jumpstart	
Total Hours		9

## Junior-Level Writing Requirement

Students choose one three-hour course from the following list to meet the junior-level writing requirement:

ENGL 3090	Turning the Kaleidoscope: How We Look at Texts <sup>1</sup>	3
ENGL 3100	Junior-Level Writing	3
ENGL 3110	Junior-Level Writing for International Students	3
ENGL 3120	Business Writing	3
ENGL 3130	Technical Writing	3
ENGL 3160	Writing in the Sciences	3
HONORS 3100	Honors Advanced Composition: Writing The City	3

<sup>1</sup> This course is strongly advised for literature majors and students anticipating graduate study in English.

**3000 Level Major Courses: required total of 9 hours**, at least six of which are literature.

Courses at this level feature a more narrow range of content, deepening the skills and habits of mind learned at the 2000 level.

One 3000-level British Literature Course	3
One 3000-level American Literature Course	3
An additional 3000-level English Course	3
<b>Total Hours</b>	<b>9</b>

**4000 Level Courses: required total of 12 hours. Pre-requisite: students must pass all three 2000-level core curriculum courses before enrolling in 4000-level courses.**

Senior level courses are more specialized in content and more challenging in the kinds of work students produce. A wide range of these is available, in literature in English, writing and language, and creative writing. A student can focus on one of those three areas or may remain a generalist.

**Electives: 9 hours of English courses at any level**, exclusive of courses used to satisfy the first-year and junior-level writing requirements.

### B.S. Ed. in Secondary Education with Emphasis in English

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

### B.A. in English with Master’s Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master’s level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master’s Degree in Secondary Education, with additional coursework. Students interested in Master’s Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

### Bachelor of Arts (B.A.) in English Learning Outcomes

**English BA Graduates Will Be Strong Writers, Compose Ideas with Clarity and Utilize Effective Writing Processes. They Will:**

- Experiment with and enact various textual and discursive forms
- Integrate audience expectations and/or needs into texts they create
- Challenge audience expectations when appropriate
- Construct purposeful texts
  - (i.e. texts may include but are not limited to: literature, rhetoric, language, film, music, and other media/interactions)

- Practice revision processes, with complexity and concision complementing each other
- Make use of grammatically and mechanically correct prose when the rhetorical situation requires it
- Adapt and experiment with grammatical and mechanical conventions when the rhetorical situation requires it

**English BA Graduates Participate in Conversations via Reading, Writing, Speaking, Listening, and Critical Thinking. They Will:**

- Read, write, and interact with a variety of texts
  - Read broadly and widely
  - Read closely and critically
- Engage with increasingly complex texts as readers and writers
- Contribute their own perspectives to scholarly and public conversations involving texts they read
- Develop their own ideas and elaborate on them in relation to the ideas of others
  - Discuss texts thoughtfully, inside and outside of classrooms
  - Listen to others and synthesize perspectives when discussing texts
- Develop and master listening rhetorically, and listening to understand, not merely to argue against.

**English BA Graduates Will Engage with a Wide Variety of Texts and Become Astute Analysts and Creators. They will:**

- Define and describe texts
- Identify patterns in texts
- Analyze patterns in texts
- Make claims based on evidence found in texts
- Develop and propose alternative claims about texts
- Create original texts in response to texts
- Create and articulate original ideas in texts

**English BA Graduates Will Be Culturally and Historically Aware Citizens and Professionals. They will:**

- Explore and explain the interrelatedness of texts with culture, race, ethnicity, gender, disability, sexuality, class, and power, and the intersectional and sometimes fluid nature of such concepts
- Articulate worldviews from varied perspectives and evidence-based positions
- Discuss the historical dimensions and contemporary implications of texts
- Explore the structure and history of the English language
- Demonstrate strong social awareness

### Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 ENGL 2360	3
ENGL 1100		3 ENGL 2040	3
MATH 1020		3 Foreign Language 1002	5
Foreign Language 1001		5 CORE - Communication Proficiency	3
EXPLORE - Social Sciences		3 Elective or minor	1
		<b>15</b>	<b>15</b>



**Second Year**

Fall	Hours	Spring	Hours
ENGL 2410		3 ENGL 3530	3
ENGL 3320		3 ENGL 3710	3
Foreign Language 2101		3 CORE - Information Literacy	3
CORE - US History and Government		3 EXPLORE - Social Sciences	3
EXPLORE - Math and Sciences		3 Elective or minor	3
	15		15

**Third Year**

Fall	Hours	Spring	Hours
ENGL 3090		3 ENGL 4000 Level elective	3
ENGL 4000-level course		3 ENGL elective	3
ENGL elective		3 EXPLORE - Mathematics and Life/ Natural Sciences	3
EXPLORE - Social Sciences		3 Cultural Diversity Requirement	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 Elective or minor	3
	15		15

**Fourth Year**

Fall	Hours	Spring	Hours
ENGL 4000+ level course		3 ENGL 4000+ level course	3
ENGL elective		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		15

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor. All requirements are subject to change.*

## English MA

### Admission Requirements

To enter the graduate program in English a candidate must satisfy the requirements both of the Graduate School and the Department of English. A candidate should have a bachelor's degree, with at least 18 hours in English above the freshmen level, 12 of which must be in literature. Normally, only students with a grade point average of 3.0 in undergraduate English courses and an overall undergraduate average of 2.75 will be considered. Though the English department welcomes scores from the Graduate Record Aptitude Exam and letters of recommendation, it does not require either of these. (Students applying for Teaching Assistantships, please see "Financial Aid and Teaching Assistantships.")

The graduate coordinator of the English Department with the advice of the graduate committee will use the undergraduate record and, and if available, the scores of the GRE general test as the basis for a decision. We welcome letters of recommendation from the applicant's former English instructors and a sample of expository prose. Applications to the MA in English are considered at all times. However, because spaces in graduate courses are limited, it is strongly advised that prospective students submit their applications well before the semester begins in order to gain admission into their appropriate classes.

### Teaching Assistantships

A number of teaching assistantships are available for qualified applicants. In addition to the undergraduate record and the scores on the GRE general test, applications should include two letters of recommendation from former English instructors. Applications should be submitted to the graduate coordinator of the English department no later than March 15 preceding the academic year for which the appointment is desired.

### Degree Requirements

#### Master of Arts in English

In addition to the Graduate School requirements, students must complete at least 36 hours, 24 hours of which must be in 5000-level courses. Twelve hours may be taken in 4000-level courses approved by the department and Graduate School.

Required of both concentrations, literature and writing studies:

- ENGL 5000: Introduction to Graduate Study in English. Focuses upon bibliography, research methods, and literary criticism. Should be taken at the outset of the program, for graduate (not undergraduate) credit.

Students who choose a literature track must also take at least one course in each of the following six areas:

- Area 1, British literature before 1660
- Area 2, British literature between 1660 and 1900
- Area 3, Twentieth-century literature (British, American, post-colonial, or in translation)
- Area 4, American literature
- Area 5, Theories of writing, criticism, language, and/or culture
- Area 6, Literature in translation study of a particular literary genre, or a course in another relevant discipline

Students who choose the writing studies track must take:

- 18 hours in literature courses providing broad coverage rather than a narrow focus on a particular genre or historical period (ENGL 5000 constitutes three of these required literature credits)
- 18 hours in writing studies courses (including ENGL 5840)

If students choose the thesis option (6 hours) they will take 15 hours in literature and 15 hours in writing studies.

### Thesis Options

Students may elect the thesis option, which requires a total of 6 hours of thesis credit. The thesis will engage the student in sustained and self-motivated study through the processes of research, conferring with advisors, drafting and revising text. The thesis must be approved and assigned a grade by a thesis committee. The student will select a major professor who, after consulting with the chair and the graduate coordinator, will select two other members of the committee.

**Literature Emphasis:** The thesis should demonstrate original thought and substantial research and may be a critical study of literary works or a theoretical exploration of issues related to literature.

**Writing Studies Emphasis:** The final document will demonstrate significant familiarity with scholarship in Writing Studies through the critical analysis and clear synthesis of published research, observational data (where appropriate) and the student's thoughts/views/reflections/positions. The thesis may be a critical study, theoretical exploration or descriptive

assessment of fieldwork drawing on writing, language, rhetorical, socio-cultural or reading theories; literacy; and the history of writing instruction; composition pedagogies; technologies.

## English Minor

### Minor in English

Students minoring in English may choose to specialize in literature, language and writing, or creative writing. Alternatively, students may choose a mixture of courses and remain generalists.

The minor will include a total of 18 hours of required English courses, exclusive of first-year composition and junior-level writing:

- One 2000-level core curriculum course in each of the following areas: one in literature, one in writing and language, and one in creative writing.
- Nine more hours of English courses of the student's choosing. At least three of those hours must be at the 4000 level.

### Learning Outcomes

#### English Minor Graduates Will Be Able To:

- Demonstrate a knowledge that what counts as text is broader than traditionally assumed
- Interpret and compose for numerous contexts
- Demonstrate knowledge about audience and apply that understanding in shaping texts
- Compose purposeful texts
- Exhibit the ability to practice revision processes
- Make use of correct grammar and writing mechanics when rhetorically appropriate
- Engage with sources
- Analyze texts
- Develop and propose claims about texts
- Respond to texts with originality and purpose
- Contribute to scholarly and public conversations
- View the world from varied perspectives and evidence-based positions
- Apply skills and knowledge from the minor into their major course of study
- Discuss texts thoughtfully, inside and outside of classrooms
- Listen to others and synthesize perspectives when discussing texts

## Enterprise Systems Development Graduate Certificate

The Graduate Certificate in Enterprise Systems Development is designed to help students from all backgrounds achieve competence in the development and management of web-based or legacy information systems including the interface with contemporary programming languages, frameworks, platforms, testing methodologies, and security standards.

This 12 credit hour certificate program also counts toward the 30 credit hour Master of Science in Information Systems and Technology degree

program requirements. Students may choose to combine this certificate with other courses and/or certificates to obtain the Master of Science in Information Systems and Technology degree.

### Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

### Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs.

#### Required Course

INFSYS 6806	Managerial Applications of Object-Oriented Technologies	3
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#### Electives

Choose one of the following sequences: 6

INFSYS 6807 & INFSYS 6817	Contemporary z/OS COBOL and Advanced COBOL and Modern z/OS System Tools	
INFSYS 6814 & INFSYS 6815	Web Applications for Business and Advanced Web Applications for Business	

Chose one of the following: 3

INFSYS 6818	Management of Software Testing	
INFSYS 6868	Software Assurance	

Total Hours 12

The required courses may be substituted with other courses with the approval of the Chair of the Information Systems and Technology Department.

### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Develop business information systems
- Exhibit specialized technical expertise
- Apply software testing methodologies to ensure high quality business applications
- Apply software security standards in business applications
- Communicate effectively with information systems users

## Entrepreneurship Graduate Certificate

The Graduate Certificate in Entrepreneurship is an applied program of study designed for individuals who seek to develop skills enabling them to lead venture creation processes and sustainable growth efforts in all types of organizations. Course experiences will enable students develop an entrepreneurial mindset and a deep understanding of problem identification, opportunity recognition, customer discovery, design thinking, and lean startup processes. Students may pursue a general track of study or may pursue either social or technology specialized tracks of study.

## Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

## Certificate Requirements

The Graduate Certificate in Entrepreneurship is an experientially-based 12-credit-hour program. Students complete 6 credit hours of required coursework and 6 credit hours of specialized track coursework. Students can select technology, social, or general entrepreneurship tracks. Students must complete both elective courses from the same track of study. All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs. All 12 credit hours taken as part of this certificate transfer to the MBA degree program.

### Required Courses

Choose two of the following courses: 6

EDUC 5612	Intrapreneurial Leadership
ENT 5614	Entrepreneurship and Innovation
EDUC 5616	Accelerate Intrapreneurial Experience
ENT 5618	Accelerate Entrepreneurial Experience

### General Track

Choose two of the following courses: 6

BUS AD 5001	Managerial Economic Analysis
BUS AD 5100	Managerial Communication
ED TECH 5420	Advanced Computer Programming and Pedagogy
EDUC 6442	Leadership in Community Education
ENT 5650	Advanced Experiential Entrepreneurship
INFSYS 6808	Advanced Object-Oriented Programming for Business
INFSYS 6815	Advanced Web Applications for Business
INFSYS 6862	Artificial Intelligence Applications for Business and Cybersecurity
FINANCE 6570	Introduction to Fintech
FINANCE 6572	Financial Data Analytics
FINANCE 6574	Artificial Intelligence and Machine Learning in Finance
FINANCE 6576	Blockchain: Applications in Finance
TCH ED 6440	Innovation in Education

### Social Track

Choose two of the following courses: 6

ED TECH 5420	Advanced Computer Programming and Pedagogy
EDUC 5612	Intrapreneurial Leadership
EDUC 5616	Accelerate Intrapreneurial Experience
EDUC 6442	Leadership in Community Education

ENT 5650	Advanced Experiential Entrepreneurship
TCH ED 6440	Innovation in Education

## Technology Track

Choose two of the following courses: <sup>1</sup> 6

ENT 5650	Advanced Experiential Entrepreneurship
INFSYS 6806	Managerial Applications of Object-Oriented Technologies
INFSYS 6808	Advanced Object-Oriented Programming for Business
INFSYS 6815	Advanced Web Applications for Business
INFSYS 6862	Artificial Intelligence Applications for Business and Cybersecurity
FINANCE 6570	Introduction to Fintech
FINANCE 6572	Financial Data Analytics
FINANCE 6576	Blockchain: Applications in Finance
FINANCE 6574	Artificial Intelligence and Machine Learning in Finance

## Entrepreneurship Undergraduate Certificate

### Requirements

This 18-credit hour certificate, which includes 9 hours of required coursework, will allow students from different majors and with different professional interests to investigate the foundations of entrepreneurial practice. This certificate is appropriate for any student who has an interest in advancing his or her knowledge, creativity, and skills necessary to become or work with entrepreneurs, bring entrepreneurial thinking to his or her workplace, and who seeks a competitive edge in the job market.

### Required Courses

ENT 1001	Introduction to Entrepreneurship	3
BUS AD 4001	Accelerate Capstone	3

In addition, students must take at least one of the following classes: 3

ENT 3040	Creativity and Systems for Innovation
EDUC 2002	Social Entrepreneurship

Total Hours 9

### Elective Courses

Students must complete a minimum of nine hours, chosen from any of the following lists. The groupings are suggestions that would provide a concentrated focus in a specific area.

Additional courses that may meet this requirement:

1. a course designated as Entrepreneurship in transfer;
2. future courses, as approved by the director of entrepreneurship certificate.

**Entrepreneurship in the Arts**

ENT 2030	Business in the Arts	3
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**Entrepreneurship with Digital Marketing**

CMP SCI 3010	Web Programming	3
CMP SCI 4010	Advanced Web Development with Java	3
INFSYS 3847	Web Design	3
MGMT 4614	Entrepreneurship/Small Business Management	3
MKTG 3710	Consumer Behavior	3
MKTG 3720	Management of Promotion	3
MKTG 3721	Introduction to Digital Marketing Strategies	3
MKTG 3722	Introduction to Social Media Marketing	3

**Education Entrepreneurship**

ED FND 3251	Black Americans in Education	3
ED FND 4330	History of American Education through the Lens of Social Justice	3
ED PSY 2212	Child and Adolescent Development	3
ED REM 4730	Program Assessment and Evaluation	3
ED TECH 4302	Educational Technology Instruction in Educational Agencies	3
or ED TECH 4436	Computer-Mediated Teaching and Learning in Education	
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
EDUC 3170	Grant Proposal Writing for Educators	3
MKTG 3721	Introduction to Digital Marketing Strategies	3
THEATR 3362	Storytelling	3

**Focus on Entrepreneurship**

ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
MGMT 4614	Entrepreneurship/Small Business Management	3
NURSE 3808	Management And Leadership In Nursing	3
SOC WK 4350	Human Service Organizations	3

**Social Entrepreneurship**

ACCTNG 3451	Accounting for Governmental and Not-For-Profit Entities	3
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
MGMT 4614	Entrepreneurship/Small Business Management	3
MKTG 3721	Introduction to Digital Marketing Strategies	3
SOC WK 2000	Social Work and Social Issues	3

SOC WK 2200	Social Welfare as a Social Institution	3
SOC WK 3100	Introduction to Strategies for Social Work Practice	3
SOC WK 3410	Research Design in Social Work	3
SOC WK 3700	Diversity and Social Justice	3

**Technology Entrepreneurship**

BIOL 4614	Biotechnology Laboratory I	4
BIOL 4905	Research	3
CHEM 4772	Physical Biochemistry	3
CMP SCI 2250	Programming and Data Structures	3
CMP SCI 2750	Linux Environment and Programming	3
CMP SCI 3010	Web Programming	3
CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	3
CMP SCI 4220	Introduction to iOS Programming and Apps	3
CMP SCI 4792	Introduction to Mobile Computing, Networking, and Security	3
ED TECH 4558	Computer Ethics for Educators	3
INFSYS 3810	Information Systems Analysis	3
INFSYS 3844	Developing Business Applications in .NET	3
INFSYS 3845	Database Management Systems	3
INFSYS 3847	Web Design	3
INFSYS 4850	Information Systems Design	3
INFSYS 3848	Introduction to Information Security	3
J E ENGR 4050	Reliability and Quality Control	3
J M ENGR 4900	Engineering Project Management	3

**Learning Outcomes**

Upon completion of the program, certificate earners will be able to:

- Understand and apply the language of entrepreneurship and innovation
- Apply entrepreneurship concepts in both personal and professional contexts
- Articulate and communicate new opportunities by writing and presenting elevator pitches, slide decks, and performing class presentations
- Use interdisciplinary theories and concepts to identify root causes and solve problems in any setting

**Environmental Studies Minor****Minor in Environmental Studies**

This is an interdisciplinary program that integrates the natural and physical sciences with the social sciences and humanities to study current environmental problems resulting from human population growth, global climate change, overuse of natural resources, pollution and biodiversity loss. A minimum 18 hours are required, 9 of which must be in the natural and physical sciences, including the listed Honors College courses, and 9 must be from the social sciences and humanities. Both BIOL 1202 (Environmental Biology) and POL SCI 3480 Environmental Politics must be completed as part of the total 18 hours. A total of 12 hours must be



taken at or above the 2000 level, with one additional course at or above the 3000 level besides POL SCI 3480. At least 9 hours must be taken while in residence at UMSL. A minimum GPA of 2.0 is required.

ANTHRO 1005	Introduction to Biological Anthropology	4
ANTHRO 2126	Archaeology Of Greater St Louis	3
ANTHRO 3228	People and Plants	3
ANTHRO 3232	Environmental Archaeology	3
ANTHRO 3270	Human Ecology, Cultural Collapse, and Sustainable Developments	3
BIOL 1202	Environmental Biology	3
BIOL 1821	Introductory Biology: Organisms and the Environment (MOTR BIOL 150L)	5
BIOL 2102	General Ecology	3
BIOL 2103	General Ecology Laboratory	2
BIOL 2501	Biology of Plants	5
BIOL 3202	Conservation Biology	3
BIOL 3203	Conservation Biology Laboratory	2
BIOL 3302	Introduction to Evolution	3
BIOL 4102	Behavioral Ecology	3
BIOL 4192	Applications of Geographic Information Systems	5
BIOL 4222	Tropical Ecology and Conservation	3
BIOL 4245	Field Biology	3
BIOL 4270	Global Climate Change	3
BIOL 4402	Ornithology	3
BIOL 4403	Ornithology Laboratory	2
BIOL 4422	Entomology	3
BIOL 4423	Entomology Laboratory	2
BIOL 4501	Flowering Plant Families: Phylogeny and Diversification	5
ECON 3500	The Economics of Government Spending and Taxation	3
ECON 4160	Geospatial Analysis in the Social Sciences	3
ECON 4170	Fundamentals of Cost-Benefit Analysis	3
ECON 4550	Natural Resource Economics	3
GEOL 1002	Historical Geology	4
HONORS 2050	Inquiries in the Natural Sciences	1-3
HONORS 2051	Inquiries in the Sciences: Laboratory or Field Work	1
INTL BUS 4281	Entrepreneurship in the Global Environment	3
PHIL 2255	Environmental Ethics	3
POL SCI 3480	Environmental Policy	3
POL SCI 3595	Studies in Comparative Politics	3
POL SCI 3850	International Organizations and Global Problem-Solving	3
POL SCI 3900	Special Readings	1-10

## Learning Outcomes

### Foundational Knowledge

Students obtaining a minor in environmental studies will be able to integrate knowledge from multiple disciplines including natural sciences, physical sciences, social sciences, and economics as they pertain to environmental issues and policies.

### Practical skills and problem solving

Students earning a minor in environmental studies will be able to appreciate the biological methods and applications to solving environmental issues while recognizing the cultural and ethical context of environmental issues. Moreover, the minor will be able to reflect on his or her contribution as a citizen and consumer to global environmental issues.

## Exercise Science Minor

A minor in Exercise Science is available for students pursuing any undergraduate degree program. It is intended for those who wish to join careers in prescribed physical activity such as personal training, strength and conditioning, rehabilitation and human performance. Students completing this minor could work with clients in recreational and wellness programs as well.

### Minor Requirements:

PHY ED 2134	Personal Physical Fitness	3
HLTH PE 3280	Human Anatomy and Physiology	4
HLTH PE 3380	Introduction to Nutrition for Health and Performance	3
PHY ED 3283	Kinesiology	3
HLTH PE 3284	Physiology of Human Exercise	3
PHY ED 3287	Seminar in Exercise Science	1-3
PHY ED 3330	Designing Physical Activity Programs	3

Total Hours	20-22
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## Family Nurse Practitioner Post-Graduate Certificate

Post-graduate certificate (PGC) requirements are tailored to the individual student, depending on past academic work, experience, the student's goals, and specialty requirements. Upon completion of the PGC requirements, a certificate is awarded by the College of Nursing (CON) and Graduate School. Graduates are eligible to apply to take board certification exams in the advanced practice role and population for which they have been prepared.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html).

### Certificate Requirements

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3

NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
NURSE 6741	Family Health I: Diagnosis and Management of Advanced Practice Nursing	4
NURSE 6742	Family Health II: Diagnosis and Management in Advanced Practice Nursing	4
NURSE 6954	Advanced Practice Nursing: Residency I	2-4
NURSE 6955	Advanced Practice Nursing: Residency II	2-4
NURSE 7954	Advanced Practice Nursing: Residency III	2-4

All students must complete 8 credit hours of Residency. Once credit hour is equivalent to 75 residency hours.

## Film Studies Undergraduate Certificate

The On-line Certificate Program in Film Studies is open to all St. Louis campus undergraduate and graduate students, as well as to graduates of UM-St. Louis and other colleges and universities.

To receive a Film Studies Certificate, a student must complete the required courses (18 credit hours) with an average grade of C or better. None of the courses may be taken on a satisfactory/unsatisfactory basis. Up to six credit hours of course work may be transferred from other institutions.

### Required

THEATR 1080	Introduction to World Cinema	3
THEATR 2271	History of American Film	3
THEATR 2273	Survey of Film Genres	3

### Electives

Select three of the following:		9
THEATR/MEDIA ST 1070	Introduction to Cinema	
THEATR 2214	Screenwriting	
THEATR 2272	Contemporary Cinema	
THEATR 3070	International Cinema	
THEATR 3370	Documentary Film	

Total Hours		18
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## Finance Minor

### General Requirements

- All minors are 15 credit hours or 5 courses, including business core courses.
- Students must attain a 2.0 grade point average for all courses in the minor.
- Students must attain a minimum grade of C- in each course included in the minor.
- All courses in the minor must be on a graded basis.
- A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.

- One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.
- A minor may be added for up to two years following completion of the baccalaureate degree

### Specific Requirements for the Minor

Available to all students except those pursuing the Bachelor of Science in Business Administration degree. Students must complete:

FINANCE 3500	Financial Management	3
Select any four upper division finance electives		12
Total Hours		15

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Describe fundamental concepts in finance.
- Interpret financial data and describe firm financial performance.
- Demonstrate competency to identify and assess financial risk and return.

## French Minor

A minor in French, German, Japanese or Spanish requires the completion of four courses in the language beyond the basic foundation sequence (Language 1001, Language 1002, and Language 2101). Transfer students must complete at least two courses for the minor at UMSL. All courses must be passed with a grade of C- or better.

### Specific Requirements for the French Minor

FRENCH 2170	Intermediate French Language and Culture	3
FRENCH 2180	Readings in French	3
Select two French courses 3000-level or above		6
Total Hours		12

## Gender and Politics Minor

### Requirements for Political Science Minors

A general minor in political science can be arranged, as well as specialized minors in eight different subfields of the discipline. Interested students should see a faculty adviser to plan a coherent program of study as a minor field.

Students must achieve a cumulative 2.0 GPA in the political science courses chosen to qualify for the minor. Students may count no more than 3 hours in political science taken on a satisfactory/unsatisfactory basis toward the minor. Students taking an internship POL SCI 3940 may count no more than three hours of the internship toward the minor.

### Specific Requirements for the Minor

Select five of the following:		15
POL SCI 2102	Introduction to Gender Studies	
POL SCI 2290	Gender and the Law	
POL SCI 2370	The Politics of Identity and Social Justice	

POL SCI 2380	The Politics of Gender in the United States
POL SCI 3460	The Politics of Poverty and Welfare
POL SCI 3900	Special Readings <sup>1</sup>
POL SCI 3940	Public Affairs Internship <sup>1</sup>
Total Hours	15

<sup>1</sup> May be taken with approval of the faculty advisor.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Explain the major events, laws, and court findings regarding gender and politics.
- Compare and contrast multiple social movements and policies.
- Assess issues of inequity, formulate evidence-based recommendations that take into account areas of privilege and oppression and existing political and societal structures, and communicate them with clarity and coherence.

# Gender Studies Graduate Certificate

## Requirements For Admission

- Baccalaureate degree 2.75 G.P.A.
- Official transcripts of all previous undergraduate/graduate work
- Two letters of recommendation

If you are not currently enrolled at UMSL, you must apply through the Graduate School. This certificate is available to students with Bachelor's or Master's degrees and students enrolled in graduate degree programs. A student need not be enrolled in a degree program to earn the Gender Studies graduate certificate. Post B.A./B.S. students may enroll in the undergraduate or graduate certificate program.

## Certificate Requirements

At least 18 hours of Gender Studies courses at the 4000, 5000, and/or 6000 level

1. 3 hours must include a graduate feminist or gender theory course, which may be GS 5033 , Advanced Sexuality and Gender Theory, GS 5040 Feminist Critical Theory, or other theory course.
2. 3 hours must include either a graduate internship or practicum, or final writing project, which may be an independent study GS 6452 Special Readings in Gender Studies, or a substantial research and writing project for a GS graduate seminar, which may be GS 6450 Seminar in Gender Studies, or other cross-listed, 5000 or 6000-level seminar
3. 12 hours must be at the 5000 level or above, while up to 6 hours of 4000-level courses may be taken for graduate credit, as long as student completes graduate level work for the course.
4. No more than 6 hours may be taken as Directed or Independent Study credit.

Most Gender Studies courses are cross-listed with other departments and count toward a department's degree requirements as well as toward the certificate.

## Learning Outcomes

Upon completion of the certificate earners will be able to:

### Knowledge

- Contrast different theoretical approaches to understanding gender and their implications for advocacy and activism
- Develop in-depth knowledge of one aspect of gendered experience examined through the lens of a time period, literary genre, a geographic region, or other focus on a narrowed topic

### Writing Research and Communications

- Apply feminist theories and methods to analyze, interpret, and discuss the role of gender in written, oral, visual, and/or multimedia texts
- Apply feminist research methods to identify and investigate a problem relating to gender in order to design an original research project that contributes to the scholarship on a topic in the field of Gender Studies by conducting a comprehensive and critical literature review, identifying and utilizing at least one appropriate method of original data collection, evaluating sources, and interpreting and disseminating the results

### Professional

- Network with local and global leaders in the field of gender studies or fields appropriate to students' interests and career goals
- Develop the skills and knowledge necessary to compete for and be successful in a wide range of fields both local and global including non-profit management, education, academia, social work, the sciences, business, law, and transnational feminist work

# Gender Studies Minor

For a Minor in Gender Studies, students must take at least 12 hours of Gender Studies courses. 9 hours must include 3 core courses:

1. GS 2102 Introduction to Gender Studies
2. GS 3033 Sexuality and Gender Theory or other 3000-5000 level course in feminist or gender theory.
3. Capstone experience: Students must complete a final research project or practicum. The Capstone requirement may be satisfied by GS 4352 Independent Study in Gender Studies, GS 4353 Internship in Gender Studies, or by a 4000-level Gender Studies course or other 4000-level seminar where student completes a final research and writing project that focuses on gender studies.

The remaining 3 hours may be cross-listed courses with the student's major department or Gender Studies electives from various disciplines.

## Learning Outcomes

Upon completion of the Gender Studies Minor and Undergraduate Certificate, a student will be able to:

### Knowledge

- Analyze how gender affects individuals and society historically and currently, locally and globally, including how

systems of power and oppression operate and how gender intersects with other facets of identity such as ethnicity, nationality, class, sexuality, age, and ability

- Describe key figures, concepts, and debates within the discipline of gender studies, such as “the Other,” sex vs. gender, gender as a social construct vs. essentialism, and intersectionality
- Utilize gender as a variable to explain historical, social, cultural, technological, and/or symbolic phenomena
- Evaluate ideological assumptions underlying social institutions and systems of representation

### Writing Research and Communications

- Articulate complex ideas coherently to diverse audiences.
- Relate how personal experience connects to institutions and systems of privilege and oppression.
- Apply traditional and new media literacies to locate, evaluate, utilize, and produce knowledge.
- Synthesize evidence obtained from research to compose texts that advance, support, and defend an argument about gender.

### Professional

- Develop strategies for promoting equality and combating oppression
- Connect personal experience and the ideas explored in the classroom to apply the insights gained to other classes and personal and professional life
- Describe the importance of respect, civility, sensitivity, civic engagement, and appreciation for diversity and demonstrate these traits

## Gender Studies Undergraduate Certificate

### Gender Studies Certificate Requirements For Admission

Undergraduate certificate candidates must meet the University’s general education requirements. Applicants must have a cumulative G.P.A. of at least 2.5 and must maintain a minimum 2.5 G.P.A. in Gender Studies courses. Candidates for undergraduate certificates are asked to register with Gender Studies after taking one or two courses. Students will then be enrolled in the program and will be placed on our mailing list for class information and announcements of upcoming events.

### Certificate Requirements

Students must take at least 18 hours in Gender Studies courses. 9 hours must include 3 core courses:

1. GS 2102 Introduction to Gender Studies
2. GS 3033 Sexuality and Gender Theory or other 3000-5000 level course in feminist or gender theory
3. Capstone Experience: Students must complete a final research project or practicum. The Capstone requirement may be satisfied by GS 4352 Independent Study in Gender Studies, GS 4353 Internship in Gender Studies, or by a 4000-level Gender Studies course or other 4000-level

seminar where student completes a final research and writing project that focuses on gender studies.

9 hours may be cross-listed courses with student’s major department or Gender Studies electives from various disciplines.

### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Demonstrate an understanding of the complex ways gender and other culturally constructed categories inform social, cultural, economic, and political practices that both reproduce and resist hierarchies of power in the U.S. and global contexts.
- Articulate the central questions of gender studies scholarship, including foundational theories in feminist thought and action.
- Conduct interdisciplinary research that applies gender as a central category of analysis.
- Apply gained knowledge, research skills, and gender studies concepts in an independent study, experience of direct engagement with professionals in their field, and/or community service-oriented activity.

## German Minor

A minor in French, German, Japanese or Spanish requires the completion of four courses in the language beyond the basic foundation sequence (Language 1001, Language 1002, and Language 2101). Transfer students must complete at least two courses for the minor at UMSL. All courses must be passed with a grade of C- or better.

### Specific Requirements for the German minor

GERMAN 2170	Intermediate Practice in Speaking and Writing German	3
GERMAN 2180	Intermediate Readings In German	3
Select two German courses 3000-level or above		6
Total Hours		12

## Gerontology Minor

Students have many courses to choose from to create a personalized plan of study. All students must take a 3-credit introductory course – Aging in America: Concepts & Controversies (GERON 2170). At least 6 of the remaining 12 credits must be from courses at the 4000 level (see below).

Students wishing to designate a course for capstone for the BLS must coordinate this with Program Director for Gerontology prior to starting the course.

### Required Course

GERON 2170	Aging in America: Concepts & Controversies	3
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### Electives

Choose Four Courses (with at least 6 credits at 4000 level):		12
PSYCH 1268		
GERON 2220	Special Topics in Gerontology	
PHIL/GERON 2256	Bioethics	
PHIL 2258	Medicine, Values, and Society	
GERON 2300	Social & Community Services for an Aging Population	
GERON/PSYCH 3280	Psychology of Death and Dying	



GERON/ANTHRO 3212	Medical Anthropology
GERON/ANTHRO 3215	Aging, Culture & Globalization
SOC 3224	Families in Global Perspective
GERON 4130	Interviewing Older Adults and Life Review
GERON 4200/ soc wk 4200	Gerontological Practice with Aging Veterans
GERON 4320	Gender, Sexuality & Aging
PSYCH 4349	Human Learning and Memory
GERON/SOC 4361	Social Gerontology
GERON/PSYCH/SOC WK 4376	Mental Health and Aging
GERON 4445	Aging, Chronic Illness & Disability
GERON 4490	Directed Readings
GERON 4500	Physiology & Pharmacology of Aging
GERON 4620	Dying, Grief & Death in Older Adulthood
GERON 4700	Successful Aging: Individual & Societal Perspectives
GERON 4720	Ageless Arts: Creativity in Later Life
GERON/SOC WK 4680	Introduction to Gerontological Practice
Total Hours	15

## Global Biodiversity Conservation and Leadership Graduate Certificate

The Graduate Certificate in Biodiversity Conservation and Leadership is intended for students who wish to pursue a career in conservation biology or ecology from either a research or practical standpoint. Cooperating institutions include the Missouri Botanical Garden, St. Louis Zoo, Center for International Studies at UMSL, and the Departments of Economics, History, Political Science, and Social Work.

The Graduate Certificate in Global Biodiversity Conservation and Leadership is intended for students who wish to pursue a career in conservation biology or ecology from either a research or practical standpoint. Cooperating institutions include the Missouri Botanical Garden, the Saint Louis Zoo, the Center for International Studies at UMSL, and the Departments of Economics, History, and Political Science, and the Business School.

### Admission

Graduate students enrolled in UMSL who intend to receive a Graduate Certificate in Global Biodiversity Conservation and Leadership must complete the Application for Graduate Certificate (G10) once completing the required coursework. Students not enrolled in a course of graduate studies at UMSL who have a baccalaureate degree or are enrolled in graduate work elsewhere must apply for admission to the UMSL Graduate School as graduate certificate-seeking students. The minimum admission requirements include: (1) completion of a baccalaureate degree and the prerequisites of the certificate program; 2) at least a 3.0 GPA for undergraduate course work or a 3.2 GPA for 12 credit hours of graduate

course work. The minimum prerequisites are undergraduate courses in ecology, evolution and genetics.

### Requirements

The certificate is awarded after completion of 18 credit hours of core courses and electives with a minimum of 12 credits at the 5000 or 6000 level. Electives must include a minimum of 3 credits outside biology with a maximum of 7 outside biology. A maximum of 3 credits may be taken at institutions other than UMSL. Students may simultaneously earn a graduate degree and count credits earned in their degree program toward the certificate when appropriate.

### Required Core Courses

BIOL 6250/POL SCI 6452	Public Policy of Conservation and Sustainable Development	3
BIOL 6299	Internship in Conservation Biology	2-4
BIOL 6222	Advanced Tropical Ecology and Conservation	3
or BIOL 6270	Advanced Global Climate Change	

### Electives 10

#### Biology

BIOL 4182	Population Biology
BIOL 4402	Ornithology
BIOL 4403	Ornithology Laboratory
BIOL 4422	Entomology
BIOL 4423	Entomology Laboratory
BIOL 4501	Flowering Plant Families: Phylogeny and Diversification
BIOL 5192	Community Ecology
BIOL 6182	Advanced Population Biology
BIOL 6192	Applications of Geographic Information Systems
BIOL 6222	Advanced Tropical Ecology and Conservation
BIOL 6270	Advanced Global Climate Change
BIOL 6889	Graduate Seminar

#### Economics

ECON 3500	The Economics of Government Spending and Taxation
ECON 4160	Geospatial Analysis in the Social Sciences
ECON 4170	Fundamentals of Cost-Benefit Analysis
ECON 4550	Natural Resource Economics

#### History

HIST 3000	Selected Topics in History
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#### International Business

INTL BUS 4281	Entrepreneurship in the Global Environment
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#### Political Science

POL SCI 3440	Public and NonProfit Budgeting
POL SCI 3480	Environmental Policy
POL SCI 3590	Women and Leadership World-Wide: Breaking the Glass Ceiling
POL SCI 3710	NonProfits, Civil Society and Volunteerism

POL SCI 3830	International Political Economy	
POL SCI 3850	International Organizations and Global Problem-Solving	
POL SCI 4850	International Law	
POL SCI 6448	Political Economy and Public Policy	
Total Hours		18-20

## Global Health and Social Medicine Minor

Select one of the following 1000-level courses: 3-4

ANTHRO 1005	Introduction to Biological Anthropology	
ANTHRO 1021	The Body in Culture	
BIOL 1131	Human Physiology and Anatomy I	

Select one of the following 2000 level courses: 3

ANTHRO 2104	Medicine in Culture and History	
ANTHRO 2105	Human Variation	
SOC 2180	Alcohol, Drugs and Society	
SOC 2338	Health and Society	

Select two of the following 3000-4000 level courses: 6

ANTHRO 3209	Forensic Anthropology	
ANTHRO/GERON 3212	Medical Anthropology	
ANTHRO 3217	Anthropology of Pregnancy and Birth	
ANTHRO 3215	Aging Across Cultures	
ANTHRO 3245	Evolutionary Medicine	
SOC 3250	Sociology of Victimization	
SOC 4361	Social Gerontology	
GERON 4445	Aging, Chronic Illness & Disability	
GERON 4500	Physiology & Pharmacology of Aging	

Select one of the following courses: 3

ANTHRO 4000	Ethnographic Field Research Methods	
ANTHRO 4307	Community Based Research in Anthropology	
SOC 4307	Community-Based Research in Sociology	

Total Hours 15-16

All required courses for the minor must be completed with a grade of C- or better.

## Health Communication Undergraduate Certificate

The Department of Communication and Media offers a certificate program for those students interested in careers in health communication. Our certificate program addresses the dynamics of health communication from varying perspectives. The core classes in the program focus on a breadth of health communication topics, such as the influence of mass media, interpersonal communication, organizational communication, and culture.

After completing the certificate, students will be able to recognize, analyze, and design effective communication strategies for promoting individual and public health.

The certificate program is comprised of 18 credit hours of coursework, as indicated. All students must earn a C or better in all courses applied to the certificate program.

### Core Course List:

COMM 1369	Introduction to Health Communication	3
COMM 2235	Professional Communication	3
COMM 3150	Crisis, Disaster, and Risk Communication	3
COMM 3330	Research Methods in Communication I	3
COMM 3368	Advanced Health Communication	3
COMM 4360	Applied Health Communication <sup>1</sup>	3
Total Hours		18

<sup>1</sup> COMM 4360 may count toward the internship credit for the BA in Communication.

For more information on this certificate, please contact the Department of Communication and Media's Health Communication Certificate Coordinator.

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Effectively apply theory and best practices to design messages to enhance health
- Critically analyze and evaluate health strategies and messages using relevant theory and best practices
- Understand the roles of communication and other factors that contribute to and/or alleviate health issues
- Practice effective, professional communication in a variety of health-related settings

## History BA

Do you often ask "how" and "why"? Are you curious and analytical and up for a challenge? A History degree is for those who answer "Yes!" Studying history introduces you to the fascinating and familiar in ancient and modern societies, to cultures in faraway places, and to the complexities of our own neighborhoods. A history major will help you understand the present in new ways and build your professional future through hands-on research. By honing the skills demanded by employers in a wide variety of fields, history is a versatile and marketable major.

## General Education Requirements

History majors must meet the university and college general education requirements (p. 51).

Majors may not take required history courses on a satisfactory/unsatisfactory basis. Students enrolled in variable credit reading courses for 5 credit hours must complete a seminar paper.

Students may take any language that fulfills the college's foreign language requirement.

## Degree Requirements

Students are encouraged to move from introductory courses at the 1000 to more advanced content-oriented courses at the 2000 level then to skill oriented courses at the 3000 and 4000 levels. Majors must complete at least 33, but not more than 45, hours in history with no grade below C-.

### 1000 Level

Select three courses at the 1000 level	9
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### 2000 and 3000 Level

Select an additional two to five courses at the 2000 and 3000 level.	6-15
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HIST 3199	Introduction to Historical Inquiry	4
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### 4000 Level

Select two to four of the following courses at the 4000 level.	6-14
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HIST 4142	Inquiries in U.S. History
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HIST 4143	Inquiries in World History
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HIST 4999	Senior Seminar <sup>1</sup>
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<sup>1</sup> Students seeking a degree with distinction must enroll in this course.

Undergraduate majors must complete a residency minimum of 15 hours of 2000/3000/4000 level History courses including 6 credit hours of 4000 level courses at UMSL.

## Alternative courses to satisfy the History requirements

Some courses may satisfy the History requirement even though they are not listed as such, depending on what their content is. These include variable content courses, courses at the Honors College, and history of philosophy courses. If a course that deals with some aspect of History and might satisfy a requirement is not listed among those satisfying the requirements, you may do the following:

1. Obtain the description of what the course will cover.
2. Write a very short explanation of why the course ought to count toward satisfaction of the requirement, by showing how it deals with the relevant aspect of History.
3. Submit both to the History undergraduate advisor for approval.

## Departmental Honors

Students majoring in history may be awarded departmental honors upon graduation if they have achieved the following: a) at least a 3.2 overall GPA; b) at least a 3.5 GPA for all hours attempted in history courses; and c) an outstanding research paper in the Senior Seminar as certified by the faculty member responsible for directing it.

## B.S. Ed. in Secondary Education with Emphasis in History

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification.

Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for

discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. in History with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. in History Learning Outcomes

Graduates of this program will be able to:

- Build historical knowledge.
  - Gather and contextualize information in order to convey both the particularity of past lives and the scale of human experience.
  - Recognize how humans in the past shaped their own unique historical moments and were shaped by those moments.
  - Develop a body of historical knowledge with breadth of time and place—as well as depth of detail—in order to discern context.
  - Distinguish the past from our very different present.
- Develop research methods.
  - Recognize history as an interpretive account of the human past—one that historians create in the present from surviving evidence.
  - Collect, sift, organize, question, synthesize, and interpret complex material.
  - Practice ethical historical inquiry that makes use of and acknowledges sources from the past as well as the scholars who have interpreted that past.
  - Develop empathy toward people in the context of their distinctive historical moments.
- Recognize that Historical knowledge is complex, sometimes ambiguous, and subject to ongoing reexamination.
  - Welcome contradictory perspectives and data, which enable us to provide more accurate accounts and construct stronger arguments.
  - Describe past events from multiple perspectives.
  - Explain and justify multiple causes of complex events and phenomena using conflicting sources.
  - Identify, summarize, appraise, and synthesize other scholars' historical arguments.
- Apply the range of historical thinking skills to evidence that is often incomplete, complex, and contradictory.
  - Consider a variety of historical sources for credibility, position, perspective, and relevance.
  - Evaluate historical arguments, explaining how they were constructed and might be improved.
  - Revise analyses and narratives when new evidence requires it.

- Create historical arguments and narratives and effectively communicate them.
  - Generate substantive, open-ended questions about the past and develop research strategies to answer them.
  - Craft well-supported historical narratives, arguments, and reports of research findings in a variety of media for a variety of audiences.
- Use historical perspective as central to active citizenship.
  - Apply historical knowledge and historical thinking to contemporary issues.
  - Develop positions that reflect deliberation, cooperation, and diverse perspectives.

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 HIST 1XXX History Core	3
HIST 1001		3 HIST 1XXX History Core	3
ENGL 1100		3 EXPLORE - Mathematics and Life/ Natural Sciences	3
CORE - Mathematics Proficiency		3 CORE - Communication Proficiency	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 Elective or minor	3
EXPLORE - Social Sciences		3	
	16		15

### Second Year

Fall	Hours	Spring	Hours
HIST 2000-3999 History Core		3 HIST 2100	1
EXPLORE - Mathematics and Life/ Natural Sciences		3 HIST 2000-3999 History Core	3
EXPLORE - Social Sciences		3 Foreign Language 1002	5
Foreign Language 1001		5 EXPLORE - Social Sciences	3
		Elective or minor	3
	14		15

### Third Year

Fall	Hours	Spring	Hours
HIST 2000-3999 History Core		3 HIST 2000-3999 level course	3
ENGL 3100		3 HIST 3199	4
Foreign Language 2101		3 Cultural Diversity Requirement	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		16

### Fourth Year

Fall	Hours	Spring	Hours
HIST 4000-level Course		3 HIST 4000-level Course	3
HIST 3999 (or HIST 3XXX Elective))		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		15

Total Hours: 121

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## History BA/MA Dual Degree Program

The 2+3 B.A./B.S. – Ed and M.A. in History enables students of demonstrated academic ability and educational maturity to complete the requirements for both degrees in five years of full-time study. Because of its accelerated nature, the program requires the completion of lower-division requirements (15 hours) before entry into the three-year portion of the program. It also has prerequisites numbered 5000-5999 for graduate readings courses numbered 6000-6999. When all the requirements of the B.A./B.S. – Ed. and M.A. program have been completed, students will be awarded both the baccalaureate and master's degrees. A carefully designed program can permit a student to earn both degrees within as few as ten semesters.

The combined program requires a minimum of 137 hours, at least 5 of which must be at the senior level (HIST 4999) and at least 32 of which must be at the graduate level (courses numbered in the 5000 and 6000 range). In qualifying for the B.A. or B.S. – Ed., students must meet all university and college requirements, including the requirements of the undergraduate major. In qualifying for the M.A., students must meet all university and Graduate School requirements, including satisfactory completion of at least 32 credit hours at the graduate level.

The semester they will complete 62 undergraduate credit hours, (including 15 credit hours of appropriate 1000-level coursework in the History Department and ART ED 5588) interested students should apply to the Graduate Director of the Department of History for admission to the 2+3 combined degree program in History. A cumulative grade point average of 3.4 or higher in history courses, a writing sample, and three letters of recommendation from faculty are required for consideration. Students will be admitted to the 2+3 program under provisional status until they have completed 105 total credit hours toward their BA degree with a grade point average of 3.0 or higher. After completion of the provisional period, and with the recommendation of the graduate director, and approval of the graduate dean, students can be granted full admission into the program. Students will not be admitted to the program, if they have accumulated more than 105 credits. Students in the 2+3 program begin to pay graduate credit hour fees once they exceed the 105 credit hour threshold. Students must maintain a grade point average of 3.0 or higher throughout the combined program. Students who officially withdraw from the 2+3 combined degree program will be awarded the B.A. or B.S. – Ed. Degree when they have successfully completed all the requirements for the degree.

## Undergraduate History Requirements For Students in the 2+3 Program

The following requirements must be completed prior to enrolling in the 2+3 Program:

Three 1000-level courses	9
HIST 3199 Introduction to Historical Inquiry	4
Two additional 2000-3000 level courses	6
Total Hours	19

**Once admitted to the program students must take the following courses:**

Additional Undergraduate History Requirements For Students in the 2+3 Program:



HIST 4999, Senior Seminar (5).

## Graduate History Requirements For Students in the 2+3 Program

- Three courses at the **5000-level** for 9 credit hours.
- Five courses at the **6000-level** for 17 credits beginning with HIST 6000 (students must take two of their three 5000-level courses prior to enrolling in HIST 6000), followed by at least three courses in a major field of study and one 5-credit course.
- In addition to this core, each candidate must select one of the two following degree options:
  - a. Thesis Option –32 hours total

In addition to the fulfilling the requirements listed above, the candidate choosing this option must enroll for 6 hours of thesis credit and submit an acceptable thesis. The thesis is based on original research in primary sources. Normally, theses do not exceed 100 pages of text. Candidates receive a grade for the thesis upon its approval by an advisory committee. The committee consists of professors selected by the candidate after consultation with the major professor. One member of the committee must be from the department but outside the candidate's general area of study, and one may be outside the history department.

The advisory committee conducts an oral examination on the thesis during the candidate's last semester of residence.

The committee decides whether the candidate shall pass, fail or fail with the option to repeat the oral examination at a later date. Students may not take the oral examination more than twice. The second examination must be held no less than one and no more than two semesters following the date of the first examination. Summer session may be counted as a semester under this procedure, but students should be aware of the difficulties involved in assembling faculty committees during the summer.

Thesis candidates must demonstrate competence in one foreign language or in quantitative methods as applied to historical study. Candidates shall demonstrate foreign language competence by translating, with the use of a dictionary, 500 words in one hour. A member of the history faculty will conduct this examination and choose the test for translation. Candidates shall demonstrate quantitative methods competence by satisfactory completion of either PSYCH 2201, Psychological Statistics or SOC 3220, Sociological Statistics, or their equivalent.

### b. Research Paper Option

To complete this option, the candidate must complete two additional 5-credit hour seminars (each consisting of a 6000-level reading seminar plus 2 credit hours of supplementary work on a substantial research paper.) The candidate may choose a fourth field in addition to the three already represented in the core to complete this option.

## History Education Graduate Certificate

The Graduate Certificate in History Education is designed for practicing teachers, instructional coordinators, and history educators in the community who are seeking to deepen their knowledge of history

education. It offers history and social studies educators a program that integrates historical and educational knowledge, theory, and practice. The purpose of the certificate is to improve the practice of history education in schools and the community, to introduce history educators to research in the field, to deepen their historical knowledge, and to encourage sophisticated teaching and curriculum development built on research at the intersection of history and the learning sciences.

## Admission Requirements

Applicants wishing to pursue the Graduate Certificate in History Education in conjunction with an MA degree or an MED should follow the normal application procedures for their respective Master's level program. Applicants wishing to pursue the Graduate Certificate in History Education alone normally must have a GPA of 3.0 or higher and should apply specifically for this certificate program and submit three letters of recommendation and a writing sample along with their application.

## Program Requirements

All candidates for Graduate Certificate in History Education must complete:

HIST 6013		3
HIST/TCH ED 6115	Historical Thinking in Research and Practice	3

Students must take an additional twelve credits at the graduate level in History or Education courses as approved by the Program Director.

## History MA

The History M.A. program offers study in U.S. History, World History, History Education, Public History and Cultural Heritage, and Museum Studies. All students receive disciplined advanced work in preparation for doctoral programs or advanced training leading to teaching or other careers. Students select one of two options for completing the Master of Arts degree: thesis or research papers. The first path requires a substantial master's thesis; this path emphasizes depth of knowledge and research competence. The second path requires several research papers.

This path emphasizes breadth of historical knowledge. Students should consult with the Director of Graduate Studies to be sure that they have properly selected their fields of study.

## Admission Requirements

Applicants must meet several departmental admission requirements in addition to the general criteria of the Graduate School. The applicant's undergraduate studies need not have been in history, but they must demonstrate high academic potential. Normally, only students with a 3.2 grade point average (3.35 for the online degree) in their undergraduate major are admitted; most successful applicants have higher grades.

Applicants must submit three letters of recommendation, preferably from former teachers, and a sample of their written work. The History Department bases its admission decisions upon the undergraduate transcript, the letters of recommendation, and the sample of written work. The deadlines for applications are March 15<sup>th</sup> for the Fall semester and October 15<sup>th</sup> for the Spring semester. Applications will be accepted after these deadlines but admission for the upcoming semester is not guaranteed.

## Core

All candidates for the M.A. degree in history must complete a core of 26 hours of course work (excluding thesis credit), with no more than nine hours of history and related fields at the 5000 level. This 26-hour core must include seven courses at 3 credit hours each (21 hours in all), and one 5-credit-hour writing seminar consisting of a 2-credit-hour research paper supplement to a 3-credit-hour, 6000-level history readings course.

To earn the 26-hour core, candidates must complete HIST 6000 and select at least one field of study with a minimum of three courses (each at 3 credit hours or more.) Students may use the remaining hours to complete a second field.

In addition to this core, each candidate must select one of the two following degree options:

### 1. Thesis Option--32 hours total

In addition to the core, the candidate choosing this option must enroll for 6 hours of thesis credit and submit an acceptable thesis. The thesis is based on original research in primary sources. Normally, theses do not exceed 100 pages of text. Candidates receive a grade for the thesis upon its approval by an advisory committee. The committee consists of professors selected by the candidate after consultation with the major professor. One member of the committee must be from the department but outside the candidate's general area of study, and one may be outside the history department.

The advisory committee conducts an oral examination on the thesis during the candidate's last semester of residence.

The committee decides whether the candidate shall pass, fail, or fail with the option to repeat the oral examination at a later date. Students may not take the oral examination more than twice. The second examination must be held no less than one and no more than two semesters following the date of the first examination. Summer session may be counted as a semester under this procedure, but students should be aware of the difficulties involved in assembling faculty committees during the summer.

Thesis candidates must demonstrate competence in one foreign language or in quantitative methods as applied to historical study. Candidates shall demonstrate foreign language competence by translating, with the use of a dictionary, 500 words in one hour. Normally a member of the history faculty will conduct this examination and choose the test for translation. Candidates shall demonstrate quantitative methods competence by satisfactory completion of either PSYCH 2201 Psychological Statistics or SOC 3220 Sociological Statistics, or their equivalent.

### 2. Research Paper Option-36 hours total

To complete this option, the candidate must complete two 5-credit-hour seminars (each consisting of a 6000-level reading seminar plus 2 credit hours of supplementary work on a substantial research paper), in addition to the core. The candidate may choose a fourth field in addition to the three already represented in the core to complete this option.

- Conduct empirical historical research based on primary source evidence
- Compose publishable-quality scholarship that makes an original contribution to knowledge
- Evaluate recent scholarship within chosen subfield of study in the context of historiographical trends
- Synthesize historical research in interpretive formats, including written papers and essays
- Demonstrate facility for presenting historical argument orally and describing research and findings to an audience
- Distinguish between different methodological approaches to historical research, writing, and interpretation

## History MA, Museums, Heritage and Public History Emphasis

The MA in Museums, Heritage, and Public History joins theoretical and practical study at an advanced level to prepare students for careers in museums, heritage institutions, historic sites and societies, and related organizations. The program works closely with cultural resources in St Louis, particularly the city's many museums and historic sites. We focus on community engagement, the interdisciplinary and cross-cultural study of material culture, interpreting and debating the past, new media and public education, and research in archival and material collections. Our graduates work in art museums, history museums, science centers, historic house museums, and other cultural institutions across the United States and internationally.

### Career Outlook for M. A. in Museums, Heritage, and Public History

According to the Institute of Museum and Library Services, there are more than 35,000 museums in the United States, employing more than 400,000 individuals. History museums constitute forty-eight percent of the total museums in the country; there are more than 16,800 historical societies and historic preservation organizations alone. While job requirements vary among individual institutions and specific professional roles, the MA degree offered by this program qualifies graduates for a wide range of careers in the museum and heritage field. Faculty and mentors in the Museum Studies Program provide students with placement assistance, counseling, and access to information on career opportunities. Our alumni are employed at institutions around the country, from Santa Fe to Philadelphia, Minneapolis to Dallas.

### Admission Requirements

Prospective students for the Master of Arts in Museums, Heritage, and Public History must apply specifically for this program on the graduate application. Applications for the Master of Arts in Museums, Heritage, and Public History will be accepted only for the fall semester.

Prospective students must demonstrate high academic potential. Typically, the History department admits only students with at least a 3.2 grade point average in their undergraduate major; most successful applicants have higher grades. An undergraduate major in History is not required for admission to this program. Applicants must submit three letters of recommendation, preferably from former teachers and/or employers, and a sample of their written work. Applicants must also complete the Museums, Heritage, and Public History Supplemental Application, which includes a statement of career intent.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

Admissions decisions are based on the undergraduate transcript, the letters of recommendation, the sample of written work, and the supplemental application.

Applications must be received by the university no later than February 1.

## Program Requirements

All candidates for the MA in Museums, Heritage, and Public History must complete the following core courses (20 hours):

HIST 6000	The Historian's Craft	3
HIST 6001	Introduction to Public History and Cultural Heritage	3
HIST 6002 or HIST 6134	Material Culture in Historical Context History Curatorship	3
HIST 6131	Museum Origins and Evolution	3
HIST 6142 or HIST 6143	Readings in U.S. History Readings in World History	5
Choose one of the following:		3
HIST 6125	Practicum in Public History and Cultural Heritage	
HIST 6127	Museums and Communities	
HIST 6129	Emerging Museum Practices	
Total Hours		20

Candidates must also complete 10 credit hours of elective courses. These may include courses listed above, if not already taken for the core, or additional courses which may include the following:

HIST 6139	Practicum in Exhibit and Program Development	3
HIST/ART HS 5592	The History of the Visual Arts in American Museums	3
ART HS 5593	Museum Management and Curatorial Practice	3
HIST 6133	Museums and History in the Digital Age	3
POL SCI 6300	Leadership and Management in NonProfit Organizations	3
P P ADM 6311	Staff Management Issues in Nonprofit Organizations	1
P P ADM 6312	Legal Issues in Managing Nonprofit Organizations	1
P P ADM 6313	Financial Issues in Managing Nonprofit Organizations	1

Students may substitute other courses with approval of the Director of the Museums, Heritage, and Public History program. For courses outside the History Department, a maximum of six credits may be at the 3000 level. No 3000 level courses may be taken for graduate credit within the History Department.

Candidates conclude the degree with an internship or exit project represented by the course numbered HIST 6138 (4 credits). This capstone project will be customized to the interests and career aspirations of each student, as approved in advance by the Director.

In addition to these requirements, candidates for the MA in Museums, Heritage, and Public History are required to demonstrate either oral or

written proficiency in one second language (in addition to English) by completing an appropriate language test. The test will be designed through consultation with the candidate and the faculty of the Department of Language and Cultural Studies.

**Total hours for Program: 34**

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Conduct original historical research based on disciplinary protocols
- Demonstrate competence in digital technologies utilized in the creation, presentation, and distribution of interpretive content
- Assess contemporary activities in the field of museums, heritage, and public history with reference to best practices
- Develop skills for communicating interpretive content effectively with public and professional audiences
- Demonstrate skills to become a competent professional and ethical contributor to museum, heritage, and public history collaborative settings
- Integrate community perspectives into professional museum, heritage, and public history products and activities

## History Minor

Students may minor in history by taking 19 hours of history courses as follows:

1. Three courses numbered 1000 -1999 (9 credits)
2. Three courses numbered 2000-3999, including HIST 3199 (10 credits)

No course in which a grade below a C- is received shall count toward a minor.

## Prerequisites

Some courses required by the Minor in History have prerequisites. Some students may satisfy prerequisites by virtue of their prior curriculum. When this is not the case, students are responsible for either satisfying the prerequisites by adding courses to their curriculum or obtaining a waiver from the instructor.

## History of Art and Visual Culture Minor

A minor in History of Art and Visual Culture requires the completion of at least 18 hours with a GPA of 2.0 or better. Students must take ART HS 1100 and at least one course in non-Western art. They must also take at least two courses at the 2000-level and two courses at the 3000-level or above in History of Art and Visual Culture. A maximum of 3 hours of internship can be applied toward the minor in art history. At least nine of the 18 hours must be taken in residence at UMSL. All courses in the minor must receive a grade of C- or above.

ART HS 1100	Introduction to Western Art (MOTR ARTS 100)	3
Choose one course from the following:		3
ART HS 1120	Global Art and Visual Culture (MOTR ARTS 101)	
ART HS 1140	Indigenous Arts of the Americas	

ART HS 1150	Introduction to the Art and Visual Cultures of Africa	
ART HS 1160	Introduction to the Art and Visual Cultures of Asia	
Chose two 2000-level or above and two 3000-level or above from the following courses:		12
ART HS 2211	Art and Archaeology of The Ancient World	
ART HS 2212	Greek Art and Archaeology	
ART HS 2225	Medieval Art	
ART HS 2250	Nineteenth Century European Art	
ART HS 2270	American Art to 1876	
ART HS 2280	Modern to Contemporary Art	
ART HS 3390	Special Study	
ART HS 3395	Sophomore/Junior Seminar: Research in Art History	
ART HS 4490	Special Study	
Total Hours		18

## Honors College Undergraduate Certificate, 2-year Program

### Two year Program (22 credit hours total):

Students in this program will take a combination of Honors College seminars and honors independent study credit (usually for work done in their major fields). The 22 credit hours must include 6 credits of independent study, as for the four-year program.

### Third Year

During the first year of the two-year program, students take three honors seminars, including HONORS 3100, Writing the City or HONORS 3160, Writing in the Sciences; one course from the Inquiries series (2000 level); one course from either the Advanced Seminar (3000 level) or Research Seminar (HONORS 3530 or HONORS 3535). In addition, 3 credit hours of independent study may be taken during this year, normally in or closely related to their major.

### Fourth Year

The final year of the two-year program involves three courses chosen from the 3000 and 4000 level options, including HONORS 4100, the honors writing portfolio, and at least one course chosen from the 3000 level. In addition, students will complete their independent study requirements with 3 or 6 hours of project, internship, or research work.

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Through coursework comparing and contrasting diverse cultural viewpoints, academic disciplinary approaches and information, Honors students will demonstrate the ability to synthesize knowledge from various perspectives.
- Honors students will exhibit the ability to communicate effectively in speech and writing:
  - by speaking in groups to present, reflect on and evaluate information and perspectives.
  - by completing the written assignments required in all Honors courses that focus on various perspectives, audiences and

disciplinary approaches(demonstrating effective writing that employs correct diction, syntax, usage, grammar and mechanics.

- Honors students will demonstrate skills in higher-order thinking, valuing and managing information:
  - by exhibiting the ability to distinguish among opinions, facts and inferences; by identifying underlying or implicit ins assumptions; by making informed judgments; and by solving problems through applying evaluative standards.
  - by locating, accessing, synthesizing and annotating information from print, electronic, and other sources; by distinguishing between scholarly and non-scholarly sources in preparation for higher-order thinking.
  - by analyzing and synthesizing information from a variety of sources, applying the results to resolving complex situations and problems, and defending conclusions using relevant evidence and reasoned argument.
  - by utilizing cultural, behavioral, and historical knowledge to clarify and articulate a personal value system while recognizing the ramifications of personal value decisions on the self and others.
  - by identifying conflicts within and between multiple perspectives and value systems; by recognizing and analyzing ethical issues in a variety of contexts; and by employing standards of logic to formulate a reasonable position among multiple perspectives.
- Honors students will select and participate in Honors courses in various disciplines and will demonstrate essential skills and approaches relevant to those disciplines: Students participating in Honors courses in disciplines such as the social sciences, life and physical sciences that rely upon the understanding of fundamental mathematical concepts and their applications will display a level of quantitative literacy that would enable them to understand and analyze quantitative data, draw conclusions, and solve problems.
- Students participating in Honors courses in the social and behavioral sciences will exhibit understanding of themselves and the world around them through the study of the content and methodologies used by historians and social and behavioral scientists to discover, describe, explain, and predict human behavior and social systems; they will demonstrate understanding of the diversities and complexities of the cultural and social world, past and present, and come to an informed sense of self and others.
- Students participating in Honors courses in the humanities and fine arts will exhibit understanding and critical analysis of the ways in which people have addressed their condition through literature and art; they will demonstrate their understanding of these cultural works and their historical circumstances; they will formulate aesthetic judgments of these works.
- Students participating in Honors courses focusing on life and physical sciences will demonstrate knowledge of scientific principles, research procedures and empirical methods of scientific enquiry; they will display their understanding of how scientific discoveries affect and are affected by theoretical views of the world and human history.
- Honors students will complete specific Honors requirements designed to develop their awareness of career and advanced study opportunities:
  - by participating in internships, independent study and undergraduate research to develop and demonstrate advanced knowledge in a discipline, professional skills, and greater understanding of career and educational goals.
  - by creating an Honors Writing Portfolio that demonstrates the ability to assess their writing skills and development; by devising and revising documents for employment searches or graduate



school applications to enhance their ability to formulate and pursue specific career goals.

## Honors College Undergraduate Certificate, 4-year Program

### Four Year Program (40 credit hours total):

Approximately one-third of the 120 hours honors students earn toward graduation are taken in the Honors College. Most of these credits are associated with a sequence of honors courses designed specifically for the college, the majority of which are taken during the first two years. During this period, these students fulfill virtually all of the university's general education requirements (p. 51), usually in innovative ways. In their junior and senior years, honors students also may earn honors credit for work done within their major fields, work which includes the possibility of internships, independent study projects, and advanced undergraduate research.

### First Year

Students take HONORS 1100, HONORS 1200, and HONORS 1201, and one course each from the Western Traditions and Non-Western Traditions seminar series. Students may take a seminar from the American Traditions series as an elective or in place of the Western Traditions seminar.

HONORS 1110	Western Traditions: Humanities	3
HONORS 1200	Freshman Symposium: Cultural Traditions I - Humanities	3
HONORS 1201	Freshman Symposium: Cultural Traditions II - Humanities	3
HONORS 1130	Western Traditions: Social and Behavioral Sciences	3
HONORS 1230	American Traditions: Social and Behavioral Sciences <sup>1</sup>	3
HONORS 1310	Non-Western Traditions Series Humanities	3
HONORS 1330	Non-Western Traditions Series-Social Sciences	3

<sup>1</sup> Elective as an alternate to Western Traditions.

### Second Year

Students take two of the following Honors classes:

HONORS 2010	Inquiries in The Humanities	3
HONORS 2020	Inquiries in the Fine and Performing Arts	3
HONORS 2030	Inquiries in the Social and Behavioral Sciences	3
HONORS 2050	Inquiries in the Natural Sciences	1-3
HONORS 2060	Inquiries in Business	3
HONORS 2070	Inquiries in Education	3
HONORS 2071		4
HONORS 2080	Inquiries in Nursing	3

During the first two years, honors students will take additional course work in other areas, such as mathematics, natural science, foreign language,

and major prerequisite classes to satisfy various university, Honors College, and specific degree requirements.

### Third and Fourth Years

Honors students in the four-year program take at least four seminars (12 credit hours) from the Advanced Seminar (3000 level series) and/or Research Seminar (HONORS 3530 or HONORS 3535). They may take more where this is compatible with their major and/or minor requirements.

Honors students in the four year program who take HONORS 3100 ('Writing the City') or HONORS 3160 ('Writing in the Sciences') may present it for their honors certificate as one of their 3000-level seminars.

They may also, depending on their major, present it to meet their graduation requirement for Junior-level composition.

HONORS 3010	Advanced Honors Seminar in the Humanities	3
HONORS 3020	Advanced Honors Seminar in the Fine and Performing Arts	3
HONORS 3030	Advanced Honors Seminar in the Social and Behavioral Sciences	3
HONORS 3100	Honors Advanced Composition: Writing The City	3
HONORS 3160	Honors Writing in the Sciences	3
HONORS 3530		3
HONORS 3535		4

In addition, honors students do 6 credit hours in independent study projects, normally in or closely related to their major field. These independent study projects normally carry credit in the major, but can be done as Honors College independent study or research projects (HONORS 4900, HONORS 4910, HONORS 4915). During the final year, students also take HONORS 4100, a one-hour capstone for the Honors College writing program; HONORS 4100 may be taken for two hours.

### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Through coursework comparing and contrasting diverse cultural viewpoints, academic disciplinary approaches and information, Honors students will demonstrate the ability to synthesize knowledge from various perspectives.
- Honors students will exhibit the ability to communicate effectively in speech and writing:
  - by speaking in groups to present, reflect on and evaluate information and perspectives.
  - by completing the written assignments required in all Honors courses that focus on various perspectives, audiences and disciplinary approaches(demonstrating effective writing that employs correct diction, syntax, usage, grammar and mechanics.
- Honors students will demonstrate skills in higher-order thinking, valuing and managing information:
  - by exhibiting the ability to distinguish among opinions, facts and inferences; by identifying underlying or implicit ins assumptions; by making informed judgments; and by solving problems through applying evaluative standards.
  - by locating, accessing, synthesizing and annotating information from print, electronic, and other sources; by distinguishing between scholarly and non-scholarly sources in preparation for higher-order thinking.

- by analyzing and synthesizing information from a variety of sources, applying the results to resolving complex situations and problems, and defending conclusions using relevant evidence and reasoned argument.
  - by utilizing cultural, behavioral, and historical knowledge to clarify and articulate a personal value system while recognizing the ramifications of personal value decisions on the self and others.
  - by identifying conflicts within and between multiple perspectives and value systems; by recognizing and analyzing ethical issues in a variety of contexts; and by employing standards of logic to formulate a reasonable position among multiple perspectives.
- Honors students will select and participate in Honors courses in various disciplines and will demonstrate essential skills and approaches relevant to those disciplines: Students participating in Honors courses in disciplines such as the social sciences, life and physical sciences that rely upon the understanding of fundamental mathematical concepts and their applications will display a level of quantitative literacy that would enable them to understand and analyze quantitative data, draw conclusions, and solve problems.
  - Students participating in Honors courses in the social and behavioral sciences will exhibit understanding of themselves and the world around them through the study of the content and methodologies used by historians and social and behavioral scientists to discover, describe, explain, and predict human behavior and social systems; they will demonstrate understanding of the diversities and complexities of the cultural and social world, past and present, and come to an informed sense of self and others.
  - Students participating in Honors courses in the humanities and fine arts will exhibit understanding and critical analysis of the ways in which people have addressed their condition through literature and art; they will demonstrate their understanding of these cultural works and their historical circumstances; they will formulate aesthetic judgments of these works.
  - Students participating in Honors courses focusing on life and physical sciences will demonstrate knowledge of scientific principles, research procedures and empirical methods of scientific enquiry; they will display their understanding of how scientific discoveries affect and are affected by theoretical views of the world and human history.
  - Honors students will complete specific Honors requirements designed to develop their awareness of career and advanced study opportunities:
    - by participating in internships, independent study and undergraduate research to develop and demonstrate advanced knowledge in a discipline, professional skills, and greater understanding of career and educational goals.
    - by creating an Honors Writing Portfolio that demonstrates the ability to assess their writing skills and development; by devising and revising documents for employment searches or graduate school applications to enhance their ability to formulate and pursue specific career goals.

## Information Security Management and Auditing Graduate Certificate

The Graduate Certificate in Information Security Management and Auditing provides students an opportunity to pursue a focused study of core information security management principles and practices and auditing of information security programs and operations. Students first obtain basic technical background to understand core information

security issues and principles. They then learn about designing, managing, assessing, and auditing security within organizational contexts. The program is suitable for candidates with undergraduate education and/or work experience in business related fields and who do not prior technical background. It's also suitable for candidates with Information Technology and/or technical cybersecurity backgrounds who wish to broaden their skill-sets in the business and management aspects of information security.

### Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

### Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs. This 12 credit hour certificate program also counts toward the 30 credit hour Master of Science in Information Systems and Technology degree program requirements. Students may choose to combine this certificate with other courses and/or certificates to obtain the Master of Science in Information Systems and Technology degree.

INFSYS 6820	Systems and IT Infrastructure	3
INFSYS 6828	Principles of Information Security	3
INFSYS 6878	Management of Information Security	3
ACCTNG 5436	Systems Auditing	3
Total Hours		12

## Information Systems and Technology BS

The Information Systems (IS) area endeavors to prepare high-potential students of diverse backgrounds for successful careers in the IS profession. Careers in IS may include programming, systems analysis and design, database administration, end-user support, network administration, and management consulting. The goal is to provide students with the skills to deal with the challenges confronting IS through teaching, research, and service to the profession.

### General Education Requirements

All Business majors must meet the university general education requirements (p. 51). As part of meeting the university's general education requirements, all Business majors must complete the prerequisite courses below :

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
MATH 1030	College Algebra (MOTR MATH 130)	3
MATH 1100	Basic Calculus	3
MATH 1105	Basic Probability and Statistics	3

### Degree Requirements

All Business majors must meet College of Business G.P.A., good standing and credit requirements (p. 179) as outlined in the Bulletin.

## Lower Division Business Core Requirements

ACCTNG 2400	Fundamentals of Financial Accounting	3
ACCTNG 2410	Managerial Accounting	3
BUS AD 2900	Legal Environment of Business	3
INFSYS 2800	Information Systems Concepts and Applications	3
Total Hours		12

## Upper Division Requirements

ENGL 3120	Business Writing	3
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## Upper Division Non-Business or Business Requirement

Two global awareness courses selected from an approved list maintained in the Office of Undergraduate Academic Advising in the College of Business Administration; also available on our web site.

## Upper Division Business Requirements

FINANCE 3500	Financial Management	3
SCMA 3300	Business Analytics and Statistics	3
SCMA 3301	Introduction to Supply Chain Management	3
MGMT 3600	Management and Organizational Behavior	3
MGMT 4219	Strategic Management	3
MKTG 3700	Basic Marketing	3
A minimum of 18 additional hours of upper division approved business electives		18

## Assessment Requirement

MGMT 4220	Business Assessment Testing	0
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## Specific Requirements for the Major

Students are required to complete a minimum of 8 courses beyond required business core courses:

### Required Courses

INFSYS 3806	Managerial Applications of Object-Oriented Programming I	3
INFSYS 3816	Managerial Application of Object-Oriented Programming II	3
INFSYS 3810	Information Systems Analysis	3
INFSYS 3842	Data Networks and Security	3
INFSYS 3845	Database Management Systems	3
INFSYS 4850	Information Systems Design	3

### Electives

Select 2 courses (at least 1 3800-level Information Systems course) from the following:

ACCTNG 3421	Accounting Information Systems	
FINANCE 3503	Computer Applications in Finance	
INFSYS 3807	Legacy Systems	
INFSYS 3815	Object-Oriented Applications in Business	

INFSYS 3841	Enterprise Information Systems	
INFSYS 3843	Decision Support Systems for Business Intelligence	
INFSYS 3844	Developing Business Applications in .NET	
INFSYS 3846	E-Commerce	
INFSYS 3847	Web Design	
INFSYS 3848	Introduction to Information Security	
INFSYS 3858	Advanced Security and Information Systems	
INFSYS 3868	Secure Software Development	
INFSYS 3878	Information Security Risk Management and Business Continuity	
INFSYS 3890	Internship in Information Systems	
INFSYS 3898	Seminar in Information Systems <sup>1</sup>	
INFSYS 3899	Independent Study in Information Systems <sup>1</sup>	
MKTG 3722	Introduction to Social Media Marketing	
A pre-approved Computer Science class		
Total Hours		24

<sup>1</sup> Seminars and Independent Studies are restricted to those offered by and approved by the Area faculty and approved by the Area Coordinator.

## Academic Tracks within the Information Systems and Technology Major

Information Systems and Technology majors may choose to focus their elective hours in a particular sub-discipline of information systems and technology, or academic track. These tracks are groups of departmental courses that fit within sub-disciplines of information systems and technology and are recommendations for students wanting to pursue careers in specific sub-disciplines. Academic tracks are NOT majors and are only intended to serve as guides for courses within a particular area of information systems and technology and are represented by current faculty expertise. Selecting an academic track does not prevent a student from taking courses in another track. Students should not expect to take all recommended courses for each academic track. Students may choose not to select an academic track.

### Application Development Track (pick 2)

INFSYS 3830	Data Programming	3
INFSYS 3844	Developing Business Applications in .NET	3
INFSYS 3818	Management of Software Testing	3
INFSYS 3868	Secure Software Development	3

### Business Intelligence Track (pick 2)

INFSYS 3830	Data Programming	3
INFSYS 3843	Decision Support Systems for Business Intelligence	3
INFSYS 3862	Artificial Intelligence Applications for Business	3

### Cybersecurity Track (pick 2)

INFSYS 3820	Introduction to Systems Administration	3
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INFSYS 3842	Data Networks and Security	3
INFSYS 3858	Advanced Security and Information Systems	3
INFSYS 3864	Applied Cryptography for Business	3
INFSYS 3868	Secure Software Development	3
INFSYS 3878	Information Security Risk Management and Business Continuity	3

**Legacy Systems (COBOL) Track**

INFSYS 3807	Legacy Systems	3
INFSYS 3817	Advanced Legacy Systems	3

**Self-Directed Learning Track**

INFSYS 3890	Internship in Information Systems	1-3
INFSYS 3899	Independent Study in Information Systems	1-3

**Web Design Track**

INFSYS 3847	Web Design	3
INFSYS 3815	Object-Oriented Applications in Business	3

**Learning Outcomes**

Upon completion of the program, graduates will be able to:

- Evaluate and implement effective IS leadership principles and strategy.
- Prioritize and propose managerial practices to develop and deploy technological innovations that produce business advantage.
- Explain best practices in systems analysis and design.
- Support and improve current best practices in application development, business intelligence, cybersecurity, and legacy systems.
- Exhibit specialized leadership and technical expertise.

**Sample Four Year Plan**

**First Year**

Fall	Hours	Spring	Hours
MATH 1030		3 MATH 1100	3
ENGL 1100		3 ECON 1001	3
BUS AD 1000		3 INFSYS 2800	3
INFSYS 1800		3 EXPLORE – Humanities & Fine Arts	3
EXPLORE – Humanities & Fine Arts		3 EXPLORE – Math & Sciences	3
		15	15

**Second Year**

Fall	Hours	Spring	Hours
MATH 1105		3 ACCTNG 2410	3
ACCTNG 2400		3 BUS AD 2900	3
ECON 1002		3 INFSYS 3816	3
INFSYS 3806		3 EXPLORE – Humanities & Fine Arts	3
CORE – Communication Proficiency		3 Cultural Diversity Requirement	3
		15	15

**Third Year**

Fall	Hours	Spring	Hours
MGMT 3600		3 FINANCE 3500	3
ENGL 3120		3 MKTG 3700	3
INFSYS 3810		3 INFSYS 3845	3
SCMA 3301		3 SCMA 3300	3
CORE – US History & Government		3 Non-Business Elective	3
		15	15

**Fourth Year**

Fall	Hours	Spring	Hours
INFSYS 4850		3 MGMT 4219 & MGMT 4220	3
INFSYS Elective		3 INFSYS Elective	3
INFSYS Elective		3 Global Awareness Course, non-business	3
Non-Business Elective		6 Non-Business Elective	6
		15	15

Total Hours: 120

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor. All requirements are subject to change.*

**Information Systems and Technology BS/MS Dual Degree Program**

The 2+3 Combined BS/MS program in Information Systems and Technology provides an opportunity for students of recognized academic ability and educational maturity to complete the requirements for both degrees in 5 years of full-time study. The combined program allows students to complete both the undergraduate and graduate degrees in Information Systems and Technology with a total of 135 credit hours instead of the typical 150 credit hours if the degrees were pursued separately. When all the requirements of the BS/MS program have been completed, students will be awarded both the BS and MS degrees.

Students can apply to the Chair of the Information Systems and Technology Department for admission to the 2+3 combined degree program during the semester they will complete 60 undergraduate credit hours. A cumulative grade point average of 3.0 or higher is required. Students must also meet with a Graduate Business Programs academic advisor.

Students will be admitted to the 2+3 program under **provisional status** until they have completed the department-specified 15 hours in the program with a grade point average of 3.0 or higher. After completion of the provisional period, upon recommendation of the Department Chair, students can be granted **formal admission** into the 2+3 program, which involves admission to the Graduate School. After **formal admission**, the student will be classified as a graduate student, will pay graduate tuition for all courses, and must continue taking courses under graduate status until completion of the master’s degree. Students must maintain a grade point average of 3.0 or higher throughout the combined program.

Applicants are considered for **formal admission** into the 2+3 program, if they meet the following four criteria:

1. earned at least 90 hours as an undergraduate;
2. have a minimum GPA of 3.0 since being granted provisional status;
3. have submitted at least one letter of recommendation from an Information Systems and Technology faculty member; and
4. have met with a Graduate Business Programs academic advisor.

A total of 15 hours of graduate coursework may be counted both to meet the 120 credit hours required for the Bachelor’s degree and to



meet the requirements of the Master’s degree. Students may resign from the 2+3 Program and apply for the Bachelor’s degree. However, once the Bachelor’s degree is awarded, the benefit of “double counting” courses will be lost. Any course used to meet a degree requirement for an undergraduate degree cannot be applied to a subsequent Master’s degree.

Undergraduate BS in Information Systems and Technology students who choose to pursue the 2+3 BS/MS degree option will be required to take the following five graduate courses (15-credits). With permission (Graduate School Form C1), provisional 2+3 students may take up to 6 hours of 4000/5000/6000 level courses while still classified as an undergraduate. These 6 hours will be treated by the Graduate School as “under graduate status”, and they may be counted toward a master’s degree.

INFSYS 6806	Managerial Applications of Object-Oriented Technologies	3
INFSYS 6840	Information Systems Analysis	3
INFSYS 6845	Database Management Systems	3
INFSYS 6850	Information Systems Design	3
INFSYS elective		3
Total Hours		15

If a student has completed the undergraduate equivalent of a course, they may not receive graduate credit. Students may request to substitute other courses, subject to approval of the Department Chair. In addition, 2+3 students will complete INFSYS 5800 and the requirements for one of the Graduate Certificates listed below.

- Graduate Certificate in Business Intelligence (p. 364)
- Graduate Certificate in Enterprise Systems Development (p. 459)
- Graduate Certificate in Information Security Management and Auditing

## Information Systems and Technology Graduate Certificate

### Program Description

The Graduate Certificate in Information Systems and Technology provides students with core technical skills in programming, database management, systems analysis, and systems design. These skills are a foundation for specialized domains of study in business intelligence, cybersecurity, and enterprise systems development.

### Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

### Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs. This 12 credit hour certificate program also counts toward the 30 credit hour Master of Science in Information Systems and Technology degree program requirements.

Students may choose to combine this certificate with other courses and/or certificates to obtain the Master of Science in Information Systems and Technology degree.

INFSYS 6820	Systems and IT Infrastructure	3
INFSYS 6828	Principles of Information Security	3
INFSYS 6878	Management of Information Security	3
ACCTNG 5436	Systems Auditing	3
Total Hours		12

## Information Systems and Technology Minor

### General Requirements

- All minors are 15 credit hours or 5 courses, including business core courses.
- Students must attain a 2.0 grade point average for all courses in the minor.
- Students must attain a minimum grade of C- in each course included in the minor.
- All courses in the minor must be on a graded basis.
- A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.
- One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.
- A minor may be added for up to two years following completion of the baccalaureate degree

### Specific Requirements for the Minor

Available to all students except those pursuing the Bachelor of Science in Information Systems and Technology degree. A minimum of 15 credit hours are required for the minor. Students must complete INFSYS 2800 and four elective courses. At least three of the elective courses must be 3000-level or higher Information Systems and Technology (INFSYS) courses. The fourth course can be any related course from Accounting (ACCTNG), Entrepreneurship (ENT) Finance (FINANCE), International Business (INTL BUS) Management (MGMT), Marketing (MKTG), Supply Chain and Analytics (SCMA), Computer Science (CMP SCI), or a related discipline subject to approval from the department chair.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Analyze challenges confronting the management of information systems.
- Apply ethical, legal, privacy, and compliance perspectives to the design, development, maintenance, and use of information systems.
- Explain the analysis and design of information systems.
- Synthesize data for managerial decisions.
- Demonstrate specialized technical expertise.

## Information Systems and Technology MS

The Master of Science in Information Systems and Technology (MSIST) is designed to provide the technical and managerial knowledge to work

successfully in design, development, and leadership roles related to information technology (IT). Students have opportunities to gain skills in application development, business intelligence, cybersecurity, cloud computing, fintech, and other emerging areas that impact organizational IT strategies.

The program is designed for students and professionals with diverse undergraduate backgrounds including business, information systems and technology, computer science, engineering, and other disciplines. MSIST students interact extensively with their peers as well as with industry executives in a carefully curated academic environment to gain a well-rounded perspective on the role of IT in contemporary organizations. Flexible class schedules (day and evening, weekends, 8 or 16 week sessions) and course delivery formats (face-to-face, blended, and online) enable students to balance school, work, and life.

The MSIST program provides students with flexible pathways to complete the degree by combining two graduate certificates and taking two additional courses toward the MSIST degree.

The Master of Science in IS program is designed to provide the technical and managerial knowledge to operate successfully in careers associated with the design, development and management of computer-based information, telecommunications, and Internet applications. The program accommodates students with undergraduate degrees specializing in IS, business, and computer science, as well as students with undergraduate degrees outside business.

## Admission Requirements

Applicants must meet the general graduate admission requirements of the Graduate School, described in the UMSL catalog. Students are considered for admission to the graduate program in Information Systems and Technology only after they have formally applied for admission through the Graduate School. Applications may be completed on-line.

In addition to Graduate School admission requirements, the following requirements apply for the MSIST program.

Applicants must have an undergraduate degree with a minimum cumulative GPA of 3.0. Students whose GPAs are between 2.75 and 2.9 may be admitted under a restricted status within the terms specified by the Graduate School.

Applicants must have foundational knowledge of data analysis and computer programming. This requirement can be fulfilled by providing evidence of prior coursework, training, or professional experience.

Applicants may also join the program without this background and complete the following coursework.

- Students without a background in data analysis could take SCMA 5300 as a graduate student to fulfill this requirement.
- Students without a background in computer programming can take INFSYS 6805 as a graduate student to fulfill this requirement.

## Entrance Examinations

- This program generally requires the Graduate Management Admissions Test (GMAT) or Graduate Record Examination (GRE) scores. A waiver of this requirement may be requested if applicants meet certain criteria. Please see the petition to waive the GMAT: <http://mba.umsl.edu/files/pdfs/GMAT-waiver.pdf>.

- Non-native speakers of English must provide evidence of English language competency by submitting an official TOEFL or IELTS score. The minimum TOEFL score for graduate admission is 79 iBT. The minimum IELTS score is 6.0.

## Degree Requirements

Candidates for the Master of Science in Information Systems and Technology must meet all Graduate School requirements including, but not limited to, requirements on admissions, enrollment, course policies, and academic standing as listed in the University Bulletin.

The program requires a total of 30 hours for students with either business or non-business undergraduate degrees.

### Program Requirements

All students will complete:

- INFSYS 5800 (3 hours)
- The requirements for two of the certificates listed (24 hours):
  - Graduate Certificate in Enterprise Systems Development (p. 459)
  - Graduate Certificate in Information Security Management and Auditing
  - Graduate Certificate in Information Systems and Technology
  - Graduate Certificate in Business Intelligence (p. 364)
- One elective course from the list below or from the certificates above (3 hours). Courses may also be substituted with other courses upon approval from the Department Chair:

### Cybersecurity Courses

INFSYS 6836	Management of Data Networks and Security	3
INFSYS 6858	Advanced Cybersecurity Concepts	3
INFSYS 6864	Applied Cryptography for Business Applications	3
INFSYS 6888	Capstone in Information Security	3

### Information Systems and Technology Management

INFSYS 6832	Information Systems Strategy	3
INFSYS 6838	Business Processes: Design, Management and Integration	3
INFSYS 6847	Project Management	3

### Experiential Learning, Research, and Emerging Topics

INFSYS 5890	Graduate Internship in Information Systems	1-6
INFSYS 5899	Individual Research in Information Systems	1-3
INFSYS 6891	Seminar in Information Systems	3

## Learning Outcomes

Upon completion of the program, graduates should be able to:

- Evaluate and implement effective IS leadership principles and strategy.
- Prioritize and propose managerial practices to develop and deploy technological innovations that produce business advantage.
- Explain best practices in systems analysis and design.

- Support and improve current best practices in application development, business intelligence, cybersecurity, and legacy systems.
- Exhibit specialized leadership and technical expertise.

## Institutional Research Graduate Certificate

The Post-Master's Certificate in Institutional Research (CPIR) is for academics who want training in Institutional Research in preparation for working in an IR Office at a postsecondary institution, a government agency, or a private education organization. The program consists of 18 hours and may be taken as part of a doctoral program. Of the 18 hours, 12 are in the required core (6 hours are in research methods and 6 hours in IR seminars), plus a 3-hour Higher Education (HIGHERED) or an Educational Research (ED REM) elective and a 3-hour capstone. Students may transfer up to 5 hours of post-Master's work into the program with the approval of the advisor.

## Interdisciplinary Studies BIS

### Bachelor of Interdisciplinary Studies (BIS)

The Bachelor of Interdisciplinary Studies degree (B.I.S.) provides a flexible, individualized program of study for the self-directed learner. It is developed by each student with advisement by UMSL professional advisers and faculty, and it is intended for students who have unique educational goals that cannot be met by any other UMSL degree program.

Oversight of the B.I.S. degree is the responsibility of the Interdisciplinary Studies Committee, composed of faculty and professional staff, including representatives from Arts and Sciences (Humanities, Social Sciences, and Natural Sciences), Business, Education, Fine Arts and Communication, Nursing or other divisions. The Interdisciplinary Studies Committee will be convened and supported by the Office of the Provost.

### Admission Requirements for the B.I.S. Program

Candidates for the B.I.S. degree must complete an application for admission to the program. The Interdisciplinary Studies Committee approves applications.

Approved programs of study are well-designed, coherent, structured to meet the student's unique educational goals, and not readily available under any other UMSL degree program.

Students must have demonstrated the equivalent of academic proficiency required for any other undergraduate degree at UMSL.

### Degree Requirements for the B.I.S. Program

#### General Education Requirements

Students must complete the university's general education requirements. For details refer to the general education requirements (p. 51) section of this Bulletin.

#### Area of Study

In consultation with faculty and staff advisers, students will carry out an area of study of at least 36 advanced semester hours of graded credit that meets their educational goals. Graded credit consists of degree credit courses in which the student received a letter grade C- or better. The area

of study must include at least nine hours at the 3000-level or above; these courses may be in one or more disciplines.

### Hour and Grade Requirements

The degree requires completion of 120 semester hours with a 2.0 campus grade point average overall and in the area of study. No more than 15 hours may be taken in one department. At least 45 hours must be earned in courses beyond the introductory level. A minimum of 24 hours of graded credit must be completed in residence at UMSL, of which 15 hours must be in the area of study and completed after admission to the B.I.S. program. Each candidate must be in residence for 24 of the last 30 hours of graded credit (exclusive of courses taken on a satisfactory/unsatisfactory basis).

### Supervised Professional or Service Internship and Independent Research

Credit not exceeding 6 hours may be earned for department-approved professional internship, service internship, or independent research. The projects or activities must be formulated by the student and carried out under the supervision of a faculty member with the approval of the adviser. Students must submit a written report approved by the supervisor upon completion of the projects or activities.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Communicate effectively and professionally, in writing, in preparing presentations, and in interactions with others in their field.
- Prepare persuasive reports and documents that are well-organized and carefully edited.
- Work with advanced technologies in settings appropriate to their current and future workplaces.
- Engage in informed dialogue about their chosen fields, and clearly articulate their aspirations for their future success.
- Conduct research for their areas of academic focus and on avenues for career advancement and evolving opportunities in their professions.
- Negotiate details related to planning for future steps toward their professional development, and work productively with advisors, mentors, and colleagues to maximize their strategic impact.
- Network with professionals in their field to prepare for the job market and gain a thoroughly realistic perception of their potential.
- Undertake a variety of projects independently, and develop coherent and innovative plans to launch those projects.
- Design innovative approaches to solving problems, and explore solutions that merge disparate ideas and concepts and encourage collaboration and risk-taking.

## International and Comparative Politics Minor

### Requirements for Political Science Minors

A general minor in political science can be arranged, as well as specialized minors in eight different subfields of the discipline. Interested

students should see a faculty adviser to plan a coherent program of study as a minor field.

Students must achieve a cumulative 2.0 GPA in the political science courses chosen to qualify for the minor. Students may count no more than 3 hours in political science taken on a satisfactory/unsatisfactory basis toward the minor. Students taking an internship POL SCI 3940 may count no more than three hours of the internship toward the minor.

## Minor in Comparative Politics

POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	3
Select four of the following:		12
POL SCI 2500	Comparing Different Worlds	
POL SCI 2510	The Politics of European Union	
POL SCI 2530	Political Systems of South America	
POL SCI 2540	Political Systems of Mexico, Central America and the Caribbean	
POL SCI 2580	African Politics	
POL SCI 3570	Gender, Ethnicity and Public Policy	
POL SCI 3595	Studies in Comparative Politics	
POL SCI 3900	Special Readings (when appropriate)	
POL SCI 4510	Comparative Public Policy and Administration	
Total Hours		15

## Learning Outcomes

- Evaluate critical issues within and between other countries
- Demonstrate cross-cultural competence and a global worldview.
- Compare and contrast the major political, economic, cultural, and geographic features of different regions of the world.
- Assess comparative and international political issues, formulate evidence-based recommendations, and communicate them with clarity and coherence.

## International Business Minor

### General Requirements

- All minors are 15 credit hours or 5 courses, including business core courses.
- Students must attain a 2.0 grade point average for all courses in the minor.
- Students must attain a minimum grade of C- in each course included in the minor.
- All courses in the minor must be on a graded basis.
- A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.
- One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.
- A minor may be added for up to two years following completion of the baccalaureate degree

## Specific Requirements for the Minor

Available to all students except those pursuing the Bachelor of Science in Business Administration degree with an emphasis in International Business. Students must complete any 5 courses in International Business.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Discuss the impact of globalization on international businesses operations;
- Examine the impact of cultural factors and develop the sensitivity and appreciation for cultural differences;
- Relate functional knowledge for a specific area of business with global operation.

## International Relations BA

### Bachelor of Arts in International Relations

#### General Education Requirements

Majors must satisfy the university and college general education requirements. Political science courses may be used to satisfy the social sciences requirement. The foreign language requirement for the B.A. degree may be satisfied in any language.

#### Departmental Honors

The department awards honors to students having a minimum grade point average (GPA) of 3.2 in the major, a minimum overall GPA of 3.2 (except in extraordinary circumstances), and successfully completed an honors thesis, project, or report.

## Degree Requirements

All majors must complete at least 15 hours in Political Science at the 3000 level or above.

### Core Courses

POL SCI 1800	World Politics (MOTR POSC 201)	3
POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	3
POL SCI 1820		3
POL SCI 3000	Political Analysis	3
POL SCI 4950	Senior Seminar in Political Science	3

### International Relations

Select four of the following:

POL SCI 2820	United States Foreign Policy	
POL SCI 2510	The Politics of European Union	
POL SCI 2850	Gender, Power and International Politics	
POL SCI 3800	Media, Film, and International Politics	
POL SCI 3830	International Political Economy	
POL SCI 3850	International Organizations and Global Problem-Solving	
POL SCI 3860	Studies in War and Peace	



POL SCI 3880	Diaspora Politics, Transnational Remittances, and Global Citizenship
POL SCI 3890	Workers and Globalization
POL SCI 3900	Special Readings (with consent of instructor and advisor)
POL SCI 4850	International Law
<b>Comparative Politics 9</b>	
Select three of the following:	
POL SCI 2500	Comparing Different Worlds
POL SCI 2530	Political Systems of South America
POL SCI 2540	Political Systems of Mexico, Central America and the Caribbean
POL SCI 2550	East Asian Politics
POL SCI 2580	African Politics
POL SCI 2590	Globalization: Prospects and Problems
POL SCI 3500	The Politics of the Middle East: International and National Dynamics
POL SCI 4950	Senior Seminar in Political Science
POL SCI 4520	Mega-Cities and Diasporas: Understanding Global Migration
Total Hours	36

It is recommended that majors take POL SCI 1500, POL SCI 1800, POL SCI 1820, and POL SCI 3000 as early as possible since these courses are designed to provide a substantive foundation as well as conceptual and analytical tools for subsequent course work.

Majors are strongly encouraged to broaden their academic experience by including relevant curricular experiences including study abroad, and minors or certificates in areas such as economics and foreign languages.

B.A. degree students may take a maximum of 3 hours of political science on a satisfactory/ unsatisfactory basis; this can include any course except the four required courses in the core curriculum.

## Departmental Honors

The department awards honors to students having a grade point average (GPA) of 3.2 in the major, an overall GPA of 3.2 (except in extraordinary circumstances), and successfully completed an honors thesis, project, or report.

### Learning Outcomes

Graduates of this program will be able to:

- Identify key trends in international relations that are expected to impact life in the United States and other countries in the foreseeable future.
- Demonstrate cross-cultural competence and a global worldview.
- Apply major international relations theories and concepts to contemporary issues in global affairs.
- Analyze the foreign policy behavior of the United States and other major actors in world politics.
- Compare and contrast the major political, economic, cultural, and geographic features of different regions of the world.

- Assess international relations issues, formulate evidence-based recommendations, and communicate them with clarity and coherence.
- Plan, execute, and defend a major research project.

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 POL SCI 1500	3
POL SCI 1100		3 CORE-Communication Proficiency	3
CORE-Mathematics Proficiency		3 EXPLORE-Mathematics and Natural/ Life Sciences	3
ENGL 1100		3 EXPLORE- Humanities and Fine Arts	3
EXPLORE-Humanities and Fine Arts		3 Elective or minor	3
EXPLORE - Mathematics and Life/ Sciences		3	
			15
			16
Second Year			
Fall	Hours	Spring	Hours
POL SCI 1800		3 POL SCI 2800	3
POL SCI XXXX Comparative Politics Course		3 Foreign Language 1002	5
Foreign Language 1001		5 EXPLORE - Mathematics and Life/ Natural Sciences	3
EXPLORE- Humanities and Fine Arts		3 Elective or minor	3
		Elective or minor	1
			15
			14
Third Year			
Fall	Hours	Spring	Hours
POL SCI 3000		3 POL SCI XXXX Comparative Politics Course	3
POL SCI XXXX International Relations Course		3 POL SCI XXXXX International Relations Course	3
Foreign Language 2101		3 ENGL 3100	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
			15
			15
Fourth Year			
Fall	Hours	Spring	Hours
POL SCI XXXX International Relations Course		3 POL SCI 4950	3
POL SCI XXXX Comparative Politics Course		3 POL SCI XXXX International Relations Course	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
			15
			15
Total Hours: 120			

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## International Relations Minor

### Requirements for Political Science Minors

A general minor in political science can be arranged, as well as specialized minors in eight different subfields of the discipline. Interested students should see a faculty adviser to plan a coherent program of study as a minor field.

Students must achieve a cumulative 2.0 GPA in the political science courses chosen to qualify for the minor. Students may count no more than 3 hours in political science taken on a satisfactory/unsatisfactory basis toward the minor. Students taking an internship POL SCI 3940 may count no more than three hours of the internship toward the minor.

### Minor in International Relations

Select five of the following: 15

POL SCI 1800	World Politics (MOTR POSC 201)
POL SCI 2820	United States Foreign Policy
POL SCI 3500	The Politics of the Middle East: International and National Dynamics
POL SCI 3830	International Political Economy
POL SCI 3850	International Organizations and Global Problem-Solving
POL SCI 3860	Studies in War and Peace
POL SCI 3890	Studies in International Relations
POL SCI 3900	Special Readings (when appropriate)
POL SCI 3940	Public Affairs Internship (when appropriate)
POL SCI 4850	International Law

Total Hours 15

## International Studies Graduate Certificate

Applicants to the Certificate program must meet the general requirements for admission to Graduate School as explained in the graduate study section of this Bulletin. The Certificate is awarded after completion of 18 hours, including a minimum of 12 hours drawn from a list of core courses and an additional six hours selected from a wide variety of offerings in eight different disciplines. No more than 12 hours may be from any one discipline. Students may simultaneously earn a graduate degree and count credits earned in their degree program toward the Certificate when appropriate.

### Requirements

Select four from the following list of core courses: 12

Business Administration	
FINANCE 6580	International Financial Management
SCMA 5381	International Logistics and Operations Management
Economics	
ECON 5300	International Trade
ECON 5301	International Monetary Analysis
History	

HIST 6115	Historical Thinking in Research and Practice	
Political Science		
POL SCI 6450	Proseminar in Comparative Politics	
POL SCI 6451	Seminar in Comparative Politics	
POL SCI 6480	Proseminar in International Relations	
POL SCI 6481	Seminar in International Relations	
POL SCI 6488	Studies In International Relations	
Select two of the following:		6
Economics		
ECON 4980	Special Readings	
English		
ENGL 4920	Major Works Of European Fiction	
History		
HIST 4001	Special Readings	
Languages and Cultural Studies		
FRENCH 4360	Studies in Nineteenth-Century French Literature and Culture	
Music		
M H L T 4250	Music of the Romantic Period	
M H L T 4260	Music from 1900 to the Present	
Political Science		
POL SCI 4850	International Law	
POL SCI 6485	Directed Readings and Research in International Relations	
Total Hours		18

Note: No more than 12 credit hours may be from any one discipline.

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Explain the major components of culture and how cultural differences affect conducting business abroad
- Integrate global awareness and cultural knowledge into business analysis
- Describe functional knowledge of global operation for a specific area of business, such as marketing or finance
- Assess the impact of cultural and environmental factors on international business operations

## Internet and Web Undergraduate Certificate

### Certificate Requirements

The undergraduate certificate in Internet and Web is a five-course (15 credit hour) program. It is designed to provide a broad training in technologies related to the Internet and Web, with flexibility allowing a student to satisfy specific interests. A minimum GPA of 2.5 is required for admission.

Required Courses	
CMP SCI 3010	Web Programming
	3

CMP SCI 4010	Advanced Web Development with Java	3
CMP SCI 4011	Web Development with Advanced JavaScript	3
CMP SCI 4012	Introduction to Enterprise Web Development	3
Elective		
Choose one of the following courses:		3
CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	
CMP SCI 4030	Introduction to Intelligent Web	
CMP SCI 4610	Database Management Systems	
CMP SCI 4730	Computer Networks and Communications	
CMP SCI 4750	Introduction to Cloud Computing	
Total Hours		15

A minimum of three courses must be taken from UMSL. Courses may be substituted with the permission of the certificate coordinator. For more information, students can contact the department chair or email [info@arch.umsi.edu](mailto:info@arch.umsi.edu).

## Learning Outcomes

Upon completion the program, certificate earners will be able to:

- Identify and implement techniques for communicating complex information on the Web
- Use Web languages to integrate media and user interaction
- Design and develop Internet applications
- Use the state-of-the-art languages and frameworks on both server and client sides

## Japanese Minor

A minor in French, German, Japanese or Spanish requires the completion of four courses in the language beyond the basic foundation sequence (Language 1001, Language 1002, and Language 2101). Transfer students must complete at least two courses for the minor at UMSL. All courses must be passed with a grade of C- or better.

### Specific Requirements for the Japanese Minor

JAPAN 2102	Intermediate Japanese II	5
JAPAN 3201	Intermediate Japanese III	4
JAPAN 3202	Intermediate Japanese IV	4
Select one course in Japanese Studies		3

## Learning Outcomes

Graduates with a minor in Japanese from the University of Missouri-St. Louis can use the language to interact with native speakers on familiar topics related to their daily lives. They have an emerging understanding of Japanese culture fostered through engaging courses and opportunities such as study abroad. They can apply their linguistic and cultural competencies in real-life situations such as travel and work.

## Skills and Knowledge Areas

Upon completion of the Japanese minor, students should be able to:

### Linguistic Goals

- In listening/speaking:
  - demonstrate comprehension of the main ideas and supporting details of everyday conversations on familiar and concrete topics, both formal and informal;
  - take part in conversations on topics related to work, school, home, leisure activities, culture, and media;
  - narrate short anecdotes using Japanese conversational conventions; and,
  - function in real-world situations in culturally-appropriate ways.
- In reading/writing:
  - interpret basic authentic texts, such as menus and schedules;
  - apply reading strategies to glean key information from more challenging texts;
  - compose simple practical messages, such as personal emails and letters; and,
  - assess language reference resources and use them effectively.

### Cultural Goals

- recognize and describe some of the key historical, social, economic, and political forces that shape Japanese society;
- analyze and critique the products of Japanese culture (film, media, literature, art, etc.) in socio-historical context.

The linguistic goals are based on the National Standards For Foreign Language Learning and the ACTFL Proficiency Guidelines. In speaking and listening, minors are expected to reach the Intermediate-Mid level proficiency at a minimum. For detailed descriptions of sublevels, see the ACTFL Proficiency Guidelines.

## Jazz Studies Minor

Candidates must complete 22 credit hours from the following:

<b>Music Theory</b>		
THRY COM 1300	Introduction to Music Theory	1
THRY COM 1301	Theory of Music I	3
THRY COM 1302	Aural Training I	2
THRY COM 1311	Theory of Music II	3
THRY COM 1312	Aural Training II	2
<b>Piano Proficiency</b>		
PRACTM 1140/1150	Piano Proficiency I	1
PRACTM 1150	Piano Proficiency II	1
<b>Applied Area</b> <b>2</b>		
2 credit hours minimum, to be selected from this group:		
PRACTM 2190	Piano Jazz	
PRACTM 2191	Brass Jazz	
PRACTM 2192	Woodwind Jazz	
PRACTM 2193	Rhythm Section Jazz	
<b>Pedagogy</b>		

PDGOGY 2220	Jazz Pedagogy	3
<b>Ensemble</b>		
2 credit hours of each minimum		
EN PER 1542	Jazz Combo	2
EN PER 1550	Jazz Ensemble	2
Total Hours		22

## Labor Studies Undergraduate Certificate

### Labor Studies Certificate

The Labor Studies Certificate is designed for students who are interested in a focused specialty in labor studies. The 18 credit hour curriculum consists of six credit courses offered over a three-semester period.

HIST 2219	United States Labor History	3
ECON 3450	Labor in the Global Political Economy	3
POL SCI 1450	Introduction to Labor Studies	3
POL SCI 3220	Labor Law	3
POL SCI 3430	Union Leadership and Administration	3
POL SCI 3470	Collective Bargaining	3
Total Hours		18

### Learning Outcomes

Upon completion of the program, a certificate earner will be able to:

- Identify and apply techniques to research and analyze power relations, organizational structures, and effective action in workplace settings.
- Demonstrate knowledge about the economy, including wage, tax, and trade policy; historical disparities; and the role of corporations, unions, and other organizations.
- Assess, analyze and apply the skills of building cooperation and collaboration needed in negotiations and in alternative dispute resolution.
- Locate and clearly explain the laws and regulations affecting workers, workplaces, labor and community organizations.

## Latina/Latino Studies Minor

Latina/Latino Studies at the University of Missouri-St. Louis is an interdisciplinary program dedicated to the study of the historical, social, political, language, and cultural experiences of U.S. Latina/Latinos, their families and communities. Students in this program will examine how transnational understandings of race, ethnicity, politics, culture, and language are mapped onto and struggled over within the United States, the Midwest, and St. Louis.

In addition to two required courses—Introduction to Latina/Latino Studies and an internship/service learning Capstone Experience—students will select three electives to round out the minor, each from a different discipline, on topics such as immigration, bilingualism, cultural worldview, comparative politics, and history (more classes will be added as created). Students will combine courses across the disciplinary spectrum into an individualized program to gain a deeper understanding of Latina/

Latino cultures, histories, and social conditions; while they engage in collaborative projects, civic programs, and service learning; and enhance writing and analytical skills.

### Introductory Course

HIST 2002	Introduction to Latinx Studies	3
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### Electives 9

Choose 3 from following list; at most one course from each discipline will count toward the minor/certificate

CRIMIN 4340	Race, Crime, and Justice	
TCH ED 3210	General Linguistics in Teaching English to Speakers of Other Languages	
TCH ED 3211	Basic Principles of Second and Foreign Language Acquisition	
TCH ED 3212	Sociolinguistics and Communication in the Classroom	
FGN LANG 2100	Languages and World View	
PHIL 1030	Present Moral Problems	
POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	
POL SCI 2530	Political Systems of South America	
POL SCI 2540	Political Systems of Mexico, Central America and the Caribbean	
SPANISH 2101 or above (SPANISH 1199 can substitute)		

### Capstone

A service learning/internship capstone experience course in the Latina/Latino community approved by the program director.		3
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Total Hours		15
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### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Read, interpret evidence, and draw conclusions about the role and contributions of Latinxs to the history, culture, economy, language, politics, and social experiences of the United States;
- Communicate ideas about Latinxs, Latinx communities, and race, gender, class, and ethnicity in evidence-based presentations, writings, and new media;
- Apply a foundational understanding of Latinxs, Latinx communities, and complexities of race, gender, class, and ethnicity to new situations, questions, and concerns.

## Law and Philosophy Minor

The undergraduate minor in Law and Philosophy requires five philosophy courses (15 credit hours). At least 6 hours must be at the 3000 level or above. A GPA of 2.0 or better is required in courses presented for the minor. Prospective minors are encouraged to consult with members of the department for advice in planning an appropriate sequence of courses.

PHIL 2252	Crime and Punishment	3
PHIL 4487	Topics in Philosophy of Law	3
PHIL 1160	Critical Thinking (MOTR PHIL 101)	3
or PHIL 3360	Formal Logic	



Two courses in Philosophy <sup>1</sup>	6
Total Hours	15

<sup>1</sup> PHIL 3000-level or higher courses must be taken in residence in the UMSL Department of Philosophy. In special cases, one of the 3000-level or higher courses may be taken outside of the UMSL Department of Philosophy; the course must (1) have a strong law and philosophy component and (2) have been pre-approved by the Pre-Law advisor.

## Learning Outcomes

An ideal graduate with a Minor in Law and Philosophy will:

- Demonstrate an ability to apply the distinctive methods of philosophy by reconstructing philosophical arguments and deliberating rationally over their merits
- Understand central theories about the nature of law and its role in society
- Be able to critically evaluate on moral and empirical grounds a range of common justifications for the use of punishment by the state
- Demonstrate competence with formal reasoning tools such as syllogistic logic, propositional logic and/or quantificational logic and show an ability to apply those tools in philosophical and everyday contexts
- Will have detailed knowledge of, and an ability to critically evaluate, the dominant positions in the history of legal philosophy on the nature and role of law
- Will be able to apply legal theory to contemporary ethical and social issues
- Will be able to think critically and ethically about issues in legal theory and express their thoughts in a clear and persuasive writing style

## Liberal Studies BLS

### Bachelor of Liberal Studies (BLS)

The Bachelor of Liberal Studies is a degree program that enables students to combine structured areas of academic emphasis in ways more relevant to their interests than the standard academic major.

Students who participate in this program must declare their areas of study (two minors or a minor and undergraduate certificate) at the time they declare that BLS is their intended degree. The plan of study must be approved at the beginning of the program.

The BLS program is administered through the Department of Philosophy.

To obtain a Bachelor of Liberal Studies (BLS), a student must complete:

- UMSL General Education Requirements (consult General Education (p. 51) section of course listings)
- In addition, students must complete the State Requirement (3) and Cultural Diversity Requirement (3) if not met in General Education course selection
- The university requirement of proficiency in English Composition
  - ENGL 1100 - First Year Writing (to be completed in the first 24 credit hours at the university)
  - Junior Level Writing
- The university requirement of proficiency in Mathematics (to be completed in the first 24 credit hours at the university)

- Two emphasis areas that are satisfied by completing the requirements for:
  - two designated BLS Minors in participating departments or other units OR
  - a designated minor and any undergraduate certificate. No course may be used more than once.
- A capstone course<sup>1</sup> (minimum of 3 hours) selected from one of the concentration areas that make up the identified BLS core.

#### Also Required

- Minimum of 45 credit hours in upper level course work (2000 or higher)
  - Electives 28-42
- A minimum of 120 credit hours
- Overall GPA of 2.0 or better
- GPA of 2.0 or better in BLS combination areas (unless otherwise specified)
- Minimum grade of C in all courses used in BLS combination areas unless otherwise specified by the department
- Residency requirement, in addition to campus residency, unless otherwise specified, 9 graded hours in each minor and certificate at 2000 level or above and one capstone course

<sup>1</sup> Note: Not all minors have a designated BLS capstone course so students must be careful to pair minors and certificates so that they have a capstone course.

The Colleges of Arts and Sciences (CAS), Business Administration (COBA), College of Education (COE), the Pierre Laclède Honors College (PLHC), and the School of Social Work (SW) have joined together to make available Liberal Studies combinations involving the following units:

- Department of Anthropology and Archaeology (CAS)
- Department of Art and Design (CAS)
- Department of Biology (CAS)
- College of Business Administration (COBA)
- College of Education (COE)
- Department of Chemistry and Biochemistry (CAS)
- Department of Communication and Media (CAS)
- Department of Criminology and Criminal Justice (CAS)
- Department of Economics (CAS)
- Department of English (CAS)
- Department of History (CAS)
- Pierre Laclède Honors College (PLHC)<sup>1</sup>
- Department of Language and Cultural Studies (CAS)
- Department of Mathematics and Computer Science (CAS)
- Department of Music (CAS)
- Department of Philosophy (CAS)
- Department of Physics and Astronomy (CAS)
- Department of Political Science (CAS)
- Department of Psychological Sciences (CAS)
- Department of Sociology, Gerontology and Gender Studies (CAS)
- Department of Theatre Arts (CAS)
- School of Social Work (SW)
- Undergraduate certificates

<sup>1</sup> Must be admitted to Honors program.

## Bachelor of Liberal Studies: Capstone and Other Restrictions

- Students who are planning to earn a Bachelor of Liberal Studies degree should declare the BLS as their major within the first 90 hours of the program. Declaration past this time may prevent timely graduation as all capstone courses are not available every semester.
- The College of Nursing and the Joint Engineering Program are not participants in the BLS program.
- The following Colleges/Departments participate in the BLS program but do not offer a capstone course and must be paired with a minor from one of the areas listed below: Business, Studio Art, Theater Arts, Statistics, Undergraduate Certificates, and Interdisciplinary minors.
- Students admitted to the Pierre Laclède Honors College who wish to present the Honors Certificate as a minor for the BLS must complete the Honors Capstone, (one or two credit hours) and also direct three to six hours of their Honors independent study requirement to work demonstrably relevant to their BLS program. Students should consult the BLS faculty advisor in the Honors College about this requirement.
- The capstone is required in addition to the courses presented for the minor. A minimum grade of C must be earned in the capstone course. The capstone course is not counted toward the minor residency requirement.
- Students choosing to combine the minor in History of Science and Technology with a minor in the Philosophy of Science and Technology may use the same course to satisfy the Logic and Methodology requirement for both minors and may select either PHIL 4491 or HIST 4999 as the capstone. However students selecting HIST 4999 must have also taken HIST 2999.
- The following have identified a Capstone, so at least one of these minors must be included in the BLS program:

### Anthropology

One additional 4000 level course in Anthropology not used in the minor. 3

### Art & Design

One additional 4000 level topics course in Art History not used in the minor. 3

### Biology

BIOL 3302 Introduction to Evolution 3

### Chemistry/Biochemistry

3 total hours from the options listed: 3

CHEM 3022 Introduction to Chemical Literature

CHEM 3905 Chemical Research

CHEM 4897 Seminar

### Communication

One additional 3000/4000 level Communication course not used in the minor. 3

### Criminology & Criminal Justice

One additional 4000 level course in Criminology and Criminal Justice, not used as part of the minor. 3

### Economics

One additional 4000 level Economics course (except ECON 4105, ECON 4160, and ECON 4550) not used in the minor. 3

### Education

A 3 hour capstone course must be selected from the following:

ECH ED 4989	Practicum I: Early Childhood Education/Early Childhood Special Education Site Based Experience	3
EDUC 4989	Internship I	3
ELE ED 4989	Practicum I: Elementary/Special Education Site-Based Experience	3
ELE ED 4992	Practicum I: Elementary/Special Education/TESOL Site Based Experience	3
ELE ED 4994	Practicum I: Elementary/TESOL Site Based Experience	3
MID ED 4989	Practicum I: Middle Level Education Site Based Experience	3
SEC ED 4989	Practicum I: Site-Based Experience	3

### English

One additional 4000 level English Literature course not used in the minor. 3

### Gerontology

One additional 4000 level course in Gerontology not used in the minor and to be coordinated with the program director for Gerontology before starting the course. 3

### History

HIST 4999 Senior Seminar 5

### Honors College <sup>1</sup>

3 total hours taken from the options listed:

HONORS 4100 Independent Portfolio Writing

HONORS 4900 Independent Study in Honors

or HONORS 4910 Independent Study: Internships

### Languages and Cultures

FRENCH 3211 Contemporary French Culture 3

JAPAN 3280 Readings in Japanese 3

SPANISH 3210 Hispanic Culture And Civilization: Spain 3

or SPANISH 3211 Hispanic Culture And Civilization: Spanish America

### Mathematics/Computer Science

Computer Science: One additional 4000 Level Course in Computer Science not used in the minor. 3

Mathematics: One additional 4000 Level Course in Mathematics not in the minor. 3

### Media Studies

One additional 4000 level course not used in the minor. 3

### Music

Select one of the following: 3

M H L T 4000 Directed Studies

THRY COM 4000 Directed Studies: Variable Topic

PDGOGY 4000 Directed Study: Variable Topic

PRACTM 4000 Directed Studies: Variable Topic

### Philosophy

One additional 4000 level course not used in the minor. 3

### Physics

PHYSICS 4381 Directed Readings in Physics 3

<b>Political Science</b>		
POL SCI 4950	Senior Seminar in Political Science	3
<b>Psychology</b>		
One additional 4000 level Psychology course not used in the minor.		3
<b>Sociology</b>		
One additional 4000 level course in Sociology not used in the minor, excluding:		3
SOC 4350 or SOC 4385	Special Study Internship in Sociology	

P P ADM 6350	Issues in Urban Management	
P P ADM 6400	Proseminar in Public Administration	
P P ADM 6510	Urban and Regional Planning and Public Policy	
P P ADM 6600	Managing People in Organizations	
P P ADM 6680/ MGMT 5612	Negotiating Workplace Conflict	
Total Hours		3

Three hours of internship are also required but may be waived if the student has sufficient professional experience in the field. Any request for an exemption from the internship requirement must be submitted in writing and approved by the local government program director after a review of the student's professional or managerial field experience. Students who receive an exemption must take another three hours of electives from courses listed above.

<sup>1</sup> Other courses may be added as advisors deem appropriate for content.

Requirements for admission to the graduate certificate program include an undergraduate degree and a GPA of 3.0 or better. Applicants must submit two letters of recommendation. At least one of the letters should be from a current or former college-level instructor. Applicants must submit a two-page personal statement explaining how the certificate program fits in with the applicant's educational and professional goals. The letters and the personal statement should be sent directly to the Public Policy Administration Program.

<sup>1</sup> Must be admitted to Honors program.

## Local Government Management Graduate Certificate

The Graduate Certificate in Local Government Management is designed for current professional staff, elected or non-elected local government officials, and those who are interested in pursuing a career in the local government sector. The certificate can be taken by itself or in conjunction with the Master of Public Policy Administration degree or other graduate degree. A separate application for the certificate program may be required when students in a degree program wish to incorporate the certificate program.

### Requirements

The Graduate Certificate in Local Government Management requires the completion of 18 credit hours. Twelve of these are the following core courses:

P P ADM 6180	Governmental Budgeting and Financial Control	3
P P ADM 6340 or P P ADM 6350	Seminar in City Administration Issues in Urban Management	3
P P ADM 6490	Human Resources in the Public Sector	3
POL SCI 6470 or POL SCI 6471	Proseminar in Urban Politics Seminar in Urban Politics	3
Total Hours		12

Three hours of electives are to be taken from selected courses in business administration, criminal justice, economics, political science, and public policy administration. A student may choose among these courses or other courses approved by the program director. Electives will be chosen from the following course list:

Select one of the following:		<sup>1</sup> 3
CRIMIN 6442	Communities and Crime	
ECON 4160	Geospatial Analysis in the Social Sciences	
ECON 5700		
POL SCI 6470	Proseminar in Urban Politics	
POL SCI 6471	Seminar in Urban Politics	
P P ADM/SOC WK 6300	Leadership and Management in Nonprofit Organizations	
P P ADM 6340	Seminar in City Administration	

## Logistics and Supply Chain Management Graduate Certificate

The Graduate Certificate in Logistics and Supply Chain Management is an 18-hour program designed to provide a focused, intensive study of important issues within logistics and, more broadly, in supply chain management. Three required courses provide thorough background in operations, logistics and supply chain management. Three elective courses allow specialization in areas such as logistics and supply chain software, international logistics, operations research, e-commerce, and quality.

### Program Description

The Graduate Certificate in Logistics and Supply Chain Management provides focused and intensive study of important topics in supply chain management including procurement, production, operations, logistics and transportation. Students first get introduced to the foundation and basic concepts of supply chain management. They then take in-depth studies into domain topics of global supply chain management, strategic sourcing and supply chain integration, in conjunction with analytical methodologies for various data-driven decision-making functions in supply chains, including facility location and layout, production planning, inventory control, scheduling and vehicle routing. The program is suitable for candidates with undergraduate or graduate education other than supply chain management. It is also suitable for professionals whose primary responsibility is in other business functions (e.g., finance, marketing, information system, accounting), but who wish to broaden their scope of knowledge and training in supply chains.

This 12 credit hour certificate program also counts toward MBA degree program with the Management, and Operations Management Emphasis.

## Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

## Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs.

### Required Course

SCMA 5310	Supply Chain Strategies	3
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### Supply Chain Management Course 3

Choose one of the following courses:

SCMA 5381	Global Supply Chain Management	
SCMA 6321	Strategic Sourcing	
SCMA 6360	Supply Chain Integration	

### Supply Chain Analytics Course 3

Choose one of the following courses:

SCMA 5320	Supply Chain and Operations Management	
SCMA 6330	Business Logistics Systems	
SCMA 6331	Supply Chain Modeling	

### Elective

An additional course chosen from the remaining Supply Chain Management and Supply Chain Analytics courses	3
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Total Hours	12
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The required and elective courses may be substituted with other courses with the approval of the Chair of Supply Chain & Analytics Department.

## Learning Outcomes

Upon completion of the program, certificate earners should be able to:

- Interpret foundational concepts in supply chain management including procurement/sourcing, production, operations and logistics, across domain contexts such as global supply chain management, strategic sourcing and supply chain integration
- Apply analytical methods for data-driven decision making in supply chain management

## Management Minor

### General Requirements

- All minors are 15 credit hours or 5 courses, including business core courses.
- Students must attain a 2.0 grade point average for all courses in the minor.
- Students must attain a minimum grade of C- in each course included in the minor.
- All courses in the minor must be on a graded basis.
- A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.
- One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.

- A minor may be added for up to two years following completion of the baccalaureate degree

## Specific Requirements for the Minor

Available to all students except those pursuing the Bachelor of Science in Business Administration degree. Students must complete:

MGMT 3600	Management and Organizational Behavior	3
MGMT 3611	Advanced Management and Organizational Behavior	3
Select any three upper division management and organizational behavior electives.		9
<hr/>		
Total Hours		15

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate competence in applying management concepts and theories related to motivation, leadership, group process, decision making, job design, and organizational development.
- Demonstrate the ability to utilize a diversity-oriented mindset in business decision-making.
- Demonstrate the ability to apply human resource concepts regarding attracting, selecting, developing, motivating, evaluating and retaining employees.

## Marketing Management Graduate Certificate

**Effective Fall 2020, The Marketing Management Graduate Certificate will no longer be accepting applications**

### Requirements

Students must complete the following six courses or appropriate substitutes if course waivers are appropriate:

MKTG 5700	Contemporary Marketing Concepts	3
MKTG 5710	Consumer Motivation and Behavior	3
MKTG 5740	Marketing and Business Analytics	3
<b>Marketing Management:</b>		
MKTG 5701	Marketing Planning and Strategy	3
MKTG 5720	Marketing Communications	3
MKTG 5730	Clinical Study in Digital and Social Media Marketing	3
<hr/>		
Total Hours		18

All course prerequisites and all course waivers are applicable. The Marketing department chairperson and the director of Graduate Studies in Business must approve substitute courses. In all cases, 18 hours (including at least 12 hours in Marketing) are needed to complete the certificate.

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:



- Assess the role and practice of marketing within an organization, including theoretical and applied aspects of the marketing discipline (MKTG 5700)
- Demonstrate proficiency in marketing analytics and research skills (MKTG 5740)
- Describe how marketers design and adapt their campaigns and strategies based on the psychology of their buyers and the processes these buyers employ to learn about, select, use, and dispose of products (MKTG 5710)
- Develop, analyze, and evaluate strategic and tactical marketing plans and programs and to assess marketing performance (MKTG 5701)

## Marketing Minor

### General Requirements

- All minors are 15 credit hours or 5 courses, including business core courses.
- Students must attain a 2.0 grade point average for all courses in the minor.
- Students must attain a minimum grade of C- in each course included in the minor.
- All courses in the minor must be on a graded basis.
- A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.
- One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.
- A minor may be added for up to two years following completion of the baccalaureate degree

### Specific Requirements for the Minor

Available to all students except those pursuing the Bachelor of Science in Business Administration degree. Students must complete:

MKTG 3700	Basic Marketing	3
Select any four additional upper division marketing electives.		12

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Students will be able to develop knowledge about the definition of marketing, consumer, and environment.
- Students will be able to identify drivers of consumer behavior and market opportunities and threats.
- Students will be able to interpret marketing research results.
- Students will be able to explain product, price, place, and promotion strategies.

## Mathematical and Computational Science PhD, Computer Science Emphasis

### Admission Requirements

Applicants must have at least a bachelor's degree in mathematics or in a field with significant mathematical content. Examples of such fields include computer science, data science, economics, engineering and

physics. An applicant's record should demonstrate superior achievement in undergraduate mathematics.

Individuals may apply for direct admission to either the M.A. or Ph.D. program. Candidates for the M.A. degree may choose an emphasis in mathematics or data science. Students in the M.A. program who want to transfer to the Ph.D. program upon successful completion of 15 credit hours must fill out a new application through Graduate Admissions.

Students intending to enter the Ph.D. program must have a working ability in modern programming technologies. A student with a deficiency in this area may be required to take courses at the undergraduate level in computer science.

Applicants for the Ph.D. program must, in addition, submit three letters of recommendation and scores from the Graduate Record Examination (GRE) general aptitude test.

## Doctor of Philosophy in Mathematical and Computational Sciences

The program has three options:

1. Mathematics Option
2. Computer Science Option
3. Statistics Option

The requirements for the Ph.D. degree include the following:

1. Course work
2. Ph.D. candidacy
3. Doctoral dissertation

The requirements are described in detail below.

1. Course Work  
A minimum of 60 hours of courses numbered 4000 or above.

In the Mathematics Option, at least 33 hours must be in courses numbered 5000 or above.

In the Computer Science Option, at least 45 hours must be in courses numbered 5000 or above.

In the Statistics Option, at least 33 hours must be in courses numbered 5000 or above.

At most 9 hours of a student's enrollment in Dissertation Research may be counted. Students are expected to maintain a 3.0 average on a 4.0 scale. All courses numbered below 5000 must be completed with a grade of at least B. Courses outside the Department of Mathematics and Computer Science will require approval of the graduate director.

When students who have earned a Master's degree are admitted to the doctoral program, appropriate credits of course work may be applied toward meeting the requirements for the doctoral degree, subject to Graduate School regulations and the approval of the graduate director. The same applied to those with some appropriate graduate credits but without a completed Master's degree.

2. Ph.D. Candidacy  
Advancement to Ph.D. candidacy is a three-step process consisting of:
  - a. Completing 18 hours of 5000 level courses other than Ph.D. Dissertation Research as appropriate for the selected option.

- b. Passing the comprehensive examination.
- c. Selecting a Ph.D. committee and preparing a dissertation proposal and defense of the proposal.

## Qualifying Examination

A student must fulfill the following requirements.

### Basic Requirement

Pass one written examination covering fundamental topics. This examination would normally take place within the first 12 credit hours of study after admission to the Ph.D. program.

### Mathematics Option

Topics from real analysis, complex analysis, and linear algebra:

MATH 4100	Real Analysis I	3
MATH 4160	Complex Analysis I	3
MATH 4450	Linear Algebra	3
Total Hours		9

### Computer Science Option

Topics from the theory of programming languages, operating systems, analysis of algorithms, and computer systems:

CMP SCI 4250	Programming Languages	3
CMP SCI 4760	Operating Systems	3
CMP SCI 5130	Advanced Data Structures and Algorithms	3
CMP SCI 5700	Computer Systems	3
Total Hours		12

### Statistics Option

Topics from real analysis, linear algebra, and mathematical statistics:

MATH 4100	Real Analysis I	3
MATH 4450	Linear Algebra	3
MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3
Total Hours		12

### Additional Requirement

After fulfilling the basic requirement above, the student must meet one of the following:

1. Pass a written examination in an area of the student's interests. This area will be approved by the graduate committee and will be based on a set of two or more graduate courses taken by the student. This examination would normally take place within the first 24 credit hours of study after admission to the Ph.D. program.
2. Write a survey paper in a specialized area under the direction of a member of the graduate faculty. The student should propose to take this option when he/she has already finished at least 2 graduate level courses and has the approval of the graduate committee. The paper should be submitted within four semesters, at which time an oral examination given by a committee of at least three members of the graduate faculty must be passed.

In both parts 1) and 2), the graduate committee will determine if the topics are consistent with the option that the student is pursuing.

## Dissertation Committee and Dissertation Proposal

After completing the comprehensive examinations, each student chooses a dissertation advisor and prepares a Dissertation Proposal. Usually students choose an advisor from contacts made through their course work. The dissertation committee will be formed, and the student will meet with this committee for an oral defense of his/her dissertation proposal. The dissertation proposal is a substantial document describing the problem to be worked on and the methods to be used, as well as demonstrating the student's proficiency in written communication.

### Doctoral Dissertation

Each Ph.D. candidate must write a dissertation that is an original contribution to the field on a topic approved by the candidate's Ph.D. Committee and the department, and which meets the standards and requirements set by the Graduate School including the public defense of the dissertation. Students working on a dissertation may enroll in Ph.D. Dissertation Research, as appropriate for the selected option. A maximum of 9 hours Dissertation Research can be used toward the required hours of work in courses numbered 5000 or above.

## Mathematical and Computational Science PhD, Mathematics Emphasis

### Admission Requirements

Applicants must have at least a bachelor's degree in mathematics or in a field with significant mathematical content. Examples of such fields include computer science, data science, economics, engineering and physics. An applicant's record should demonstrate superior achievement in undergraduate mathematics.

Individuals may apply for direct admission to either the M.A. or Ph.D. program. Candidates for the M.A. degree may choose an emphasis in mathematics or data science. Students in the M.A. program who want to transfer to the Ph.D. program upon successful completion of 15 credit hours must fill out a new application through Graduate Admissions.

Students intending to enter the Ph.D. program must have a working ability in modern programming technologies. A student with a deficiency in this area may be required to take courses at the undergraduate level in computer science.

Applicants for the Ph.D. program must, in addition, submit three letters of recommendation and scores from the Graduate Record Examination (GRE) general aptitude test.

### Preliminary Advisement

Incoming students are assigned advisers with whom they should consult before each registration period to determine an appropriate course of study. If necessary, students may be required to complete undergraduate course work without receiving graduate credit.

Students interested in the Ph.D. program in mathematical and computational sciences with the computer science option must follow the requirements for that program and that option.

## Doctor of Philosophy in Mathematical and Computational Sciences

The program has three options:

1. Mathematics Option
2. Computer Science Option
3. Statistics Option

The requirements for the Ph.D. degree include the following:

1. Course work
2. Ph.D. candidacy
3. Doctoral dissertation

The requirements are described in detail below.

### 1. Course Work

A minimum of 60 hours of courses numbered 4000 or above.

In the Mathematics Option, at least 33 hours must be in courses numbered 5000 or above.

In the Computer Science Option, at least 45 hours must be in courses numbered 5000 or above.

In the Statistics Option, at least 33 hours must be in courses numbered 5000 or above.

At most 9 hours of a student's enrollment in Dissertation Research may be counted. Students are expected to maintain a 3.0 average on a 4.0 scale. All courses numbered below 5000 must be completed with a grade of at least B. Courses outside the Department of Mathematics and Computer Science will require approval of the graduate director.

When students who have earned a Master's degree are admitted to the doctoral program, appropriate credits of course work may be applied toward meeting the requirements for the doctoral degree, subject to Graduate School regulations and the approval of the graduate director. The same applied to those with some appropriate graduate credits but without a completed Master's degree.

### 2. Ph.D. Candidacy

Advancement to Ph.D. candidacy is a three-step process consisting of:

- a. Completing 18 hours of 5000 level courses other than Ph.D. Dissertation Research as appropriate for the selected option.
- b. Passing the comprehensive examination.
- c. Selecting a Ph.D. committee and preparing a dissertation proposal and defense of the proposal.

## Qualifying Examination

A student must fulfill the following requirements.

### Basic Requirement

Pass one written examination covering fundamental topics. This examination would normally take place within the first 12 credit hours of study after admission to the Ph.D. program.

### Mathematics Option

Topics from real analysis, complex analysis, and linear algebra:

MATH 4100	Real Analysis I	3
MATH 4160	Complex Analysis I	3
MATH 4450	Linear Algebra	3
Total Hours		9

### Computer Science Option

Topics from the theory of programming languages, operating systems, analysis of algorithms, and computer systems:

CMP SCI 4250	Programming Languages	3
CMP SCI 4760	Operating Systems	3
CMP SCI 5130	Advanced Data Structures and Algorithms	3
CMP SCI 5700	Computer Systems	3
Total Hours		12

### Statistics Option

Topics from real analysis, linear algebra, and mathematical statistics:

MATH 4100	Real Analysis I	3
MATH 4450	Linear Algebra	3
MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3
Total Hours		12

## Additional Requirement

After fulfilling the basic requirement above, the student must meet one of the following:

1. Pass a written examination in an area of the student's interests. This area will be approved by the graduate committee and will be based on a set of two or more graduate courses taken by the student. This examination would normally take place within the first 24 credit hours of study after admission to the Ph.D. program.
2. Write a survey paper in a specialized area under the direction of a member of the graduate faculty. The student should propose to take this option when he/she has already finished at least 2 graduate level courses and has the approval of the graduate committee. The paper should be submitted within four semesters, at which time an oral examination given by a committee of at least three members of the graduate faculty must be passed.

In both parts 1) and 2), the graduate committee will determine if the topics are consistent with the option that the student is pursuing.

## Dissertation Committee and Dissertation Proposal

After completing the comprehensive examinations, each student chooses a dissertation advisor and prepares a Dissertation Proposal. Usually students choose an advisor from contacts made through their course work. The dissertation committee will be formed, and the student will meet with this committee for an oral defense of his/her dissertation proposal. The dissertation proposal is a substantial document describing the problem to be worked on and the methods to be used, as well as demonstrating the student's proficiency in written communication.

## Doctoral Dissertation

Each Ph.D. candidate must write a dissertation that is an original contribution to the field on a topic approved by the candidate's Ph.D. Committee and the department, and which meets the standards and requirements set by the Graduate School including the public defense of the dissertation. Students working on a dissertation may enroll in Ph.D. Dissertation Research, as appropriate for the selected option. A maximum of 9 hours Dissertation Research can be used toward the required hours of work in courses numbered 5000 or above.

## Financial Assistance

Any student who intends to apply for financial assistance, in the form of a teaching assistantship or a research assistantship, is required to have three letters of recommendation submitted with the application to the graduate program in Mathematics or Computer Science. The application must include scores on the GRE general aptitude test. Applicants are also encouraged to submit scores in the GRE subject area test in Mathematics or Computer Science. Applications for financial assistance should be submitted before February 15 prior to the academic year in which the student expects to begin graduate study. Notifications of awards are generally made March 15, and students awarded financial assistance are expected to return letters of acceptance by April 15.

## Mathematical and Computational Science PhD, Statistics Emphasis

### Admission Requirements

Applicants must have at least a bachelor's degree in mathematics or in a field with significant mathematical content. Examples of such fields include computer science, data science, economics, engineering and physics. An applicant's record should demonstrate superior achievement in undergraduate mathematics.

Individuals may apply for direct admission to either the M.A. or Ph.D. program. Candidates for the M.A. degree may choose an emphasis in mathematics or data science. Students in the M.A. program who want to transfer to the Ph.D. program upon successful completion of 15 credit hours must fill out a new application through Graduate Admissions.

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Applicants for the Ph.D. program must, in addition, submit three letters of recommendation and scores from the Graduate Record Examination (GRE) general aptitude test.

## Doctor of Philosophy in Mathematical and Computational Sciences

The program has three options:

1. Mathematics Option
2. Computer Science Option
3. Statistics Option

The requirements for the Ph.D. degree include the following:

1. Course work
2. Ph.D. candidacy
3. Doctoral dissertation

The requirements are described in detail below.

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A minimum of 60 hours of courses numbered 4000 or above.

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In the Statistics Option, at least 33 hours must be in courses numbered 5000 or above.

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2. Ph.D. Candidacy  
Advancement to Ph.D. candidacy is a three-step process consisting of:
  - a. Completing 18 hours of 5000 level courses other than Ph.D. Dissertation Research as appropriate for the selected option.
  - b. Passing the comprehensive examination.
  - c. Selecting a Ph.D. committee and preparing a dissertation proposal and defense of the proposal.

## Qualifying Examination

A student must fulfill the following requirements.

### Basic Requirement

Pass one written examination covering fundamental topics. This examination would normally take place within the first 12 credit hours of study after admission to the Ph.D. program.

### Mathematics Option

Topics from real analysis, complex analysis, and linear algebra:

MATH 4100	Real Analysis I	3
MATH 4160	Complex Analysis I	3
MATH 4450	Linear Algebra	3
Total Hours		9

### Computer Science Option

Topics from the theory of programming languages, operating systems, analysis of algorithms, and computer systems:



CMP SCI 4250	Programming Languages	3
CMP SCI 4760	Operating Systems	3
CMP SCI 5130	Advanced Data Structures and Algorithms	3
CMP SCI 5700	Computer Systems	3
Total Hours		12

## Statistics Option

Topics from real analysis, linear algebra, and mathematical statistics:

MATH 4100	Real Analysis I	3
MATH 4450	Linear Algebra	3
MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3
Total Hours		12

## Additional Requirement

After fulfilling the basic requirement above, the student must meet one of the following:

1. Pass a written examination in an area of the student's interests. This area will be approved by the graduate committee and will be based on a set of two or more graduate courses taken by the student. This examination would normally take place within the first 24 credit hours of study after admission to the Ph.D. program.
2. Write a survey paper in a specialized area under the direction of a member of the graduate faculty. The student should propose to take this option when he/she has already finished at least 2 graduate level courses and has the approval of the graduate committee. The paper should be submitted within four semesters, at which time an oral examination given by a committee of at least three members of the graduate faculty must be passed.

In both parts 1) and 2), the graduate committee will determine if the topics are consistent with the option that the student is pursuing.

## Dissertation Committee and Dissertation Proposal

After completing the comprehensive examinations, each student chooses a dissertation advisor and prepares a Dissertation Proposal. Usually students choose an advisor from contacts made through their course work. The dissertation committee will be formed, and the student will meet with this committee for an oral defense of his/her dissertation proposal. The dissertation proposal is a substantial document describing the problem to be worked on and the methods to be used, as well as demonstrating the student's proficiency in written communication.

## Doctoral Dissertation

Each Ph.D. candidate must write a dissertation that is an original contribution to the field on a topic approved by the candidate's Ph.D. Committee and the department, and which meets the standards and requirements set by the Graduate School including the public defense of the dissertation. Students working on a dissertation may enroll in Ph.D. Dissertation Research, as appropriate for the selected option. A maximum of 9 hours Dissertation Research can be used toward the required hours of work in courses numbered 5000 or above.

# Mathematics BA

## General Education Requirements

All department majors must satisfy the university and appropriate school or college general education requirements (p. 51). All mathematics courses may be used to meet the university's general education breadth of study requirement in natural sciences and mathematics.

## Satisfactory/Unsatisfactory Restrictions

All department majors may not take mathematical sciences or related area courses on a satisfactory/unsatisfactory basis. Students considering graduate study should consult with their advisers about taking work on a satisfactory/unsatisfactory basis.

## Degree Requirements

All courses of the department presented to meet the degree requirements must be completed with a grade of C- or better. At least four courses numbered 3000 or above must be taken in residence. Students must have a 2.0 grade point average in the mathematical sciences courses completed.

Students enrolling in introductory mathematics courses should check the prerequisites to determine if a satisfactory score on the Mathematics Placement Test is necessary. Placement into introductory courses assumes a mastery of two years of high school algebra.

A minimum grade of C- is required to meet the prerequisite requirement for any course except with permission of the department.

Note: Courses that are prerequisites for higher-level courses may not be taken for credit or quality points if the higher-level course has been satisfactorily completed.

Many students are qualified, as a result of having studied calculus in high school, to begin their major with MATH 1900, Analytic Geometry and Calculus II, or MATH 2000, Analytic Geometry and Calculus III. These students are urged to consult with the department before planning their programs. Credit for MATH 1800, Analytic Geometry and Calculus I, will be granted to those students who complete MATH 1900 with a grade of C- or better.

Similarly, students who are ready to begin their computer science studies with CMP SCI 2250, Programming and Data Structures, will be granted credit for CMP SCI 1250, Introduction to Computing, once they complete CMP SCI 2250 with a grade of C- or better.

## Declaring the Mathematics Major

Students seeking to major in mathematics are first designated as "pre-mathematics majors" until they have completed both MATH 1900 and MATH 2000 or equivalent courses. Upon successful completion of these two courses with grades of C or better, students will be allowed to declare mathematics as their major. Each of these courses must be completed successfully within two attempts.

## Degree Requirements in Mathematics

All mathematics majors in all undergraduate programs must complete the mathematics core requirements.

## Core Requirements

1. The following courses are required:

CMP SCI 1250	Introduction to Computing	3
MATH 1320	Introduction to Probability and Statistics	3
MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
MATH 2020	Introduction to Differential Equations	3
MATH 2450	Elementary Linear Algebra	3
MATH 3250 or CMP SCI 3130	Foundations of Mathematics Design and Analysis of Algorithms	3
MATH 4100	Real Analysis I	3
Total Hours		33

2. The related area requirements as described below must be satisfied.

Students seeking a double degree, either within this department or with another department, do not have to fulfill the related area requirements.

## Related Area Requirements for majors in Mathematics

Candidates for the B.A. in Mathematics must satisfy the requirements in one of the groups below with a grade of C-or better. Candidates for the B.S.Ed. in Mathematics and B.S. in Mathematics must satisfy the requirements in two of the groups below with a grade of C-or better.

If candidates choose group 2, then they cannot apply either of the two courses listed in that group towards the additional 4000 level mathematics courses (beyond the core requirements) that must be completed for each of these degrees.

Students seeking a double degree, either within this department or with another department do not have to fulfill the related area requirements.

## Related Area Courses

### 1) Computer Science

Select two of the following: 6

CMP SCI 2250	Programming and Data Structures
CMP SCI 2700	Computer Organization and Architecture
CMP SCI 3130	Design and Analysis of Algorithms
CMP SCI 4140	Theory of Computation
CMP SCI 4410	Introduction to Computer Graphics
CMP SCI 4420	Introduction to Digital Image Processing

### 2) Statistics

MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3

### 3) Biology

BIOL 2102	General Ecology	3
BIOL 2103	General Ecology Laboratory	2

### 4) Biology

BIOL 2012	Genetics	3
BIOL 4182	Population Biology	3

### 5) Chemistry

CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
CHEM 1121	Introductory Chemistry II	5

### 6) Chemistry

CHEM 3312	Physical Chemistry I	3
And another 3000-level, or above, chemistry course.		3

### 7) Economics

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
ECON 4100	Introduction to Econometrics	4

### 8) Philosophy

PHIL 3360	Formal Logic	3
PHIL 3380	Philosophy of Science	3

### 9) Physics

PHYSICS 2111	Physics: Mechanics and Heat (MOTR PHYS 200L)	5
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	5

### 10) Physics

PHYSICS 3221	Mechanics	3
And another 3000 level, or above, physics course.		3

### 11) Business Administration

SCMA 3320	Advanced Supply Chain and Operations Management	3
SCMA 4350	Prescriptive Analytics and Optimization	3

### 12) Engineering

ENGR 2310	Statics	3
ENGR 2320	Dynamics	3

In addition to the core requirements and the College of Arts and Sciences' foreign language requirement, three mathematics courses at the 4000 level or higher must be completed. Of these, one must be MATH 4400, Introduction to Abstract Algebra

## B.S. Ed. in Secondary Education with Emphasis in Mathematics

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Mathematics with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to

the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education.

*Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

- A successful undergraduate should, upon completion, be able to:
- Write clear, logically consistent proofs.
- Read, understand and assess the veracity of logical arguments or mathematical proofs.
- Reformulate problems or questions in relevant mathematical terms.
- Solve problems which involve analysis, algebra or linear algebra, elementary number theory, elementary probability or statistics.
- Demonstrate basic proficiency in speaking, reading and writing in a language in addition to English.

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 MATH 1320	3
ENGL 1100		3 MATH 1900	5
MATH 1800		5 EXPLORE - Humanities & Fine Arts	3
EXPLORE - Humanities & Fine Arts		3 EXPLORE - Social Sciences	3
EXPLORE - Social Sciences		3 CORE - US History and Government	3
	15		17

### Second Year

Fall	Hours	Spring	Hours
MATH 2000		5 MATH 2020	3
MATH 2450		3 MATH 3250	3
CMP SCI 1250		3 EXPLORE - Social Sciences	3
Foreign Language 1001		5 Foreign Language 1002	5
	16		14

### Third Year

Fall	Hours	Spring	Hours
ENGL 3100		3 MATH 4100	3
MATH 4400		3 Cultural Diversity Requirement	3
Foreign Language 2101		3 2000-level Related Area Requirement	3
EXPLORE - Humanities and Fine Arts		3 Elective or minor	6
CORE - Communication Proficiency		3	
	15		15

### Fourth Year

Fall	Hours	Spring	Hours
MATH 4000+ level course		3 MATH 4000-level course	3
2000-level Related Area Requirement		3 2000-level Elective	3
Elective or minor		3 Elective or minor	7
2000-level Elective		6	
	15		13

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Mathematics BA or BS/MA Dual Degree Program

### BA/BS and MA Dual Degree Program in Mathematics

This is an integrated BA/BS and MA ('2+3') dual degree program in Mathematics: it is designed to provide an opportunity for mathematics majors at the University of Missouri-St Louis (UMSL) with a strong academic record to start earning graduate work credit before actually completing their undergraduate degree and to shorten, or accelerate, the time required as graduate students to earn their master's degree. A student in this program can apply up to 12 credit hours of 4000-and-above level courses towards both programs.

#### Entry Requirements

- Undergraduate math majors can apply for provisional admission for this program if:
  1. They have completed at least 60 credit hours of coursework and
  2. Their GPA is 3.0 or higher.

Students submit their applications to the department. Once a student is admitted in this provisional status, the student continues to work toward his/her undergraduate degree until the student completes 90-102 undergraduate credit hours. Meanwhile the student will be advised to complete the required courses for graduate admission.

- A provisionally admitted student is reviewed for formal admission after completing 90 undergraduate credit hours. Minimal requirements for admission include:
  1. GPA of 3.0 or higher at the time of the review
  2. MATH 1320, MATH 2020, MATH 2450, MATH 3250 - all completed with a grade of B- or higher.

A student's application meeting the minimal requirements does not mean the student is automatically admitted in this program. The math graduate committee will review the application and make a decision. In case the application is approved, the student needs to complete a formal application for admission into the graduate program and is recommended for admission by the graduate committee.

#### Degree Program

1. The current separate requirements for BA/BS and MA in math remain unchanged.
2. Once the student is admitted in this program, the student is allowed to take graduate courses (paid with graduate fees).
3. The student in this program can apply up to 12 credit hours of 4000-and-above level courses towards both the bachelor and master's degrees. The student may get the BA/BS and MA degrees at the same time.

- In case a student cannot complete the master's degree for some reason, up to 12 credit hours of graduate level courses can be applied towards the BA/BS degree.
- Students will pay graduate fees for all courses after being admitted and starting the program.

## Mathematics BS

### General Education Requirements

All department majors must satisfy the university and appropriate school or college general education requirements (p. 51). All mathematics courses may be used to meet the university's general education breadth of study requirement in natural sciences and mathematics.

### Satisfactory/Unsatisfactory Restrictions

All department majors may not take mathematical sciences or related area courses on a satisfactory/unsatisfactory basis. Students considering graduate study should consult with their advisers about taking work on a satisfactory/unsatisfactory basis.

### Degree Requirements

All courses of the department presented to meet the degree requirements must be completed with a grade of C- or better. At least four courses numbered 3000 or above must be taken in residence. Students must have a 2.0 grade point average in the mathematical sciences courses completed.

Students enrolling in introductory mathematics courses should check the prerequisites to determine if a satisfactory score on the Mathematics Placement Test is necessary. Placement into introductory courses assumes a mastery of two years of high school algebra.

A minimum grade of C- is required to meet the prerequisite requirement for any course except with permission of the department.

Note: Courses that are prerequisites for higher-level courses may not be taken for credit or quality points if the higher-level course has been satisfactorily completed.

Many students are qualified, as a result of having studied calculus in high school, to begin their major with MATH 1900, Analytic Geometry and Calculus II, or MATH 2000, Analytic Geometry and Calculus III. These students are urged to consult with the department before planning their programs. Credit for MATH 1800, Analytic Geometry and Calculus I, will be granted to those students who complete MATH 1900 with a grade of C- or better.

Similarly, students who are ready to begin their computer science studies with CMP SCI 2250, Programming and Data Structures, will be granted credit for CMP SCI 1250, Introduction to Computing, once they complete CMP SCI 2250 with a grade of C- or better.

### Declaring the Mathematics Major

Students seeking to major in mathematics are first designated as "pre-mathematics majors" until they have completed both MATH 1900 and MATH 2000 or equivalent courses. Upon successful completion of these two courses with grades of C or better, students will be allowed to declare mathematics as their major. Each of these courses must be completed successfully within two attempts.

## Degree Requirements in Mathematics

All mathematics majors in all undergraduate programs must complete the mathematics core requirements.

### Core Requirements

- The following courses are required:

CMP SCI 1250	Introduction to Computing	3
MATH 1320	Introduction to Probability and Statistics	3
MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
MATH 2020	Introduction to Differential Equations	3
MATH 2450	Elementary Linear Algebra	3
MATH 3250 or CMP SCI 3130	Foundations of Mathematics Design and Analysis of Algorithms	3
MATH 4100	Real Analysis I	3
Total Hours		33

- The related area requirements as described below must be satisfied. Students seeking a double degree, either within this department or with another department, do not have to fulfill the related area requirements.

### Related Area Requirements for majors in Mathematics

Candidates for the B.A. in Mathematics must satisfy the requirements in one of the groups below with a grade of C- or better. Candidates for the B.S.Ed. in Mathematics and B.S. in Mathematics must satisfy the requirements in two of the groups below with a grade of C- or better.

If candidates choose group 2, then they cannot apply either of the two courses listed in that group towards the additional 4000 level mathematics courses (beyond the core requirements) that must be completed for each of these degrees.

Students seeking a double degree, either within this department or with another department do not have to fulfill the related area requirements.

### Related Area Courses

#### 1) Computer Science

Select two of the following:		6
CMP SCI 2250	Programming and Data Structures	
CMP SCI 2700	Computer Organization and Architecture	
CMP SCI 3130	Design and Analysis of Algorithms	
CMP SCI 4140	Theory of Computation	
CMP SCI 4410	Introduction to Computer Graphics	
CMP SCI 4420	Introduction to Digital Image Processing	

#### 2) Statistics

MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3

#### 3) Biology

BIOL 2102	General Ecology	3
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BIOL 2103	General Ecology Laboratory	2
<b>4) Biology</b>		
BIOL 2012	Genetics	3
BIOL 4182	Population Biology	3
<b>5) Chemistry</b>		
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
CHEM 1121	Introductory Chemistry II	5
<b>6) Chemistry</b>		
CHEM 3312	Physical Chemistry I	3
And another 3000-level, or above, chemistry course.		
<b>7) Economics</b>		
ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
ECON 4100	Introduction to Econometrics	4
<b>8) Philosophy</b>		
PHIL 3360	Formal Logic	3
PHIL 3380	Philosophy of Science	3
<b>9) Physics</b>		
PHYSICS 2111	Physics: Mechanics and Heat (MOTR PHYS 200L)	5
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	5
<b>10) Physics</b>		
PHYSICS 3221	Mechanics	3
And another 3000 level, or above, physics course.		
<b>11) Business Administration</b>		
SCMA 3320	Advanced Supply Chain and Operations Management	3
SCMA 4350	Prescriptive Analytics and Optimization	3
<b>12) Engineering</b>		
ENGR 2310	Statics	3
ENGR 2320	Dynamics	3

In addition to the core requirements, the B.S. in Mathematics degree requires:

1. Completing all of the following:

MATH 4160	Complex Analysis I	3
MATH 4400	Introduction to Abstract Algebra I	3
MATH 4450	Linear Algebra	3
Total Hours		9

2. Completing an additional three courses numbered above 4000 in mathematics, statistics or computer science, at least one of which must be in mathematics/statistics.

## B.S. Ed. in Secondary Education with Emphasis in Mathematics

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in

the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Mathematics with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

A successful undergraduate should, upon completion, be able to:

- Write clear, logically consistent proofs.
- Read, understand and assess the veracity of logical arguments or mathematical proofs.
- Reformulate problems or questions in relevant mathematical terms.
- Solve problems which involve analysis, algebra or linear algebra, elementary number theory.
- Interpret, formulate and solve applied problems in probability and statistics.
- Interpret, formulate and solve applied problems in mathematics relating to annuities, bonds and derivative investments.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 MATH 1900	5
ENGL 1100		3 MATH 1320	3
MATH 1800		5 EXPLORE - Humanities and Fine Arts	3
EXPLORE - Humanities and Fine Arts		3 EXPLORE - Social Sciences	3
EXPLORE - Social Sciences		3 CORE - US History and Government	3
		15	17
Second Year			
Fall	Hours	Spring	Hours
MATH 2000		5 MATH 2020	3
MATH 2450		3 MATH 3250	3
CMP SCI 1250		3 EXPLORE - Social Sciences	3
CORE - Communication Proficiency		3 Cultural Diversity Requirement	3
EXPLORE - Humanities and Fine Arts		3 Elective or minor	3
		17	15
Third Year			
Fall	Hours	Spring	Hours
MATH 4100		3 MATH 4160	3

MATH 4400	3 MATH 4450	3
ENGL 3100	3 Related Area Requirement	3
Related Area Requirement	3 Elective or minor	6
Elective or minor	3	
	15	15

**Fourth Year**

Fall	Hours	Spring	Hours
MATH/CMP SCI 4000-level course	3	MATH/CMP SCI 4000-level course	3
MATH 4000-level course	3	Elective or minor	9
Related Area Requirement	6		
Elective or minor	2		
	14		12

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Mathematics BS, Data Science Emphasis

### General Education Requirements

All department majors must satisfy the university and appropriate school or college general education requirements (p. 51). All mathematics courses may be used to meet the university's general education breadth of study requirement in natural sciences and mathematics.

### Satisfactory/Unsatisfactory Restrictions

All department majors may not take mathematical sciences or related area courses on a satisfactory/unsatisfactory basis. Students considering graduate study should consult with their advisers about taking work on a satisfactory/unsatisfactory basis.

### Degree Requirements

All courses of the department presented to meet the degree requirements must be completed with a grade of C- or better. At least four courses numbered 3000 or above must be taken in residence. Students must have a 2.0 grade point average in the mathematical sciences courses completed.

Students enrolling in introductory mathematics courses should check the prerequisites to determine if a satisfactory score on the Mathematics Placement Test is necessary. Placement into introductory courses assumes a mastery of two years of high school algebra.

A minimum grade of C- is required to meet the prerequisite requirement for any course except with permission of the department.

Note: Courses that are prerequisites for higher-level courses may not be taken for credit or quality points if the higher-level course has been satisfactorily completed.

Many students are qualified, as a result of having studied calculus in high school, to begin their major with MATH 1900, Analytic Geometry and Calculus II, or MATH 2000, Analytic Geometry and Calculus III. These

students are urged to consult with the department before planning their programs. Credit for MATH 1800, Analytic Geometry and Calculus I, will be granted to those students who complete MATH 1900 with a grade of C- or better.

Similarly, students who are ready to begin their computer science studies with CMP SCI 2250, Programming and Data Structures, will be granted credit for CMP SCI 1250, Introduction to Computing, once they complete CMP SCI 2250 with a grade of C- or better.

## Declaring the Mathematics Major

Students seeking to major in mathematics are first designated as "pre-mathematics majors" until they have completed both MATH 1900 and MATH 2000 or equivalent courses. Upon successful completion of these two courses with grades of C or better, students will be allowed to declare mathematics as their major. Each of these courses must be completed successfully within two attempts.

## Degree Requirements in Mathematics

All mathematics majors in all undergraduate programs must complete the mathematics core requirements.

### Core Requirements

1. The following courses are required:

CMP SCI 1250	Introduction to Computing	3
MATH 1320	Introduction to Probability and Statistics	3
MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
MATH 2020	Introduction to Differential Equations	3
MATH 2450	Elementary Linear Algebra	3
MATH 3250	Foundations of Mathematics	3
or CMP SCI 3130	Design and Analysis of Algorithms	
MATH 4100	Real Analysis I	3
Total Hours		33

2. The related area requirements as described below must be satisfied. Students seeking a double degree, either within this department or with another department, do not have to fulfill the related area requirements.

In addition to the core requirements, the B.S. in Mathematics degree requires:

1. Completing all of the following:

MATH 4160	Complex Analysis I	3
MATH 4400	Introduction to Abstract Algebra I	3
MATH 4450	Linear Algebra	3
Total Hours		9

2. Completing an additional three courses numbered above 4000 in mathematics, statistics or computer science, at least one of which must be in mathematics/statistics.

## Emphasis Area Requirements

CMP SCI 2250	Programming and Data Structures	3
MATH 1320	Introduction to Probability and Statistics	3
MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
MATH 2020	Introduction to Differential Equations	3
MATH 2450	Elementary Linear Algebra	3
MATH 3250	Foundations of Mathematics	3
MATH 4100	Real Analysis I	3

### Specialized Requirements

MATH 4005	Exploratory Data Analysis with R	3
MATH 4070	Introduction to Nonlinear Optimization	3
MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3
MATH 4250	Introduction to Statistical Methods in Learning and Modeling	3

### Elective Requirements 12

Choose two courses from the following list and two additional courses in mathematics, statistics or computer science numbered above 4000:

MATH 3320	Applied Statistics
MATH 4080	Introduction to Scientific Computation
MATH 4090	Introduction to High-dimensional Data Analysis
MATH 4220	Bayesian Statistical Methods
MATH 4225	Introduction to Statistical Computing
MATH 4260	Introduction to Stochastic Processes
MATH 4450	Linear Algebra

Total Hours	60
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There are no related area requirements.

Computer Science majors who would like to pursue the B.S. in Mathematics (Emphasis in Data Science) are not required to take MATH 2020 and must:

a) complete all courses in the core requirements, except for MATH 4100 and may substitute MATH 3000 for MATH 3250

b) complete all courses in the specialized requirements and one from elective requirements.

## B.S. Ed. in Secondary Education with Emphasis in Mathematics

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification,*

*DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Mathematics with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education.

*Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

A successful undergraduate should, upon completion, be able to:

- Write clear, logically consistent proofs.
- Read, understand and assess the veracity of logical arguments or mathematical proofs.
- Reformulate problems or questions in relevant mathematical terms.
- Solve problems which involve analysis, algebra or linear algebra, elementary number theory.
- Interpret, formulate and solve problems and assess data related questions from an advanced probabilistic and statistical viewpoint.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 CMP SCI 1250	3
ENGL 1100	3	MATH 1900	5
MATH 1800	5	MATH 1320	3
CORE - U.S. History and Government	3	EXPLORE - Humanities and Fine Arts	3
CORE - Communication Proficiency	3	EXPLORE - Social Sciences	3
	15		17
Second Year			
Fall	Hours	Spring	Hours
CMP SCI 2250		3 MATH 2020	3
MATH 2000	5	MATH 3250	3
MATH 2450	3	EXPLORE - Humanities and Fine Arts	3
Cultural Diversity Requirement	3	EXPLORE - Social Sciences	3
		EXPLORE - Social Sciences	3
	14		15
Third Year			
Fall	Hours	Spring	Hours
MATH 4070		3 MATH 4005	3
MATH 4100	3	MATH 4200	3
MATH 3000+ level Course	3	MATH 4250	3
EXPLORE - Social Sciences	3	Elective or minor	6
ENGL 3100	3		
	15		15

Fourth Year			
Fall	Hours	Spring	Hours
MATH 3000+ level Course	3	MATH/CMP SCI elective	6
MATH 4210	3	Elective or minor	8
EXPLORE - Humanities and Fine Arts	3		
Elective or minor	6		
	15		14

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Mathematics BS, Fiscal Mathematics Emphasis

### General Education Requirements

All department majors must satisfy the university and appropriate school or college general education requirements (p. 51). All mathematics courses may be used to meet the university's general education breadth of study requirement in natural sciences and mathematics.

### Satisfactory/Unsatisfactory Restrictions

All department majors may not take mathematical sciences or related area courses on a satisfactory/unsatisfactory basis. Students considering graduate study should consult with their advisers about taking work on a satisfactory/unsatisfactory basis.

### Degree Requirements

All courses of the department presented to meet the degree requirements must be completed with a grade of C- or better. At least four courses numbered 3000 or above must be taken in residence. Students must have a 2.0 grade point average in the mathematical sciences courses completed.

Students enrolling in introductory mathematics courses should check the prerequisites to determine if a satisfactory score on the Mathematics Placement Test is necessary. Placement into introductory courses assumes a mastery of two years of high school algebra.

A minimum grade of C- is required to meet the prerequisite requirement for any course except with permission of the department.

Note: Courses that are prerequisites for higher-level courses may not be taken for credit or quality points if the higher-level course has been satisfactorily completed.

Many students are qualified, as a result of having studied calculus in high school, to begin their major with MATH 1900, Analytic Geometry and Calculus II, or MATH 2000, Analytic Geometry and Calculus III. These students are urged to consult with the department before planning their programs. Credit for MATH 1800, Analytic Geometry and Calculus I, will be granted to those students who complete MATH 1900 with a grade of C- or better.

Similarly, students who are ready to begin their computer science studies with CMP SCI 2250, Programming and Data Structures, will be granted credit for CMP SCI 1250, Introduction to Computing, once they complete CMP SCI 2250 with a grade of C- or better.

### Declaring the Mathematics Major

Students seeking to major in mathematics are first designated as "pre-mathematics majors" until they have completed both MATH 1900 and MATH 2000 or equivalent courses. Upon successful completion of these two courses with grades of C or better, students will be allowed to declare mathematics as their major. Each of these courses must be completed successfully within two attempts.

### Degree Requirements in Mathematics

All mathematics majors in all undergraduate programs must complete the mathematics core requirements.

### Core Requirements

1. The following courses are required:

CMP SCI 1250	Introduction to Computing	3
MATH 1320	Introduction to Probability and Statistics	3
MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
MATH 2020	Introduction to Differential Equations	3
MATH 2450	Elementary Linear Algebra	3
MATH 3250	Foundations of Mathematics	3
or CMP SCI 3130	Design and Analysis of Algorithms	
MATH 4100	Real Analysis I	3
Total Hours		33

2. The related area requirements as described below must be satisfied. Students seeking a double degree, either within this department or with another department, do not have to fulfill the related area requirements.

### Related Area Requirements for majors in Mathematics

Candidates for the B.A. in Mathematics must satisfy the requirements in one of the groups below with a grade of C- or better. Candidates for the B.S.Ed. in Mathematics and B.S. in Mathematics must satisfy the requirements in two of the groups below with a grade of C- or better.

If candidates choose group 2, then they cannot apply either of the two courses listed in that group towards the additional 4000 level mathematics courses (beyond the core requirements) that must be completed for each of these degrees.

Students seeking a double degree, either within this department or with another department do not have to fulfill the related area requirements.

### Related Area Courses

#### 1) Computer Science

Select two of the following:	6
CMP SCI 2250	Programming and Data Structures



CMP SCI 2700	Computer Organization and Architecture	
CMP SCI 3130	Design and Analysis of Algorithms	
CMP SCI 4140	Theory of Computation	
CMP SCI 4410	Introduction to Computer Graphics	
CMP SCI 4420	Introduction to Digital Image Processing	

**2) Statistics**

MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3

**3) Biology**

BIOL 2102	General Ecology	3
BIOL 2103	General Ecology Laboratory	2

**4) Biology**

BIOL 2012	Genetics	3
BIOL 4182	Population Biology	3

**5) Chemistry**

CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
CHEM 1121	Introductory Chemistry II	5

**6) Chemistry**

CHEM 3312	Physical Chemistry I	3
And another 3000-level, or above, chemistry course.		3

**7) Economics**

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
ECON 4100	Introduction to Econometrics	4

**8) Philosophy**

PHIL 3360	Formal Logic	3
PHIL 3380	Philosophy of Science	3

**9) Physics**

PHYSICS 2111	Physics: Mechanics and Heat (MOTR PHYS 200L)	5
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	5

**10) Physics**

PHYSICS 3221	Mechanics	3
And another 3000 level, or above, physics course.		3

**11) Business Administration**

SCMA 3320	Advanced Supply Chain and Operations Management	3
SCMA 4350	Prescriptive Analytics and Optimization	3

**12) Engineering**

ENGR 2310	Statics	3
ENGR 2320	Dynamics	3

**Emphasis Area Requirements**

MATH 1320	Introduction to Probability and Statistics	3
MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5

MATH 2000	Analytic Geometry and Calculus III	5
MATH 2020	Introduction to Differential Equations	3
MATH 2450	Elementary Linear Algebra	3
MATH 3250	Foundations of Mathematics	3
MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3

**Specialized Requirements**

MATH 4010	Financial Mathematics I	3
MATH 4020	Financial Mathematics II	3
FINANCE 3500	Financial Management	3
MATH 4005	Exploratory Data Analysis with R	3

In addition, two further courses in mathematics, statistics or computer science numbered above 4000.

**Related Requirements**

ECON 4100	Introduction to Econometrics	4
ECON 4110	Applied Econometrics	4
or ECON 4130	Business and Economic Forecasting	

Complete two of the following courses:

FINANCE 3503	Computer Applications in Finance	
FINANCE 3520	Investments	
FINANCE 3521	Financial Engineering: Applying Derivatives	
FINANCE 3523	Fixed Income Analysis	
FINANCE 3540	Introduction to Financial Institutions and Financial Markets	

Total Hours 65

**B.S. Ed. in Secondary Education with Emphasis in Mathematics**

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

**B.A. or B.S. in Mathematics with Master's Level Coursework for Secondary Teacher Certification**

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

A successful undergraduate should, upon completion, be able to:

- Write clear, logically consistent proofs.
- Read, understand and assess the veracity of logical arguments or mathematical proofs.
- Reformulate problems or questions in relevant mathematical terms.
- Solve problems which involve analysis, algebra or linear algebra, elementary number theory.
- Interpret, formulate and solve applied problems in probability and statistics.
- Interpret, formulate and solve applied problems in mathematics relating to annuities, bonds and derivative investments.

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 MATH 1900	5
ENGL 1100		3 MATH 1320	3
MATH 1800		5 ECON 1001	3
INFSYS 1800		3 EXPLORE - Humanities and Fine Arts	3
CORE - Communication Proficiency		3 INFSYS 2800	3
	15		17

### Second Year

Fall	Hours	Spring	Hours
MATH 2000		5 MATH 2020	3
MATH 2450		3 MATH 3250	3
CMP SCI 1250		3 CORE - U.S. History and Government	3
ECON 1002		3 Cultural Diversity Requirement	3
ACCTNG 2400		3 Elective or minor	2
	17		14

### Third Year

Fall	Hours	Spring	Hours
MATH 4010		3 MATH 4200	3
ECON 4100		4 MATH 4020	3
MATH 4005		3 FINANCE 3500	3
ENGL 3100		3 EXPLORE - Humanities and Fine Arts	3
Elective or minor		3 Elective or minor	3
	16		15

### Fourth Year

Fall	Hours	Spring	Hours
MATH 4210		3 MATH/CMP SCI 4000-level course	3
ECON 4130		4 ECON 4110	4
FINANCE 35XX Course		3 FINANCE 35XX Course	3
EXPLORE - Humanities and Fine Arts		3 EXPLORE - Social Sciences	3
	13		13

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Mathematics MA

### Admission Requirements

Applicants must have at least a bachelor's degree in mathematics or in a field with significant mathematical content. Examples of such fields include computer science, data science, economics, engineering and physics. An applicant's record should demonstrate superior achievement in undergraduate mathematics.

Individuals may apply for direct admission to either the M.A. or Ph.D. program. Candidates for the M.A. degree may choose an emphasis in mathematics or data science. Students in the M.A. program who want to transfer to the Ph.D. program upon successful completion of 15 credit hours must fill out a new application through Graduate Admissions.

Students intending to enter the Ph.D. program must have a working ability in modern programming technologies. A student with a deficiency in this area may be required to take courses at the undergraduate level in computer science.

Applicants for the Ph.D. program must, in addition, submit three letters of recommendation and scores from the Graduate Record Examination (GRE) general aptitude test.

### Preliminary Advisement

Incoming students are assigned advisers with whom they should consult before each registration period to determine an appropriate course of study. If necessary, students may be required to complete undergraduate course work without receiving graduate credit.

Students interested in the Ph.D. program in mathematical and computational sciences with the computer science option must follow the requirements for that program and that option.

### Degree Requirements

Candidates for the M.A. degree must complete 30 hours of course work with at least 15 hours of courses numbered 5000 or above. All courses numbered below 5000 must be completed with grades of at least B. The selections of the courses numbered 5000 or above need the prior approval of the graduate advisor. The courses taken must include those listed below in the mathematics core and other seven mathematics courses numbered 4000 or higher with at least five courses numbered 5000 or above.

Students who have already completed courses equivalent to those in the core may substitute other courses numbered above 4000. All substitutions of courses for those listed in the core require the prior approval of the graduate director.

### Thesis Option

Either for the mathematics option or for the data science option, the non-core course work may consist of an M.A. thesis written under the direction of a faculty member in the Department of Mathematics and Computer Science. A thesis is not, however, required for this degree. A student who wishes to write a thesis should enroll in 6 hours of MATH 6900, M.A. Thesis. Students writing an M.A. thesis must defend their thesis in an oral exam administered by a committee of three department members which includes the thesis director.

### Core Courses

MATH 4100	Real Analysis I	3
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MATH 4160	Complex Analysis I	3
MATH 4450	Linear Algebra	3
Electives <sup>1</sup>		21
Total Hours		30

<sup>1</sup> Electives must be seven mathematics courses numbered 4000 or higher with at least five courses numbered 5000 or above.

## Financial Assistance

Any student who intends to apply for financial assistance, in the form of a teaching assistantship or a research assistantship, is required to have three letters of recommendation submitted with the application to the graduate program in Mathematics or Computer Science. The application must include scores on the GRE general aptitude test. Applicants are also encouraged to submit scores in the GRE subject area test in Mathematics or Computer Science. Applications for financial assistance should be submitted before February 15 prior to the academic year in which the student expects to begin graduate study. Notifications of awards are generally made March 15, and students awarded financial assistance are expected to return letters of acceptance by April 15.

## Mathematics MA, Data Science Emphasis

### Admission Requirements

Applicants must have at least a bachelor's degree in mathematics or in a field with significant mathematical content. Examples of such fields include computer science, data science, economics, engineering and physics. An applicant's record should demonstrate superior achievement in undergraduate mathematics.

Individuals may apply for direct admission to either the M.A. or Ph.D. program. Candidates for the M.A. degree may choose an emphasis in mathematics or data science. Students in the M.A. program who want to transfer to the Ph.D. program upon successful completion of 15 credit hours must fill out a new application through Graduate Admissions.

Students intending to enter the Ph.D. program must have a working ability in modern programming technologies. A student with a deficiency in this area may be required to take courses at the undergraduate level in computer science.

Applicants for the Ph.D. program must, in addition, submit three letters of recommendation and scores from the Graduate Record Examination (GRE) general aptitude test.

### Preliminary Advisement

Incoming students are assigned advisers with whom they should consult before each registration period to determine an appropriate course of study. If necessary, students may be required to complete undergraduate course work without receiving graduate credit.

Students interested in the Ph.D. program in mathematical and computational sciences with the computer science option must follow the requirements for that program and that option.

Candidates for the M.A. degree must complete 30 hours of course work with at least 15 hours of courses numbered 5000 or above. All courses numbered below 5000 must be completed with grades of at least B. The selections of the courses numbered 5000 or above need the prior approval

of the graduate advisor. The courses taken must include those listed below in the mathematics core and other seven mathematics courses numbered 4000 or higher with at least five courses numbered 5000 or above. For the data science option, the courses taken must include the data-science core courses listed below and five elective courses chosen from the listed below in the data-science electives. Up to 2 courses in the data-science electives can be substituted with other courses upon student's request and graduate program director's approval.

Students who have already completed courses equivalent to those in the core may substitute other courses numbered above 4000. All substitutions of courses for those listed in the core require the prior approval of the graduate director.

### Thesis Option

Either for the mathematics option or for the data science option, the non-core course work may consist of an M.A. thesis written under the direction of a faculty member in the Department of Mathematics and Computer Science. A thesis is not, however, required for this degree. A student who wishes to write a thesis should enroll in 6 hours of MATH 6900, M.A. Thesis. Students writing an M.A. thesis must defend their thesis in an oral exam administered by a committee of three department members which includes the thesis director.

### Core Courses

MATH 4005	Exploratory Data Analysis with R	3
MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3
MATH 5070	Nonlinear Optimization	3
MATH 5250	Statistical Methods in Learning and Modeling	3

### Elective Courses **15**

Choose five of the following courses:

MATH 4220	Bayesian Statistical Methods
MATH 4260	Introduction to Stochastic Processes
MATH 5080	Scientific Computation
MATH 5090	High-dimensional Data Analysis
MATH 5225	Statistical Computing
MATH 5320	Topics in Statistics and its Applications
MATH 5600	Topics in Computation
MATH 5770	Advanced Topics in Nonlinear Optimization
CMP SCI 5340	Machine Learning
CMP SCI 5342	Data Mining

Total Hours **30**

## Financial Assistance

Any student who intends to apply for financial assistance, in the form of a teaching assistantship or a research assistantship, is required to have three letters of recommendation submitted with the application to the graduate program in Mathematics or Computer Science. The application must include scores on the GRE general aptitude test. Applicants are also encouraged to submit scores in the GRE subject area test in Mathematics or Computer Science. Applications for financial assistance should be submitted before February 15 prior to the academic year in which the student expects to begin graduate study. Notifications of awards are

generally made March 15, and students awarded financial assistance are expected to return letters of acceptance by April 15.

## Mathematics Minor

### Minor Requirements

The department offers minors in computer science, mathematics, and statistics. All courses presented for any of these minors must be completed with a grade of C- or better.

#### Minor in Mathematics

The requirements for the minor are:

MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
Select two additional three-hour mathematics courses numbered above 2400 <sup>1</sup>		6

<sup>1</sup> excluding MATH 2510

A minimum of two mathematics courses numbered 2000 or above must be taken in residence in the Department of Mathematics and Computer Science at UMSL.

### Learning Outcomes

A successful undergraduate should, upon completion, be able to:

- Reformulate problems or questions in relevant mathematical terms.
- Solve problems which involve algebra or calculus (of one or several variables).

## Mechanical Engineering BSME

### Admission

Students are admitted to the upper-division program after they have completed an acceptable pre-engineering program. The pre-engineering program can be taken at University of Missouri-St. Louis or at community colleges in the area. Normally, admission is granted to persons who have completed the pre-engineering program with a minimum grade point average of 2.75 over all their mathematics, chemistry, physics, and introductory (statics and dynamics) engineering courses. Students with less than a 2.75 grade point average, but at least a C, in all their science, engineering and mathematics courses may be admitted on a conditional basis.

For more information, please contact the program advisor at (314) 516-7018.

### Degree Requirements

A program of 132 semester hours is required for the Bachelor of Science in Mechanical Engineering.

- Majors must complete the University General Education (p. 51) and Graduation (p. 19) requirements, the Pre-Engineering Requirements, the Core Engineering Requirements, and Major Requirements.
- Majors must first complete J E MATH 3170, Engineering Mathematics, with a minimum grade of C-.

- Majors must also complete J E ENGR 2300, Introduction to Electrical Networks, with a minimum grade of C-.
- A minimum grade of C- is necessary to meet the prerequisite requirement for any course.

## General Education and Graduation Requirements

The following courses fulfill general education and graduation requirements and are required of Mechanical Engineering majors:

PHIL 2259	Engineering Ethics	3
PHIL 3380	Philosophy of Science	3
HIST 1001	American Civilization to 1865 (MOTR HIST 101)	3
or HIST 1002	American Civilization 1865 to Present (MOTR HIST 102)	
Three additional Social Science courses <sup>1</sup>		9
Total Hours		18

<sup>1</sup> One course must meet the Cultural Diversity requirement, and one course must meet the engineering Valuing Skill requirement. Humanities and social sciences electives must meet both the University of Missouri-St. Louis General Education Requirements and the Humanities and Social Sciences Requirements of the Joint Undergraduate Engineering Program. Check with your advisor for details.

## Pre-Engineering Requirements

Students seeking to major in engineering are first designated as 'Undeclared with an interest in Engineering majors' until they have completed Math 1800 Analytical Geometry & Calculus I. Upon successful completion of Math 1800 with a grade of C or better, students will be allowed to declare pre-engineering as their major. Math 1800 must be completed successfully within two attempts.

MATH 1800	Analytic Geometry and Calculus I	5
MATH 1900	Analytic Geometry and Calculus II	5
MATH 2000	Analytic Geometry and Calculus III	5
MATH 2020	Introduction to Differential Equations	3
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	5
PHYSICS 2111	Physics: Mechanics and Heat	4
PHYSICS 2111L	Mechanics and Heat Laboratory	1
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	4
PHYSICS 2112L	Electricity, Magnetism, and Optics Laboratory	1
ENGR 2310	Statics	3
ENGR 2320	Dynamics	3
ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
Total Hours		42

## Engineering Core Requirements

CMP SCI 1250	Introduction to Computing	3
J E COMM 2000	Engineering Studio I	1
J E MATH 3170	Engineering Mathematics	4



ENGL 3130	Technical Writing	3
Total Hours		11

## Mechanical Engineering Major Requirements

J C ENGR 4950	Fundamentals of Civil Engineering Review	1
J CMP SC 1002	Introduction to Computing Tools: Matlab Skills	1
J E ENGR 2300	Introduction to Electrical Networks	3
J E ENGR 2340	Electrical Laboratory for Mechanical Engineers	1
J E MATH 3260	Probability and Statistics for Engineering	3
J M ENGR 1413	Introduction to Engineering Design: CAD	2
J M ENGR 1414	Introduction to Engineering Design: Project	2
J M ENGR 2110	Machine Shop, Fabrication, and Prototyping	2
J M ENGR 2410	Mechanics of Deformable Bodies	3
J M ENGR 3110	Mechanical Design and Machine Elements	3
J M ENGR 3200	Thermodynamics	3
J M ENGR 3250	Material Science for J M ENGR	4
J M ENGR 3700	Fluid Mechanics	3
J M ENGR 3710	Principles of Heat Transfer	3
J M ENGR 3721	Fluid Mechanics Laboratory	1
J M ENGR 3722	Heat Transfer Laboratory	1
J M ENGR 4120	Design of Thermal Systems	3
J M ENGR 4170	Dynamic Response of Physical Systems	2
J M ENGR 4180	Dynamic Response Laboratory	1
J M ENGR 4110	Mechanical Engineering Design Project	3
J M ENGR 4310/ J E ENGR 4410	Control Systems I	3
J M ENGR 4990	Mechanical Engineering Senior Seminar	1
Mechanical Engineering Electives		12
Total Hours		61

## Graduation Requirements

In addition to the requirements of the University of Missouri-St. Louis that apply to all candidates for undergraduate degrees, the student must earn a minimum campus grade point average of 2.0 and a minimum grade point average of 2.0 for all engineering courses attempted at the University of Missouri-St. Louis.

## Sample Graduation Plan

First Year			
Fall	Hours	Spring	Hours
MATH 1800	5	MATH 1900	5
CHEM 1111	5	HIST 1001 or 1002	3
ENGR 1010 <sup>1</sup>	1	EXPLORE – Social Sciences	3

ENGL 1100	3 EXPLORE - Social Sciences <sup>2</sup>	3
Total Hours		14

### Second Year

Fall	Hours	Spring	Hours	Summer	Hours
MATH 2000	5	MATH 2020	3	ENGR 2320	3
PHYSICS 2111	4	PHYSICS 2112	4		
PHYSICS 2111L	1	PHYSICS 2112L	1		
PHIL 2259	3	ENGR 2310	3		
EXPLORE – Social Sciences	3	PHIL 3380	3		
Total Hours		16	14		3

### Third Year

Fall	Hours	Spring	Hours	Summer	Hours
J CMP SC 1002	1	J M ENGR 1414	2	J M ENGR 3250	4
J E MATH 3170	4	J M ENGR 2110	2		
J E ENGR 2300	3	J M ENGR 2410	3		
J E COMM 2000	1	ENGL 3130	3		
CMP SCI 1250	3				
Total Hours		12	10		4

### Fourth Year

Fall	Hours	Spring	Hours	Summer	Hours
J M ENGR 1413	2	J M ENGR 3200	3	J M ENGR 4170	2
J E ENGR 2340	1	J M ENGR 3700	3	J M ENGR 4180	1
MATH 1320	3	J M ENGR 3010 <sup>3</sup>	3		
J M ENGR 4730 <sup>3</sup>	3	J M ENGR 4900 <sup>3</sup>	3		
Total Hours		9	12		3

### Fifth Year

Fall	Hours	Spring	Hours	Summer	Hours
J M ENGR 3110	3	J M ENGR 3722	1	J M ENGR 4110	3
J M ENGR 3710	3	J M ENGR 4120	3		
J M ENGR 3721	1	J C ENGR 4950	1		
J M ENGR 4310	3	J M ENGR 4700 <sup>3</sup>	3		
J M ENGR 4990	1				
Total Hours		11	8		3

Total Hours: 133

- 1 Course does not count toward 132 credit hours for the degree.
- 2 Course should also satisfy the Cultural Diversity Requirement.
- 3 Course is an example J M ENGR elective. Four are required for a total of 12 hours.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Mechanical Engineering Minor

Admission to the Joint Engineering program is required. A minimum of 19 credit hours in Joint Mechanical Engineering and Engineering courses are required.

### Required Courses

ENGR 2310	Statics	3
ENGR 2320	Dynamics	3
J M ENGR 2410	Mechanics of Deformable Bodies	3

Choose at least one of the following four options for an additional 10 credit hours:

**Option 1**

J M ENGR 3250 Material Science for J M ENGR

Any other two J M ENGR courses for 6 credit hours

**Option 2**

J M ENGR 3200 Thermodynamics

J M ENGR 3700 Fluid Mechanics

J M ENGR 3710 Principles of Heat Transfer

J M ENGR 3721 Fluid Mechanics Laboratory

or J M ENGR 3722 Heat Transfer Laboratory

**Option 3**

J M ENGR 3200 Thermodynamics

J M ENGR 3700 Fluid Mechanics

J M ENGR 3710 Principles of Heat Transfer

J M ENGR 3721 Fluid Mechanics Laboratory

or J M ENGR 3722 Heat Transfer Laboratory

**Option 4**

J M ENGR 4170 Dynamic Response of Physical Systems

J M ENGR 4180 Dynamic Response Laboratory

Any other J M ENGR course for 7 credit hours

Total Hours

19

## Media Production Undergraduate Certificate

The Certificate in Media Production provides a sequence of courses designed to develop multi-channel and multi-media skill sets that can be used by students to record, edit, and produce media for artistic, personal, or commercial applications. Students will develop a portfolio of work that will reflect both independent and client-centered content. Students who complete the Certificate in Media Production will develop the knowledge and skills needed in a rapidly changing media environment.

The Certificate in Media Production is composed of 18 hours of coursework. Students must complete at least 12 hours at UMSL and earn at least a B in any course applied to the certificate.

**Required Coursework**

MEDIA ST 2113	Media Production I	3
MEDIA ST 2210	Video Production I	3
MEDIA ST 3310	Video Production II	3
MEDIA ST 3313	Advanced Video Editing	3
MEDIA ST 3318	Advanced Independent Video Production	3
MEDIA ST 2225	Live Events Media	3
or MEDIA ST 3113	Media Production II	

Total Hours

18

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Demonstrate an understanding of available media technology and its applications.
- Develop a substantial foundation in all aspects of media production.

- Establish and nurture a working application in evolving production techniques.
- Learn to utilize external information design in order to extend experiences in production techniques and standards.
- Become prepared to perform as a production specialist in all areas of media.
- Develop a skill set in Media Production that will certify competence in all levels of pre-production, production, and post-production.

## Media Studies BS

**Effective Fall 2019, the Bachelor of Science in Media Studies will no longer be accepting applications.**

## Bachelor of Science in Media Studies

### General Education Requirements

All Media Studies majors must satisfy the University and the College of Arts and Sciences' 42-hour General Education core requirements, which include ENGL 1100 and the Math proficiency requirement.

A Junior-level writing class is required.

The Cultural Diversity requirements may be satisfied by General Education courses or other lower- or-upper level courses in various departments.

State Government/History graduation requirements may be satisfied by General Education courses or by other lower-or-upper level courses in various departments.

There is no foreign language requirement, but foreign language proficiency is recommended.

### Degree Requirements

Media Studies majors must complete 36 hours as part of the degree. At least 24 hours must be taken at UMSL. A core of 21 hours is required.

Required Core Courses for all media studies majors:

Required Core Courses for all media studies majors:

COMM 1050	Introduction to Mass Communication	3
MEDIA ST 2235	Media Theory	3
Select at least two of the following introductory courses:		6
COMM 1150	Introduction to Public Relations	
MEDIA ST 1070	Introduction to Cinema	
MEDIA ST 1100	Introduction to Advertising	
MEDIA ST 1110	Introduction to Broadcasting and Digital Media	
Select at least two of the following applied writing courses:		6
COMM 2180	Public Relations Writing	
MEDIA ST 2180	Introduction to News Writing	
MEDIA ST 2080	Advertising Copywriting	
MEDIA ST 2180	Introduction to News Writing	
MEDIA ST 2212	Broadcast Writing and Reporting	
MEDIA ST 3150	Feature Writing	
Capstone		3
MEDIA ST 1198	Practicum in Media Studies	
or MEDIA ST 3500	Advanced Advertising Seminar	
or MEDIA ST 3398	Internship in Media Studies	

or MEDIA ST 4400	Senior Project	
Total Hours		21

Students must also complete 15 credit hours of electives. Of these, at least six credit hours must be 2000 or higher and another six must be 3000 and higher. Practicum and Internship courses may be repeated for credit and a combined total of six credit hours in Practicum/Internship can be applied to the major. A limit of 20 hours of Practicum/Internship courses will be accepted towards the 120 hour degree. Students may apply up to three of the approved communication courses listed below toward the major as media studies electives.

COMM 3150	Crisis, Disaster, and Risk Communication	3
COMM 3330	Research Methods in Communication I	3
COMM 3352	Mass Media in Society	3
COMM 3355	Dangerous Messages	3
COMM 3360	Media and Health Communication	3
COMM 3370	Social Media in Public Relations	3
COMM 4100	Communication Campaigns	3
COMM 4199	Applied Strategic Communication	3

## Media Studies Minor

A minor in Media Studies consists of 18 credit hours.

### Required Courses:

COMM 1050	Introduction to Mass Communication	3
MEDIA ST 2235	Media Theory	3
Select one of the following:		3
MEDIA ST 1100	Introduction to Advertising	
MEDIA ST 1110	Introduction to Broadcasting and Digital Media	
Select one of the following:		3
MEDIA ST 2180	Introduction to News Writing	
MEDIA ST 2080	Advertising Copywriting	
MEDIA ST 2212	Broadcast Writing and Reporting	
Elective courses		6
Total Hours		18

The elective courses may consist of any media studies course or any communication course that counts towards the media studies major as either an elective or a requirement. At least 3 credit hours must be at the 3000 level or above. At least 9 of the 18 hours required for the minor must be taken at UMSL.

Students must earn at least a C for all media studies courses applied to the minor. A minimum GPA of 2.50 is required in the minor.

## Mobil Apps and Computing Graduate Certificate

The graduate certificate in Mobile Apps and Computing is a five-course (15 credit hours) program. It is designed to provide training in technologies and frameworks for mobile apps and computing.

A minimum of four courses must be taken in residence in the Department of Mathematics and Computer Science at UMSL. A minimum of three courses must be at the 5000-level or higher. Courses may be substituted with the permission of the program director.

### Core

CMP SCI 4220	Introduction to iOS Programming and Apps	3
CMP SCI 5020	Android Apps: Android Fundamentals	3
CMP SCI 5222	Advanced iOS Apps	3

### Electives

Choose two of the following:		6
CMP SCI 4610	Database Management Systems	
CMP SCI 4792	Mobile and Ubiquitous Computing	
CMP SCI 5750	Cloud Computing	

Total Hours		15
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## Mobile Apps and Ubiquitous Computing Undergraduate Certificate

The undergraduate certificate in Mobile Apps and Computing is a five-course (15 credit hour) program. It is designed to provide training in technologies and framework for mobile apps and computing. A minimum GPA of 2.5 is required for admission.

### Required Courses

CMP SCI 4020	Introduction to Android Apps: Android Fundamentals	3
CMP SCI 4220	Introduction to iOS Programming and Apps	3
CMP SCI 4222	iOS Apps	3
CMP SCI 4792	Mobile and Ubiquitous Computing	3
Elective		
Choose one of the following courses:		3
CMP SCI 4010	Advanced Web Development with Java	
CMP SCI 4610	Database Management Systems	
CMP SCI 4750	Introduction to Cloud Computing	
Total Hours		15

A minimum of three courses must be taken from UMSL. Courses may be substituted with the permission of the certificate coordinator. For more information, students can contact the department chair or email [info@arch.umsl.edu](mailto:info@arch.umsl.edu).

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Identify and implement techniques for communicating complex information in the Internet, particularly for mobile and wireless platforms
- Use appropriate programming languages and tools to integrate media and user interaction

- Design and develop applications in mobile and wireless computing, using representative mobile devices and platforms
- Assess and implement security principles in mobile applications
- Evaluate the quality and performance of mobile applications

## Modern European Studies Undergraduate Certificate

Four semesters of college work or the equivalent in a modern European foreign language. 20

HIST 1032	Topics in European Civilization: 1715 to the Present (MOTR WCIV 102)	3
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Select one course each from at least four of the following areas: <sup>1</sup> 12

### Anthropology

ANTHRO 2192	Anthropological Perspectives on Western Culture
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### Art and Art History

ART HS 2250	Rococo to Realism
ART HS 2280	Modern to Contemporary Art
ART HS 4455	Topics in Modern Art

### English

ENGL 3530	Contemporary World Literature
ENGL 4450	The Eighteenth-Century English Novel
ENGL 4540	The Nineteenth-Century English Novel
ENGL 4580	Literature of the Late Nineteenth and Early Twentieth Centuries
ENGL 4750	Modern British Fiction
ENGL 4920	Major Works Of European Fiction

### History

HIST 3092	War and Upheaval in Europe, 1900-1950
HIST 3093	Europe in Peace and Prosperity, 1950-Present

### Languages and Cultural Studies

French	
FRENCH 3211	Contemporary French Culture
FRENCH 4360	Studies in Nineteenth-Century French Literature and Culture
German	
GERMAN 2180	Intermediate Readings in German
GERMAN 3210	German Culture and Civilization
GERMAN 3211	Topics in German Culture
GERMAN 4311	Special Topics in German Culture

### Spanish

SPANISH 4311	Special Topics in Hispanic Culture
SPANISH 4325	Poetry And Drama Of The Golden Age

### Music

M H L T 4240	Music of the Classic Period
M H L T 4250	Music of the Romantic Period

### Philosophy

PHIL 1111	Western Philosophy II: Descartes to the Present
PHIL 3303	Early Modern Philosophy
PHIL 3304	19th and 20th Century Philosophy

### Political Science

POL SCI 2510	The Politics of European Union
POL SCI 3595	Studies in Comparative Politics *
POL SCI 3890	Workers and Globalization *

### Independent Study Course

Students seeking the certificate must complete an independent study course in which a research paper will be written focusing upon aspect of Modern European Studies. The topics should be approved in advance by International Studies and Programs. 3

Total Hours 38

<sup>1</sup> Students should consult International Studies and Programs advisers to determine how these courses can best be arranged to meet their interests.

## Modern Language BA, Dual Language Emphasis Professional

To meet the increasing demand for multilingual professionals, the Department offers students the option of the Dual Language Professional Track as part of the B.A. in Modern Languages. Students interested in pursuing intermediate studies in more than one language may combine the study of any two of the following languages: French, Japanese, or Spanish. Coursework focuses on developing language proficiency, intercultural competency, and professional skills. Students in the dual-language concentration also benefit from numerous study abroad opportunities to further refine their linguistic and cultural competencies.

### General Education Requirements

Each language major must satisfy the general education requirements (p. 51) of the university and the general education requirements of the College of Arts and Sciences.

### Specific Requirements or Restrictions

Students entering with no high school language units must enroll in Language 1001 or may enroll in Language 2115. Language 2115 (a, b, and c) is the intensive study of a language and will satisfy the foreign language requirement. 2115a, 2115b, and 2115c are co-requisites and must be taken concurrently. To satisfy the foreign language requirement all three sections must be completed with a grade of C- or better.

A grade of D in a Language 1001 course is a passing grade but not an entrance grade for a Language 1002 course. A grade of D in a Language 1002 course is a passing grade but not an entrance grade for a Language 2101 course or its equivalent. A grade of D in a Language 2101 course fulfills the language requirement, but is not an entrance grade for a higher-level course.

Demonstration of a high level of proficiency may affect the number of hours required for the major. Native or heritage speakers of a language should consult with the department concerning appropriate placement and advising. Students with previous language coursework should contact the department for language placement testing and advising. Students may not take for credit an elementary course if they have already completed a



higher-level course for which the elementary course, or its equivalent, is a prerequisite.

## Degree Requirements

All courses for the major must be passed with a grade of C- or better. No course required for the major may be taken on a satisfactory/unsatisfactory (s/u) basis with the exception of those taken abroad as part of a university program that has received departmental approval.

## Bachelor of Arts

All students seeking a B.A. in a Modern Language must successfully complete FL 2100 Languages and World View, and must meet the departmental requirement of a minimum of 33 hours in French or 33 hours in German or 37 hours in Japanese or 35 hours in Spanish (excluding Language 1001 and 1002). The maximum number of hours that may be taken in the major is 45 (including Language 1001 and 1002). In addition, students seeking the B.A. in a Modern Language who desire a teaching certificate must also take FGN LANG 4589 (same as SEC ED 4589), Curriculum and Methods of Teaching Foreign Languages, FGN LANG 4590 (same as SEC ED 4590), and fulfill the professional secondary education requirements of the College of Education.

## Transfer Students

Transfer students majoring in one of the modern languages must complete at UMSL a minimum of 12 graded hours in language courses at the 3000 level or above with a grade point average of 2.0 or better in those courses.

## Native Speakers

Native speakers must complete at least two courses at the 3000 level and four courses at the 4000 level to obtain a major in their native language.

## Emphasis Area Requirements

FGN LANG 2100	Languages and World View	3
Choose two of the following language options.		30-33

At least one course (minimum 3 credit hours) must include an internship, service learning, or study abroad component.

### French

FRENCH 2170	Intermediate French Language and Culture
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FRENCH 2180	Readings in French
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Three courses at the 3000-level or higher, at least one of which must be business/professions-focused

### German

GERMAN 2170	Intermediate Practice in Speaking and Writing German
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GERMAN 2180	Intermediate Readings In German
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Three courses at the 3000-level or higher

### Japanese

JAPAN 2102	Intermediate Japanese II
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Choose two of the following courses:

JAPAN 2170	Kanji: A Radical Approach
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JAPAN 3202	Intermediate Japanese IV
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JAPAN 3210	Japanese Culture and Society
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JAPAN 3211	Topics in Japanese Culture
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JAPAN 3280	Readings in Japanese
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JAPAN 3201	Intermediate Japanese III
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## Spanish

Two courses at the 2000-level above 2101

Three courses at the 3000-level, at least one of which must be business/professions-focused

### One 4000-Level Capstone 3

Capstone course requirement may be met by 4000-level language course

Total Hours 36-39

## B.S. Ed. in Secondary Education with Emphasis in a Foreign Language

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. degree in the language; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. in a Foreign Language with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 FRENCH 1002	5
FRENCH 1001		5 JAPAN 1002	5
JAPAN 1001		5 MATH 1020	3
ENGL 1100		3 CORE - Communication Proficiency	3
	14		16

### Second Year

Fall	Hours	Spring	Hours
FGN LANG 2100		3 FRENCH 2180	3
FRENCH 2101		3 JAPAN 2102	5
JAPAN 2101		5 CORE - Information Literacy	3
EXPLORE - Mathematics & Life/ Natural Sciences		3 EXPLORE - Social Sciences	3
	14		14

### Third Year

Fall	Hours	Spring	Hours
FRENCH 2170		3 FRENCH 3000-level Course	3
JAPAN 3201		4 JAPAN 3202	4
ENGL 3100		3 CORE - US History and Government	3

EXPLORE - Mathematics & Life/ Natural Sciences	3	EXPLORE - Social Sciences	3
Elective or minor	3	Elective or minor	3
16		16	
<b>Fourth Year</b>			
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>
FRENCH 3000-level course	3	FRENCH 3000-level course	3
JAPAN 4301	3	EXPLORE - Social Sciences	3
EXPLORE - Mathematics and Life/ Natural Sciences	3	Elective or minor	9
Elective or minor	3		
Elective or minor	3		
15		15	
Total Hours: 120			

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Modern Language BA, French Emphasis

The French Program at UMSL develops learners who are both linguistically and culturally competent and ready to be global citizens. UMSL offers a broad range of coursework in French: foundational courses in language and culture, courses focused on the many facets of literature and culture, and pre-professional courses, all aimed at developing skills for the 21st century. Our dedicated faculty engage learners in and out of the classroom. You can expect a challenging, collaborative, and interactive environment in every course. Our students are a part of a larger learning community connected through our conversation group, numerous activities, and study abroad experiences.

### General Education Requirements

Each language major must satisfy the general education requirements (p. 51) of the university and the general education requirements of the College of Arts and Sciences.

### Specific Requirements or Restrictions

Students entering with no high school language units must enroll in Language 1001 or may enroll in Language 2115. Language 2115 (a, b, and c) is the intensive study of a language and will satisfy the foreign language requirement. 2115a, 2115b, and 2115c are co-requisites and must be taken concurrently. To satisfy the foreign language requirement all three sections must be completed with a grade of C- or better.

A grade of D in a Language 1001 course is a passing grade but not an entrance grade for a Language 1002 course. A grade of D in a Language 1002 course is a passing grade but not an entrance grade for a Language 2101 course or its equivalent. A grade of D in a Language 2101 course fulfills the language requirement, but is not an entrance grade for a higher-level course.

Demonstration of a high level of proficiency may affect the number of hours required for the major. Native or heritage speakers of a language

should consult with the department concerning appropriate placement and advising. Students with previous language coursework should contact the department for language placement testing and advising. Students may not take for credit an elementary course if they have already completed a higher-level course for which the elementary course, or its equivalent, is a prerequisite.

## Degree Requirements

All courses for the major must be passed with a grade of C- or better. No course required for the major may be taken on a satisfactory/unsatisfactory (s/u) basis with the exception of those taken abroad as part of a university program that has received departmental approval.

### Bachelor of Arts

All students seeking a B.A. in a Modern Language must successfully complete FL 2100 Languages and World View, and must meet the departmental requirement of a minimum of 33 hours in French or 33 hours in German or 37 hours in Japanese or 35 hours in Spanish (excluding Language 1001 and 1002). The maximum number of hours that may be taken in the major is 45 (including Language 1001 and 1002). In addition, students seeking the B.A. in a Modern Language who desire a teaching certificate must also take FGN LANG 4589 (same as SEC ED 4589), Curriculum and Methods of Teaching Foreign Languages, FGN LANG 4590 (same as SEC ED 4590), and fulfill the professional secondary education requirements of the College of Education.

### Transfer Students

Transfer students majoring in one of the modern languages must complete at UMSL a minimum of 12 graded hours in language courses at the 3000 level or above with a grade point average of 2.0 or better in those courses.

### Native Speakers

Native speakers must complete at least two courses at the 3000 level and four courses at the 4000 level to obtain a major in their native language.

## Specific Requirements for Concentration in French

Each major with a French concentration must complete the following courses:

FRENCH 2101	French Language and Culture III (or the equivalent)	3
FRENCH 2170	Intermediate French Language and Culture	3
FRENCH 2180	Readings in French	3
FRENCH 3200	French Grammar in Review	3
Select four additional courses at the 3000-level		12
Select three courses at the 4000-level		9
Total Hours		33

## Career Outlook

Career options for graduates with a major or minor in modern languages include the following fields: teaching, social work, nursing, engineering, business, communications, government, journalism, travel industry, translation, and research. Our graduates have been especially successful when they combine advanced study in a modern language with another major. They are then able to add proficiency in a foreign language and culture to their knowledge and skills in another specialty. Experience with

world cultures makes our graduates more adaptable and better prepared to meet the challenges of a global and increasingly diverse job market.

### B.S. Ed. in Secondary Education with Emphasis in a Foreign Language

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. degree in the language; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

### B.A. in a Foreign Language with Master’s Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master’s level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master’s Degree in Secondary Education, with additional coursework. Students interested in Master’s Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

### Learning Outcomes

Graduates of the BA in Modern Languages from the University of Missouri-St. Louis possess the necessary linguistic and cultural competencies to interact with native speakers in culturally appropriate ways. They are able to use the target language in a variety of academic, social, and professional situations and have a rich understanding of the target culture(s) fostered through engaging topic-based courses and opportunities such as study abroad, service learning, and internships. Recognizing the interconnection between languages and world views, they can critically explore their own assumptions, value alternative perspectives, and act with cultural sensitivity. They are empowered with the tools to meet the challenges of a globalized world and continue developing their skills as lifelong learners.

### Skills and Knowledge Areas

Upon completion of the major, students should be able to:

#### Linguistic and Critical Thinking Goals:

- In listening and speaking,
  - demonstrate comprehension of the main ideas and supporting details of narrative and descriptive texts on familiar and concrete topics, such as those on radio, television, and podcasts;
  - discuss topics related to work, school, home, leisure activities, culture, and a variety of media;
  - use the target language in real-world situations in culturally-appropriate ways;

- produce narrations and descriptions on familiar topics in present, past, and future time frames and;
- summarize research in oral presentations.
- In reading and writing,
  - demonstrate comprehension of the main idea, supporting details, argumentative structure, and perspective in authentic texts of various genres;
  - produce narrations and descriptions in present, past, and future time frames employing connected discourse;
  - summarize, analyze, and synthesize content, and begin to express supported opinions;
  - assess language reference resources and use them effectively and;
  - conduct independent research and present findings.

#### Cultural and Global Awareness Goals:

- demonstrate an awareness of the linguistic, ethnic, racial, religious, cultural, and social diversity of the target cultures;
- recognize and describe some of the key historical, social, economic, and political forces in the target cultures;
- analyze and critique film, media, literature, art, etc. in their socio-historical contexts;
- compare and contrast their own cultural beliefs, behaviors, and norms with those of other cultures;
- describe how language and culture impact one’s world view;
- explain the skills acquired through language study and their benefits to a potential employer.

The linguistic goals are based on the National Standards For Foreign Language Learning and the American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines. In speaking and listening, graduates are expected to reach the Advanced-Low level proficiency, in writing the Advanced-Mid level proficiency, and in reading the Advanced-High level proficiency. For detailed descriptions of sublevels, see the ACTFL Proficiency Guidelines.

### Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 FRENCH 1002	5
FRENCH 1001		5 CORE - Communication Proficiency	3
ENGL 1100		3 CORE - US History and Government	3
MATH 1020		3 EXPLORE - Math and Natural Sciences	3
EXPLORE - Social Sciences		3	
		15	14
Second Year			
Fall	Hours	Spring	Hours
FRENCH 2101		3 FRENCH 2180	3
FGN LANG 2100		3 EXPLORE - Social Sciences	3
CORE - Information Literacy		3 EXPLORE - Math and Natural Sciences	3
EXPLORE - Social Sciences		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
		15	15

Third Year			
Fall	Hours	Spring	Hours
FRENCH 2170		3 FRENCH 3200	3
ENGL 3100		3 FRENCH 3000-level course	3
EXPLORE - Math and Natural Sciences		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	4
	15		16
Fourth Year			
Fall	Hours	Spring	Hours
FRENCH 3000 - level course		3 FRENCH 3000 - level course	3
FRENCH 3000 - level course		3 FRENCH 4000 - level course	3
FRENCH 4000 - level course		3 FRENCH 4000 - level course	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		15

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Modern Language BA, German Emphasis

Beginning Fall 2019, the program is no longer accepting applications.

### General Education Requirements

Each language major must satisfy the general education requirements (p. 51) of the university and the general education requirements of the College of Arts and Sciences.

### Specific Requirements or Restrictions

Students entering with no high school language units must enroll in Language 1001 or may enroll in Language 2115. Language 2115 (a, b, and c) is the intensive study of a language and will satisfy the foreign language requirement. 2115a, 2115b, and 2115c are co-requisites and must be taken concurrently. To satisfy the foreign language requirement all three sections must be completed with a grade of C- or better.

A grade of D in a Language 1001 course is a passing grade but not an entrance grade for a Language 1002 course. A grade of D in a Language 1002 course is a passing grade but not an entrance grade for a Language 2101 course or its equivalent. A grade of D in a Language 2101 course fulfills the language requirement, but is not an entrance grade for a higher-level course.

Demonstration of a high level of proficiency may affect the number of hours required for the major. Native or heritage speakers of a language should consult with the department concerning appropriate placement and advising. Students with previous language coursework should contact the department for language placement testing and advising. Students may not take for credit an elementary course if they have already completed a

higher-level course for which the elementary course, or its equivalent, is a prerequisite.

## Degree Requirements

All courses for the major must be passed with a grade of C- or better. No course required for the major may be taken on a satisfactory/unsatisfactory (s/u) basis with the exception of those taken abroad as part of a university program that has received departmental approval.

## Bachelor of Arts

All students seeking a B.A. in a Modern Language must successfully complete FL 2100 Languages and World View, and must meet the departmental requirement of a minimum of 33 hours in French or 33 hours in German or 37 hours in Japanese or 35 hours in Spanish (excluding Language 1001 and 1002). The maximum number of hours that may be taken in the major is 45 (including Language 1001 and 1002). In addition, students seeking the B.A. in a Modern Language who desire a teaching certificate must also take FGN LANG 4589 (same as SEC ED 4589), Curriculum and Methods of Teaching Foreign Languages, FGN LANG 4590 (same as SEC ED 4590), and fulfill the professional secondary education requirements of the College of Education.

## Transfer Students

Transfer students majoring in one of the modern languages must complete at UMSL a minimum of 12 graded hours in language courses at the 3000 level or above with a grade point average of 2.0 or better in those courses.

## Native Speakers

Native speakers must complete at least two courses at the 3000 level and four courses at the 4000 level to obtain a major in their native language.

## Specific Requirements for the Concentration in German

Each major with a concentration in German must complete the following courses:

GERMAN 2101	Intermediate Language And Culture: German III	3
GERMAN 2170	Intermediate Practice in Speaking and Writing German	3
GERMAN 2180	Intermediate Readings In German	3
GERMAN 3201	Introduction to German Literature	3
GERMAN 3202	Introduction to German Film	3
GERMAN 3208	The German-Speaking Countries in the Modern World	3
Select one course at the 3000-level		3
Select three courses at the 4000-level		9
Total Hours		30

## Learning Outcomes

Graduates of the BA in Modern Languages from the University of Missouri-St. Louis possess the necessary linguistic and cultural competencies to interact with native speakers in culturally appropriate ways. They are able to use the target language in a variety of academic, social, and professional situations and have a rich understanding of the target culture(s) fostered through engaging topic-based courses and opportunities such as study abroad, service learning, and internships. Recognizing the interconnection between languages and world views,



they can critically explore their own assumptions, value alternative perspectives, and act with cultural sensitivity. They are empowered with the tools to meet the challenges of a globalized world and continue developing their skills as lifelong learners.

## Skills and Knowledge Areas

Upon completion of the major, students should be able to:

### Linguistic and Critical Thinking Goals:

- In listening and speaking,
  - demonstrate comprehension of the main ideas and supporting details of narrative and descriptive texts on familiar and concrete topics, such as those on radio, television, and podcasts;
  - discuss topics related to work, school, home, leisure activities, culture, and a variety of media;
  - use the target language in real-world situations in culturally-appropriate ways;
  - produce narrations and descriptions on familiar topics in present, past, and future time frames and;
  - summarize research in oral presentations.
- In reading and writing,
  - demonstrate comprehension of the main idea, supporting details, argumentative structure, and perspective in authentic texts of various genres;
  - produce narrations and descriptions in present, past, and future time frames employing connected discourse;
  - summarize, analyze, and synthesize content, and begin to express supported opinions;
  - assess language reference resources and use them effectively and;
  - conduct independent research and present findings.

### Cultural and Global Awareness Goals:

- demonstrate an awareness of the linguistic, ethnic, racial, religious, cultural, and social diversity of the target cultures;
- recognize and describe some of the key historical, social, economic, and political forces in the target cultures;
- analyze and critique film, media, literature, art, etc. in their socio-historical contexts;
- compare and contrast their own cultural beliefs, behaviors, and norms with those of other cultures;
- describe how language and culture impact one's world view;
- explain the skills acquired through language study and their benefits to a potential employer.

The linguistic goals are based on the National Standards For Foreign Language Learning and the American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines. In speaking and listening, graduates are expected to reach the Advanced-Low level proficiency, in writing the Advanced-Mid level proficiency, and in reading the Advanced-High level proficiency. For detailed descriptions of sublevels, see the ACTFL Proficiency Guidelines.

## Modern Language BA, Japanese Emphasis

Knowledge of Japanese will empower you to dive deep into Japan's rich cultural heritage, which spans from "The Tale of Genji" to "Attack on Titan" and beyond. Students who choose to study Japanese at UMSL benefit from faculty who are dedicated to creating a challenging but supportive learning environment. You will engage with the language and culture in the classroom, out of the classroom through on-campus events and Japan-America Student Association involvement, and in a variety of study abroad opportunities.

### General Education Requirements

Each language major must satisfy the general education requirements (p. 51) of the university and the general education requirements of the College of Arts and Sciences.

### Specific Requirements or Restrictions

Students entering with no high school language units must enroll in Language 1001 or may enroll in Language 2115. Language 2115 (a, b, and c) is the intensive study of a language and will satisfy the foreign language requirement. 2115a, 2115b, and 2115c are co-requisites and must be taken concurrently. To satisfy the foreign language requirement all three sections must be completed with a grade of C- or better.

A grade of D in a Language 1001 course is a passing grade but not an entrance grade for a Language 1002 course. A grade of D in a Language 1002 course is a passing grade but not an entrance grade for a Language 2101 course or its equivalent. A grade of D in a Language 2101 course fulfills the language requirement, but is not an entrance grade for a higher-level course.

Demonstration of a high level of proficiency may affect the number of hours required for the major. Native or heritage speakers of a language should consult with the department concerning appropriate placement and advising. Students with previous language coursework should contact the department for language placement testing and advising. Students may not take for credit an elementary course if they have already completed a higher-level course for which the elementary course, or its equivalent, is a prerequisite.

### Degree Requirements

All courses for the major must be passed with a grade of C- or better. No course required for the major may be taken on a satisfactory/unsatisfactory (s/u) basis with the exception of those taken abroad as part of a university program that has received departmental approval.

### Bachelor of Arts

All students seeking a B.A. in a Modern Language must successfully complete FL 2100 Languages and World View, and must meet the departmental requirement of a minimum of 33 hours in French or 33 hours in German or 37 hours in Japanese or 35 hours in Spanish (excluding Language 1001 and 1002). The maximum number of hours that may be taken in the major is 45 (including Language 1001 and 1002). In addition, students seeking the B.A. in a Modern Language who desire a teaching certificate must also take FGN LANG 4589 (same as SEC ED 4589), Curriculum and Methods of Teaching Foreign Languages, FGN LANG 4590 (same as SEC ED 4590), and fulfill the professional secondary education requirements of the College of Education.

## Transfer Students

Transfer students majoring in one of the modern languages must complete at UMSL a minimum of 12 graded hours in language courses at the 3000 level or above with a grade point average of 2.0 or better in those courses.

## Native Speakers

Native speakers must complete at least two courses at the 3000 level and four courses at the 4000 level to obtain a major in their native language.

## Specific Requirements for the Emphasis in Japanese

Each major with an emphasis in Japanese must complete the following courses:

JAPAN 2101	Intermediate Japanese I	5
JAPAN 2102	Intermediate Japanese II	5
JAPAN 2170	Kanji: A Radical Approach	3
JAPAN 3201	Intermediate Japanese III	4
JAPAN 3202	Intermediate Japanese IV	4
JAPAN 3280	Readings in Japanese	3
JAPAN 4301	Advanced Japanese I	3
JAPAN 4302	Advanced Japanese II	3
JAPAN 4380	Advanced Readings in Japanese	3
Select 6 hours from the following: <sup>1</sup>		6
ANTHRO/HIST 2420	Maiko, Maids, and Masako: Women in Japanese Cultural History	
ANTHRO/HIST 2430	Ghosts, Goblins, and Godzillas	
ANTHRO/HIST 2425	Food and Drink in Japan: A Cultural History	
ANTHRO/HIST 3218	Visual and Material Culture of Japan	
JAPAN 1005	Practicum in East Asian Calligraphy	
JAPAN 1011	Anime Nation: Popular Culture in Japan	
JAPAN 1199	Special Topics: Language Immersion: Japanese	
JAPAN 2111	The World of Anime - Advanced Topics in Japanese Animation	
JAPAN 2150	Classical Japanese Literature in Translation	
JAPAN 2191	Special Topics in Japanese Culture	
JAPAN 3210	Japanese Culture and Society	
JAPAN 3211	Topics in Japanese Culture	
Total Hours		39

<sup>1</sup> Only three hours may be taken at the 1000 level.

## Career Outlook

Career options for graduates with a major or minor in modern languages include the following fields: teaching, social work, nursing, engineering, business, communications, government, journalism, travel industry, translation, and research. Our graduates have been especially successful when they combine advanced study in a modern language with another major. They are then able to add proficiency in a foreign language and culture to their knowledge and skills in another specialty. Experience with

world cultures makes our graduates more adaptable and better prepared to meet the challenges of a global and increasingly diverse job market.

## B.S. Ed. in Secondary Education with Emphasis in a Foreign Language

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. degree in the language; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. in a Foreign Language with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

Graduates with a BA in Modern Languages (Japanese) from the University of Missouri-St. Louis possess the necessary linguistic and cultural competencies to interact with native speakers in culturally appropriate ways. They are able to use the target language in a variety of academic, social, and professional situations and have a rich understanding of the culture that has been fostered through engaging courses and opportunities such as study abroad, service learning, and internships. Recognizing the interconnection between languages and world views, they can critically explore their own assumptions, value alternative perspectives, and act with cultural sensitivity. They are empowered with the tools to meet the challenges of a globalized world and continue developing their skills as lifelong learners.

## Skills and Knowledge Areas

*Upon completion of the Japanese major, students should be able to:*

## Linguistic and Critical Thinking Goals

- In listening/speaking:
  - demonstrate comprehension of the main ideas and supporting details of everyday conversations on familiar and concrete topics, both formal and informal;
  - discuss topics related to work, school, home, leisure activities, culture, and media;
  - narrate short anecdotes using Japanese conversational conventions;
  - summarize research in oral presentations; and,

- function in real-world situations in culturally-appropriate ways.
- In reading/writing:
  - identify the main idea, supporting details, argumentative structure, and perspective in authentic texts of various genres;
  - apply reading strategies to glean key information from more challenging texts;
  - summarize and analyze content, and begin to express supported opinions;
  - assess language reference resources and use them effectively; and,
  - conduct independent research and present findings.

### Cultural and Global Awareness Goals

- recognize and describe some of the key historical, social, economic, and political forces that shape Japanese society;
- analyze and critique products of Japanese culture (film, media, literature, art, etc.) in their socio-historical contexts;
- compare and contrast their own cultural beliefs, behaviors, and norms with those of other cultures;
- describe how language and culture impact one’s world view; and,
- explain the skills acquired through language study and their benefits to a potential employer.

The linguistic program goals are based on the National Standards For Foreign Language Learning and the ACTFL Proficiency Guidelines. Graduates are expected to reach the Intermediate-High level proficiency at a minimum. For detailed descriptions of sublevels, see the ACTFL Proficiency Guidelines.

### Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 JAPAN 1002	5
JAPAN 1001	5	EXPLORE - Mathematics and Life/ Natural Sciences	3
ENGL 1100	3	CORE - Communication Proficiency	3
MATH 1020	3	CORE - US History and Government	3
EXPLORE - Social Sciences	3		
	15		14
Second Year			
Fall	Hours	Spring	Hours
JAPAN 2101	5	JAPAN 2102	5
FGN LANG 2100	3	JAPAN XXXX Japan Studies Elective	3
CORE - Information Literacy	3	EXPLORE - Social Sciences	3
EXPLORE - Social Sciences	3	EXPLORE - Mathematics and Life/ Natural Sciences	3
	14		14
Third Year			
Fall	Hours	Spring	Hours
JAPAN 3201	4	JAPAN 3202	4
JAPAN XXXX: Japanese Studies Elective	3	JAPAN 3280	3
ENGL 3100	3	JAPAN XXXX: Japanese Studies Elective	3
EXPLORE - Mathematics and Life/ Natural Sciences	3	Elective or minor	3

Elective or minor	3	Elective or minor	3
	16		16
Fourth Year			
Fall	Hours	Spring	Hours
JAPAN 4301	3	JAPAN 4302	3
Elective or minor	3	JAPAN 4390	3
Elective or minor	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
Elective or minor	3	Elective or minor	4
	15		16

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Modern Language BA, Spanish Emphasis

The BA in Modern Languages with emphasis in Spanish develops learners who are both linguistically and culturally competent and ready to become global citizens. We offer a broad range of coursework in Spanish, from foundational courses in language and culture to courses focused on literature, linguistics, creative writing, and professions, all aimed at developing competencies for the 21st century. Our introductory-level courses are taught in different delivery modes: in person, hybrid, and online. We encourage study abroad through our short-term faculty-led programs in Costa Rica and Barcelona, as well as through year-long programs in partner institutions.

### General Education Requirements

Each language major must satisfy the general education requirements (p. 51) of the university and the general education requirements of the College of Arts and Sciences.

### Specific Requirements or Restrictions

Students entering with no high school language units must enroll in Language 1001 or may enroll in Language 2115. Language 2115 (a, b, and c) is the intensive study of a language and will satisfy the foreign language requirement. 2115a, 2115b, and 2115c are co-requisites and must be taken concurrently. To satisfy the foreign language requirement all three sections must be completed with a grade of C- or better.

A grade of D in a Language 1001 course is a passing grade but not an entrance grade for a Language 1002 course. A grade of D in a Language 1002 course is a passing grade but not an entrance grade for a Language 2101 course or its equivalent. A grade of D in a Language 2101 course fulfills the language requirement, but is not an entrance grade for a higher-level course.

Demonstration of a high level of proficiency may affect the number of hours required for the major. Native or heritage speakers of a language should consult with the department concerning appropriate placement and advising. Students with previous language coursework should contact the department for language placement testing and advising. Students may

not take for credit an elementary course if they have already completed a higher-level course for which the elementary course, or its equivalent, is a prerequisite.

## Degree Requirements

All courses for the major must be passed with a grade of C- or better. No course required for the major may be taken on a satisfactory/unsatisfactory (s/u) basis with the exception of those taken abroad as part of a university program that has received departmental approval.

### Bachelor of Arts

All students seeking a B.A. in a Modern Language must successfully complete FL 2100 Languages and World View, and must meet the departmental requirement of a minimum of 33 hours in French or 33 hours in German or 37 hours in Japanese or 35 hours in Spanish (excluding Language 1001 and 1002). The maximum number of hours that may be taken in the major is 45 (including Language 1001 and 1002). In addition, students seeking the B.A. in a Modern Language who desire a teaching certificate must also take FGN LANG 4589 (same as SEC ED 4589), Curriculum and Methods of Teaching Foreign Languages, FGN LANG 4590 (same as SEC ED 4590), and fulfill the professional secondary education requirements of the College of Education.

### Transfer Students

Transfer students majoring in one of the modern languages must complete at UMSL a minimum of 12 graded hours in language courses at the 3000 level or above with a grade point average of 2.0 or better in those courses.

### Native Speakers

Native speakers must complete at least two courses at the 3000 level and four courses at the 4000 level to obtain a major in their native language.

## Specific Requirements for Concentration in Spanish

Each major with a Spanish concentration must complete the following courses:

SPANISH 2101	Spanish Language And Culture III (or the equivalent)	3
SPANISH 2172	Spanish Composition	4
SPANISH 2180	Readings In Spanish	4
SPANISH 3210	Hispanic Culture And Civilization: Spain	3
or SPANISH 3211	Hispanic Culture And Civilization: Spanish America	
SPANISH 3280	Introduction To Hispanic Literature: Spain	3
or SPANISH 3281	Introduction To Hispanic Literature: Spanish America	
or SPANISH 3282	Introduction to Hispanic Literature: A Survey Course	
SPANISH 3326	Introduction to Hispanic Linguistics	3
Select one additional course at the 3000-level (see course descriptions for more detail)		3
Select three courses at the 4000-level		9

Select an additional course at the 2000-level, 3000-level, or 4000-level. The selected course must be consistent with the student's level of study.	3
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Total Hours	35
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## Career Outlook

Career options for graduates with a major or minor in modern languages include the following fields: teaching, social work, nursing, engineering, business, communications, government, journalism, travel industry, translation, and research. Our graduates have been especially successful when they combine advanced study in a modern language with another major. They are then able to add proficiency in a foreign language and culture to their knowledge and skills in another specialty. Experience with world cultures makes our graduates more adaptable and better prepared to meet the challenges of a global and increasingly diverse job market.

## Learning Outcomes

Graduates of the BA in Modern Languages from the University of Missouri-St. Louis possess the necessary linguistic and cultural competencies to interact with native speakers in culturally appropriate ways. They are able to use the target language in a variety of academic, social, and professional situations and have a rich understanding of the target culture(s) fostered through engaging topic-based courses and opportunities such as study abroad, service learning, and internships. Recognizing the interconnection between languages and world views, they can critically explore their own assumptions, value alternative perspectives, and act with cultural sensitivity. They are empowered with the tools to meet the challenges of a globalized world and continue developing their skills as lifelong learners.

## Skills and Knowledge Areas

Upon completion of the major, students should be able to:

### Linguistic and Critical Thinking Goals:

- In listening and speaking,
  - demonstrate comprehension of the main ideas and supporting details of narrative and descriptive texts on familiar and concrete topics, such as those on radio, television, and podcasts;
  - discuss topics related to work, school, home, leisure activities, culture, and a variety of media;
  - use the target language in real-world situations in culturally-appropriate ways;
  - produce narrations and descriptions on familiar topics in present, past, and future time frames and;
  - summarize research in oral presentations.
- In reading and writing,
  - demonstrate comprehension of the main idea, supporting details, argumentative structure, and perspective in authentic texts of various genres;
  - produce narrations and descriptions in present, past, and future time frames employing connected discourse;
  - summarize, analyze, and synthesize content, and begin to express supported opinions;
  - assess language reference resources and use them effectively and;



- conduct independent research and present findings.

**Cultural and Global Awareness Goals:**

- demonstrate an awareness of the linguistic, ethnic, racial, religious, cultural, and social diversity of the target cultures;
- recognize and describe some of the key historical, social, economic, and political forces in the target cultures;
- analyze and critique film, media, literature, art, etc.in their socio-historical contexts;
- compare and contrast their own cultural beliefs, behaviors, and norms with those of other cultures;
- describe how language and culture impact one’s world view;
- explain the skills acquired through language study and their benefits to a potential employer.

The linguistic goals are based on the National Standards For Foreign Language Learning and the American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines. In speaking and listening, graduates are expected to reach the Advanced-Low level proficiency, in writing the Advanced-Mid level proficiency, and in reading the Advanced-High level proficiency. For detailed descriptions of sublevels, see the ACTFL Proficiency Guidelines.

**Sample Four Year Plan**

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 SPANISH 1002	5
SPANISH 1001		5 CORE - Communication Proficiency	3
ENGL 1100		3 CORE - US History and Government	3
MATH 1020		3 EXPLORE - Mathematics and Life/ Natural Sciences	3
EXPLORE - Social Sciences	3		
		15	14
Second Year			
Fall	Hours	Spring	Hours
SPANISH 2101		3 SPANISH 2172	4
FGN LANG 2100		3 SPANISH 2180	4
CORE - Information Literacy		3 EXPLORE - Social Sciences	3
EXPLORE - Social Sciences		3 EXPLORE - Mathematics and Life/ Natural Sciences	3
Elective or minor	3	3 Elective or minor	3
		15	17
Third Year			
Fall	Hours	Spring	Hours
SPANISH 3212		3 SPANISH 3326	3
ENGL 3100		3 SPANISH 3282	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 Elective or minor	3
Elective or minor	3	3 Elective or minor	3
Elective or minor	3	3 Elective or minor	3
		15	15
Fourth Year			
Fall	Hours	Spring	Hours
SPANISH 3000-level course		3 SPANISH 4000-level course	3
SPANISH 4000-level course		3 SPANISH 4000-level course	3
SPANISH 3000+ level course		3 Elective or minor	3
Elective or minor	3	3 Elective or minor	3

Elective or minor	3	Elective or minor	2
		15	14

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

**Modern Languages Minor**

A minor in Modern Languages requires the completion of 4 courses beyond the introductory sequence (1001, 1002 and 2101), two in each of two different languages. For students who are seeking a B.A. in a Modern Language, the two languages must be different from the language in which they are majoring.

**Museums Heritage and Public History Graduate Certificate**

The Graduate Certificate in Museums, Heritage, and Public History provides interdisciplinary professional and academic training for museum professionals and others who seek to develop their practical skills and knowledge to work in the heritage sector.

All those who wish to be considered for the Graduate Certificate in Museums, Heritage, and Public History should designate this certificate program on their application to the graduate school, submit three letters of recommendation and a writing sample, and complete the Museums, Heritage, and Public History supplemental application with their application for graduate work. Applicants who wish to pursue the Graduate Certificate in Museums, Heritage, and Public History normally must have a Master’s degree and a GPA of 3.2 or higher. Prospective students who wish to pursue the Graduate Certificate in Museums, Heritage, and Public History in conjunction with another graduate program should follow the normal application procedures for that program in addition to those for this certificate.

Admissions decisions are based on transcripts, the letters of recommendation, the sample of written work, and the supplemental application.

The program will accept applications twice per year, once for the fall semester and once for the spring.

**Program Requirements (18 hours)**

All candidates for Graduate Certificate in Museums, Heritage, and Public History must complete the following core courses (12 hours):

HIST 6001	Introduction to Public History and Cultural Heritage	3
HIST 6002 or HIST 6134	Material Culture in Historical Context History Curatorship	3
HIST 6131	Museum Origins and Evolution	3
Choose one of the following:		3

HIST 6125	Practicum in Public History and Cultural Heritage	
HIST 6127	Museums and Communities	
HIST 6129	Emerging Museum Practices	
Students must also complete an additional 2 elective courses (6 hours) as approved by the Director of Museums, Heritage, and Public History.		6
Total Hours		18

## Music BA

### Degree Requirements

Admission to all Music degree programs is by audition to demonstrate musical aptitude and potential, moderate technical proficiency, and seriousness in selecting music as a four-year course of study. In addition to the applied music audition, placement examinations in music theory and music history may be required to confirm students' prior experience in these areas. Auditions are scheduled from January to May for the fall semester; a limited number are held in December for the spring/winter semester. Students in applied music must pass a junior-standing examination to confirm their level of performance skills for enrollment in AP MUS 3440 – AP MUS 3459 or AP MUS 4440 – AP MUS 4459. This examination is usually taken at the same time as the applied music jury for the fourth semester of enrollment in AP MUS 1440 - AP MUS 1459.

Evidence of sound musicianship, a close acquaintance with an appropriate portion of musical literature, and the ability to bring it to actual performance are required for graduation in all Music degree programs. Students in the B.M.: Performance Emphasis fulfill this requirement with junior and senior recitals. Students in all other degree programs fulfill this requirement with a senior recital. In some cases, upon the recommendation of the student's applied teacher, the senior recital (for non-performance majors only) may be replaced by participating in three regularly scheduled student recitals during the last two semesters of applied music study, or by performing for a special panel of faculty members.

### General Education Requirements

General education requirements (p. 51) apply to all majors, except the students in the B.M. with Elective Studies in Business and B.M. in Music Education degree programs are not required to take a foreign language. Courses required for degree programs may not be taken on a satisfactory/unsatisfactory basis. Students must receive at least a C in each music course and maintain a cumulative GPA of 2.5 (music education 2.7) in all music courses to meet degree requirements.

Non-Music majors may complete no more than 8 hours in music-performing organizations (EN PER 1400, University Chorus; EN PER 1410, University Concert Band; EN PER 1500, University Orchestra; EN PER 1520, University Symphonic Band, et. seq.) toward graduation, including credit transferred. Courses in applied music (private lessons and performing organizations) do not fulfill the humanities general education requirement. M H L T 1150, Drumming Cultures of the World; M H L T 1160, Musical Journey through Latin America; M H L T 1170, Musical Journey through the Far East; or M H L T 1180, Musical Journey through Africa will meet the non-Euro-American study requirement.

### Other Requirements

Music majors are required to enroll in an approved ensemble [University Chorus, University Symphonic Band, University Wind Ensemble, University Singers, University Orchestra, or Jazz Orchestra (for Jazz

Studies majors)] each semester, to study one applied area progressively each semester, and to enroll in the appropriate Pedagogy and Literature Seminar each semester of the degree program. Music Education majors are exempt from these requirements during the student teaching semester. The following specific ensemble enrollments, depending upon the applied music area, are required:

- Wind and Percussion students—University Symphonic Band or University Wind Ensemble;
- String students--University Orchestra;
- Voice students--University Singers or University Chorus;
- Keyboard and Guitar students--any approved ensemble, but those in the bachelor of music in music education program must successfully audition for and enroll in an ensemble compatible with the teaching certification they are pursuing;
- Instrumental students may be required to participate in additional ensembles to enhance their musical development;
- Jazz Studies majors (any instrument)--Jazz Orchestra.

Majors are required to appear in performance at the department's discretion and to attend a prescribed number of departmental recitals. Non-keyboard players are required to pass an exam in piano proficiency: PRACTM 2180, Piano Proficiency IV, or the equivalent.

The music department may require students to pass a placement test to enroll in the next level course, provided this or an equivalent test is administered to all students seeking to enroll in that course.

### Core Curriculum

The following core courses are required for all Music majors:

Music Theory		
THRY COM 1300	Introduction to Music Theory	1
THRY COM 1301	Theory of Music I	3
THRY COM 1302	Aural Training I	2
THRY COM 1311	Theory of Music II	3
THRY COM 1312	Aural Training II	2
THRY COM 2301	Theory of Music III	3
THRY COM 2302	Aural Training III	2
THRY COM 2311	Theory of Music IV <sup>1</sup>	3
THRY COM 2312	Aural Training IV <sup>2</sup>	2
Piano Proficiency		
PRACTM 1140	Piano Proficiency I	1
PRACTM 1150	Piano Proficiency II	1
PRACTM 2160	Piano Proficiency III <sup>3</sup>	1
PRACTM 2180	Piano Proficiency IV <sup>4</sup>	1
Conducting		
PRACTM 2510	Conducting I	2
Music History and Literature		
M H L T 2010	History of Western Music I (MOTR MUSC 103)	3
M H L T 2020	History of Western Music II (MOTR MUSC 104)	3
Choose one of the following courses:		3
M H L T 1150	Drumming Cultures of the World (MOTR MUSC 102)	

M H L T 1160	Musical Journey through Latin America	
M H L T 1170	Musical Journey through the Far East	
M H L T 1180	Musical Journey Through Africa	

Applied Music		
AP MUS 1460	Seminar in Pedagogy and Literature	0
AP MUS 3460	Seminar in Pedagogy and Literature	0
AP MUS 4460	Seminar in Pedagogy and Literature	0
AP MUS 3510	Senior Recital	0
Total Hours		36

- <sup>1</sup> Students in the BM Jazz Studies program will take THRY COM 2313 instead.
- <sup>2</sup> Students in the BM Jazz Studies program will take THRY COM 2314 instead.
- <sup>3</sup> Students in the BM Jazz Studies program will take PRACTM 2170 instead.
- <sup>4</sup> Students in the BM Jazz Studies program will take PRACTM 2171 instead.

PRACTM 1250	Singer's Diction: English, Italian and German (voice majors only)	1
PRACTM 1260	Singer's Diction: Latin, French, and Spanish (voice majors only)	1
PRACTM 3920	Senior Research	2-4

Applied Area	
One hour every semester in progress toward degree with a minimum of 8 credit hours	8

Ensemble	
Must be enrolled every semester in progress toward degree with a minimum of 4 credit hours	4

Foreign Language	
Candidates for the B.A. degree in Music are required to complete 13 credit hours or the equivalent in proficiency in one foreign language. <sup>1</sup>	13

Music History and Literature	
Select one upper-level course M H L T 4000-4280	3

<sup>1</sup> Please see the College of Arts and Sciences Baccalaureate Degree Requirements for additional information about the foreign language requirement.

## Learning Outcomes

Upon completion of the program, graduates will:

- Have the technical skills requisite for artistic self-expression (Performance)
- Understand the common elements and organizational patters of music and their interaction (Musicianship Skills and Analysis)
- Have a Rudimentary capacity to create original or derivative music (Composition/Improvisation)
- Have a basic knowledge of music history and repertoires through the present time (History and Repertory)

- Have the ability to work on musical problems by combining their capabilities in performance, aural, verbal and visual analysis; composition/improvisation; history and repertory (Synthesis)

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 THRY COM 1311	3
THRY COM 1300		1 THRY COM 1312	2
THRY COM 1301		3 PRACTM 1150	1
THRY COM 1302		2 AP MUS 14XX	1
PRACTM 1140		1 AP MUS 1460	0
AP MUS 14XX		1 EN PER XXXX	1
AP MUS 1460		0 FGN LANG 1002	5
EN PER XXXX		1 ENGL 1100	3
Foreign Language 1001		5	
CORE - Mathematics Proficiency		3	
		18	16

Second Year			
Fall	Hours	Spring	Hours
THRY COM 2301		3 THRY COM 2311	3
THRY COM 2302		2 THRY COM 2312	2
M H L T 2010		3 M H L T 2020	3
PRACTM 2160		1 PRACTM 2180	1
AP MUS 14XX		1 AP MUS 14XX	1
AP MUS 1460		0 AP MUS 1460	0
EN PER XXXX		1 EN PER XXXX	1
FGN LANG 2101		3 PRACTM 2510	2
PRACTM 1250 or 1260 (voice students)		1 EXPLORE - Social Science	3
		Elective (Instrumental Students)	1
		Elective or minor	1
		15	18

Third Year			
Fall	Hours	Spring	Hours
AP MUS 34XX		1 M H L T 1150, 1160, 1170, or 1180	3
AP MUS 3460		0 AP MUS 34XX	1
EN PER XXXX		1 AP MUS 3460	0
PRACTM 1250 or 1260		1 EN PER XXXX	1
CORE – US History and Government		3 ENGL 3100	3
CORE – Communication Proficiency		3 CORE – Information Literacy	3
EXPLORE – Social Sciences		3 EXPLORE – Mathematics and Life/ Natural Sciences	3
		12	14

Fourth Year			
Fall	Hours	Spring	Hours
M H L T 42XX+ Music Theory Elective		3 AP MUS 34XX	1
PRACTM 3920		3 AP MUS 3510	0
AP MUS 34XX		1 AP MUS 3460	0
AP MUS 3460		0 EN PER XXXX	1
EN PER XXXX		1 EXPLORE – Mathematics and Life/ Natural Sciences	3
EXPLORE – Mathematics and Life/ Natural Sciences		3 EXPLORE – Social Sciences	3
Elective or Minor		3 Elective or minor	3
		Elective or minor	2
		14	13

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Music BM, Elective Studies in Business Emphasis

### Degree Requirements

Admission to all Music degree programs is by audition to demonstrate musical aptitude and potential, moderate technical proficiency, and seriousness in selecting music as a four-year course of study. In addition to the applied music audition, placement examinations in music theory and music history may be required to confirm students' prior experience in these areas. Auditions are scheduled from January to May for the fall semester; a limited number are held in December for the spring/winter semester. Students in applied music must pass a junior-standing examination to confirm their level of performance skills for enrollment in AP MUS 3440 – AP MUS 3459 or AP MUS 4440 – AP MUS 4459. This examination is usually taken at the same time as the applied music jury for the fourth semester of enrollment in AP MUS 1440 - AP MUS 1459.

Evidence of sound musicianship, a close acquaintance with an appropriate portion of musical literature, and the ability to bring it to actual performance are required for graduation in all Music degree programs. Students in the B.M.: Performance Emphasis fulfill this requirement with junior and senior recitals. Students in all other degree programs fulfill this requirement with a senior recital. In some cases, upon the recommendation of the student's applied teacher, the senior recital (for non-performance majors only) may be replaced by participating in three regularly scheduled student recitals during the last two semesters of applied music study, or by performing for a special panel of faculty members.

### General Education Requirements

General education requirements (p. 51) apply to all majors, except the students in the B.M. with Elective Studies in Business and B.M. in Music Education degree programs are not required to take a foreign language. Courses required for degree programs may not be taken on a satisfactory/unsatisfactory basis. Students must receive at least a C in each music course and maintain a cumulative GPA of 2.5 (music education 2.7) in all music courses to meet degree requirements.

Non-Music majors may complete no more than 8 hours in music-performing organizations (EN PER 1400, University Chorus; EN PER 1410, University Concert Band; EN PER 1500, University Orchestra; EN PER 1520, University Symphonic Band, et. seq.) toward graduation, including credit transferred. Courses in applied music (private lessons and performing organizations) do not fulfill the humanities general education requirement. M H L T 1150, Drumming Cultures of the World; M H L T 1160, Musical Journey through Latin America; M H L T 1170, Musical Journey through the Far East; or M H L T 1180, Musical Journey through Africa will meet the non-Euro-American study requirement.

### Other Requirements

Music majors are required to enroll in an approved ensemble [University Chorus, University Symphonic Band, University Wind Ensemble, University Singers, University Orchestra, or Jazz Orchestra (for Jazz Studies majors)] each semester, to study one applied area progressively

each semester, and to enroll in the appropriate Pedagogy and Literature Seminar each semester of the degree program. Music Education majors are exempt from these requirements during the student teaching semester. The following specific ensemble enrollments, depending upon the applied music area, are required:

- Wind and Percussion students—University Symphonic Band or University Wind Ensemble;
- String students--University Orchestra;
- Voice students--University Singers or University Chorus;
- Keyboard and Guitar students--any approved ensemble, but those in the bachelor of music in music education program must successfully audition for and enroll in an ensemble compatible with the teaching certification they are pursuing;
- Instrumental students may be required to participate in additional ensembles to enhance their musical development;
- Jazz Studies majors (any instrument)--Jazz Orchestra.

Majors are required to appear in performance at the department's discretion and to attend a prescribed number of departmental recitals. Non-keyboard players are required to pass an exam in piano proficiency: PRACTM 2180, Piano Proficiency IV, or the equivalent.

The music department may require students to pass a placement test to enroll in the next level course, provided this or an equivalent test is administered to all students seeking to enroll in that course.

### Core Curriculum

The following core courses are required for all Music majors:

#### Music Theory

THRY COM 1300	Introduction to Music Theory	1
THRY COM 1301	Theory of Music I	3
THRY COM 1302	Aural Training I	2
THRY COM 1311	Theory of Music II	3
THRY COM 1312	Aural Training II	2
THRY COM 2301	Theory of Music III	3
THRY COM 2302	Aural Training III	2
THRY COM 2311	Theory of Music IV <sup>1</sup>	3
THRY COM 2312	Aural Training IV <sup>2</sup>	2

#### Piano Proficiency

PRACTM 1140	Piano Proficiency I	1
PRACTM 1150	Piano Proficiency II	1
PRACTM 2160	Piano Proficiency III <sup>3</sup>	1
PRACTM 2180	Piano Proficiency IV <sup>4</sup>	1

#### Conducting

PRACTM 2510	Conducting I	2
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#### Music History and Literature

M H L T 2010	History of Western Music I (MOTR MUSC 103)	3
M H L T 2020	History of Western Music II (MOTR MUSC 104)	3

Choose one of the following courses: 3

M H L T 1150	Drumming Cultures of the World (MOTR MUSC 102)	
M H L T 1160	Musical Journey through Latin America	



M H L T 1170	Musical Journey through the Far East	
M H L T 1180	Musical Journey Through Africa	
<b>Applied Music</b>		
AP MUS 1460	Seminar in Pedagogy and Literature	0
AP MUS 3460	Seminar in Pedagogy and Literature	0
AP MUS 4460	Seminar in Pedagogy and Literature	0
AP MUS 3510	Senior Recital	0
Total Hours		36

- <sup>1</sup> Students in the BM Jazz Studies program will take THRY COM 2313 instead.
- <sup>2</sup> Students in the BM Jazz Studies program will take THRY COM 2314 instead.
- <sup>3</sup> Students in the BM Jazz Studies program will take PRACTM 2170 instead.
- <sup>4</sup> Students in the BM Jazz Studies program will take PRACTM 2171 instead.

### Emphasis Area Requirements

#### Additional General Education Requirements <sup>1</sup>

PSYCH 1003	General Psychology (MOTR PSYC 100)	3
or SOC 1010	Introduction to Sociology (MOTR SOCI 101)	
ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3

#### Applied Area

1 hour every semester in progress toward degree with a minimum of 8 credit hours.	8
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#### Music History and Literature **3**

Select two courses from MHLT 4000–4459	6
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#### Ensemble

Must be enrolled every semester in progress toward degree with a minimum of 4 credit hours	4
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#### Internship

PRACTM 4920 Internship	1-3
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#### English

Select one of the following:	3
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ENGL 3100 Junior-Level Writing	
ENGL 3120 Business Writing	
ENGL 3130 Technical Writing (MOTR ENGL 110)	

#### Business Administration

ACCTNG 2400 Fundamentals of Financial Accounting	3
ACCTNG 2410 Managerial Accounting	3
ENT 2030 Business in the Arts	3
MGMT 3600 Management and Organizational Behavior	3
MKTG 3700 Basic Marketing	3
Select two of the following:	6
BUS AD 2900 Legal Environment of Business	
FINANCE 3500 Financial Management	
INFSYS 1800 Computers and Information Systems	

MGMT 3611	Advanced Management and Organizational Behavior	
MGMT 3621	Human Resource Management	
MGMT 3622	Industrial and Labor Relations	
MKTG 3710	Consumer Behavior	
Total Hours		52-54

<sup>1</sup> Prerequisites to the required business administration courses.

### Learning Outcomes

Upon completion of the program, graduates will:

- Have technical skills requisite for artistic self-expression (Performance)
- Understand the common elements and organizational patterns of music and their interaction (Musicianship Skills and Analysis)
- Have a rudimentary capacity to create original or derivative music (Composition/Improvisation)
- Have basic knowledge of music history and repertoires through the present time (History and Repertory)
- Be Able to work on musical problems by combining their capabilities in performance, aural, verbal and visual analysis; composition/improvisation; history and repertory (Synthesis)
- Be Able to develop necessary professional abilities and dispositions in order function in a field-based business internship (e.g. marketing, management, public relations, etc.)

### Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003		1 THRY COM 1311	3
THRY COM 1300		1 THRY COM 1312	2
THRY COM 1301		3 PRACTM 1150	1
THRY COM 1302		2 AP MUS 14XX	1
PRACTM 1140		1 AP MUS 1460	0
AP MUS 14XX		1 EN PER XXXX	1
AP MUS 1460		0 ECON 1001	3
EN PER XXXX		1 PSYCH 1003 or SOC 1010	3
ENGL 1100	3		
MATH 1030	3		
		16	14
Second Year			
Fall	Hours	Spring	Hours
THRY COM 2301		3 THRY COM 2311	3
THRY COM 2302		2 THRY COM 2312	2
M H L T 2010		3 M H L T 2020	3
PRACTM 2160		1 PRACTM 2180	1
AP MUS 14XX		1 AP MUS 14XX	1
AP MUS 1460		0 AP MUS 1460	0
EN PER XXXX		1 EN PER XXXX	1
ACCTNG 2400		3 PRACTM 2510	2
EXPLORE - Mathematics and Life/Natural Sciences		3 ACCTNG 2410	3
		17	16
Third Year			
Fall	Hours	Spring	Hours
AP MUS 34XX		1 M H L T 1150, 1150, 1160, 1170, or 1180	3
AP MUS 3460		0 AP MUS 34XX	1
EN PER XXXX		1 AP MUS 3460	0
MKTG 3700		3 EN PER XXXX	1
MGMT 3600		3 HIST 1001 or 1002	3

CORE - Communication Proficiency	3 ENGL 3100, 3120, or 3130	3
EXPLORE - Mathematics and Life/ Natural Sciences	3 General Education or Elective	4
	14	15
<b>Fourth Year</b>		
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>
M H L T 42XX Music History Elective	3 M H L T 42XX Music History Elective	3
AP MUS 34XX	1 AP MUS 34XX	1
AP MUS 3460	0 AP MUS 3460	0
INFSYS 1800	3 EN PER XXXX	1
EN PER XXXX	1 PRACTM 4920	3
EXPLORE - Mathematics and Life/ Natural Sciences	3 Business Elective	3
ENT 2030	3 General Education or Elective	3
	14	14

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Music BM, Jazz Studies Emphasis

### Degree Requirements

Admission to all Music degree programs is by audition to demonstrate musical aptitude and potential, moderate technical proficiency, and seriousness in selecting music as a four-year course of study. In addition to the applied music audition, placement examinations in music theory and music history may be required to confirm students' prior experience in these areas. Auditions are scheduled from January to May for the fall semester; a limited number are held in December for the spring/winter semester. Students in applied music must pass a junior-standing examination to confirm their level of performance skills for enrollment in AP MUS 3440 – AP MUS 3459 or AP MUS 4440 – AP MUS 4459. This examination is usually taken at the same time as the applied music jury for the fourth semester of enrollment in AP MUS 1440 - AP MUS 1459.

Evidence of sound musicianship, a close acquaintance with an appropriate portion of musical literature, and the ability to bring it to actual performance are required for graduation in all Music degree programs. Students in the B.M.: Performance Emphasis fulfill this requirement with junior and senior recitals. Students in all other degree programs fulfill this requirement with a senior recital. In some cases, upon the recommendation of the student's applied teacher, the senior recital (for non-performance majors only) may be replaced by participating in three regularly scheduled student recitals during the last two semesters of applied music study, or by performing for a special panel of faculty members.

### General Education Requirements

General education requirements (p. 51) apply to all majors, except the students in the B.M. with Elective Studies in Business and B.M. in Music Education degree programs are not required to take a foreign language. Courses required for degree programs may not be taken on a satisfactory/unsatisfactory basis. Students must receive at least a C in each music

course and maintain a cumulative GPA of 2.5 (music education 2.7) in all music courses to meet degree requirements.

Non-Music majors may complete no more than 8 hours in music-performing organizations (EN PER 1400, University Chorus; EN PER 1410, University Concert Band; EN PER 1500, University Orchestra; EN PER 1520, University Symphonic Band, et. seq.) toward graduation, including credit transferred. Courses in applied music (private lessons and performing organizations) do not fulfill the humanities general education requirement. M H L T 1150, Drumming Cultures of the World; M H L T 1160, Musical Journey through Latin America; M H L T 1170, Musical Journey through the Far East; or M H L T 1180, Musical Journey through Africa will meet the non-Euro-American study requirement.

### Other Requirements

Music majors are required to enroll in an approved ensemble [University Chorus, University Symphonic Band, University Wind Ensemble, University Singers, University Orchestra, or Jazz Orchestra (for Jazz Studies majors)] each semester, to study one applied area progressively each semester, and to enroll in the appropriate Pedagogy and Literature Seminar each semester of the degree program. Music Education majors are exempt from these requirements during the student teaching semester. The following specific ensemble enrollments, depending upon the applied music area, are required:

- Wind and Percussion students—University Symphonic Band or University Wind Ensemble;
- String students--University Orchestra;
- Voice students--University Singers or University Chorus;
- Keyboard and Guitar students--any approved ensemble, but those in the bachelor of music in music education program must successfully audition for and enroll in an ensemble compatible with the teaching certification they are pursuing;
- Instrumental students may be required to participate in additional ensembles to enhance their musical development;
- Jazz Studies majors (any instrument)--Jazz Orchestra.

Majors are required to appear in performance at the department's discretion and to attend a prescribed number of departmental recitals. Non-keyboard players are required to pass an exam in piano proficiency: PRACTM 2180, Piano Proficiency IV, or the equivalent.

The music department may require students to pass a placement test to enroll in the next level course, provided this or an equivalent test is administered to all students seeking to enroll in that course.

### Core Curriculum

The following core courses are required for all Music majors:

<b>Music Theory</b>		
THRY COM 1300	Introduction to Music Theory	1
THRY COM 1301	Theory of Music I	3
THRY COM 1302	Aural Training I	2
THRY COM 1311	Theory of Music II	3
THRY COM 1312	Aural Training II	2
THRY COM 2301	Theory of Music III	3
THRY COM 2302	Aural Training III	2
THRY COM 2311	Theory of Music IV <sup>1</sup>	3
THRY COM 2312	Aural Training IV <sup>2</sup>	2

**Piano Proficiency**

PRACTM 1140	Piano Proficiency I	1
PRACTM 1150	Piano Proficiency II	1
PRACTM 2160	Piano Proficiency III <sup>3</sup>	1
PRACTM 2180	Piano Proficiency IV <sup>4</sup>	1

**Conducting**

PRACTM 2510	Conducting I	2
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**Music History and Literature**

M H L T 2010	History of Western Music I (MOTR MUSC 103)	3
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M H L T 2020	History of Western Music II (MOTR MUSC 104)	3
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Choose one of the following courses: 3

M H L T 1150	Drumming Cultures of the World (MOTR MUSC 102)	
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M H L T 1160	Musical Journey through Latin America	
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M H L T 1170	Musical Journey through the Far East	
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M H L T 1180	Musical Journey Through Africa	
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**Applied Music**

AP MUS 1460	Seminar in Pedagogy and Literature	0
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AP MUS 3460	Seminar in Pedagogy and Literature	0
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AP MUS 4460	Seminar in Pedagogy and Literature	0
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AP MUS 3510	Senior Recital	0
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Total Hours 36

<sup>1</sup> Students in the BM Jazz Studies program will take THRY COM 2313 instead.

<sup>2</sup> Students in the BM Jazz Studies program will take THRY COM 2314 instead.

<sup>3</sup> Students in the BM Jazz Studies program will take PRACTM 2170 instead.

<sup>4</sup> Students in the BM Jazz Studies program will take PRACTM 2171 instead.

**Specific Requirements for the Emphasis Area**

ENT 2030	Business in the Arts	3
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M H L T 1200	History of Jazz Music	3
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PDGOGY 2220	Jazz Pedagogy	3
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THRY COM 3411	Jazz Arranging	3
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**Ensemble**

EN PER 1550	Jazz Orchestra (Must be enrolled every semester in progress toward degree with a minimum of 4 credit hours)	4
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EN PER 1530	University Wind Ensemble (2 semesters)	2
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**Jazz Combo/Improvisation**

EN PER 1542	Jazz Combo (8 semesters)	8
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PRACTM 1200	Jazz Improvisation (4 semesters)	4
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PRACTM 2200	Advanced Jazz Improvisation (4 semesters)	4
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Total Hours 34

**Learning Outcomes**

Upon completion of the program, graduates will be able to:

- Have technical skills requisite for artistic self-expression (Performance)
- Understand the common elements and organizational patterns of music and their interaction (Musicianship Skills and Analysis)
- Have a rudimentary capacity to create original or derivative music (Composition/Improvisation)
- Have basic knowledge of music history and repertoires through the present time (History and Repertory)
- Be Able to work on musical problems by combining their capabilities in performance, aural, verbal and visual analysis; composition/improvisation; history and repertory (Synthesis)

**Four Year Plan****First Year**

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 THRY COM 1311	3
THRY COM 1301		3 THRY COM 1312	2
THRY COM 1302		2 PRACTM 1150	1
THRY COM 1300		1 AP MUS 14XX	1
PRACTM 1140		1 AP MUS 1460	0
AP MUS 14XX		1 EN PER 1542	1
AP MUS 1460		0 EN PER 1550	1
EN PER 1542		1 PRACTM 1200	1
EN PER 1550		1 ENGL 1100	3
PRACTM 1200		1 EXPLORE - Social Sciences	3
CORE - Mathematics Proficiency	3		
	15		16

**Second Year**

Fall	Hours	Spring	Hours
THRY COM 2301		3 THRY COM 2313	3
THRY COM 2302		2 THRY COM 2314	1
M H L T 2010		3 M H L T 2020	3
PRACTM 2170		1 AP MUS 14XX	1
AP MUS 14XX		1 AP MUS 1460	0
AP MUS 1460		0 EN PER 1530	1
EN PER 1542		1 EN PER 1542	1
EN PER 1530		1 EN PER 1550	1
EN PER 1550		1 PRACTM 1200	1
PRACTM 1200		1 PRACTM 2171	1
HIST 1002 or 1002		3 PRACTM 2510	2
	17		15

**Third Year**

Fall	Hours	Spring	Hours
ENT 2030		3 THRY COM 3411	3
AP MUS 34XX		1 PDGOGY 2220	3
AP MUS 3460		0 AP MUS 34XX	1
EN PER 1542		1 AP MUS 3460	0
CORE - Communication Proficiency		3 EN PER 1550	1
EN PER 1550		1 PRACTM 2200	1
PRACTM 2200		1 EN PER 1542	1
EXPLORE - Mathematics and Life/ Natural Sciences		3 ENGL 3100	3
		EXPLORE - Mathematics and Life/ Natural Sciences	3
	13		16

Fourth Year			
Fall	Hours	Spring	Hours
M H L T 1200		3 M H L T 1150, 1160, 1170, or 1180	3
AP MUS 34XX		1 AP MUS 3510	0
AP MUS 3460		0 AP MUS 34XX	1
EN PER 1550		1 AP MUS 3460	0
PRACTM 2200		1 EN PER 1542	1
EN PER 1542		1 EN PER 1550	1
CORE - Information Literacy		3 PRACTM 2200	1
EXPLORE - Social Sciences		3 PRACTM 3920	2
		EXPLORE - Social Sciences	3
		EXPLORE - Mathematics and Life/ Natural Sciences	3
	13		15

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical full-time student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Music BM, Music Composition Emphasis

### Degree Requirements

Admission to all Music degree programs is by audition to demonstrate musical aptitude and potential, moderate technical proficiency, and seriousness in selecting music as a four-year course of study. In addition to the applied music audition, placement examinations in music theory and music history may be required to confirm students' prior experience in these areas. Auditions are scheduled from January to May for the fall semester; a limited number are held in December for the spring/ winter semester. Students in applied music must pass a junior-standing examination to confirm their level of performance skills for enrollment in AP MUS 3440 – AP MUS 3459 or AP MUS 4440 – AP MUS 4459. This examination is usually taken at the same time as the applied music jury for the fourth semester of enrollment in AP MUS 1440 - AP MUS 1459.

Evidence of sound musicianship, a close acquaintance with an appropriate portion of musical literature, and the ability to bring it to actual performance are required for graduation in all Music degree programs. Students in the B.M.: Performance Emphasis fulfill this requirement with junior and senior recitals. Students in all other degree programs fulfill this requirement with a senior recital. In some cases, upon the recommendation of the student's applied teacher, the senior recital (for non-performance majors only) may be replaced by participating in three regularly scheduled student recitals during the last two semesters of applied music study, or by performing for a special panel of faculty members.

### General Education Requirements

General education requirements (p. 51) apply to all majors, except the students in the B.M. with Elective Studies in Business and B.M. in Music Education degree programs are not required to take a foreign language. Courses required for degree programs may not be taken on a satisfactory/unsatisfactory basis. Students must receive at least a C in each music

course and maintain a cumulative GPA of 2.5 (music education 2.7) in all music courses to meet degree requirements.

Non-Music majors may complete no more than 8 hours in music-performing organizations (EN PER 1400, University Chorus; EN PER 1410, University Concert Band; EN PER 1500, University Orchestra; EN PER 1520, University Symphonic Band, et. seq.) toward graduation, including credit transferred. Courses in applied music (private lessons and performing organizations) do not fulfill the humanities general education requirement. M H L T 1150, Drumming Cultures of the World; M H L T 1160, Musical Journey through Latin America; M H L T 1170, Musical Journey through the Far East; or M H L T 1180, Musical Journey through Africa will meet the non-Euro-American study requirement.

### Other Requirements

Music majors are required to enroll in an approved ensemble [University Chorus, University Symphonic Band, University Wind Ensemble, University Singers, University Orchestra, or Jazz Orchestra (for Jazz Studies majors)] each semester, to study one applied area progressively each semester, and to enroll in the appropriate Pedagogy and Literature Seminar each semester of the degree program. Music Education majors are exempt from these requirements during the student teaching semester. The following specific ensemble enrollments, depending upon the applied music area, are required:

- Wind and Percussion students—University Symphonic Band or University Wind Ensemble;
- String students--University Orchestra;
- Voice students--University Singers or University Chorus;
- Keyboard and Guitar students--any approved ensemble, but those in the bachelor of music in music education program must successfully audition for and enroll in an ensemble compatible with the teaching certification they are pursuing;
- Instrumental students may be required to participate in additional ensembles to enhance their musical development;
- Jazz Studies majors (any instrument)--Jazz Orchestra.

Majors are required to appear in performance at the department's discretion and to attend a prescribed number of departmental recitals. Non-keyboard players are required to pass an exam in piano proficiency: PRACTM 2180, Piano Proficiency IV, or the equivalent.

The music department may require students to pass a placement test to enroll in the next level course, provided this or an equivalent test is administered to all students seeking to enroll in that course.

### Core Curriculum

The following core courses are required for all Music majors:

#### Music Theory

THRY COM 1300	Introduction to Music Theory	1
THRY COM 1301	Theory of Music I	3
THRY COM 1302	Aural Training I	2
THRY COM 1311	Theory of Music II	3
THRY COM 1312	Aural Training II	2
THRY COM 2301	Theory of Music III	3
THRY COM 2302	Aural Training III	2
THRY COM 2311	Theory of Music IV <sup>1</sup>	3
THRY COM 2312	Aural Training IV <sup>2</sup>	2



<b>Piano Proficiency</b>		
PRACTM 1140	Piano Proficiency I	1
PRACTM 1150	Piano Proficiency II	1
PRACTM 2160	Piano Proficiency III <sup>3</sup>	1
PRACTM 2180	Piano Proficiency IV <sup>4</sup>	1
<b>Conducting</b>		
PRACTM 2510	Conducting I	2
<b>Music History and Literature</b>		
M H L T 2010	History of Western Music I (MOTR MUSC 103)	3
M H L T 2020	History of Western Music II (MOTR MUSC 104)	3
Choose one of the following courses:		3
M H L T 1150	Drumming Cultures of the World (MOTR MUSC 102)	
M H L T 1160	Musical Journey through Latin America	
M H L T 1170	Musical Journey through the Far East	
M H L T 1180	Musical Journey Through Africa	
<b>Applied Music</b>		
AP MUS 1460	Seminar in Pedagogy and Literature	0
AP MUS 3460	Seminar in Pedagogy and Literature	0
AP MUS 4460	Seminar in Pedagogy and Literature	0
AP MUS 3510	Senior Recital	0
Total Hours		36

<sup>1</sup> Students in the BM Jazz Studies program will take THRY COM 2313 instead.

<sup>2</sup> Students in the BM Jazz Studies program will take THRY COM 2314 instead.

<sup>3</sup> Students in the BM Jazz Studies program will take PRACTM 2170 instead.

<sup>4</sup> Students in the BM Jazz Studies program will take PRACTM 2171 instead.

## Emphasis Area Requirements

### Theory and Composition

THRY COM 3110	Analysis of Music from 1900 to Present	2
THRY COM 3120	Tonal Counterpoint	2
THRY COM 3300	Seminar in Composition (two semesters)	2
THRY COM 3310	Studio Composition (four semesters)	4
THRY COM 3410	Orchestration	3
THRY COM 3420	Choral Arranging	2
THRY COM 3130	Advanced Analytical Techniques	2
or THRY COM 3140	Readings in Music Theory	

### Music History and Literature

Select two upper level courses MHLT 4000-MHLT 4280 6

### Practicum

PRACTM 3521	Conducting II - Instrumental	2
or PRACTM 3522	Conducting II - Choral	

PRACTM 4100	Senior Project in Theory/Composition	2-4
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### Applied Area

1 hour every semester in progress toward degree with a minimum of 8 credit hours 8

### Ensemble

Must be enrolled every semester in progress toward degree with a minimum of 4 credit hours 4

Total Hours 39-41

## Learning Outcomes

Upon completion of the program, graduates will:

- Have technical skills requisite for artistic self-expression (Performance)
- Understand the common elements and organizational patterns of music and their interaction (Musicianship Skills and Analysis)
- Have a rudimentary capacity to create original or derivative music (Composition/Improvisation)
- Have basic knowledge of music history and repertoires through the present time (History and Repertory)
- Be Able to work on musical problems by combining their capabilities in performance, aural, verbal and visual analysis; composition/improvisation; history and repertory (Synthesis)

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 THRY COM 1311	3
THRY COM 1300		1 THRY COM 1312	2
THRY COM 1301		3 PRACTM 1150	1
THRY COM 1302		2 AP MUS 14XX	1
PRACTM 1140		1 AP MUS 1460	0
AP MUS 14XX		1 EN PER XXXX	1
AP MUS 1460		0 ENGL 1100	3
EX PER XXXX		1 EXPLORE - Social Sciences	3
CORE - US History and Government		3	
CORE - Mathematics Proficiency		3	
		16	14

### Second Year

Fall	Hours	Spring	Hours
THRY COM 2301		3 THRY COM 2311	3
THRY COM 2302		2 THRY COM 2312	2
THRY COM 3300		1 THRY COM 3300	1
M H L T 2010		3 M H L T 2020	3
PRACTM 2160		1 PRACTM 2180	1
AP MUS 14XX		1 AP MUS 14XX	1
AP MUS 1460		0 AP MUS 1460	0
EN PER XXXX		1 EN PER XXXX	1
CORE - Communication Proficiency		3 PRACTM 2510	2
EXPLORE - Mathematics and Life/Natural Sciences		3 CORE - Information Literacy	3
		18	17

### Third Year

Fall	Hours	Spring	Hours
THRY COM 3310		1 M H L T 1150, 1160, 1170, or 1180	3
THRY COM 3410		3 THRY COM 3110	2
M H L T 42XX Music History Elective		3 THRY COM 3310	1
AP MUS 34XX		1 AP MUS 34XX	1
AP MUS 3460		0 AP MUS 3460	0
EN PER XXXX		1 EN PER XXXX	1

PRACTM 3521	2 PRACTM 3280	1
ENGL 3100	3 EXPLORE - Social Sciences	3
	EXPLORE - Math and Sciences	3
	14	15

**Fourth Year**

Fall	Hours	Spring	Hours
M H L T 42XX Music History Elective	3	AP MUS 34XX	1
THRY COM 3310	1	AP MUS 3460	0
EN PER XXXX	1	AP MUS 3510	0
AP MUS 34XX	1	THRY COM 3120	2
AP MUS 3460	0	THRY COM 3420	2
EXPLORE - Social Sciences	3	THRY COM 3310	1
EXPLORE - Mathematics and Life/ Natural Sciences	3	EN PER XXXX	1
THRY COM 3130 or 3140	2	PRACTM 4100	3
		Elective or minor	2
	14		12

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Music BM, Music Education Emphasis

### Degree Requirements

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### General Education Requirements

General education requirements (p. 51) apply to all majors, except the students in the B.M. with Elective Studies in Business and B.M. in Music

Education degree programs are not required to take a foreign language. Courses required for degree programs may not be taken on a satisfactory/unsatisfactory basis. Students must receive at least a C in each music course and maintain a cumulative GPA of 2.5 (music education 2.7) in all music courses to meet degree requirements.

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### Other Requirements

Music majors are required to enroll in an approved ensemble [University Chorus, University Symphonic Band, University Wind Ensemble, University Singers, University Orchestra, or Jazz Orchestra (for Jazz Studies majors)] each semester, to study one applied area progressively each semester, and to enroll in the appropriate Pedagogy and Literature Seminar each semester of the degree program. Music Education majors are exempt from these requirements during the student teaching semester. The following specific ensemble enrollments, depending upon the applied music area, are required:

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- Voice students--University Singers or University Chorus;
- Keyboard and Guitar students--any approved ensemble, but those in the bachelor of music in music education program must successfully audition for and enroll in an ensemble compatible with the teaching certification they are pursuing;
- Instrumental students may be required to participate in additional ensembles to enhance their musical development;
- Jazz Studies majors (any instrument)--Jazz Orchestra.

Majors are required to appear in performance at the department's discretion and to attend a prescribed number of departmental recitals. Non-keyboard players are required to pass an exam in piano proficiency: PRACTM 2180, Piano Proficiency IV, or the equivalent.

The music department may require students to pass a placement test to enroll in the next level course, provided this or an equivalent test is administered to all students seeking to enroll in that course.

### Core Curriculum

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THRY COM 1302	Aural Training I	2
THRY COM 1311	Theory of Music II	3
THRY COM 1312	Aural Training II	2
THRY COM 2301	Theory of Music III	3
THRY COM 2302	Aural Training III	2

THRY COM 2311	Theory of Music IV <sup>1</sup>	3
THRY COM 2312	Aural Training IV <sup>2</sup>	2
<b>Piano Proficiency</b>		
PRACTM 1140	Piano Proficiency I	1
PRACTM 1150	Piano Proficiency II	1
PRACTM 2160	Piano Proficiency III <sup>3</sup>	1
PRACTM 2180	Piano Proficiency IV <sup>4</sup>	1
<b>Conducting</b>		
PRACTM 2510	Conducting I	2
<b>Music History and Literature</b>		
M H L T 2010	History of Western Music I (MOTR MUSC 103)	3
M H L T 2020	History of Western Music II (MOTR MUSC 104)	3
Choose one of the following courses:		3
M H L T 1150	Drumming Cultures of the World (MOTR MUSC 102)	
M H L T 1160	Musical Journey through Latin America	
M H L T 1170	Musical Journey through the Far East	
M H L T 1180	Musical Journey Through Africa	
<b>Applied Music</b>		
AP MUS 1460	Seminar in Pedagogy and Literature	0
AP MUS 3460	Seminar in Pedagogy and Literature	0
AP MUS 4460	Seminar in Pedagogy and Literature	0
AP MUS 3510	Senior Recital	0
Total Hours		36

<sup>1</sup> Students in the BM Jazz Studies program will take THRY COM 2313 instead.

<sup>2</sup> Students in the BM Jazz Studies program will take THRY COM 2314 instead.

<sup>3</sup> Students in the BM Jazz Studies program will take PRACTM 2170 instead.

<sup>4</sup> Students in the BM Jazz Studies program will take PRACTM 2171 instead.

In addition to the requirement for a successful audition on their primary instrument, piano and guitar students applying for the BM: Music Education program must also successfully audition for the full participation in (1) Applied Music (seven hours) and University Singers (for those seeking vocal/choral certification), or (2) Symphonic Band, Wind Ensemble, or Orchestra (for those seeking instrumental certification).

In addition to the required music core curriculum, candidates must complete the following:

#### Other General Education Requirements <sup>1</sup>

All B.M. in Music Education majors must meet the university and college general education requirements.

#### GPA Requirement

Students enrolled in B.M. in music education must maintain minimum GPAs (2.75 cumulative; 3.0 music; and 3.0 professional education).

#### Proficiency Exam

Students working toward certification in choral/vocal or instrumental music K-12 are required to pass a keyboard proficiency examination before admission to student teaching in music, usually before or during the sixth semester of their program.

<sup>1</sup> All of the courses in the General Education Requirement Area must be a minimum of two semester hours.

#### Instrumental Track

AP MUS 1410 - 3459		7
One hour every semester in progress toward degree with a minimum of 7 credit hours		
EN PER 1500	University Orchestra (MOTR PERF 102O) <sup>1</sup>	4
or EN PER 1520	University Symphonic Band (MOTR PERF 102B)	
or EN PER 1530	University Wind Ensemble	
MUS ED 3570	Curriculum and Methods of Teaching Elementary and Secondary General Music <sup>2</sup>	3
MUS ED 3680	Curriculum and Methods of Teaching Instrumental Music <sup>2</sup>	3
PDGOGY 1250	Brass Techniques	2
PDGOGY 1260	Woodwind Techniques	2
PDGOGY 1270	String Techniques	2
PDGOGY 1280	Percussion Instrumental Techniques	2
PRACTM 2610	Instrumental Literature Laboratory	1
PRACTM 3521	Conducting II - Instrumental	2
Total Hours		28

<sup>1</sup> One hour every semester in progress toward degree with a minimum of 4 credit hours in EN PER 1500, EN PER 1520, or EN PER 1530.

<sup>2</sup> Must be taken **in residence** before enrolling in SEC ED 4993 and SEC ED 4994.

#### Vocal Track <sup>1</sup>

AP MUS 1410 - 3459		7
One hour every semester in progress toward degree with a minimum of 7 credit hours		
EN PER 1410	The University Singers (MOTR PERF 102C) <sup>2</sup>	4
MUS ED 3570	Curriculum and Methods of Teaching Elementary and Secondary General Music <sup>3</sup>	3
MUS ED 3710	Curriculum and Methods of Teaching Choral Music <sup>3</sup>	3
PRACTM 1250	Singer's Diction: English, Italian and German	1
PRACTM 1260	Singer's Diction: Latin, French, and Spanish	1
PRACTM 3522	Conducting II - Choral	2
PRACTM 2611	Choral Literature Laboratory	1
THRY COM 3420	Choral Arranging	2
Total Hours		24

- <sup>1</sup> Vocal certification students whose applied area is not voice must consult an advisor for additional courses.
- <sup>2</sup> One hour every semester in progress toward degree with a minimum of 4 credit hours.
- <sup>3</sup> Must be taken **in residence** before enrolling in SEC ED 4993 and SEC ED 4994.

PRACTM 1140	1 AP MUS 14XX	1
AP MUS 14XX	1 AP MUS 1460	0
AP MUS 1460	0 EN PER 1410	1
EN PER 1410	1 TCH ED 1001	1
ENGL 1100	3 TCH ED 2209	2
CORE - Mathematics Proficiency	3 TCH ED 2001	1
TCH ED 1000	1 TCH ED 2000	1
EXPLORE - Social Sciences	3 EXPLORE - Math and Sciences	3
	EXPLORE - US History and Government	3
		19
		19

## Professional Education and Student Teaching

### Level I: Exploring Education as a Profession

TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3

### Level II: Teaching and Learning Across Context and Clinical Experiences

ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3
SEC ED 4992	Practicum I: Site-Based Experience in Music	3

### Level III: Synthesizing Theory and Practice in Education

SEC ED 4993	Practicum II: 12-Week Site-Based Experience in Music	9
SEC ED 4994	Practicum II: 4-Week Site-Based Experience in Music	3

Total Hours 30

## Learning Outcomes

Upon completion of the program, graduates will:

- Have technical skills requisite for artistic self-expression (Performance)
- Understand the common elements and organizational patters of music and their interaction (Musicianship Skills and Analysis)
- Have a rudimentary capacity to create original or derivative music (Composition/Improvisation)
- Have basic knowledge of music history and repertoires through the present time (History and Repertory)
- Be Able to work on musical problems by combining their capabilities in performance, aural, verbal and visual analysis; composition/ improvisation; history and repertory (Synthesis)
- Develop requisite knowledge base, skill sets and the professional dispositions needed to pass initial State of Missouri Teacher Licensure Exams (MOGEA, MOCA and MEES, 'Candidate Level')

## Sample Four Year Plans Bachelor of Music in Music Education (Vocal)

### First Year

Fall	Hours	Spring	Hours
THRY COM 1301	3	THRY COM 1311	3
THRY COM 1302	2	THRY COM 1312	2
THRY COM 1300	1	PRACTM 1150	1

### Second Year

Fall	Hours	Spring	Hours
THRY COM 2301	3	THRY COM 2311	3
THRY COM 2302	2	THRY COM 2312	2
M H L T 2010	3	M H L T 2020	3
PRACTM 2160	1	PRACTM 2180	1
AP MUS 14XX	1	AP MUS 14XX	1
AP MUS 1460	0	AP MUS 1460	0
EN PER 1410	1	PRACTM 2510	2
PRACTM 1250	1	EN PER 1410	1
ED PSY 2212	3	POL SCI 1100	3
EXPLORE - Math and Sciences	3	COMM 1040	3
		PRACTM 1250	1
		18	20

### Third Year

Fall	Hours	Spring	Hours
THRY COM 3410	3	THRY COM 3420	2
PRACTM 3190	1	PRACTM 3290	1
AP MUS 34XX	1	AP MUS 34XX	1
AP MUS 3460	0	AP MUS 3460	0
EN PER 1410	1	EN PER 1410	1
PRACTM 3522	2	PRACTM 2611	1
MUS ED 3570	3	PRACTM 2611	1
MUS ED 3710	3	PRACTM 1260	1
ED PSY 3312	3	TCH ED 3310	3
		TCH ED 4391	3
		ENGL 3100	3
		CORE - Information Literacy	3
		17	20

### Fourth Year

Fall	Hours	Spring	Hours
AP MUS 34XX	1	SEC ED 4993	9
AP MUS 3460	0	SEC ED 4994	3
EN PER 1410	1		
AP MUS 3510	0		
SPEC ED 3318	3		
TCH ED 3001	1		
SEC ED 4992	3		
EXPLORE - Math and Sciences	3		
Cultural Diversity Requirement	3		
		15	12

Total Hours: 140

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*



## Bachelor of Music in Music Education (Instrumental)

### First Year

Fall	Hours	Spring	Hours
THRY COM 1300		1 THRY COM 1311	3
THRY COM 1301	3	THRY COM 1312	2
THRY COM 1302	2	PRACTM 1150	1
PRACTM 1140	1	AP MUS 14XX	1
AP MUS 14XX	1	AP MUS 1460	0
AP MUS 1460	0	EN PER XXXX	1
EN PER XXXX	1	TCH ED 1001	1
ENGL 1100	3	TCH ED 2001	1
TCH ED 1000	1	TCH ED 2000	1
CORE - Mathematics Proficiency	3	TCH ED 2209	2
		EXPLORE - Math & Sciences	3
		CORE - US History & Government	3
	16		19

### Second Year

Fall	Hours	Spring	Hours
THRY COM 2301		3 THRY COM 2311	3
THRY COM 2302	2	THRY COM 2312	2
M H L T 2010	3	M H L T 2020	3
PRACTM 2160	1	PRACTM 2180	1
AP MUS 14XX	1	AP MUS 14XX	1
AP MUS 1460	0	AP MUS 1460	0
en per xxxx	1	EN PER XXXX	1
PDGOGY 1260	2	PRACTM 2510	2
ED PSY 2212	3	PDGOGY 1250	2
EXPLORE - Math & Sciences	3	POL SCI 1100	3
		COMM 1040	3
	19		21

### Third Year

Fall	Hours	Spring	Hours
THRY COM 3410		3 AP MUS 34XX	1
AP MUS 34XX	1	AP MUS 3460	0
AP MUS 3460	0	EN PER XXXX	1
EN PER XXXX	1	PDGOGY 1270	2
PRACTM 3521	2	TCH ED 4391	3
PRACTM 2610	1	ENGL 3100	3
MUS ED 3570	3	CORE - Information Literacy	3
MUS ED 3680	3	EXPLORE - Social Sciences	3
ED PSY 3312	3		
EXPLORE - Social Sciences	3		
	20		16

### Fourth Year

Fall	Hours	Spring	Hours
AP MUS 34XX		1 SEC ED 4993	9
AP MUS 3460	0	SEC ED 4994	3
EN PER XXXX	1		
PDGOGY 1280	2		
SPEC ED 3318	3		
TCH ED 3001	1		
SEC ED 4992	3		
Cultural Diversity Requirement	3		
EXPLORE - Math & Sciences	3		
	17		12

Total Hours: 140

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used*

*in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Music BM, Music Theory Emphasis

### Degree Requirements

Admission to all Music degree programs is by audition to demonstrate musical aptitude and potential, moderate technical proficiency, and seriousness in selecting music as a four-year course of study. In addition to the applied music audition, placement examinations in music theory and music history may be required to confirm students' prior experience in these areas. Auditions are scheduled from January to May for the fall semester; a limited number are held in December for the spring/winter semester. Students in applied music must pass a junior-standing examination to confirm their level of performance skills for enrollment in AP MUS 3440 – AP MUS 3459 or AP MUS 4440 – AP MUS 4459. This examination is usually taken at the same time as the applied music jury for the fourth semester of enrollment in AP MUS 1440 - AP MUS 1459.

Evidence of sound musicianship, a close acquaintance with an appropriate portion of musical literature, and the ability to bring it to actual performance are required for graduation in all Music degree programs. Students in the B.M.: Performance Emphasis fulfill this requirement with junior and senior recitals. Students in all other degree programs fulfill this requirement with a senior recital. In some cases, upon the recommendation of the student's applied teacher, the senior recital (for non-performance majors only) may be replaced by participating in three regularly scheduled student recitals during the last two semesters of applied music study, or by performing for a special panel of faculty members.

### General Education Requirements

General education requirements (p. 51) apply to all majors, except the students in the B.M. with Elective Studies in Business and B.M. in Music Education degree programs are not required to take a foreign language. Courses required for degree programs may not be taken on a satisfactory/unsatisfactory basis. Students must receive at least a C in each music course and maintain a cumulative GPA of 2.5 (music education 2.7) in all music courses to meet degree requirements.

Non-Music majors may complete no more than 8 hours in music-performing organizations (EN PER 1400, University Chorus; EN PER 1410, University Concert Band; EN PER 1500, University Orchestra; EN PER 1520, University Symphonic Band, et. seq.) toward graduation, including credit transferred. Courses in applied music (private lessons and performing organizations) do not fulfill the humanities general education requirement. M H L T 1150, Drumming Cultures of the World; M H L T 1160, Musical Journey through Latin America; M H L T 1170, Musical Journey through the Far East; or M H L T 1180, Musical Journey through Africa will meet the non-Euro-American study requirement.

### Other Requirements

Music majors are required to enroll in an approved ensemble [University Chorus, University Symphonic Band, University Wind Ensemble, University Singers, University Orchestra, or Jazz Orchestra (for Jazz Studies majors)] each semester, to study one applied area progressively each semester, and to enroll in the appropriate Pedagogy and Literature Seminar each semester of the degree program. Music Education majors are exempt from these requirements during the student teaching

semester. The following specific ensemble enrollments, depending upon the applied music area, are required:

- Wind and Percussion students—University Symphonic Band or University Wind Ensemble;
- String students--University Orchestra;
- Voice students--University Singers or University Chorus;
- Keyboard and Guitar students--any approved ensemble, but those in the bachelor of music in music education program must successfully audition for and enroll in an ensemble compatible with the teaching certification they are pursuing;
- Instrumental students may be required to participate in additional ensembles to enhance their musical development;
- Jazz Studies majors (any instrument)--Jazz Orchestra.

Majors are required to appear in performance at the department's discretion and to attend a prescribed number of departmental recitals. Non-keyboard players are required to pass an exam in piano proficiency: PRACTM 2180, Piano Proficiency IV, or the equivalent.

The music department may require students to pass a placement test to enroll in the next level course, provided this or an equivalent test is administered to all students seeking to enroll in that course.

## Core Curriculum

The following core courses are required for all Music majors:

### Music Theory

THRY COM 1300	Introduction to Music Theory	1
THRY COM 1301	Theory of Music I	3
THRY COM 1302	Aural Training I	2
THRY COM 1311	Theory of Music II	3
THRY COM 1312	Aural Training II	2
THRY COM 2301	Theory of Music III	3
THRY COM 2302	Aural Training III	2
THRY COM 2311	Theory of Music IV <sup>1</sup>	3
THRY COM 2312	Aural Training IV <sup>2</sup>	2

### Piano Proficiency

PRACTM 1140	Piano Proficiency I	1
PRACTM 1150	Piano Proficiency II	1
PRACTM 2160	Piano Proficiency III <sup>3</sup>	1
PRACTM 2180	Piano Proficiency IV <sup>4</sup>	1

### Conducting

PRACTM 2510	Conducting I	2
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### Music History and Literature

M H L T 2010	History of Western Music I (MOTR MUSC 103)	3
M H L T 2020	History of Western Music II (MOTR MUSC 104)	3

Choose one of the following courses: 3

M H L T 1150	Drumming Cultures of the World (MOTR MUSC 102)	
M H L T 1160	Musical Journey through Latin America	
M H L T 1170	Musical Journey through the Far East	
M H L T 1180	Musical Journey Through Africa	

### Applied Music

AP MUS 1460	Seminar in Pedagogy and Literature	0
AP MUS 3460	Seminar in Pedagogy and Literature	0
AP MUS 4460	Seminar in Pedagogy and Literature	0
AP MUS 3510	Senior Recital	0
Total Hours		36

- 1 Students in the BM Jazz Studies program will take THRY COM 2313 instead.
- 2 Students in the BM Jazz Studies program will take THRY COM 2314 instead.
- 3 Students in the BM Jazz Studies program will take PRACTM 2170 instead.
- 4 Students in the BM Jazz Studies program will take PRACTM 2171 instead.

### Theory and Composition

THRY COM 3110	Analysis of Music from 1900 to Present	2
THRY COM 3120	Tonal Counterpoint	2
THRY COM 3130	Advanced Analytical Techniques	2
THRY COM 3140	Readings in Music Theory	2
THRY COM 3410	Orchestration	3
THRY COM 3420	Choral Arranging	2

### Music History and Literature

Select two upper level courses MHLT 4000-MHLT 4280	6
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### Practicum

PRACTM 3521	Conducting II - Instrumental	2
or PRACTM 3522	Conducting II - Choral	
PRACTM 3280	Score Reading at the Keyboard	1
PRACTM 4100	Senior Project in Theory/Composition	2-4

### Applied Area

1 hour every semester in progress toward degree with a minimum of 8 credit hours.	8
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### Ensemble

Must be enrolled every semester in progress toward degree with a minimum of 4 credit hours	4
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Total Hours	36-38
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## Learning Outcomes

Upon completion of the program, graduates will:

- Have technical skills requisite for artistic self-expression (Performance)
- Understand the common elements and organizational patterns of music and their interaction (Musicianship Skills and Analysis)
- Have a rudimentary capacity to create original or derivative music (Composition/Improvisation)
- Have basic knowledge of music history and repertoires through the present time (History and Repertory)
- Be Able to work on musical problems by combining their capabilities in performance, aural, verbal and visual analysis; composition/improvisation; history and repertory (Synthesis)

- Develop requisite knowledge, skills, and disposition needed to engage in scholarly dialogue through research and analysis

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>	1	THRY COM 1311	3
THRY COM 1300	1	THRY COM 1312	2
THRY COM 1301	3	PRACTM 1150	1
THRY COM 1302	2	AP MUS 14XX	1
PRACTM 1140	1	AP MUS 1460	0
AP MUS 14XX	1	EN PER XXXX	1
AP MUS 1460	0	CORE - Communication Proficiency	3
EN PER XXXX	1	CORE - US History and Government	3
ENGL 1100	3	EXPLORE - Social Sciences	3
CORE - Mathematics Proficiency	3		
	16		17
Second Year			
Fall	Hours	Spring	Hours
THRY COM 2301	3	THRY COM 2311	3
THRY COM 2302	2	THRY COM 2312	2
M H L T 2010	3	M H L T 2020	3
PRACTM 2160	1	PRACTM 2180	1
AP MUS 14XX	1	AP MUS 14XX	1
AP MUS 1460	0	AP MUS 1460	0
EN PER XXXX	1	EN PER XXXX	1
EXPLORE - Mathematics and Life/ Natural Sciences	3	PRACTM 2510	2
		CORE - Information Literacy	3
	14		16
Third Year			
Fall	Hours	Spring	Hours
THRY COM 3130	2	M H L T 1150, 1160, 1170, or 1180	3
THRY COM 3410	3	THRY COM 3110	2
M H L T 42XX Music History Elective	3	AP MUS 34XX	1
AP MUS 34XX	1	AP MUS 3460	0
AP MUS 3460	0	EN PER XXXX	1
EN PER XXXX	1	PRACTM 3280	1
ENGL 3100	3	EXPLORE - Social Sciences	3
PRACTM 3521	2	EXPLORE Mathematics and Life/ Natural Sciences	3
	15		14
Fourth Year			
Fall	Hours	Spring	Hours
M H L T XXXX Music History Elective	3	THRY COM 3120	2
THRY COM 3140	2	THRY COM 3420	2
AP MUS 34XX	1	AP MUS 34XX	1
AP MUS 3460	0	AP MUS 3460	0
EN PER XXXX	1	EN PER XXXX	1
EXPLORE - Social Sciences	3	PRACTM 4100	3
EXPLORE - Mathematics and Life/ Natural Sciences	3	Elective or minor	3
Elective or minor	3		
	16		12

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as*

*the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Music BM, Performance Emphasis Degree Requirements

Admission to all Music degree programs is by audition to demonstrate musical aptitude and potential, moderate technical proficiency, and seriousness in selecting music as a four-year course of study. In addition to the applied music audition, placement examinations in music theory and music history may be required to confirm students' prior experience in these areas. Auditions are scheduled from January to May for the fall semester; a limited number are held in December for the spring/winter semester. Students in applied music must pass a junior-standing examination to confirm their level of performance skills for enrollment in AP MUS 3440 – AP MUS 3459 or AP MUS 4440 – AP MUS 4459. This examination is usually taken at the same time as the applied music jury for the fourth semester of enrollment in AP MUS 1440 - AP MUS 1459.

Evidence of sound musicianship, a close acquaintance with an appropriate portion of musical literature, and the ability to bring it to actual performance are required for graduation in all Music degree programs. Students in the B.M.: Performance Emphasis fulfill this requirement with junior and senior recitals. Students in all other degree programs fulfill this requirement with a senior recital. In some cases, upon the recommendation of the student's applied teacher, the senior recital (for non-performance majors only) may be replaced by participating in three regularly scheduled student recitals during the last two semesters of applied music study, or by performing for a special panel of faculty members.

## General Education Requirements

General education requirements (p. 51) apply to all majors, except the students in the B.M. with Elective Studies in Business and B.M. in Music Education degree programs are not required to take a foreign language. Courses required for degree programs may not be taken on a satisfactory/unsatisfactory basis. Students must receive at least a C in each music course and maintain a cumulative GPA of 2.5 (music education 2.7) in all music courses to meet degree requirements.

Non-Music majors may complete no more than 8 hours in music-performing organizations (EN PER 1400, University Chorus; EN PER 1410, University Concert Band; EN PER 1500, University Orchestra; EN PER 1520, University Symphonic Band, et. seq.) toward graduation, including credit transferred. Courses in applied music (private lessons and performing organizations) do not fulfill the humanities general education requirement. M H L T 1150, Drumming Cultures of the World; M H L T 1160, Musical Journey through Latin America; M H L T 1170, Musical Journey through the Far East; or M H L T 1180, Musical Journey through Africa will meet the non-Euro-American study requirement.

## Other Requirements

Music majors are required to enroll in an approved ensemble [University Chorus, University Symphonic Band, University Wind Ensemble, University Singers, University Orchestra, or Jazz Orchestra (for Jazz Studies majors)] each semester, to study one applied area progressively each semester, and to enroll in the appropriate Pedagogy and Literature Seminar each semester of the degree program. Music Education majors are exempt from these requirements during the student teaching

semester. The following specific ensemble enrollments, depending upon the applied music area, are required:

- Wind and Percussion students—University Symphonic Band or University Wind Ensemble;
- String students--University Orchestra;
- Voice students--University Singers or University Chorus;
- Keyboard and Guitar students--any approved ensemble, but those in the bachelor of music in music education program must successfully audition for and enroll in an ensemble compatible with the teaching certification they are pursuing;
- Instrumental students may be required to participate in additional ensembles to enhance their musical development;
- Jazz Studies majors (any instrument)--Jazz Orchestra.

Majors are required to appear in performance at the department's discretion and to attend a prescribed number of departmental recitals. Non-keyboard players are required to pass an exam in piano proficiency: PRACTM 2180, Piano Proficiency IV, or the equivalent.

The music department may require students to pass a placement test to enroll in the next level course, provided this or an equivalent test is administered to all students seeking to enroll in that course.

### Core Curriculum

The following core courses are required for all Music majors:

#### Music Theory

THRY COM 1300	Introduction to Music Theory	1
THRY COM 1301	Theory of Music I	3
THRY COM 1302	Aural Training I	2
THRY COM 1311	Theory of Music II	3
THRY COM 1312	Aural Training II	2
THRY COM 2301	Theory of Music III	3
THRY COM 2302	Aural Training III	2
THRY COM 2311	Theory of Music IV <sup>1</sup>	3
THRY COM 2312	Aural Training IV <sup>2</sup>	2

#### Piano Proficiency

PRACTM 1140	Piano Proficiency I	1
PRACTM 1150	Piano Proficiency II	1
PRACTM 2160	Piano Proficiency III <sup>3</sup>	1
PRACTM 2180	Piano Proficiency IV <sup>4</sup>	1

#### Conducting

PRACTM 2510	Conducting I	2
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#### Music History and Literature

M H L T 2010	History of Western Music I (MOTR MUSC 103)	3
M H L T 2020	History of Western Music II (MOTR MUSC 104)	3

Choose one of the following courses: 3

M H L T 1150	Drumming Cultures of the World (MOTR MUSC 102)	
M H L T 1160	Musical Journey through Latin America	
M H L T 1170	Musical Journey through the Far East	
M H L T 1180	Musical Journey Through Africa	

Applied Music		
AP MUS 1460	Seminar in Pedagogy and Literature	0
AP MUS 3460	Seminar in Pedagogy and Literature	0
AP MUS 4460	Seminar in Pedagogy and Literature	0
AP MUS 3510	Senior Recital	0
Total Hours		36

- 1 Students in the BM Jazz Studies program will take THRY COM 2313 instead.
- 2 Students in the BM Jazz Studies program will take THRY COM 2314 instead.
- 3 Students in the BM Jazz Studies program will take PRACTM 2170 instead.
- 4 Students in the BM Jazz Studies program will take PRACTM 2171 instead.

### Emphasis Area Requirements

PRACTM 1250	Singer's Diction: English, Italian and German (voice majors only)	1
PRACTM 1260	Singer's Diction: Latin, French, and Spanish (voice majors only)	1
PRACTM 3521 or PRACTM 3522	Conducting II - Instrumental Conducting II - Choral	2
PRACTM 3920	Senior Research	2-4

#### Music Theory

Select two of the following courses:		4
THRY COM 3110	Analysis of Music from 1900 to Present	
THRY COM 3120	Tonal Counterpoint	
THRY COM 3130	Advanced Analytical Techniques	
THRY COM 3140	Readings in Music Theory	

#### Music History and Literature

Select two upper level courses M H L T 4000-4280. 6

#### Applied Area <sup>1</sup>

Must enroll every semester in progress toward degree with a minimum of 12 credit hours of applied music, 8 credit hours of which must be AP MUS 4440-4459 level. 12

AP MUS 3500	Junior Recital	0
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#### Ensemble

Must be enrolled every semester in progress toward degree with a minimum of 4 credit hours 4

#### Chamber Ensemble/Collaborative Performance

Choose any of the following courses for a total of six hours: 6

EN PER 1541	Chamber Ensemble Brass	
EN PER 1543	Chamber Ensemble Percussion	
EN PER 1544	Chamber Ensemble Strings	
EN PER 1545	Chamber Ensemble Voice	
EN PER 1546	Chamber Ensemble Woodwinds	
EN PER 1547	Chamber Ensemble New Music	
PRACTM 1530	Collaborative Piano I	
PRACTM 1540	Collaborative Piano II	
PRACTM 1550	Collaborative Piano III	



PRACTM 1570	Piano Performance Class
Total Hours	38-40

<sup>1</sup> Students in Applied Music must pass a junior-standing exam to confirm their level of performance skills for enrollment in AP MUS 4440 - AP MUS 4459.

### Foreign Language Requirement

Candidates pursuing the performance emphasis area with an applied area in voice must complete two semesters of one foreign language selected from French, German, or Italian.

### Learning Outcomes

Upon completion of the program, graduates will:

- Have technical skills requisite for artistic self-expression (Performance)
- Understand the common elements and organizational patters of music and their interaction (Musicianship Skills and Analysis)
- Have a rudimentary capacity to create original or derivative music (Composition/Improvisation)
- Have basic knowledge of music history and repertoires through the present time (History and Repertory)
- Be Able to work on musical problems by combining their capabilities in performance, aural, verbal and visual analysis; composition/ improvisation; history and repertory (Synthesis)

### Sample Four Year Plans

#### Bachelor of Music with an Emphasis in Performance (Instrumental)

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 THRY COM 1311	3
THRY COM 1300		1 THRY COM 1312	2
THRY COM 1301		3 PRACTM 1150	1
THRY COM 1302		2 AP MUS 14XX	1
PRACTM 1140		1 AP MUS 1460	0
AP MUS 14XX		1 EN PER XXXX	1
AP MUS 1460		0 EN PER 15XX	1
EN PER XXXX		1 CORE - US History and Government	3
ENGL 1100		3 EXPLORE – Social Sciences	3
CORE - Mathematics Proficiency		3	
	16		15
Second Year			
Fall	Hours	Spring	Hours
THRY COM 2301		3 THRY COM 2311	3
THRY COM 2302		2 THRY COM 2312	2
M H L T 2010		3 M H L T 2020	3
PRACTM 2160		1 PRACTM 2180	1
AP MUS 14XX		1 AP MUS 14XX	1
AP MUS 1460		0 AP MUS 1460	0
EN PER XXXX		1 EN PER XXXX	1
EN PER 15XX		1 EN PER 15XX	1
EXPLORE - Social Sciences		3 PRACTM 2510	2
		EXPLORE – Mathematics and Life/ Natural Sciences	3
	15		17

Third Year			
Fall	Hours	Spring	Hours
AP MUS 44XX		2 THRY COM 3110	2
AP MUS 4460		0 M H L T 1150, 1160, 1170, or 1180	3
EN PER XXXX		1 AP MUS 44XX	2
EN PER 15XX		1 AP MUS 3500	0
PRACTM 3521		2 AP MUS 4460	0
EXPLORE – Mathematics and Life/ Natural Sciences		3 EN PER XXXX	1
General Education or Elective		3 EN PER 15XX	1
		ENGL 3100	3
		EXPLORE – Mathematics and Life/ Natural Sciences	3
	12		15

Fourth Year			
Fall	Hours	Spring	Hours
MHLT 42XX Music History Elective		3 THRY COM 3120	2
PRACTM 3920		2 M H L T 4200-level course	3
AP MUS 44XX		2 AP MUS 44XX	2
AP MUS 4460		0 AP MUS 3510	0
EN PER XXXX		1 AP MUS 4460	0
EN PER 15XX		1 EN PER XXXX	1
CORE - Communication Proficiency		3 CORE – Information Literacy	3
EXPLORE – Social Sciences		3 Elective or minor	4
	15		15

Total Hours: 120

- <sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.
- <sup>2</sup> Courses that meet this requirement are THRY COM 3110 (odd spring), THRY COM 3120 (even spring), THRY COM 3130 (odd fall), and THRY COM 3140 (even fall)

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

#### Bachelor of Music with an Emphasis in Performance (Keyboard)

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 THRY COM 1311	3
THRY COM 1300		1 THRY COM 1312	2
THRY COM 1301		3 AP MUS 14XX	1
THRY COM 1302		2 AP MUS 1460	0
AP MUS 14XX		1 EN PER XXXX	1
AP MUS 1460		0 CORE - US History and Government	3
EN PER XXXX		1 EXPLORE - Social Sciences	3
ENGL 1100		3	
CORE - Mathematics Proficiency		3	
	15		13
Second Year			
Fall	Hours	Spring	Hours
THRY COM 2301		3 THRY COM 2311	3
THRY COM 2302		2 THRY COM 2312	2
M H L T 2010		3 M H L T 2020	3
AP MUS 14XX		1 AP MUS 14XX	1

AP MUS 1460	0	AP MUS 1460	0
EN PER XXXX	1	EN PER XXXX	1
PRACTM 1530	1	PRACTM 1570	2
EXPLORE - Social Sciences	3	PRACTM 2510	2
		EXPLORE - Mathematics and Life/ Natural Sciences	3
	14		17

**Third Year**

Fall	Hours	Spring	Hours
AP MUS 44XX		2 THRY COM 3110	2
AP MUS 4460	0	M H L T 1150, 1160, 1170, or 1180	3
EN PER XXXX	1	AP MUS 44XX	2
PRACTM 1540	1	AP MUS 4460	0
PRACTM 3521	2	AP MUS 3500	0
EXPLORE - Mathematics & Natural Sciences	3	EN PER XXXX	1
General Education or Elective	3	PRACTM 1570	2
Elective or minor	3	ENGL 3100	3
		EXPLORE - Mathematics and Life/ Natural Sciences	3
	15		16

**Fourth Year**

Fall	Hours	Spring	Hours
M H L T 42XX Music History Elective		3 THRY COM 3120	2
PRACTM 3920	2	M H L T 42XX Music History Elective	3
AP MUS 44XX	2	AP MUS 44XX	3
AP MUS 4460	0	AP MUS 4460	0
EN PER XXXX	1	AP MUS 3510	0
PRACTM 1550	1	EN PER XXXX	1
CORE - Communication Proficiency	3	CORE – Information Literacy	3
EXPLORE - Social Sciences	3	Elective or minor	3
	15		15

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

<sup>2</sup> Choose two of the following: THRY COM 3110 (odd spring), THRY COM 3120 (even spring), THRY COM 3130 (odd fall), and THRY COM 3140 (even fall)

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Bachelor of Music with an Emphasis in Performance (Voice)

**First Year**

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 THRY COM 1311	3
THRY COM 1300	1	THRY COM 1312	2
THRY COM 1301	3	PRACTM 1150	1
THRY COM 1302	2	AP MUS 14XX	1
PRACTM 1140	1	AP MUS 1460	0
AP MUS 14XX	1	EN PER 1410	1
AP MUS 1460	0	EN PER 1545	1
EN PER 1410	1	FGN LANG 1002	5
FGN LANG 1001 (French, German or Italian)	5	ENGL 1100	3
	15		17

**Second Year**

Fall	Hours	Spring	Hours
THRY COM 2301		3 THRY COM 2311	3
THRY COM 2302		2 THRY COM 2312	2
M H L T 2010		3 M H L T 2020	3
PRACTM 2160	1	PRACTM 2180	1
AP MUS 14XX	1	AP MUS 14XX	1
AP MUS 1460	0	AP MUS 1460	0
EN PER 1410	1	EN PER 1410	1
EN PER 1545	1	EN PER 1545	1
PRACTM 1250 or 1260	1	PRACTM 2510	2
FGN LAN 2101	3	Elective (Instrumental Students)	1
	16		15

**Third Year**

Fall	Hours	Spring	Hours
AP MUS 44XX		2 M H L T 1150, 1160, 1170, or 1180	3
AP MUS 3460	0	AP MUS 44XX	1
EN PER 1410	1	AP MUS 3460	0
EN PER 1545	1	AP MUS 3500	0
PRACTM 1260	1	EN PER 1410	1
CORE – US History and Government	3	EN PER 1545	1
CORE - Communication Proficiency	3	THRY COM 31XX Theory Elective	3
CORE - Mathematics Proficiency	3	ENGL 3100	3
		CORE - Information Literacy	3
		EXPLORE - Mathematics and Life/ Natural Sciences	3
	14		18

**Fourth Year**

Fall	Hours	Spring	Hours
M H L T 42XX Music History Elective		3 M H L T 42XX Music History Elective	3
PRACTM 3920	3	AP MUS 44XX	2
AP MUS 44XX	2	AP MUS 3510	0
AP MUS 3460	0	AP MUS 3460	0
EN PER 1410	1	EN PER 1410	1
EN PER 1545	1	EXPLORE - Mathematics and Life/ Natural Sciences	3
THRY COM 31XX Theory Elective	2	EXPLORE - Social Sciences	3
EXPLORE - Social Sciences	3	EXPLORE – Social Sciences	3
EXPLORE - Mathematics and Natural/ Life Sciences	3		
	18		15

Total Hours: 128

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

<sup>2</sup> Choose two of the following: THRY COM 3110 (odd spring), THRY COM 3120 (even spring), THRY COM 3130 (odd fall), and THRY COM 3140 (even fall)

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Music Education MME

**Effective Fall of 2018, the Department will no longer accept applicants for the Master of Music Education.**

### Master of Music Education

The master of music education degree is designed to enable music specialists in grades K-12 to pursue continued professional growth in an emphasis area of their choice.

### Admission Requirements

Admission to the program requires a bachelor of music in music education (or equivalent) degree, admission to the Graduate School, and two letters of recommendation. Student should also submit a resume, a statement of purpose, and a 20 - 30 minute video of their teaching directly to the Director of the MME program.

The program requires completion of 30 hours of graduate credit, 20 of which must be earned in residence.

### Required Courses and Options:

The minimum 30-hour program includes the following requirements.

#### Music Education Core (12 credit hours)

MUS ED 5810	Foundations of Music Education	3
MUS ED 5830	Contemporary Music Education	3
MUS ED 5910	Music Education Research	3
MUS ED 5990	Master's Project in Music Education	3

#### Music Education Electives (6 credits from following)

MUS ED 5060	Graduate Workshop in Music Education	1-5
MUS ED 5510	Graduate Instrumental Methods	3
MUS ED 5610	Graduate Choral Methods	3
MUS ED 5620	Guitar in the Classroom	3
MUS ED 5710	General Music: A Model for Multi-Faceted Learning	3
MUS ED 5840	Teaching Music in an Urban Setting	3
MUS ED 5920	Psychology of Music	3
PDGOGY 5110	Graduate Jazz Pedagogy	3

PRACTM 5020

PRACTM 5035

PRACTM 5210 Graduate Conducting 3

THRY COM 5110 Scoring and Arranging 3

#### Education Electives (6 credits from the following) <sup>1</sup>

ED TECH 5301	Introduction to Computers and the Internet in Education	3
ED TECH 5340	Selection and Utilization of Educational Multimedia	3
ED PSY 6030	Instruction, Learning and Assessment	3
ED PSY 6109	Learning and Development in Secondary School Settings	4
ED PSY 6111	Educational Psychology	3
ED REM 6707	Classroom Measurement and Evaluation	3

ED REM 6710	Educational Research Methods and Design	3
ED REM 6716	Academic Assessment and Intervention	3
SPEC ED 6345	Characteristics and Education of Students with High-Incidence Disabilities	3
SPEC ED 6412	Psychology of Exceptional Children	3
SEC ED 6415	Curriculum Leadership in Education	3
TCH ED 5312	Teaching Reading in the Content Areas	4
TCH ED 6010	Examining History, Community and Social Justice in Education	3
TCH ED 6020	Teacher Action, Advocacy and Leadership	3
<b>Free Electives (6 credits from the following) <sup>2</sup></b>		
AP MUS 5430	Special Applied Studies <sup>3</sup>	1
AP MUS 5440	Graduate Applied Music <sup>3</sup>	1
EN PER 5310	Graduate Chamber Ensemble <sup>3</sup>	1
EN PER 5490	Graduate Ensemble <sup>3</sup>	1
MUS ED 5750	Computer Applications in Music Education	3
MUS ED 5760		3
MUS ED 5770		3
MUS ED 5800		3

<sup>1</sup> Other options may be available with permission of the Director of the Master of Music Education program.

<sup>2</sup> May choose from electives listed under Music Education and Education (above). Other graduate courses may be applied to degree program with written permission from the Director of the Master of Music Education program.

<sup>3</sup> May be repeated for up to 3 credits.

## Music Minor

Candidates must complete the following courses (28 hours):

#### Music Theory

THRY COM 1301	Theory of Music I	3
THRY COM 1302	Aural Training I	2
THRY COM 1311	Theory of Music II	3
THRY COM 1312	Aural Training II	2

#### Music History and Literature

M H L T 1010	History of Western Music I (MOTR MUSC 103)	3
or M H L T 1020	History of Western Music II (MOTR MUSC 104)	

Select any M H L T course 4220-4280 3

#### Applied Area

Private Lessons 4

#### Ensemble

Ensemble (4 hours maximum credit) 2

Select six credit hours from the following: 6

PRACTM 2160	Piano Proficiency III (Prerequisite: PRACTM 1150)	
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PRACTM 2180	Piano Proficiency IV
THRY COM 2301	Theory of Music III
THRY COM 2302	Aural Training III
THRY COM 2311	Theory of Music IV
THRY COM 2312	Aural Training IV
THRY COM 3410	Orchestration
PDGOGY 1560	Piano Pedagogy
Total Hours	28

Music education methods courses and instrumental techniques courses may not be taken to complete this minor.

Non-keyboard players are required to pass an exam of piano proficiency or equivalent.

A GPA of 2.5 for all music hours is required to complete this minor.

## Neuroscience Undergraduate Certificate

### Certificate in Neuroscience

The undergraduate Certificate Program in Neuroscience is an interdisciplinary program requiring 20 credits of training in Neuroscience. The Program provides a group of related courses capped by a research experience. The Program is likely to be of particular interest to students who want to pursue graduate or professional training, but it is intended to appeal to any student interested in Neuroscience.

Courses taken for the certificate in the lower division (1000 and 2000 level) may satisfy general education requirements (that is, breadth requirements), if they are approved general education courses. Courses in the upper division (3000 level and above) may satisfy requirements for the student's major, consistently with the major's requirements. All required courses must be completed with a "B-" average or higher. Pass/Fail grades do not count.

Most courses required by the Certificate Program in Neuroscience have prerequisites. Some students may satisfy prerequisites by virtue of their prior curriculum. When this is not the case, students are responsible for satisfying the prerequisites.

### Requirements

#### The two entry level courses:

BIOL 1831	Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L) <sup>1</sup>	5
or BIOL 1012	General Biology (MOTR BIOL 100)	
or BIOL 1102	Human Biology (MOTR LIFS 150)	
PSYCH 2211	Introduction to Biological Psychology	3
Select one of the following statistics courses:		3
BIOL 4122	Biometry	
MATH 1320	Introduction to Probability and Statistics	
PSYCH 2201	Psychological Statistics	
SOC 3220	Social Statistics	

#### Electives

Select two of the following: <sup>2</sup>		6
BIOL 3102	Animal Behavior	

BIOL 4822	Introduction to Neuroscience	
CHEM 4712	Biochemistry	
CMP SCI 4300	Introduction to Artificial Intelligence	
CMP SCI 4340	Introduction to Machine Learning	
PHIL 2280	Minds, Brains, and Machines	
PHIL 3378	Philosophy of Mind	
PHIL 4478	Topics in Philosophy of Mind	
PHIL 4479	Philosophy of Cognitive Science	
PHYSICS 4347	Introduction to Biophysics	
PSYCH 4300	Introduction to Psychopharmacology: Drugs and Mental Illness	
PSYCH 4314	Behavioral Neuroscience	
PSYCH 4330	Hormones, The Brain and Behavior	
PSYCH 4349	Human Learning and Memory	
PSYCH 4356	Cognitive Processes	
PSYCH 4372	Introduction to Social Neuroscience	
Select at least 3 credits from one or more semesters of research experience <sup>3</sup>		3
BIOL 4905	Research	
CHEM 3905	Chemical Research	
CMP SCI 4880	Individual Studies	
PHIL 4450	Special Readings in Philosophy	
PHYSICS 3390	Research	
PSYCH 3390	Directed Studies	

Total Hours 20

<sup>1</sup> BIOL 1831 is strongly recommended, especially for those considering taking BIOL 4822 Introduction to Neurosciences towards their Neuroscience Certificate (BIOL 1831 is a prerequisite for BIOL 4822)"

<sup>2</sup> At least one elective must be taken outside the student's major

<sup>3</sup> This requires completion of a Directed Research Assistantship with a Neuroscience faculty member within any of the participating departments. The research project must be approved in advance by the undergraduate advisor with the assistance of a committee of Neuroscience faculty. It is expected that this research will lead to a presentation of the research (e.g., at the UM-St. Louis Neuroscience seminar or the Undergraduate Research Symposium).

### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Describe the molecular, cellular, and tissue-level organization of the central and peripheral nervous system.
- Understand the properties of cells that make up the nervous system including the propagation of electrical signals used for cellular communication.
- Relate the properties of individual cells to their function in organized neural circuits and systems.
- Explain how the interaction of cells and neural circuits leads to higher level activities such as cognition and behavior.
- Engage in research, generate testable scientific hypotheses, design experiments, and collect, analyze, and interpret data through collaborative research projects, lab work, internships, and coursework.
- Demonstrate critical thinking skills by analyzing and evaluating neuroscience primary literature.



- Effectively communicate scientific information in written and oral formats; prepare and formally present a scientific paper or poster about neuroscience research, including communication of quantitative data in statistics, graphs and tables.
- Create a career development plan that matches an accurate self-assessment of abilities, achievement, motivation and work habits with specific job opportunities in the neurosciences.

## Nonprofit Administration Minor

### Requirements for Political Science Minors

A general minor in political science can be arranged, as well as specialized minors in eight different subfields of the discipline. Interested students should see a faculty adviser to plan a coherent program of study as a minor field.

Students must achieve a cumulative 2.0 GPA in the political science courses chosen to qualify for the minor. Students may count no more than 3 hours in political science taken on a satisfactory/unsatisfactory basis toward the minor. Students taking an internship POL SCI 3940 may count no more than three hours of the internship toward the minor.

### Specific Requirements for the Minor

#### Course List

Select five of the following: 15

POL SCI 3420	Public and NonProfit Personnel Management
POL SCI 3440	Public and NonProfit Budgeting
POL SCI 2400	Public Administration
POL SCI 3700	NonProfit Organizations and Public Policy
POL SCI 3710	NonProfits, Civil Society and Volunteerism
POL SCI 3940	Public Affairs Internship (must be conducted through a nonprofit organization)

Total Hours 15

### Learning Outcomes

- Demonstrate an understanding of theories, concepts and practices relevant to nonprofit administration.
- Assess issues in the nonprofit sector, formulate evidence-based solutions, and communicate them with clarity and coherence.

## Nonprofit Organization Management and Leadership Graduate Certificate

Through the Public Policy Administration Program, UMSL offers the Graduate Certificate in Nonprofit Organization Management and Leadership for students who are current professional staff, board members, and other leaders of nonprofit and voluntary organizations, as well as those who plan to work in the field. The NPML certificate is the only nonprofit program in the St. Louis region that has full membership in the Nonprofit Academic Centers Council (NACC). The certificate can be taken by itself or in conjunction with the Master of Public Policy Administration degree or a graduate degree in another field. Course credits earned in the

certificate program can be applied to the MPPA, but a separate application to the master's program is required.

### Requirements

The Graduate Certificate in Nonprofit Organization Management and Leadership requires the completion of 18 credit hours. Nine of these include the following core courses:

P P ADM/SOC WK 6300	Leadership and Management in Nonprofit Organizations	3
P P ADM/SOC WK 6310	American Philanthropy and Nonprofit Resources Development	3
P P ADM/SOC WK 6311	Staff Management Issues in Nonprofit Organizations	1
P P ADM/SOC WK 6312	Legal Issues in Managing Nonprofit Organizations	1
P P ADM/SOC WK 6313	Financial Issues in Managing Nonprofit Organizations	1
Total Hours		9

Six hours of electives are to be taken from approved courses in accounting, business administration, economics, management, marketing, political science, psychology, public policy administration, and sociology. A student may choose among these courses or other courses approved by the program director.

Three hours of internship are also required. Students who have significant relevant field experience in the nonprofit sector may request that the internship requirement be waived. To request a waiver, students must submit a written request outlining the student's professional or managerial field experience with appropriate documentation. Any request for a waiver from the internship requirement must be approved by the program director.

Students who receive a waiver must take an additional three hours of electives in lieu of the internship.

Requirements for admission to the graduate certificate program include an undergraduate degree and a GPA of 3.0 or better. Applicants must submit two letters of recommendation. At least one of the letters should be from a current or former college-level instructor. Applicants must submit a two-page personal statement explaining how the certificate program fits in the applicant's educational and professional goals. The letters and personal statement should be sent directly to the Public Policy Administration office.

## Nursing BSN

### Freshman Guaranteed Clinical Criteria

Applicants to the nursing freshmen guaranteed clinical program will be holistically reviewed using criteria such as high school GPA, ACT test scores, a personal statement, an essay, extra-curricular activities, honors, award recognitions, leadership roles, work/volunteer experiences.

First-time freshmen and applicants with fewer than 24 transferable college credit hours from a regionally accredited college or university and who meet the following minimum criteria may earn a *guaranteed* clinical space in the Traditional Full-Time Option:

- Admission to the University by completing the UMSL Undergraduate Application
- Minimum ACT score of 24

- Minimum high school GPA of 3.0 (as calculated by UMSL's Office of Admissions)
- Complete the Traditional BSN Nursing Supplemental Application

## Pre-Clinical Transfer Student Admission Criteria

Transfer students who meet the following minimum criteria are eligible to declare Nursing as their major. Such students must still apply competitively for a clinical space during their last semester of general education coursework (see Clinical Admission Criteria below).

- Admission to the University by completing the UMSL Undergraduate Application
- Minimum cumulative GPA of 2.75 (including all transferable courses)

## Clinical Admission Criteria: Traditional Full-Time and Traditional Part-Time

- Admission to the University by completing the UMSL Undergraduate Application
- Complete the Traditional BSN Nursing Supplemental Application.
- Minimum cumulative GPA of 2.75 (including all transferable courses)
- Satisfactory completion of all general education course requirements
- Grade of B- or higher within 5 years of enrollment in the clinical major for the following courses: Chemistry, Anatomy & Physiology I, Anatomy & Physiology II, Microbiology
- Grade of C- or higher in all *prerequisite* courses except in the case of the above-listed science courses

Clinical spaces are awarded on a competitive and space-available basis for each admission

period. Admission to the UMSL and the College of Nursing (as a pre-clinical student)

does not guarantee admission into the clinical track of any of the Pre-Licensure BSN Options

(Traditional Full-Time, Traditional Part-Time, or Accelerated), unless a student is admitted to

the Traditional Full-Time Option under the Freshman Guaranteed Clinical Criteria (see above).

## General Education Course Requirements

Nursing majors must complete all general education requirements (p. 51) of the university as outlined in this Bulletin.

As part of meeting the university's general education requirements, the prerequisite courses listed under 1) Natural science course work, 2) Behavioral and social science course work, 3) Information literacy, and 4) Humanities, must be completed prior to beginning the clinical track. See a curriculum planning guide for specific courses and proper sequencing.

### 1) Natural Science Courses

BIOL 1131	Human Physiology and Anatomy I	4
BIOL 1141	Human Physiology and Anatomy II	4
BIOL 1162	General Microbiology	3
CHEM 1052	Chemistry for the Health Professions (MOTR CHEM 100) (or equivalent)	4

### 2) Behavioral and Social Science Courses

ECON 1000	Economics in Everyday Life (MOTR ECON 100) (or equivalent)	3
PSYCH 1003	General Psychology (MOTR PSYC 100)	3
PSYCH 2268	Lifespan Developmental Psychology (MOTR PSYC 200)	3

### 3) Information literacy

MATH 1105	Basic Probability and Statistics (or equivalent)	3
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### 4) Humanities

PHIL 2256	Bioethics	3
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## Nursing Pre-Major Courses

NURSE 1000	Cultural Diversity in Healthcare	3
NURSE 1050	Communication for the Healthcare Professional	3
NURSE 2050	Pathophysiology	3
NURSE 2000	Nutrition in Health	3
Total Hours		12

## Nursing Major Courses

NURSE 3000	Health Promotion and Disease Prevention Concepts Across the Lifespan	3
NURSE 3010	Foundations of Professional Practice	3
NURSE 3020	Fundamental Concepts of Nursing Care	3
NURSE 3030	Health Assessment Concepts	3
NURSE 3040	Concepts of Evidence-Based Practice	3
NURSE 3050	Concepts of Pharmacology	3
NURSE 3060	Behavioral Health Concepts	5
NURSE 3070	Concepts of Caring for Adults I	5
NURSE 4010	Concepts of Caring for Adults II	5
NURSE 4020	Concepts of Caring for Women and the Childbearing Family	3
NURSE 4025	Care of Women and Children Clinical	2
NURSE 4030	Concepts of Caring for Children and Families	3
NURSE 4050	Concepts of Community Focused Care	5
NURSE 4060	Synthesis of Concepts in Professional Nursing	4
NURSE 4065	Synthesis of Professional Practice Immersion Clinical	4
NURSE elective		3
Total Hours		57

All undergraduate nursing students must have access to transportation to their clinical practice experiences. Students must provide their own transportation to and from clinical agencies, which may be scheduled throughout the St. Louis metropolitan area, including Jefferson County and Illinois. Students who must use public transportation must inform their Program Director.

### Satisfactory/Unsatisfactory (Pass/Fail) Grading

Undergraduate nursing majors may not take required prerequisite general education or nursing courses on a satisfactory/unsatisfactory basis.

### Credit by Transfer Examination

Credit may be granted for selected general studies. Please contact an advisor for information.

### Latin Honor Requirements

In accordance with the University's Latin Honors policy (p. 26), candidates graduating from the College of Nursing in the 2020-2021 Academic Year must meet the following GPA qualifications:

Summa Cum Laude	3.966
Magna Cum Laude	3.891
Cum Laude	3.751

### Learning Outcomes

- Integrate into practice theories and evidence-based concepts from nursing, the arts, sciences, and humanities to provide comprehensive nursing care in a variety of settings.
- Integrate clinical reasoning and problem solving in professional practice.
- Administer culturally competent, compassionate, holistic care to promote healthy outcomes for diverse individuals, families, communities, and populations during all life phases.
- Use evidence-based practices to promote health, manage illness, and prevent injury among individuals, families, communities, and populations.
- Utilize communication skills to enhance relationships with patients and families and collaboration among members of the health care team.
- Assume responsibility and accountability for decisions and actions based on professional intrapersonal values, ethical and legal obligations, standards of practice, social justice, and economics.
- Integrate principles of health education, management, leadership, quality care, and patient safety when organizing, coordinating, and engaging in professional practice.
- Demonstrate knowledge of health care policies and finance in a regulatory environment and their influence on health care access and quality.
- Exhibit motivation and self-direction in activities that contribute to lifelong personal, professional, and intellectual development.
- Utilize health care technology and information management systems to promote quality care and patient safety.

### BSN Traditional Full-Time Study Plan

(for Students Admitted as Freshmen)

Students who were admitted prior to Fall 2018 should follow the plan from the year they were admitted. Four Year plans for each catalog year prior to Fall 2018 can be found in the Archives Section.

First Year			
Fall	Hours	Spring	Hours
ENGL 1100		3 BIOL 1131	4
MATH 1030		3 CHEM 1052	4
BIOL 1102		3 ECON 1000	3
PSYCH 1003		3 NURSE 1050	3

NURSE 1000		3			
			15		14
Second Year					
Fall	Hours	Spring	Hours	Spring	Hours
BIOL 1141		4 NURSE 2050			3
BIOL 1162		3 MATH 1105			3
PSYCH 2268		3 PHIL 2256			3
NURSE 2000		3 CORE: US History & Government			3
EXPLORE: Humanities & Fine Arts		3 EXPLORE: Humanities & Fine Arts			3
			16		15
Third Year					
Fall	Hours	Spring	Hours	Spring	Hours
NURSE 3000		3 NURSE 3070			5
NURSE 3010		3 NURSE 3050			3
NURSE 3020		3 NURSE 3060			5
NURSE 3030		3 ENGL 3100			3
NURSE 3040		3			
			15		16
Fourth Year					
Fall	Hours	Spring	Hours	Spring	Hours
NURSE 4010		5 NURSE 4060			4
NURSE 4020		3 NURSE 4065			4
NURSE 4030		3 NURSE 4050			5
NURSE 4025		2			
Nursing Elective		3			
			16		13

Total Hours: 120

*PLEASE NOTE: This plan is an example of what an academic plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor. All requirements are subject to change.*

### BSN Traditional Part-Time Study Plan

This plan assumes that a student has completed all prerequisites for admission.

First Year						
Fall	Hours	Spring	Hours	Summer	Hours	Hours
Prerequisite courses added	54	NURSE 3110		3 NURSE 3111		3
NURSE 2101		2 NURSE 3106		4 ENGL 1100		3
NURSE 2103		3				
NURSE 2105		3				
			62		7	6
Second Year						
Fall	Hours	Spring	Hours	Summer	Hours	Hours
NURSE 3101		6 NURSE 3205		5 NURSE 3214		4
		NURSE 3817		3 NURSE 3807		3
			6		8	7
Third Year						
Fall	Hours	Spring	Hours	Summer	Hours	Hours
NURSE 3206		5 NURSE 3215		4 NURSE 3808		2
NURSE 3804		3 NURSE 3216		4 NURSE 4300		4
			8		8	6
Fourth Year						
Fall	Hours	Spring	Hours	Summer	Hours	Hours
NURSE 4310		6				

Nursing elective  
(optional)

6

Total Hours: 124

## Nursing BSN, Accelerated Curriculum

The UMSL College of Nursing is committed to admitting a diverse group of students who will become nurse leaders responsive to the specific needs of the communities and populations we serve. We value diversity, intellectual discourse and rigor, caring, professionalism, mutual respect and support, innovation, collaboration, and transparency. Applicants will be selected using inclusive and balanced admission criteria that measure their potential in nursing practice, education, research, and scholarship. We measure our success by graduates who become lifelong learners and leaders in their communities and in the profession of nursing.

Applicants to the accelerated nursing clinical program will be holistically reviewed using criteria such as GPA, academic performance in required pre-nursing courses, a personal statement, an essay, extra-curricular activities, honors, award recognitions, leadership roles, and work/volunteer experiences.

### Clinical Admission Criteria: Accelerated BSN

Clinical track spaces are limited and are awarded to qualified students on a competitive basis. Only students who submit the required clinical application by the appropriate deadline will be considered. Applicants must meet the following minimum criteria in order to be considered for clinical admission. Please note that meeting the following minimum criteria does *not* guarantee that a student will earn a clinical space in the Accelerated Option.

- Admission to the University by completing the UMSL Undergraduate Application
- Transcripts from all previous institutions
- A bachelor's or graduate degree
- Minimum cumulative GPA of 3.25 (including all transferable courses)
- Grade of B- or higher within 5 years of clinical enrollment in the following courses: Chemistry, Anatomy & Physiology I, Anatomy & Physiology II, Microbiology, Human Growth and Development.
- Grade of C- or higher in all *prerequisite* courses except in the case of the above-listed science courses
- Completion of the Accelerated BSN Program Supplemental Application

Note: Admission criteria are subject to change.

### General Education Course Requirements

#### General Education Course Requirements for Students with a Bachelor's Degree

Students must have a Bachelor's Degree or a graduate degree to be admitted to the Accelerated BSN program. Students must also have completed the following courses with a grade of B- or higher within 5 years of clinical enrollment.

BIOL 1131	Human Physiology and Anatomy I	4
BIOL 1141	Human Physiology and Anatomy II	4
BIOL 1162	General Microbiology	3

CHEM 1052	Chemistry for the Health Professions (MOTR CHEM 100)	4
MATH 1105	Basic Probability and Statistics (or equivalent)	3
PSYCH 2268	Lifespan Developmental Psychology (MOTR PSYC 200)	3

### Nursing Course Requirements

#### PRE-LICENSURE: Accelerated Option

NURSE 3005	Introduction to Professional Nursing	3
NURSE 3015	Professional Nursing Concepts and Practice	6
NURSE 3035	Health Assessment and Promotion	3
NURSE 3055	Foundations of Nursing Pharmacotherapeutic Concepts	3
NURSE 3065	Professional Nursing Adult and Elder Care I	5
NURSE 3075	Professional Nursing Mental Health	5
NURSE 4015	Professional Nursing Adult & Elder Care II	5
NURSE 4035	Nursing Care of Children: Infancy to Adolescence	4
NURSE 4045	Nursing Care of the Childbearing Patient-Family System	4
NURSE 4105	Professional Nursing Leadership and Synthesis	8
NURSE 4125	Community Nursing and Public Health	5
NURSE 4135	Evidence-Based Practice: Integration of Research in Professional Nursing	2

Total Hours 53

All undergraduate nursing students must have access to transportation to their clinical practice experiences. Students must provide their own transportation to and from clinical agencies, which may be scheduled throughout the St. Louis metropolitan area, including Jefferson County and Illinois. Students who must use public transportation must inform their Program Director.

#### Satisfactory/Unsatisfactory (Pass/Fail) Grading

Undergraduate nursing majors may not take required prerequisite general education or nursing courses on a satisfactory/unsatisfactory basis.

#### Credit by Transfer Examination

Credit may be granted for selected general studies. Please contact an advisor for information.

#### Latin Honors Requirements

In accordance with the University's Latin Honors policy (p. 26), candidates graduating from the College of Nursing in the 2020-2021 Academic Year must meet the following GPA qualifications:

Summa Cum Laude	3.966
Magna Cum Laude	3.891
Cum Laude	3.751



## Learning Outcomes

- Integrate into practice theories and evidence-based concepts from nursing, the arts, sciences, and humanities to provide comprehensive nursing care in a variety of settings.
- Integrate clinical reasoning and problem solving in professional practice.
- Administer culturally competent, compassionate, holistic care to promote healthy outcomes for diverse individuals, families, communities, and populations during all life phases.
- Use evidence-based practices to promote health, manage illness, and prevent injury among individuals, families, communities, and populations.
- Utilize communication skills to enhance relationships with patients and families and collaboration among members of the health care team.
- Assume responsibility and accountability for decisions and actions based on professional intrapersonal values, ethical and legal obligations, standards of practice, social justice, and economics.
- Integrate principles of health education, management, leadership, quality care, and patient safety when organizing, coordinating, and engaging in professional practice.
- Demonstrate knowledge of health care policies and finance in a regulatory environment and their influence on health care access and quality.
- Exhibit motivation and self-direction in activities that contribute to lifelong personal, professional, and intellectual development.
- Utilize health care technology and information management systems to promote quality care and patient safety.

## Sample Plan of Study

This plan assumes that a student has completed all prerequisites for admission.

Prerequisite courses: 62-63 credit hours

First Year					
Fall	Hours	Spring	Hours	Summer	Hours
N/A		N/A		NURSE 3120	7
				NURSE 3820	5
				NURSE 3121	3
		0	0		15
Second Year					
Fall	Hours	Spring	Hours	Summer	Hours
NURSE 3341	1.5	NURSE 3350	5	NURSE 4520	2
NURSE 3340	2.5	NURSE 3360	5	NURSE 4521	2
NURSE 3331	3	NURSE 3361	3	NURSE 4530	4
NURSE 3330	5	NURSE 3351	3	NURSE 4531	4
NURSE 3804	3				
	15		16		12

Total Hours: 58

*PLEASE NOTE: This plan is an example of what an academic plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor. All requirements are subject to change.*

## Nursing BSN, RN to BSN Curriculum

The UMSL College of Nursing is committed to admitting a diverse group of students who will become nurse leaders responsive to the specific needs of the communities and populations we serve. We value diversity, intellectual discourse and rigor, caring, professionalism, mutual respect and support, innovation, collaboration, and transparency. Applicants will be selected using inclusive and balanced admission criteria that demonstrate their potential in nursing practice, education, research, and scholarship. We measure our success by graduates who become lifelong learners and leaders in their communities and in the profession of nursing.

Applicants to the RN to BSN program will be holistically reviewed using criteria such as GPA, a personal statement, an essay, work/volunteer experiences, professional activities, leadership roles, honors, award recognitions, etc.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html)

### Admissions Criteria

- Admission to the University by completing the UMSL Undergraduate Application
- Graduate of either an accredited diploma or associate degree program in nursing
- Evidence of current RN licensure or eligibility for RN licensure if in the final year of an associate degree program for dual admission applicants
- Cumulative GPA of 2.5 (4.0 scale) on a minimum of 30 transferable credit hours (excluding nursing course work)
- Complete the RN to BSN Nursing Supplemental Application

### General Education Course Requirements

Nursing majors must complete all general education requirements (p. 51) of the university as outlined in this Bulletin.

As part of meeting the university's general education requirements, the prerequisite courses listed under 1) Natural science course work and 2) Behavioral and social science course work must be completed prior to beginning the clinical major. See a curriculum planning guide for specific courses and proper sequencing.

Students must be in residence for at least 24 of the last 30 hours or graded credit (exclusive of courses graded on a satisfactory/unsatisfactory basis), except under unusual circumstances, to be decided by the dean.

#### 1) Natural science course work

BIOL 1131	Human Physiology and Anatomy I	4
BIOL 1141	Human Physiology and Anatomy II	4
BIOL 1162	General Microbiology	3
CHEM 1052	Chemistry for the Health Professions (MOTR CHEM 100)	4

#### 2) Behavioral and social science course work

PSYCH 1003	General Psychology (MOTR PSYC 100)	3
Psychology Elective		3

## Nursing Course Requirements

### RN to BSN Program

NURSE 3799	Statistics for Population Health	3
NURSE 3900	Role of the Baccalaureate-Prepared Nurse	3
NURSE 3910	Nursing Theory for Population Health	3
NURSE 3920	Health Assessment for the Professional Nurse	3
NURSE 3930	Nursing Research and Evidence-Based Practice for the Professional Nurse	3
NURSE 3940	Leadership and Management for Professional Nursing	3
NURSE 4900	Ethics and Values in Population Health	3
NURSE 4910	Health Policy for the Professional Nurse	3
NURSE 4911	Community and Population Health Synthesis <sup>1</sup>	6
Total Hours		30

<sup>1</sup> Includes a laboratory and/or clinical component

All undergraduate nursing students must have access to transportation to their clinical practice experiences. Students must provide their own transportation to and from clinical agencies, which may be scheduled throughout the St. Louis metropolitan area, including Jefferson County and Illinois. Students who must use public transportation must inform their Program Director.

#### Satisfactory/Unsatisfactory (Pass/Fail) Grading

Undergraduate nursing majors may not take required prerequisite general education or nursing courses on a satisfactory/unsatisfactory basis.

#### Credit by Transfer Examination

Credit may be granted for selected general studies. Please contact an advisor for information.

#### Latin Honors Requirements

In accordance with the University's Latin Honors policy (p. 26), candidates graduating from the College of Nursing in the 2020-2021 Academic Year must meet the following GPA qualifications:

Summa Cum Laude	3.966
Magna Cum Laude	3.891
Cum Laude	3.751

#### Learning Outcomes

- Integrate into practice theories and evidence-based concepts from nursing, the arts, sciences, and humanities to provide comprehensive nursing care in a variety of settings.

- Integrate clinical reasoning and problem solving in professional practice.
- Administer culturally competent, compassionate, holistic care to promote healthy outcomes for diverse individuals, families, communities, and populations during all life phases.
- Use evidence-based practices to promote health, manage illness, and prevent injury among individuals, families, communities, and populations.
- Utilize communication skills to enhance relationships with patients and families and collaboration among members of the health care team.
- Assume responsibility and accountability for decisions and actions based on professional intrapersonal values, ethical and legal obligations, standards of practice, social justice, and economics.
- Integrate principles of health education, management, leadership, quality care, and patient safety when organizing, coordinating, and engaging in professional practice.
- Demonstrate knowledge of health care policies and finance in a regulatory environment and their influence on health care access and quality.
- Exhibit motivation and self-direction in activities that contribute to lifelong personal, professional, and intellectual development.
- Utilize health care technology and information management systems to promote quality care and patient safety.

### Sample Study Plan

This plan assumes that a student has completed all prerequisites for admission:

General Education and Prerequisites: 50 credit hours

Lower Division Nursing: 39 credit hours

First Year					
Fall	Hours	Spring	Hours	Summer	Hours
NURSE 3799		3 NURSE 3910		3 NURSE 3930	3
NURSE 3900		3 NURSE 3920		3 NURSE 3940	3
		6			6
Second Year					
Fall	Hours	Spring	Hours		
NURSE 4902		6 NURSE 4911	6		
		6	6		
Total Hours: 30					

*PLEASE NOTE: This plan is an example of what an academic plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor. All requirements are subject to change.*

## Nursing DNP, Acute Care Pediatric Nurse Practitioner Emphasis

The UMSL College of Nursing is committed to admitting a diverse group of students who will become nurse leaders responsive to the specific needs of the communities and populations we serve. We value diversity, intellectual discourse and rigor, caring, professionalism, mutual respect and support, innovation, collaboration, and transparency. Applicants will be selected using inclusive and balanced admission criteria that measure their potential in nursing practice, education, research, and scholarship.

We measure our success by graduates who become lifelong learners and leaders in their communities and in the profession of nursing.

Applicants to the DNP program will be holistically reviewed using criteria such as GPA, a personal statement, an essay, work/volunteer experiences, professional activities, leadership roles, honors, award recognitions, etc.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html)

## Admission Criteria

### BSN to DNP

The post-baccalaureate entry point is designed for registered nurses who have completed a Bachelor's of Science in Nursing degree and desire to obtain a doctoral degree in nursing practice. The student will develop the knowledge, skills, and expertise to become clinical scholars, clinical experts, and transformational leaders who will function at the highest level of nursing practice.

#### General Admission Criteria:

- Admission to the University by completing the UMSL Graduate School application
- Completion of College of Nursing supplemental application
- BSN from a nationally accredited nursing program
- BSN 3.0 GPA (calculated on last 60 hours of BSN coursework)
- Current professional licensure
- Completion of an undergraduate general statistics course

### Direct Admit BSN to DNP Option

Direct admission to the BSN to DNP program is selective and open to students who have earned a BSN from UMSL or completed the UMSL CON Externship in Nursing Summer program and earned a BSN degree from a nationally accredited nursing program.

#### Admission Criteria:

Admission to the University by completing the UMSL Graduate School application

- Completion of College of Nursing supplemental application
- BSN from UMSL **OR** completed the UMSL CON Externship in Nursing Summer Program and earned a BSN degree from a nationally accredited nursing program
- 3.75 GPA in last 60 hours of BSN coursework

Once admitted, students must maintain a 3.0 GPA.

Spaces in the BSN to DNP program are limited and are first awarded to guaranteed applicants. Based on space availability, applications will be accepted until the class is full.

## Degree Requirements

### Core Content for BSN to DNP program

Completion of the BSN to DNP program has seven program emphasis areas: six Nurse Practitioner emphasis areas and a Leadership in

Healthcare Systems emphasis area. All programs include coursework in Foundational Concepts, Clinical Expertise, and Integration of Practice.

### Foundational Concepts

NURSE 6111	Healthcare Systems	3
NURSE 6130	Research, Interventions and Evidence-Based Practice	3
NURSE 6424	Social Determinants of Health for Underserved Populations	3
NURSE 7211	Biostatistics I	3
NURSE 7215	Evidence-Based Practice For the DNP	3
NURSE 7220	Leadership in Practice	3
NURSE 7230	Epidemiology	3
NURSE 7240	Health Informatics	3
NURSE 7260	Program Evaluation and Quality Management in Healthcare	3
NURSE 7443	Healthcare Policy	3
Nursing elective		3
<b>Total Hours</b>		<b>33</b>

### Clinical Expertise

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
<b>Total Hours</b>		<b>12</b>

### Integration of Practice

NURSE 6954	Advanced Practice Nursing: Residency I <sup>1</sup>	2-4
or NURSE 6934	Leadership in Population Health and Healthcare Systems Residency I	
NURSE 6955	Advanced Practice Nursing: Residency II <sup>1</sup>	2-4
or NURSE 6935	Leadership in Population Health and Healthcare Systems Residency II	
NURSE 7954	Advanced Practice Nursing: Residency III <sup>1</sup>	2-4
or NURSE 7934	Leadership in Population Health and Healthcare Systems Residency III	
NURSE 7291	DNP Capstone I	2
NURSE 7292	DNP Capstone II	2
NURSE 7293	DNP Capstone III	2
<b>Total Hours</b>		<b>14</b>

<sup>1</sup> All students must complete a minimum of 8 hours of residency. One credit hour is equivalent to 75 residency hours.

Prior to completion of the DNP program, students will complete a clinical scholarship project that satisfies the graduate school requirement.

## Specific Requirements for the Emphasis Area

For all Nurse Practitioner emphasis areas, a student must complete both focus content above and specialty courses based on area of specialty as listed below.

### Diagnosis and Management Foundations

NURSE 6723	Foundations of Pediatric Health	3
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### Diagnosis and Management I

NURSE 6743	Pediatric Health I: Acute and Chronic Care	4
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### Diagnosis and Management II

NURSE 6745	Pediatric Health II: Complex Acute Care	4
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Total Hours		11
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Total credit hours in degree program: 70

## Learning Outcomes

- Integrate informatics, research, and ethical/legal principles to provide excellence in advanced clinical nursing practice.
- Translate research to improve healthcare delivery and health outcomes.
- Generate strategies for multidisciplinary leadership through analysis of critical indicators and/or healthcare delivery systems to optimize patient care and safety.
- Demonstrate an understanding of strategies to influence health policy-making to improve health outcomes, shape healthcare delivery, and remove barriers to healthcare.
- Evaluate approaches to practice utilizing both nursing theories and other health system theories.

## Nursing DNP, Adult-Gerontology Nurse Practitioner Emphasis

The UMSL College of Nursing is committed to admitting a diverse group of students who will become nurse leaders responsive to the specific needs of the communities and populations we serve. We value diversity, intellectual discourse and rigor, caring, professionalism, mutual respect and support, innovation, collaboration, and transparency. Applicants will be selected using inclusive and balanced admission criteria that measure their potential in nursing practice, education, research, and scholarship. We measure our success by graduates who become lifelong learners and leaders in their communities and in the profession of nursing.

Applicants to the DNP program will be holistically reviewed using criteria such as GPA, a personal statement, an essay, work/volunteer experiences, professional activities, leadership roles, honors, award recognitions, etc.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsil.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsil.edu/services/ctl/onlinelearning/state_authorization.html)

## Admission Criteria

### BSN to DNP

The post-baccalaureate entry point is designed for registered nurses who have completed a Bachelor's of Science in Nursing degree and desire

to obtain a doctoral degree in nursing practice. The student will develop the knowledge, skills, and expertise to become clinical scholars, clinical experts, and transformational leaders who will function at the highest level of nursing practice.

### General Admission Criteria:

- Admission to the University by completing the UMSL Graduate School application
- Completion of College of Nursing supplemental application
- BSN from a nationally accredited nursing program
- BSN 3.0 GPA (calculated on last 60 hours of BSN coursework)
- Current professional licensure
- Completion of an undergraduate general statistics course

### Direct Admit BSN to DNP Option

Direct admission to the BSN to DNP program is selective and open to students who have earned a BSN from UMSL or completed the UMSL CON Externship in Nursing Summer program and earned a BSN degree from a nationally accredited nursing program.

### Admission Criteria:

Admission to the University by completing the UMSL Graduate School application

- Completion of College of Nursing supplemental application
- BSN from UMSL **OR** completed the UMSL CON Externship in Nursing Summer Program and earned a BSN degree from a nationally accredited nursing program
- 3.75 GPA in last 60 hours of BSN coursework

Once admitted, students must maintain a 3.0 GPA.

Spaces in the BSN to DNP program are limited and are first awarded to guaranteed applicants. Based on space availability, applications will be accepted until the class is full.

## Degree Requirements

### Core Content for BSN to DNP program

Completion of the BSN to DNP program has seven program emphasis areas: six Nurse Practitioner emphasis areas and a Leadership in Healthcare Systems emphasis area. All programs include coursework in Foundational Concepts, Clinical Expertise, and Integration of Practice.

### Foundational Concepts

NURSE 6111	Healthcare Systems	3
NURSE 6130	Research, Interventions and Evidence-Based Practice	3
NURSE 6424	Social Determinants of Health for Underserved Populations	3
NURSE 7211	Biostatistics I	3
NURSE 7215	Evidence-Based Practice For the DNP	3
NURSE 7220	Leadership in Practice	3
NURSE 7230	Epidemiology	3
NURSE 7240	Health Informatics	3
NURSE 7260	Program Evaluation and Quality Management in Healthcare	3



NURSE 7443	Healthcare Policy	3
Nursing elective		3
Total Hours		33

### Clinical Expertise

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
Total Hours		12

### Integration of Practice

NURSE 6954	Advanced Practice Nursing: Residency I <sup>1</sup>	2-4
or NURSE 6934	Leadership in Population Health and Healthcare Systems Residency I	
NURSE 6955	Advanced Practice Nursing: Residency II <sup>1</sup>	2-4
or NURSE 6935	Leadership in Population Health and Healthcare Systems Residency II	
NURSE 7954	Advanced Practice Nursing: Residency III <sup>1</sup>	2-4
or NURSE 7934	Leadership in Population Health and Healthcare Systems Residency III	
NURSE 7291	DNP Capstone I	2
NURSE 7292	DNP Capstone II	2
NURSE 7293	DNP Capstone III	2
Total Hours		14

<sup>1</sup> All students must complete a minimum of 8 hours of residency. One credit hour is equivalent to 75 residency hours.

Prior to completion of the DNP program, students will complete a clinical scholarship project that satisfies the graduate school requirement.

### Specific Requirements for the Emphasis Area

For all Nurse Practitioner emphasis areas, a student must complete both focus content above and specialty courses as listed below.

#### Diagnosis and Management Foundations

NURSE 6722	Foundations of Adolescent and Geriatric Health	3
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#### Diagnosis and Management I

NURSE 6739	Adult Health I	4
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#### Diagnosis and Management II

NURSE 6740	Adult Health II	4
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Total Hours		11
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Total number of hours in degree program: 70

### Learning Outcomes

- Integrate informatics, research, and ethical/legal principles to provide excellence in advanced clinical nursing practice.
- Translate research to improve healthcare delivery and health outcomes.
- Generate strategies for multidisciplinary leadership through analysis of critical indicators and/or healthcare delivery systems to optimize patient care and safety.
- Demonstrate an understanding of strategies to influence health policy-making to improve health outcomes, shape healthcare delivery, and remove barriers to healthcare.
- Evaluate approaches to practice utilizing both nursing theories and other health system theories.

## Nursing DNP, Family Nurse Practitioner Emphasis

The UMSL College of Nursing is committed to admitting a diverse group of students who will become nurse leaders responsive to the specific needs of the communities and populations we serve. We value diversity, intellectual discourse and rigor, caring, professionalism, mutual respect and support, innovation, collaboration, and transparency. Applicants will be selected using inclusive and balanced admission criteria that measure their potential in nursing practice, education, research, and scholarship. We measure our success by graduates who become lifelong learners and leaders in their communities and in the profession of nursing.

Applicants to the DNP program will be holistically reviewed using criteria such as GPA, a personal statement, an essay, work/volunteer experiences, professional activities, leadership roles, honors, award recognitions, etc.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html)

### Admission Criteria

#### BSN to DNP

The post-baccalaureate entry point is designed for registered nurses who have completed a Bachelor's of Science in Nursing degree and desire to obtain a doctoral degree in nursing practice. The student will develop the knowledge, skills, and expertise to become clinical scholars, clinical experts, and transformational leaders who will function at the highest level of nursing practice.

#### General Admission Criteria:

- Admission to the University by completing the UMSL Graduate School application
- Completion of College of Nursing supplemental application
- BSN from a nationally accredited nursing program
- BSN 3.0 GPA (calculated on last 60 hours of BSN coursework)
- Current professional licensure
- Completion of an undergraduate general statistics course

## Direct Admit BSN to DNP Option

Direct admission to the BSN to DNP program is selective and open to students who have earned a BSN from UMSL or completed the UMSL CON Externship in Nursing Summer program and earned a BSN degree from a nationally accredited nursing program.

### Admission Criteria:

Admission to the University by completing the UMSL Graduate School application

- Completion of College of Nursing supplemental application
- BSN from UMSL **OR** completed the UMSL CON Externship in Nursing Summer Program and earned a BSN degree from a nationally accredited nursing program
- 3.75 GPA in last 60 hours of BSN coursework

Once admitted, students must maintain a 3.0 GPA.

Spaces in the BSN to DNP program are limited and are first awarded to guaranteed applicants. Based on space availability, applications will be accepted until the class is full.

## Degree Requirements

### Core Content for BSN to DNP program

Completion of the BSN to DNP program has seven program emphasis areas: six Nurse Practitioner emphasis areas and a Leadership in Healthcare Systems emphasis area. All programs include coursework in Foundational Concepts, Clinical Expertise, and Integration of Practice.

### Foundational Concepts

NURSE 6111	Healthcare Systems	3
NURSE 6130	Research, Interventions and Evidence-Based Practice	3
NURSE 6424	Social Determinants of Health for Underserved Populations	3
NURSE 7211	Biostatistics I	3
NURSE 7215	Evidence-Based Practice For the DNP	3
NURSE 7220	Leadership in Practice	3
NURSE 7230	Epidemiology	3
NURSE 7240	Health Informatics	3
NURSE 7260	Program Evaluation and Quality Management in Healthcare	3
NURSE 7443	Healthcare Policy	3
Nursing elective		3
<b>Total Hours</b>		<b>33</b>

### Clinical Expertise

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3

NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
<b>Total Hours</b>		<b>12</b>

### Integration of Practice

NURSE 6954	Advanced Practice Nursing: Residency I <sup>1</sup>	2-4
or NURSE 6934	Leadership in Population Health and Healthcare Systems Residency I	
NURSE 6955	Advanced Practice Nursing: Residency II <sup>1</sup>	2-4
or NURSE 6935	Leadership in Population Health and Healthcare Systems Residency II	
NURSE 7954	Advanced Practice Nursing: Residency III <sup>1</sup>	2-4
or NURSE 7934	Leadership in Population Health and Healthcare Systems Residency III	
NURSE 7291	DNP Capstone I	2
NURSE 7292	DNP Capstone II	2
NURSE 7293	DNP Capstone III	2
<b>Total Hours</b>		<b>14</b>

<sup>1</sup> All students must complete a minimum of 8 hours of residency. One credit hour is equivalent to 75 residency hours.

Prior to completion of the DNP program, students will complete a clinical scholarship project that satisfies the graduate school requirement.

### Specific Requirements for the Emphasis Area

For all Nurse Practitioner emphasis areas, a student must complete both focus content above and specialty courses listed below.

#### Diagnosis and Management Foundations

NURSE 6723	Foundations of Pediatric Health	3
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#### Diagnosis and Management I

NURSE 6743	Pediatric Health I: Acute and Chronic Care	4
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#### Diagnosis and Management II

NURSE 6745	Pediatric Health II: Complex Acute Care	4
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<b>Total Hours</b>		<b>11</b>
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## Total number of hours in degree program: 70

### Learning Outcomes

- Integrate informatics, research, and ethical/legal principles to provide excellence in advanced clinical nursing practice.
- Translate research to improve healthcare delivery and health outcomes.
- Generate strategies for multidisciplinary leadership through analysis of critical indicators and/or healthcare delivery systems to optimize patient care and safety.
- Demonstrate an understanding of strategies to influence health policy-making to improve health outcomes, shape healthcare delivery, and remove barriers to healthcare.

- Evaluate approaches to practice utilizing both nursing theories and other health system theories.

## Nursing DNP, Leadership in Population Health and Healthcare Systems Emphasis

The UMSL College of Nursing is committed to admitting a diverse group of students who will become nurse leaders responsive to the specific needs of the communities and populations we serve. We value diversity, intellectual discourse and rigor, caring, professionalism, mutual respect and support, innovation, collaboration, and transparency. Applicants will be selected using inclusive and balanced admission criteria that measure their potential in nursing practice, education, research, and scholarship. We measure our success by graduates who become lifelong learners and leaders in their communities and in the profession of nursing.

Applicants to the DNP program will be holistically reviewed using criteria such as GPA, a personal statement, an essay, work/volunteer experiences, professional activities, leadership roles, honors, award recognitions, etc.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsel.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsel.edu/services/ctl/onlinelearning/state_authorization.html)

### Admission Criteria

#### BSN to DNP

The post-baccalaureate entry point is designed for registered nurses who have completed a Bachelor's of Science in Nursing degree and desire to obtain a doctoral degree in nursing practice. The student will develop the knowledge, skills, and expertise to become clinical scholars, clinical experts, and transformational leaders who will function at the highest level of nursing practice.

#### General Admission Criteria:

- Admission to the University by completing the UMSL Graduate School application
- Completion of College of Nursing supplemental application
- BSN from a nationally accredited nursing program
- BSN 3.0 GPA (calculated on last 60 hours of BSN coursework)
- Current professional licensure
- Completion of an undergraduate general statistics course

#### Direct Admit BSN to DNP Option

Direct admission to the BSN to DNP program is selective and open to students who have earned a BSN from UMSL or completed the UMSL CON Externship in Nursing Summer program and earned a BSN degree from a nationally accredited nursing program.

#### Admission Criteria:

Admission to the University by completing the UMSL Graduate School application

- Completion of College of Nursing supplemental application
- BSN from UMSL **OR** completed the UMSL CON Externship in Nursing Summer Program and earned a BSN degree from a nationally accredited nursing program
- 3.75 GPA in last 60 hours of BSN coursework

Once admitted, students must maintain a 3.0 GPA.

Spaces in the BSN to DNP program are limited and are first awarded to guaranteed applicants. Based on space availability, applications will be accepted until the class is full.

### Degree Requirements

#### Core Content for BSN to DNP program

Completion of the BSN to DNP program has seven program emphasis areas: six Nurse Practitioner emphasis areas and a Leadership in Healthcare Systems emphasis area. All programs include coursework in Foundational Concepts, Clinical Expertise, and Integration of Practice.

#### Foundational Concepts

NURSE 6111	Healthcare Systems	3
NURSE 6130	Research, Interventions and Evidence-Based Practice	3
NURSE 6424	Social Determinants of Health for Underserved Populations	3
NURSE 7211	Biostatistics I	3
NURSE 7215	Evidence-Based Practice For the DNP	3
NURSE 7220	Leadership in Practice	3
NURSE 7230	Epidemiology	3
NURSE 7240	Health Informatics	3
NURSE 7260	Program Evaluation and Quality Management in Healthcare	3
NURSE 7443	Healthcare Policy	3
Nursing elective		3
Total Hours		33

#### Clinical Expertise

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
Total Hours		12

#### Integration of Practice

NURSE 6954	Advanced Practice Nursing: Residency I <sup>1</sup>	2-4
or NURSE 6934	Leadership in Population Health and Healthcare Systems Residency I	
NURSE 6955	Advanced Practice Nursing: Residency II <sup>1</sup>	2-4

or NURSE 6935	Leadership in Population Health and Healthcare Systems Residency II	
NURSE 7954	Advanced Practice Nursing: Residency III <sup>1</sup>	2-4
or NURSE 7934	Leadership in Population Health and Healthcare Systems Residency III	
NURSE 7291	DNP Capstone I	2
NURSE 7292	DNP Capstone II	2
NURSE 7293	DNP Capstone III	2
<b>Total Hours</b>		<b>14</b>

<sup>1</sup> All students must complete a minimum of 8 hours of residency. One credit hour is equivalent to 75 residency hours.

Prior to completion of the DNP program, students will complete a clinical scholarship project that satisfies the graduate school requirement.

## Emphasis Area Requirements

For the Leadership in Population Health and Healthcare Systems emphasis area, a student must complete the focus content and specialty courses listed below.

### Foundational Concepts

NURSE 6111	Healthcare Systems	3
NURSE 6130	Research, Interventions and Evidence-Based Practice	3
NURSE 6424	Social Determinants of Health for Underserved Populations	3
NURSE 7211	Biostatistics I	3
NURSE 7215	Evidence-Based Practice For the DNP	3
NURSE 7220	Leadership in Practice	3
NURSE 7230	Epidemiology	3
NURSE 7240	Health Informatics	3
NURSE 7260	Program Evaluation and Quality Management in Healthcare	3
NURSE 7443	Healthcare Policy and Economics	3
Nursing Elective		3
<b>Total Hours</b>		<b>33</b>

### Clinical Expertise

NURSE 6418	Organizational Behavior and Human Resource Management in Healthcare	3
NURSE 6521	Healthcare Finance	3
NURSE 6527	Patient Safety, Performance Improvement, and Compliance	3
NURSE 6730	Nursing Administrative Leadership in Healthcare I	3
NURSE 6731	Nursing Administrative Leadership in Healthcare II	3
<b>Total Hours</b>		<b>15</b>

### Integration of Practice

NURSE 6934	Leadership in Population Health and Healthcare Systems Residency I <sup>1</sup>	2-4
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NURSE 6935	Leadership in Population Health and Healthcare Systems Residency II <sup>1</sup>	2-4
NURSE 7934	Leadership in Population Health and Healthcare Systems Residency III <sup>1</sup>	2-4
NURSE 7291	DNP Capstone I	2
NURSE 7292	DNP Capstone II	2
NURSE 7293	DNP Capstone III	2
<b>Total Hours</b>		<b>14</b>

<sup>1</sup> All students must complete a minimum of 8 credit hours of residency.

## Learning Outcomes

- Integrate informatics, research, and ethical/legal principles to provide excellence in advanced clinical nursing practice.
- Translate research to improve healthcare delivery and health outcomes.
- Generate strategies for multidisciplinary leadership through analysis of critical indicators and/or healthcare delivery systems to optimize patient care and safety.
- Demonstrate an understanding of strategies to influence health policy-making to improve health outcomes, shape healthcare delivery, and remove barriers to healthcare.
- Evaluate approaches to practice utilizing both nursing theories and other health system theories.

## Nursing DNP, MSN to DNP Curriculum

The post master's entry point is designed for graduate-prepared nurses who want to develop the knowledge, skills, and expertise to become clinical scholars, transformational leaders, and function at the highest level of nursing practice while obtaining a terminal degree in nursing practice.

### Admission Criteria

- Admission to the University by completing the UMSL Graduate School application
- Completion of College of Nursing supplemental application
- MSN from a nationally accredited nursing program
- MSN 3.0 GPA
- Current professional licensure
- Completion of an undergraduate general statistics course or graduate level general statistics course

See the UMSL College of Nursing's website for the application process and specific program deadlines.

### Degree Requirements

NURSE 6424	Social Determinants of Health for Underserved Populations	3
NURSE 7211	Biostatistics I	3
NURSE 7215	Evidence-Based Practice For the DNP	3
NURSE 7220	Leadership in Practice	3
NURSE 7230	Epidemiology	3
NURSE 7240	Health Informatics	3



NURSE 7260	Program Evaluation and Quality Management in Healthcare	3
NURSE 7291	DNP Capstone I	2
NURSE 7292	DNP Capstone II	2
NURSE 7293	DNP Capstone III	2
NURSE 7443	Healthcare Policy	3
Nursing elective		3
Total Hours		33

Prior to completion of the DNP program, students will complete a clinical scholarship project that satisfies the graduate school requirement.

## Learning Outcomes

- Integrate informatics, research, and ethical/legal principles to provide excellence in advanced clinical nursing practice.
- Translate research to improve healthcare delivery and health outcomes.
- Generate strategies for multidisciplinary leadership through analysis of critical indicators and/or healthcare delivery systems to optimize patient care and safety.
- Demonstrate an understanding of strategies to influence health policy-making to improve health outcomes, shape healthcare delivery, and remove barriers to healthcare.
- Evaluate approaches to practice utilizing both nursing theories and other health system theories.

## Nursing DNP, Primary Pediatric Nurse Practitioner Emphasis

The UMSL College of Nursing is committed to admitting a diverse group of students who will become nurse leaders responsive to the specific needs of the communities and populations we serve. We value diversity, intellectual discourse and rigor, caring, professionalism, mutual respect and support, innovation, collaboration, and transparency. Applicants will be selected using inclusive and balanced admission criteria that measure their potential in nursing practice, education, research, and scholarship. We measure our success by graduates who become lifelong learners and leaders in their communities and in the profession of nursing.

Applicants to the DNP program will be holistically reviewed using criteria such as GPA, a personal statement, an essay, work/volunteer experiences, professional activities, leadership roles, honors, award recognitions, etc.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.ums.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.ums.edu/services/ctl/onlinelearning/state_authorization.html)

## Admission Criteria

### BSN to DNP

The post-baccalaureate entry point is designed for registered nurses who have completed a Bachelor's of Science in Nursing degree and desire to obtain a doctoral degree in nursing practice. The student will develop the knowledge, skills, and expertise to become clinical scholars, clinical experts, and transformational leaders who will function at the highest level of nursing practice.

### General Admission Criteria:

- Admission to the University by completing the UMSL Graduate School application
- Completion of College of Nursing supplemental application
- BSN from a nationally accredited nursing program
- BSN 3.0 GPA (calculated on last 60 hours of BSN coursework)
- Current professional licensure
- Completion of an undergraduate general statistics course

### Direct Admit BSN to DNP Option

Direct admission to the BSN to DNP program is selective and open to students who have earned a BSN from UMSL or completed the UMSL CON Externship in Nursing Summer program and earned a BSN degree from a nationally accredited nursing program.

### Admission Criteria:

Admission to the University by completing the UMSL Graduate School application

- Completion of College of Nursing supplemental application
- BSN from UMSL **OR** completed the UMSL CON Externship in Nursing Summer Program and earned a BSN degree from a nationally accredited nursing program
- 3.75 GPA in last 60 hours of BSN coursework

Once admitted, students must maintain a 3.0 GPA.

Spaces in the BSN to DNP program are limited and are first awarded to guaranteed applicants. Based on space availability, applications will be accepted until the class is full.

## Degree Requirements

### Core Content for BSN to DNP program

Completion of the BSN to DNP program has seven program emphasis areas: six Nurse Practitioner emphasis areas and a Leadership in Healthcare Systems emphasis area. All programs include coursework in Foundational Concepts, Clinical Expertise, and Integration of Practice.

### Foundational Concepts

NURSE 6111	Healthcare Systems	3
NURSE 6130	Research, Interventions and Evidence-Based Practice	3
NURSE 6424	Social Determinants of Health for Underserved Populations	3
NURSE 7211	Biostatistics I	3
NURSE 7215	Evidence-Based Practice For the DNP	3
NURSE 7220	Leadership in Practice	3
NURSE 7230	Epidemiology	3
NURSE 7240	Health Informatics	3
NURSE 7260	Program Evaluation and Quality Management in Healthcare	3
NURSE 7443	Healthcare Policy	3
Nursing elective		3
Total Hours		33

## Clinical Expertise

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
Total Hours		12

## Integration of Practice

NURSE 6954	Advanced Practice Nursing: Residency I <sup>1</sup>	2-4
or NURSE 6934	Leadership in Population Health and Healthcare Systems Residency I	
NURSE 6955	Advanced Practice Nursing: Residency II <sup>1</sup>	2-4
or NURSE 6935	Leadership in Population Health and Healthcare Systems Residency II	
NURSE 7954	Advanced Practice Nursing: Residency III <sup>1</sup>	2-4
or NURSE 7934	Leadership in Population Health and Healthcare Systems Residency III	
NURSE 7291	DNP Capstone I	2
NURSE 7292	DNP Capstone II	2
NURSE 7293	DNP Capstone III	2
<b>Total Hours</b>		<b>14</b>

<sup>1</sup> All students must complete a minimum of 8 hours of residency. One credit hour is equivalent to 75 residency hours.

Prior to completion of the DNP program, students will complete a clinical scholarship project that satisfies the graduate school requirement.

## Specific Requirements for the Emphasis Area

For all Nurse Practitioner emphasis areas, a student must complete both focus content above and specialty courses as listed below.

### Diagnosis and Management Foundations

NURSE 6723	Foundations of Pediatric Health	3
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### Diagnosis and Management I

NURSE 6743	Pediatric Health I: Acute and Chronic Care	4
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### Diagnosis and Management II

NURSE 6744	Pediatric Health II: Comprehensive Primary Care	4
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Total Hours		11
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Total number of hours in degree program: 70

## Learning Outcomes

- Integrate informatics, research, and ethical/legal principles to provide excellence in advanced clinical nursing practice.
- Translate research to improve healthcare delivery and health outcomes.

- Generate strategies for multidisciplinary leadership through analysis of critical indicators and/or healthcare delivery systems to optimize patient care and safety.
- Demonstrate an understanding of strategies to influence health policy-making to improve health outcomes, shape healthcare delivery, and remove barriers to healthcare.
- Evaluate approaches to practice utilizing both nursing theories and other health system theories.

## Nursing DNP, Psychiatric Mental Health Nurse Practitioner Emphasis

The UMSL College of Nursing is committed to admitting a diverse group of students who will become nurse leaders responsive to the specific needs of the communities and populations we serve. We value diversity, intellectual discourse and rigor, caring, professionalism, mutual respect and support, innovation, collaboration, and transparency. Applicants will be selected using inclusive and balanced admission criteria that measure their potential in nursing practice, education, research, and scholarship. We measure our success by graduates who become lifelong learners and leaders in their communities and in the profession of nursing.

Applicants to the DNP program will be holistically reviewed using criteria such as GPA, a personal statement, an essay, work/volunteer experiences, professional activities, leadership roles, honors, award recognitions, etc.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html)

## Admission Criteria

### BSN to DNP

The post-baccalaureate entry point is designed for registered nurses who have completed a Bachelor's of Science in Nursing degree and desire to obtain a doctoral degree in nursing practice. The student will develop the knowledge, skills, and expertise to become clinical scholars, clinical experts, and transformational leaders who will function at the highest level of nursing practice.

### General Admission Criteria:

- Admission to the University by completing the UMSL Graduate School application
- Completion of College of Nursing supplemental application
- BSN from a nationally accredited nursing program
- BSN 3.0 GPA (calculated on last 60 hours of BSN coursework)
- Current professional licensure
- Completion of an undergraduate general statistics course

### Direct Admit BSN to DNP Option

Direct admission to the BSN to DNP program is selective and open to students who have earned a BSN from UMSL or completed the UMSL CON Externship in Nursing Summer program and earned a BSN degree from a nationally accredited nursing program.

### Admission Criteria:

Admission to the University by completing the UMSL Graduate School application

- Completion of College of Nursing supplemental application
- BSN from UMSL **OR** completed the UMSL CON Externship in Nursing Summer Program and earned a BSN degree from a nationally accredited nursing program
- 3.75 GPA in last 60 hours of BSN coursework

Once admitted, students must maintain a 3.0 GPA.

Spaces in the BSN to DNP program are limited and are first awarded to guaranteed applicants. Based on space availability, applications will be accepted until the class is full.

## Degree Requirements

### Core Content for BSN to DNP program

Completion of the BSN to DNP program has seven program emphasis areas: six Nurse Practitioner emphasis areas and a Leadership in Healthcare Systems emphasis area. All programs include coursework in Foundational Concepts, Clinical Expertise, and Integration of Practice.

### Foundational Concepts

NURSE 6111	Healthcare Systems	3
NURSE 6130	Research, Interventions and Evidence-Based Practice	3
NURSE 6424	Social Determinants of Health for Underserved Populations	3
NURSE 7211	Biostatistics I	3
NURSE 7215	Evidence-Based Practice For the DNP	3
NURSE 7220	Leadership in Practice	3
NURSE 7230	Epidemiology	3
NURSE 7240	Health Informatics	3
NURSE 7260	Program Evaluation and Quality Management in Healthcare	3
NURSE 7443	Healthcare Policy	3
Nursing elective		3
<b>Total Hours</b>		<b>33</b>

### Clinical Expertise

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
<b>Total Hours</b>		<b>12</b>

### Integration of Practice

NURSE 6954	Advanced Practice Nursing: Residency I <sup>1</sup>	2-4
or NURSE 6934	Leadership in Population Health and Healthcare Systems Residency I	

NURSE 6955	Advanced Practice Nursing: Residency II <sup>1</sup>	2-4
or NURSE 6935	Leadership in Population Health and Healthcare Systems Residency II	
NURSE 7954	Advanced Practice Nursing: Residency III <sup>1</sup>	2-4
or NURSE 7934	Leadership in Population Health and Healthcare Systems Residency III	
NURSE 7291	DNP Capstone I	2
NURSE 7292	DNP Capstone II	2
NURSE 7293	DNP Capstone III	2
<b>Total Hours</b>		<b>14</b>

<sup>1</sup> All students must complete a minimum of 8 hours of residency. One credit hour is equivalent to 75 residency hours.

Prior to completion of the DNP program, students will complete a clinical scholarship project that satisfies the graduate school requirement.

## Specific Requirements for the Emphasis Area

For all Nurse Practitioner emphasis areas, a student must complete both focus content above and specialty courses as listed below.

### Diagnosis and Management Foundations

NURSE 6721	Foundations of Psychiatric Mental Health	3
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### Diagnosis and Management I

NURSE 6737	Psychiatric Mental Health I	4
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### Diagnosis and Management II

NURSE 6738	Psychiatric Mental Health II	4
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<b>Total Hours</b>		<b>11</b>
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Total number of hours in degree program: 70

## Learning Outcomes

- Integrate informatics, research, and ethical/legal principles to provide excellence in advanced clinical nursing practice.
- Translate research to improve healthcare delivery and health outcomes.
- Generate strategies for multidisciplinary leadership through analysis of critical indicators and/or healthcare delivery systems to optimize patient care and safety.
- Demonstrate an understanding of strategies to influence health policy-making to improve health outcomes, shape healthcare delivery, and remove barriers to healthcare.
- Evaluate approaches to practice utilizing both nursing theories and other health system theories.

## Nursing DNP, Women's Health Nurse Practitioner Emphasis

The UMSL College of Nursing is committed to admitting a diverse group of students who will become nurse leaders responsive to the specific needs of the communities and populations we serve. We value diversity, intellectual discourse and rigor, caring, professionalism, mutual respect and support, innovation, collaboration, and transparency. Applicants will be selected using inclusive and balanced admission criteria that measure their potential in nursing practice, education, research, and scholarship.

We measure our success by graduates who become lifelong learners and leaders in their communities and in the profession of nursing.

Applicants to the DNP program will be holistically reviewed using criteria such as GPA, a personal statement, an essay, work/volunteer experiences, professional activities, leadership roles, honors, award recognitions, etc.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html)

## Admission Criteria

### BSN to DNP

The post-baccalaureate entry point is designed for registered nurses who have completed a Bachelor's of Science in Nursing degree and desire to obtain a doctoral degree in nursing practice. The student will develop the knowledge, skills, and expertise to become clinical scholars, clinical experts, and transformational leaders who will function at the highest level of nursing practice.

#### General Admission Criteria:

- Admission to the University by completing the UMSL Graduate School application
- Completion of College of Nursing supplemental application
- BSN from a nationally accredited nursing program
- BSN 3.0 GPA (calculated on last 60 hours of BSN coursework)
- Current professional licensure
- Completion of an undergraduate general statistics course

### Direct Admit BSN to DNP Option

Direct admission to the BSN to DNP program is selective and open to students who have earned a BSN from UMSL or completed the UMSL CON Externship in Nursing Summer program and earned a BSN degree from a nationally accredited nursing program.

#### Admission Criteria:

Admission to the University by completing the UMSL Graduate School application

- Completion of College of Nursing supplemental application
- BSN from UMSL **OR** completed the UMSL CON Externship in Nursing Summer Program and earned a BSN degree from a nationally accredited nursing program
- 3.75 GPA in last 60 hours of BSN coursework

Once admitted, students must maintain a 3.0 GPA.

Spaces in the BSN to DNP program are limited and are first awarded to guaranteed applicants. Based on space availability, applications will be accepted until the class is full.

## Degree Requirements

### Core Content for BSN to DNP program

Completion of the BSN to DNP program has seven program emphasis areas: six Nurse Practitioner emphasis areas and a Leadership in

Healthcare Systems emphasis area. All programs include coursework in Foundational Concepts, Clinical Expertise, and Integration of Practice.

### Foundational Concepts

NURSE 6111	Healthcare Systems	3
NURSE 6130	Research, Interventions and Evidence-Based Practice	3
NURSE 6424	Social Determinants of Health for Underserved Populations	3
NURSE 7211	Biostatistics I	3
NURSE 7215	Evidence-Based Practice For the DNP	3
NURSE 7220	Leadership in Practice	3
NURSE 7230	Epidemiology	3
NURSE 7240	Health Informatics	3
NURSE 7260	Program Evaluation and Quality Management in Healthcare	3
NURSE 7443	Healthcare Policy	3
Nursing elective		3
<b>Total Hours</b>		<b>33</b>

### Clinical Expertise

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
<b>Total Hours</b>		<b>12</b>

### Integration of Practice

NURSE 6954	Advanced Practice Nursing: Residency I <sup>1</sup>	2-4
or NURSE 6934	Leadership in Population Health and Healthcare Systems Residency I	
NURSE 6955	Advanced Practice Nursing: Residency II <sup>1</sup>	2-4
or NURSE 6935	Leadership in Population Health and Healthcare Systems Residency II	
NURSE 7954	Advanced Practice Nursing: Residency III <sup>1</sup>	2-4
or NURSE 7934	Leadership in Population Health and Healthcare Systems Residency III	
NURSE 7291	DNP Capstone I	2
NURSE 7292	DNP Capstone II	2
NURSE 7293	DNP Capstone III	2
<b>Total Hours</b>		<b>14</b>

<sup>1</sup> All students must complete a minimum of 8 hours of residency. One credit hour is equivalent to 75 residency hours.

Prior to completion of the DNP program, students will complete a clinical scholarship project that satisfies the graduate school requirement.



## Specific Requirements for the Emphasis Area

For all Nurse Practitioner emphasis areas, a student must complete both focus content above and as listed below.

### Diagnosis and Management Foundations

NURSE 6722	Foundations of Adolescent and Geriatric Health	3
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### Diagnosis and Management I

NURSE 6739	Adult Health I	4
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### Diagnosis and Management II

NURSE 6740	Adult Health II	4
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Total Hours		11
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Total number of hours in degree program: 70

## Learning Outcomes

- Integrate informatics, research, and ethical/legal principles to provide excellence in advanced clinical nursing practice.
- Translate research to improve healthcare delivery and health outcomes.
- Generate strategies for multidisciplinary leadership through analysis of critical indicators and/or healthcare delivery systems to optimize patient care and safety.
- Demonstrate an understanding of strategies to influence health policy-making to improve health outcomes, shape healthcare delivery, and remove barriers to healthcare.
- Evaluate approaches to practice utilizing both nursing theories and other health system theories.

## Nursing MSN

**Effective Fall 2016, The MSN program is no longer accepting applications.**

### MSN and Post-MSN Program Requirements

- BSN or MSN from a nationally accredited nursing program
- Minimum cumulative grade point average of 3.0 (4.0 scale)
- Current professional licensure with eligibility for Missouri license
- Successful completion of an undergraduate general statistics course
- Successful completion of an undergraduate health assessment course or equivalent
- Two letters of reference regarding the applicant's academic potential (NP option)
- Narrative outlining goals (NP functional role or nurse educator)
- Two years of clinical experience with chosen population are preferred prior to starting clinicals. (NP functional role)
- Computer literacy and access
- Must reside in the United States

Availability of clinical resources may limit the number of applicants accepted to the practitioner options. NURSE 6954 (p. 217) and NURSE 6955 (p. 217). Deadline for fall admission is February 15th.

## Degree Requirements

### Core Content

Completion of the MSN Nurse Practitioner and Nurse Educator programs require the completion of the following core content for all emphasis areas:

NURSE 6106	Policy, Organization and Financing in Health Care	3
NURSE 6111	Healthcare Systems Concepts and Theory	3
NURSE 6120	Population-Based Foundations of Health	3
NURSE 6130	Research, Interventions and Evidence-Based Practice	3
NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment For Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
NURSE 7443	Healthcare Policy	3

## Nursing PhD

Applicants to the Ph.D. program will be holistically reviewed using criteria such as GPA, a personal statement, an essay, work/volunteer experiences, professional activities, leadership roles, honors, award recognitions, etc.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html)

### Admission Criteria

- Admission to the University by completing the UMSL Graduate School Application
- Completion of the College of Nursing supplemental application
- Graduation from a nationally accredited baccalaureate or master's nursing program with 3.25 minimum GPA (4.0 scale)
- Completion of a basic undergraduate statistics course

International applicants must meet minimum requirements on tests of written and spoken English (TOEFL, Minimum iBT score of 79 or better is desired). International students must also apply through the International Student Services Office.

See the UMSL College of Nursing's website for the application process and specific program deadlines.

### Degree Requirements

While each program of study is individualized, BSN to Ph.D. students complete a minimum of 60 credit hours of graduate-level course work and an additional 12 credit hours of dissertation, which equal the 72 total credit hours required for the Ph.D. program. MSN to Ph.D. students complete a minimum of 45 post-MSN credit hours and an additional 12 credit hours of

dissertation. These 57 credit hours, in addition to 15 credit hours earned from Master's level work, equal the 72 credit hours required for a Ph.D.

#### Nursing Science, Theory, and Discipline of Nursing:

NURSE 6424	Social Determinants of Health	3
NURSE 7200	State of the Science in Nursing Research and Practice	3
NURSE 7403	Development of the Nurse Scientist	3
NURSE 7443	Healthcare Policy	3
NURSE 7481	Development of Nursing Science and Theory	3
NURSE 7491	Advanced Nursing Theory Development and Validation	3
Total Hours		18

#### Nursing Research Methods:

NURSE 7211	Biostatistics I	3
NURSE 7488	Introduction to Qualitative Research Methodologies and Methods	3
NURSE 7212	Biostatistics II	3
NURSE 7490	Advanced Nursing Research Designs and Methods	3
NURSE 7495	Mixed Methods Research in Health Care	3
Select one of the following:		3
NURSE 7497	Design, Implementation and Evaluation of Health Interventions	
NURSE 7213	Biostatistics III - Structural Equation Modeling	
NURSE 7496	Seminar in Advanced Qualitative Research Methods	
Total Hours		18

#### Cognates:

All Ph.D. students (BSN to Ph.D. and MSN to Ph.D.) are required to take a minimum of 9 credit hours of cognates in the related area of research<sup>1</sup>. The advisor must approve the cognate to ensure it meets the College of Nursing guidelines.

<sup>1</sup> BSN to Ph.D. students must also take 6 credit hours of electives.

#### Dissertation:

NURSE 7499	Dissertation Research	12
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#### Additional Required Courses for BSN to Ph.D. Students:

NURSE 6111	Healthcare Systems Concepts and Theory	3
NURSE 6130	Research, Interventions and Evidence-Based Practice	3
NURSE 7220	Leadership in Practice	3
Total Hours		9

- Translate nursing research into practice & policy to improve health & healthcare systems.
- Provide leadership to effect change in healthcare practice, policy, & education issues by collaboration & partnerships.
- Collaborate effectively with interdisciplinary teams.
- Improve the healthcare quality of life, individuals/families/communities regionally, nationally & internationally.

## Optometry OD

### First Year

#### Fall Semester

Semester	Credit Hours	Lecture	Lab
8010 Anatomy, Physiology and Disease Processes I	4	3	2
8020 Basic and Clinical Optics I	4	3	2
8030 Introduction to Optometry	1	1	
8040 Neuroanatomy	4	3	2
8050 Basic and Applied Immunology	2	2	
8060 Biochemistry	2	2	
8090 Case Based Discovery for the Developing Clinician	1	1	
8350 Epidemiology	2	2	

### Spring Semester

Semester	Credit Hours	Lecture	Lab
8110 Anatomy, Physiology and Disease Processes II	5	4	2
8120 Basic and Clinical Optics II	5	4	2
8160 Anatomy and Physiology of the Eye	5	4	2
8180 Clinical Optometry I	5	3	4
8190 Introduction to Clinical Diagnostic Reasoning	1	1	

## PhD Program Learning Outcomes

- Develop expertise and knowledge to establish a program of research & scholarship.

## Second Year

### Fall Semester

Semester	Credit Hours	Lecture	Lab
8220 Ophthalmic Optics	4	3	2
8230 Interpersonal Communications	2	2	
8240 Ocular Motility	2	2	
8250 Monocular Sensory Processes	5	4	2
8260 Foundations of Ocular and Systemic Disease and Management I	4	3	2
8280 Clinical Optometry II	5	3	4

### Spring Semester

Semester	Credit Hours	Lecture	Lab
8320 Ophthalmic Dispensing	1		2
8340 Binocular Vision and Space Perception	4	3	2
8370 Foundations of Ocular and Systemic Disease and Management II	5	4	2
8380 Clinical Optometry III	2	1	2
8390 Specialty Clinic Laboratory	1		2
8391 Clinical Topics in Contact Lenses	1	1	
8392 Clinical Topics in Binocular Vision and Pediatric Optometry	1	1	
8393 Clinical Topics in Low Vision	1	1	
8560 Public Health	2	2	

## Third Year

### Summer Semester

Semester	Credit Hours	Lecture	Lab
8450 Introduction to Primary Care Clinic	4		8
8460 Foundations of Ocular and Systemic Disease and Management III	2	2	
8540 Binocular Vision Anomalies	4	3	2
8650 Geriatric Optometry	2	2	

### Fall Semester

Semester	Credit Hours	Lecture	Lab
8470 Pharmaceutical Management in Patient Care	2	2	
8500 Primary Care Clinic I	6		12
8520 Contact Lenses I	3	2	2
8550 Low Vision	2	1	2
8570 Advanced Topics in Ocular and Systemic Disease and Management	6	5	2
8640 Pediatric Optometry	2	2	

### Spring Semester

Semester	Credit Hours	Lecture	Lab
8600 Primary Care Clinic II	6		12
8620 Contact Lenses II	2	2	
8630 Practice Management I	3	3	
8645 Neurologic Disorders of the Eye and Visual System	2	2	
8660 Contact Lens Specialty Clinic	1		2
8670 Comprehensive Case Review and Analysis	1	1	
8680 Ophthalmic Lasers	2	2	

8690 Pediatric / Binocular Vision Specialty Clinic I	1		2
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## Fourth Year

Six clinical rotations and 2 courses are required.

### Category 1 UMSL

Note: Must enroll in 8700, 8710 and 8720 concurrently

Semester	Credit Hours	Lecture	Lab
8700 UMSL Pediatric/ Binocular Vision Patient Care	3		6
8710 UMSL Contact Lens Patient Care	3		6
8720 UMSL Eye Health Management Patient Care	1		2

### Category 2 Institutional

Semester	Credit Hours	Lecture	Lab
8780 External Rotation in Institutional Patient Care	7		14

### Category 3 Ocular Disease

Semester	Credit Hours	Lecture	Lab
8790 External Rotation in Ocular Disease Patient Care	7		14

### Category 4 Community

Semester	Credit Hours	Lecture	Lab
8730 Community Service Patient Care Rotation A	7		14
8770 Community Service Patient Care Rotation C	7		14

### Category 5 Specialty

Semester	Credit Hours	Lecture	Lab
8800 External Rotation in Pediatric/ Binocular Vision Patient Care	7		14
8810 External Rotation in Contact Lens Patient Care	7		14

8811 External Rotation in Ophthalmic Surgical Patient Care	7		14
8812 External Rotation in Geriatric Patient Care	7		14
8813 External Rotation in Ophthalmic Sports vision	7		14
8814 External Rotation In Primary Care	7		14
8815 External Rotation in Pathology and Treatment	7		14
8816 External Rotation in Ophthalmic Laser Treatment	7		14
8817 External Rotation in Rehabilitative Patient Care	7		14
8820 External Rotation in Low Vision Patient Care	7		14

### Category 6 Elective

Semester	Credit Hours	Lecture	Lab
8830 External Rotation in General Patient Care	7		14
8840 External Supplementary Rotation in General Patient Care	7		14
8850 Supplementary Rotation in General Patient Care	7		14

### Required Courses

Semester	Credit Hours	Lecture	Lab
8870 Practice Management II	2	2	
8880 Practice Management III	1	1	



Due to advances in the optometric profession, sequencing of courses may change. The courses listed above are subject to change through normal academic procedures.

## Elective Courses in the College of Optometry

OPTOM 8400	Directed Readings	1-3
OPTOM 8410	Directed Research	1-3

### First Year

#### Fall Semester

Semester	Credit Hours	Lecture	Lab
8010, Anatomy, Physiology and Disease Processes I	4	3	2
8020, Basic and Clinical Optics I	4	3	2
8030, Introduction to Optometry	1	1	
8040, Neuroanatomy	4	3	2
8050, Basic and Applied Immunology	2	2	
8060, Biochemistry	2	2	
8090, Case-Based Discovery for the Developing Clinician	1	1	
8350, Epidemiology	2	2	

#### Spring Semester

Semester	Credit Hours	Lecture	Lab
8110, Anatomy, Physiology and Disease Processes II	5	4	2
8120, Basic and Clinical Optics II	5	4	2
8160, Anatomy and Physiology of the Eye	5	4	2
8180, Clinical Optometry I	5	3	4
8190, Introduction to Clinical Diagnostic Reasoning	1	1	
8230, Interpersonal Communication	2	2	

### Second Year

#### Fall Semester

Semester	Credit Hours	Lecture	Lab
8220, Ophthalmic Optics	4	3	2
8240, Ocular Motility	2	2	
8250, Monocular Sensory Processes	5	4	2
8260, General and Ocular Pharmacology	4	3	2
8280, Clinical Optometry II	5	3	4

#### Spring Semester

Semester	Credit Hours	Lecture	Lab
8320, Ophthalmic Dispensing	1		2
8340, Binocular Vision and Space Perception	4	3	2
8370, Foundations of Ocular and Systemic Disease and Management I	5	4	2
8380, Clinical Optometry III	2	1	2
8390, Specialty Clinic Laboratory	1		2
8391, Clinical Topics in Contact lenses	1	1	
8392, Clinical Topics in Binocular Vision and Pediatric Optometry	1	1	
8393, Clinical Topics in Low Vision	1	1	
8560, Public Health	2	2	

### Third Year

#### Summer Semester

Semester	Credit Hours	Lecture	Lab
8450, Introduction to Primary Care Clinic	4		8

8460, Foundations of Ocular and Systemic Disease and Management II	2	2	
8540, Binocular Vision Anomalies	4	3	2
8650, Geriatric Optometry	2	2	

## Fall Semester

Semester	Credit Hours	Lecture	Lab
8470, Pharmaceutical Management in Patient Care	2	2	
8500, Primary Care Clinic I	6		12
8520, Contact Lenses I	3	2	2
8550, Low Vision	2	1	2
8570, Advanced Topics in Ocular and Systemic Disease & Management	6	5	2
8640, Pediatric Optometry	2	2	

## Spring Semester

Semester	Credit Hours	Lecture	Lab
8600, Primary Care Clinic II	6		12
8620, Contact Lenses II	2	2	
8630, Practice Management I	3	3	
8645, Neurologic Disorders of the Eye and Visual System	2	2	
8660, Contact Lens Specialty Clinic	1		2
8670, Comprehensive Case Review and Analysis	1	1	
8680, Ophthalmic Lasers	2	2	
8690, Pediatric/Binocular Vision Specialty Clinic	1		2

## Fourth Year

Six clinical rotations and 2 courses are required.

**Category 1 UMSL** Must enroll in OPTOM 8700, OPTOM 8710, and OPTOM 8720 concurrently

OPTOM 8700	UM-St. Louis Pediatric/Binocular Vision Patient Care	3
OPTOM 8710	UM-St. Louis Contact Lens Patient Care	3
OPTOM 8720	UMSL Eye Health Management Patient Care	1

### Category 2 Institutional

OPTOM 8780	External Rotation in Institutional Patient Care	7
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### Category 3 Ocular Disease

OPTOM 8790	External Rotation in Ocular Disease Patient Care	7
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### Category 4 Community

OPTOM 8730	Community Service Patient Care Rotation A	7
OPTOM 8770	Community Service Patient Care Rotation C	7

### Category 5 Specialty

OPTOM 8800	External Rotation in Pediatric/Binocular Vision Patient Care	7
OPTOM 8810	External Rotation in Contact Lens Patient Care	7
OPTOM 8811	External Rotation in Ophthalmic Surgical Patient Care	7
OPTOM 8812	External Rotation in Geriatric Patient Care	7
OPTOM 8813	External Rotation in Ophthalmic Sports Vision	7
OPTOM 8814	External Rotation in Primary Care	7
OPTOM 8815	External Rotation in Pathology and Treatment	7
OPTOM 8816	External Rotation in Ophthalmic Laser Treatment	7
OPTOM 8817	External Rotation in Rehabilitative Patient Care	7
OPTOM 8820	External Rotation in Low Vision Patient Care	7

### Category 6 Elective

OPTOM 8830	External Rotation in General Patient Care	7
OPTOM 8840	External Supplementary Rotation In General Patient Care	7
OPTOM 8850	Supplementary Rotation in General Patient Care	7

**Required Courses**

OPTOM 8870	Practice Management IV	2
OPTOM 8880	Clinic Seminar	1

Due to advances in the optometric profession, sequencing of courses may change. The courses listed above are subject to change through normal academic procedures.

**Elective Courses in the College of Optometry**

OPTOM 8400	Directed Readings	1-3
OPTOM 8410	Directed Research	1-3

**First Year****Fall Semester**

Semester	Credit Hours	Lecture	Lab
8010 Anatomy, Physiology and Disease Processes I	5	4	2
8020 Basic and Clinical Optics I	4	3	2
8030 Introduction to Optometry	1	1	
8040 Neuroanatomy	4	3	2
8050 Basic and Applied Immunology	2	2	
8060 Biochemistry	2	2	
8090 Case-Based Discovery for the Developing Clinician	1	1	
8080 Clinical Optometry I	2	1	2

**Spring Semester**

Semester	Credit Hours	Lecture	Lab
8110 Anatomy, Physiology and Disease Processes II	4	3	2
8120 Basic and Clinical Optics II	5	4	2
8160 Anatomy and Physiology of the Eye	5	4	2
8180 Clinical Optometry II	5	3	4
8190 Introduction to Clinical Diagnostic Reasoning	1	1	

8230 Interpersonal Communication	1	1	
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**Second Year****Fall Semester**

Semester	Credit Hours	Lecture	Lab
8220 Ophthalmic Optics	4	3	2
8240 Ocular Motility	2	2	
8250 Monocular Sensory Processes	5	4	2
8260 General and Ocular Pharmacology	4	3	2
8280 Clinical Optometry III	4	2	4

**Spring Semester**

Semester	Credit Hours	Lecture	Lab
8320 Ophthalmic Dispensing	1		2
8340 Binocular Vision and Space Perception	4	3	2
8370 Foundations of Ocular and Systemic Disease and Management I	5	4	2
8380 Clinical Optometry IV	2	1	2
8390 Specialty Clinic Laboratory	1		2
8391 Clinical Topics in Contact lenses	1	1	
8392 Clinical Topics in Binocular Vision and Pediatric Optometry	1	1	
8393 Clinical Topics in Low Vision	1	1	
8560 Public Health and Epidemiology	2	2	

## Third Year

### Summer Semester

Semester	Credit Hours	Lecture	Lab
8460 Foundations 2 of Ocular and Systemic Disease and Management II		2	
8540 Binocular Vision Anomalies	4	3	2
8650 Geriatric Optometry	2	2	
8450 Introduction to Primary Care Clinic	4		8

### Fall Semester

Semester	Credit Hours	Lecture	Lab
8470 Pharmaceutical Management in Patient Care	2	2	
8500 Primary Care Clinic I	6		12
8520 Contact Lenses I	3	2	2
8550 Low Vision	2	1	2
8570 Advanced Topics in Ocular and Systemic Disease & Management	6	5	2
8640 Pediatric Optometry	2	2	

### Spring Semester

Semester	Credit Hours	Lecture	Lab
8600 Primary Care Clinic II	6		12
8620 Contact Lenses II	2	2	
8630 Practice Management I	3	3	
8645 Neurologic Diseases	2	2	
8660 Contact Lens Specialty Clinic	1		2
8670 Comprehensive Case Review and Analysis	1	1	
8680 Ophthalmic Lasers	2	2	

8690 Pediatric/Binocular Vision Specialty Clinic	1	2
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## Fourth Year

six clinical rotation and 2 courses required

### Category 1 UM-St. Louis <sup>1</sup>

OPTOM 8700	UM-St. Louis Pediatric/Binocular Vision Patient Care	3
OPTOM 8710	UM-St. Louis Contact Lens Patient Care	3
OPTOM 8720	UMSL Eye Health Management Patient Care	1

<sup>1</sup> Must enroll in OPTOM 8700, OPTOM 8710 and OPTOM 8720 concurrently.

### Category 2 Institutional

OPTOM 8780	External Rotation in Institutional Patient Care	7
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### Category 3 Ocular Disease

OPTOM 8790	External Rotation in Ocular Disease Patient Care	7
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### Category 4 Community

OPTOM 8730	Community Service Patient Care Rotation A	7
OPTOM 8770	Community Service Patient Care Rotation C	7

### Category 5 Specialty

OPTOM 8800	External Rotation in Pediatric/Binocular Vision Patient Care	7
OPTOM 8810	External Rotation in Contact Lens Patient Care	7
OPTOM 8811	External Rotation in Ophthalmic Surgical Patient Care	7
OPTOM 8812	External Rotation in Geriatric Patient Care	7
OPTOM 8813	External Rotation in Ophthalmic Sports Vision	7
OPTOM 8814	External Rotation in Primary Care	7
OPTOM 8815	External Rotation in Pathology and Treatment	7
OPTOM 8816	External Rotation in Ophthalmic Laser Treatment	7
OPTOM 8817	External Rotation in Rehabilitative Patient Care	7
OPTOM 8820	External Rotation in Low Vision Patient Care	7

### Category 6 Elective

OPTOM 8830	External Rotation in General Patient Care	7
OPTOM 8840	External Supplementary Rotation in General Patient Care	7



OPTOM 8850	Supplementary Rotation in General Patient Care	7
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**Required Courses**

OPTOM 8870	Practice Management IV	2
OPTOM 8880	Clinic Seminar	1

Due to advances in the optometric profession, sequencing of courses may change. The courses listed above are subject to change through normal academic procedures.

**Elective Courses in the College of Optometry**

OPTOM 8400	Directed Readings	1-3
OPTOM 8410	Directed Research	1-3

**First Year****Fall Semester**

Semester	Credit Hours	Lecture	Lab
8010 Anatomy, Physiology and Disease Processes I	5	4	2
8020 Basic and Clinical Optics I	4	3	2
8030 Introduction to Optometry	1	1	
8040 Neuroanatomy	4	3	2
8050 Basic and Applied Immunology	2	2	
8060 Biochemistry	2	2	
8090 Case-Based 1 Discovery for the Developing Clinician	1	1	
8080 Clinical Optometry I	2	1	2

**Spring Semester**

Semester	Credit Hours	Lecture	Lab
8110 Anatomy, Physiology and Disease Processes II	4	3	2
8120 Basic and Clinical Optics II	5	4	2
8160 Anatomy and Physiology of the Eye	5	4	2
8180 Clinical Optometry II	5	3	4
8190 Introduction to Clinical Diagnostic Reasoning	1	1	

8230 Interpersonal Communication	1	1	
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**Second Year****Fall Semester**

Semester	Credit Hours	Lecture	Lab
8220 Ophthalmic Optics	4	3	2
8240 Ocular Motility	2	2	
8250 Monocular Sensory Processes	5	4	2
8260 General and Ocular Pharmacology	4	3	2
8280 Clinical Optometry III	4	2	4

**Spring Semester**

Semester	Credit Hours	Lecture	Lab
8320 Ophthalmic Dispensing	1		2
8340 Binocular Vision and Space Perception	4	3	2
8370 Foundations of Ocular and Systemic Disease and Management I	5	4	2
8380 Clinical Optometry IV	2	1	2
8390 Specialty Clinic Laboratory	1		2
8391 Clinical Topics in Contact lenses	1	1	
8392 Clinical Topics in Binocular Vision and Pediatric Optometry	1	1	
8393 Clinical Topics in Low Vision	1	1	
8560 Public Health and Epidemiology	2	2	

## Third Year

### Summer Semester

Semester	Credit Hours	Lecture	Lab
8460 Foundations 2 of Ocular and Systemic Disease and Management II		2	
8540 Binocular Vision Anomalies	4	3	2
8650 Geriatric Optometry	2	2	
8450 Introduction to Primary Care Clinic	4		8

### Fall Semester

Semester	Credit Hours	Lecture	Lab
8470 Pharmaceutical Management in Patient Care	2	2	
8500 Primary Care Clinic I	6		12
8520 Contact Lenses I	3	2	2
8550 Low Vision	2	1	2
8570 Advanced Topics in Ocular and Systemic Disease & Management	6	5	2
8640 Pediatric Optometry	2	2	

### Spring Semester

Semester	Credit Hours	Lecture	Lab
8600 Primary Care Clinic II	6		12
8620 Contact Lenses II	2	2	
8630 Practice Management I	3	3	
8645 Neurologic Diseases	2	2	
8660 Contact Lens Specialty Clinic	1		2
8670 Comprehensive Case Review and Analysis	1	1	
8680 Ophthalmic Lasers	2	2	

8690 Pediatric/Binocular Vision Specialty Clinic	1	2
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## Fourth Year

six clinical rotation and 2 courses required

### Category 1 UM-St. Louis <sup>1</sup>

OPTOM 8700	UM-St. Louis Pediatric/Binocular Vision Patient Care	3
OPTOM 8710	UM-St. Louis Contact Lens Patient Care	3
OPTOM 8720	UMSL Eye Health Management Patient Care	1

<sup>1</sup> Must enroll in OPTOM 8700, OPTOM 8710 and OPTOM 8720 concurrently.

### Category 2 Institutional

OPTOM 8780	External Rotation in Institutional Patient Care	7
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### Category 3 Ocular Disease

OPTOM 8790	External Rotation in Ocular Disease Patient Care	7
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### Category 4 Community

OPTOM 8730	Community Service Patient Care Rotation A	7
OPTOM 8770	Community Service Patient Care Rotation C	7

### Category 5 Specialty

OPTOM 8800	External Rotation in Pediatric/Binocular Vision Patient Care	7
OPTOM 8810	External Rotation in Contact Lens Patient Care	7
OPTOM 8811	External Rotation in Ophthalmic Surgical Patient Care	7
OPTOM 8812	External Rotation in Geriatric Patient Care	7
OPTOM 8813	External Rotation in Ophthalmic Sports Vision	7
OPTOM 8814	External Rotation in Primary Care	7
OPTOM 8815	External Rotation in Pathology and Treatment	7
OPTOM 8816	External Rotation in Ophthalmic Laser Treatment	7
OPTOM 8817	External Rotation in Rehabilitative Patient Care	7
OPTOM 8820	External Rotation in Low Vision Patient Care	7

### Category 6 Elective

OPTOM 8830	External Rotation in General Patient Care	7
OPTOM 8840	External Supplementary Rotation in General Patient Care	7

OPTOM 8850	Supplementary Rotation in General Patient Care	7
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**Required Courses**

OPTOM 8870	Practice Management IV	2
OPTOM 8880	Clinic Seminar	1

Due to advances in the optometric profession, sequencing of courses may change. The courses listed above are subject to change through normal academic procedures.

**Elective Courses in the College of Optometry**

OPTOM 8400	Directed Readings	1-3
OPTOM 8410	Directed Research	1-3

## Organizational Leadership BA

The Organizational Leadership major is designed to provide adult students with the knowledge, skills, and credentials necessary to advance in a rapidly changing workplace. This program will help students understand theoretical and practical aspects of leadership across disciplines, while allowing them to focus on a specific *Area of Concentration* that interests them.

This program is most appropriate for students who have completed at least 40 transferable credit hours at the undergraduate level or have been awarded an A.A. or A.S. degree (or A.A.S. degree with a general education emphasis).

### General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). The foreign language requirement for a B.A. must also be satisfied.

**Core Courses**

INTDSC 2001		
INTDSC 2001	Introduction to Organizational Leadership	3
SOC 1010	Introduction to Sociology (MOTR SOCI 101)	3
COMM 2231	Communication in the Organization	3
COMM 2235	Professional Communication	3
COMM 2235	Professional Communications	3
ENGL 3100	Junior-Level Writing	3
or ENGL 3120	Business Writing	
or ENGL 3130	Technical Writing	
INFSYS 1800	Computers and Information Systems	3
MGMT 3600	Management and Organizational Behavior	3
PHIL 1160	Critical Thinking (MOTR PHIL 101)	3
PHIL 2254	Business Ethics	3
INTSDC 4001		
INTDSC 4001	Organizational Leadership Capstone Course	3
Total Hours		33

Students Seeking a B.A. in Organizational Leadership must complete one of the following areas of concentration:

- A. Business Management
- B. Community Studies
- C. Corporate Communication
- D. Criminal Justice
- E. Health Communication
- F. Information Systems
- G. Supply Chain Management

### Business Management

MGMT 3611	Advanced Management and Organizational Behavior	3
MGMT 3612	Professional Skills Development	3
MGMT 3625	Leadership in Organization	3
Total Hours		9

### Community Studies

SOC 1040	Social Problems	3
SOC 2302		
SOC 2302	The City	3
SOC 2160	Social Psychology	3
Total Hours		9

### Corporate Communication

COMM 1150	Introduction to Public Relations	3
COMM 3150	Crisis, Disaster, and Risk Communication	3
COMM 3370	Social Media in Public Relations	3
Total Hours		9

### Criminal Justice

CRIMIN 1100	Introduction to Criminology and Criminal Justice	3
CRIMIN 2240	Policing	3
CRIMIN 2250	Courts	3
Total Hours		9

### Health Communication

COMM 1369	Introduction to Health Communication	3
COMM 1369	Introduction to Health Communication	3
COMM 3150	Crisis, Disaster, and Risk Communication	3
COMM 3368	Advanced Health Communication	3
COMM 3368	Advanced Health Communication	3
Total Hours		15

### Information Systems

INFSYS 2800	Information Systems Concepts and Applications	3
INFSYS 3841	Enterprise Information Systems	3
INFSYS 3842	Data Networks and Security	3
Total Hours		9

## Supply Chain Management <sup>1</sup>

SCMA 3300	Business Analytics and Statistics	3
SCMA 3301	Introduction to Supply Chain Management	3
SCMA 3320	Advanced Supply Chain and Operations Management	3
Total Hours		9

<sup>1</sup> These courses carry a prerequisite of MATH 1105 or higher.

Individual courses may be substituted with the approval of the program adviser.

Each concentration area is designed such that the completion of 2-3 additional elective courses could lead to the completion of a minor or certificate in that field.

Additional areas of concentration (9-hour course sequence) can be designed to suit an individual student's personal or professional needs. These concentrations must be approved by the program adviser.

All required courses for the major must be completed with a grade of C- or better. Courses counting toward the major requirements may not be taken on a satisfactory/unsatisfactory basis. The minimum number of hours required for the B.A. degree is 39 (30 core, 9 concentration).

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Articulate a personal leadership style and evaluate her/his own performance for self-improvement
- Demonstrate an understanding of organizational leadership theory as it relates to individuals, communities and wider societies
- Communicate effectively with a variety of audiences in written, oral and non-verbal mediums
- Demonstrate critical thinking and problem solving abilities regarding organizational challenges within the chosen area of concentration
- Use tools specific to the area of concentration to manage systems and organizational resources
- Demonstrate an understanding of the ethical principles underlying effective organizational leadership
- Lead teams in the development of innovative solutions to organizational challenges and opportunities within the chosen area of concentration

## Philosophy BA

Philosophy is about hard questions: Are we free? Is there a God? What is knowledge? What should I do with my life? In addressing these questions, philosophy develops your skills in thinking, analysis, writing, argumentation and critical reading. Studying philosophy makes you more open-minded: you'll encounter the ideas of people that have lived lives very different from yours, and you'll be impressed by them. Philosophy is enormously interesting and rewarding. If anyone ever asks you "why study philosophy" you'll answer "why haven't you started yet?"

The undergraduate major in philosophy requires 30 hours of philosophy coursework. Candidates for the B.A. degree may take any foreign language to meet the foreign language requirement. Students who double major with a B.A. in Philosophy and a B.S. degree in Biology, Biochemistry and Biotechnology, Chemistry, Computer Science, Mathematics, or

Physics may waive the foreign language requirement. A minimum of 18 hours in Philosophy must be taken from the UMSL Department of Philosophy. Courses above the 3000-level taken elsewhere do not count toward the major. Philosophy majors must complete all required courses (under Course Requirements) with a grade of "C-" or higher and maintain a 2.0 GPA for all their Philosophy coursework.

### General Education Requirements

Majors must meet the university and college general education requirements. Candidates for the B.A. degree may take any foreign language to meet the foreign language requirement. Students who double major with a B.A. in Philosophy and a B.S. degree in Biology, Biochemistry and Biotechnology, Chemistry, Computer Science, Mathematics, or Physics may waive the foreign language requirement.

## Course Requirements

### History of Philosophy

Select one of the following: 3

PHIL 1110	Western Philosophy I: Antiquity to the Renaissance
PHIL 3301	Ancient Philosophy
PHIL 3302	Medieval Philosophy

And one of the following: 3

PHIL 1111	Western Philosophy II: Descartes to the Present
PHIL 3303	Early Modern Philosophy
PHIL 3304	19th and 20th Century Philosophy

### Logic

Select one of the following: 3

PHIL 1160	Critical Thinking (MOTR PHIL 101)
PHIL 3360	Formal Logic

### Normative Philosophy

Select one of the following: 3

PHIL 1030	Present Moral Problems
PHIL 1130	Approaches to Ethics (MOTR PHIL 102)
PHIL 4430	Social and Political Philosophy
PHIL 4435	Classical Ethical Theory
PHIL 4438	Recent Ethical Theory

### Junior Level Requirement

Select one of the following: 3

Any 3000 level Philosophy course not used to satisfy a requirement above, excluding PHIL 3320

### Metaphysics and Epistemology Requirement

Select one of the following: 3

PHIL 3340	Knowledge and Reality
PHIL 4440	Theories of Knowledge
PHIL 4445	Metaphysics

### Senior Capstone Requirement

Select any 4000 level Philosophy course, excluding PHIL 4458 and PHIL 4465, that has not been used to satisfy a requirement above

Elective Hours		9
Total Hours		30



## Departmental Honors

Majors with a 3.2 or higher grade point average in all courses may, with the department's consent, earn departmental honors by:

1. Taking , Introduction to Formal Logic;
2. Completing at least 3 hours of PHIL 4450, Special Readings in Philosophy;
3. Submitting an acceptable thesis before the end of the senior year.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Recall a broad range of philosophers and philosophies in both western and non-western traditions and understand their interrelations and historical significance
- Demonstrate an ability to read and engage critically with historical and contemporary philosophical texts
- Demonstrate an ability to apply the distinctive methods of philosophy by reconstructing philosophical arguments and deliberating rationally over their merits
- Understand fundamental moral theories and demonstrate an ability to apply them to ethical problems and practical pursuits
- Demonstrate competence with formal reasoning tools such as syllogistic logic, propositional logic, quantificational logic, or probability theory and show an ability to apply those to tools in philosophical and everyday contexts
- Apply philosophical concepts, analytical skills, and critical thinking to disciplines and issues outside of philosophy
- Create and defend their own philosophical views, both by writing in a clear and persuasive style and in oral discussion with other students, faculty and members of the community
- Apply research skills, including an ability to work with primary and secondary literature, in writing argumentative philosophical papers in a chosen area of advanced study

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003		1 PHIL 1111	3
PHIL 1110		3 Foreign Language 1002	5
ENGL 1100		3 CORE – Communication Proficiency	3
CORE - Mathematics Proficiency		3 EXPLORE – Social Sciences	3
Foreign Language 1001		5 EXPLORE – Mathematics and Life/ Natural Sciences	3
	15		17

### Second Year

Fall	Hours	Spring	Hours
PHIL 1030		3 PHIL 1160	3
Foreign Language 2101		3 EXPLORE – Social Sciences	3
CORE – Information Literacy		3 EXPLORE – Math and Like/Natural Sciences	3
CORE – US History and Government		3 Cultural Diversity Requirement	3
EXPLORE – Mathematics & Natural/ Like Sciences		3 Elective or minor	3
	15		15

### Third Year

Fall	Hours	Spring	Hours
PHIL 3378 or 3380		3 PHIL 4440 or 4445	3
PHIL XXXX Philosophy Elective		3 PHIL XXXX Philosophy Elective	3

ENGL 3100	3 Elective or minor	3
EXPLORE – Social Sciences	3 Elective or minor	3
Elective or minor	3 Elective or minor	3
	15	15

### Fourth Year

Fall	Hours	Spring	Hours
PHIL XXXX Philosophy Elective		3 PHIL XXXX: Philosophy Capstone	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	1
	15		13

Total Hours: 120

## Philosophy BA/MA Dual Degree Program

### Requirements

The Combined B.A./M.A. Program in Philosophy provides an opportunity for students of recognized academic ability and educational maturity to fulfill integrated requirements of undergraduate and master's degree programs in three years from the beginning of their junior year. When all the requirements of the B.A./M.A. program have been completed, students will be awarded both the B.A. and M.A. degrees. With a carefully designed program, a student can earn both degrees within as few as ten semesters.

The Combined Program requires a minimum of 138 university credit hours, of which at least 30 must be at the upper division level course numbers in the 4000-5999 range (excluding PHIL 5495). In qualifying for the B.A., students must meet all university and college requirements, including all the requirements of the regular undergraduate major in philosophy described above. Students will normally take PHIL 3360: Formal Logic and two courses in the 3301-3307: History of Philosophy sequence in their junior years, along with electives. Any courses still needed to satisfy college foreign language and expository writing requirements would also be taken during this year. The Senior Capstone Requirement and more specialized courses are taken in the senior year. In the fifth year, students take advanced electives and such required courses as are needed to fulfill remaining university, Graduate School, and departmental requirements for the M.A. This includes satisfactory completion of 30 graduate credit hours, at least 18 of which must be in courses numbered above 5000 and among which must be at least three in each of the four subject areas listed for the regular M.A. program, and one of which must be PHIL 5400: Proseminar in Philosophy. Up to 12 graduate credit hours may be applied simultaneously to both the B.A. and M.A. requirements. In addition to the above coursework, students must also write a thesis, in which case at least three hours must be taken in PHIL 5495. Students should apply to the Graduate Committee for admission to the Combined B.A./M.A. Program in Philosophy the semester they will complete sixty undergraduate credit hours or as soon thereafter as possible. It is also recommended that students complete the foreign language requirement and the junior-level writing requirement before applying. A cumulative grade point average of 3.0 or higher and three letters of recommendation from faculty are required for consideration.

Students should apply to the Graduate Committee for admission to the Combined B.A./M.A. Program in Philosophy the semester they will complete sixty undergraduate credit hours or as soon thereafter as possible. It is also recommended that students complete the foreign language requirement and the junior-level writing requirement before

applying. A cumulative grade point average of 3.0 or higher and three letters of recommendation from faculty are required for consideration.

Students will be admitted to the Combined Program under provisional status until they have completed fifteen credit hours in it with a grade point average of 3.0 or higher. After the completion of the provisional period, and with the recommendation of the Graduate Committee, students can be granted full admission into the program. Students must maintain a grade point average of 3.0 or higher throughout the Combined Program. Students who officially withdraw from the Combined Program who have successfully completed all the requirements for the B.A. degrees will be awarded the B.A. degree.

## Philosophy Requirements for Students in the 2+3 Program

- To be taken in the junior year (after 60 credits completed):  
Select four courses (12 credit hours) from the following:
  - PHIL 3360: Formal Logic
  - Two courses in the History of Philosophy, each at the 2000 level or above.
  - One additional Philosophy course, at the 2000 level or above.
- To be taken in the senior year (after 90 credits completed):
 

PHIL 4445	Metaphysics	3
or PHIL 4440	Theories of Knowledge	
Two History courses, each at the upper division		6
One course from the PHIL 4470-PHIL 4487 sequence		3
Select one of the following:		3
PHIL 4430	Social and Political Philosophy	
PHIL 4435	Classical Ethical Theory	
PHIL 4438	Recent Ethical Theory	
Total Hours		15
- Graduate level courses to be taken in the final year of the program (after 90+ credits completed):  
Six courses (18 credit hours)
  - At least five of these courses must be at or above the 5000 level.
  - Courses must be selected so that the student has taken at least one and preferably two courses from each of the four subject areas in the course of completing the 2 + 3 program:
    - Value Theory
    - History of Philosophy
    - Logic/Philosophy of Science
    - Epistemology/Metaphysics
  - PHIL 5400: Proseminar in Philosophy

## Philosophy MA

To earn a M.A. in philosophy, students must complete at least 30 hours of graduate-level course work. In addition, students must write a thesis, for which they must take three to six credit hours of Thesis Research. Entering students must demonstrate a competence in logic, either by having passed the relevant course prior to admission or by taking PHIL 5561: Graduate Formal Logic here at UMSL. Students should take PHIL 5400: Proseminar in Philosophy in the first year of residency. At least two-thirds of the course work must be completed in residence at UMSL. In addition, the courses taken are subject to two distribution requirements:

- At least half of the courses must be at the 5000 level.
- Two courses (6 credit hours) must be chosen from each of the following four subject areas:
  - Value Theory
  - History of Philosophy
  - Logic/Philosophy of Science
  - Epistemology/Metaphysics

## Cooperative arrangement with Saint Louis University

The strengths of the UMSL Department of Philosophy are complemented by those of the Saint Louis University Philosophy Department, which has strengths in the history of philosophy as well as in philosophy of religion. To enhance students' opportunities for instruction and expertise, the two departments have worked out a cooperative arrangement that permits graduate philosophy students on each campus to take up to four courses at the partner institution. In any given semester, UMSL graduate students must take at least half of their courses at their home institution. Students admitted to the M.A. program on a probationary basis must take all their courses at UMSL during their first semester.

## Expected Learning Outcomes

- Acquire advanced knowledge of traditional philosophical issues in the western tradition.
- Develop critical thinking skills based on knowledge of the standards governing logical reasoning.
- Acquire familiarity with philosophical issues that arise in some other disciplines (e.g. biology, art, education, etc.).
- Acquire a basic understanding of ethical principles and their role in resolving ethical disputes.
- Acquire the knowledge and skills required to write a paper identifying a philosophical issue and presenting arguments supporting a thesis for resolving it.

## Philosophy Minor

### Requirements

The undergraduate minor in philosophy requires any five philosophy courses, at least three of which must be taken at the 3000 level or higher. Students with particular interests are encouraged to use the tracks above to organize their minor. At least 6 hours of course work for the minor at the 2000 level or higher must be taken in residence in the UMSL Department of Philosophy.

A GPA of 2.0 or better is required in courses presented for the minor. Prospective minors are encouraged to consult with members of the department for advice in planning an appropriate sequence of courses.

### Learning Outcomes

An ideal graduate with a Minor in Philosophy will:

- Be familiar with a range of philosophers and philosophies and understand their interrelations and historical significance.
- Demonstrate an ability to read and engage critically with historical and contemporary philosophical texts
- Demonstrate an ability to apply the distinctive methods of philosophy by reconstructing philosophical arguments and deliberating rationally over their merits

- Apply conceptual understanding and critical thinking in writing argumentative essay in a clear and persuasive style in some chosen area of advanced study

## Philosophy of Science and Technology Minor

The Minor in Philosophy of Science and Technology (PST) is an interdisciplinary program requiring a minimum of 18 credits in PST.

All required courses must be completed with a "C" or higher. The satisfactory/unsatisfactory option may not be used. No transfer courses may be used towards the PST Minor. A minimum of 12 hours must be taken at 2000 and above with 9 of those hours being at 3000 or above. Courses in the upper division may satisfy requirements for the student's major, consistently with the major's requirements.

### Requirements

#### Math

Select one of the following courses in either statistics or calculus: 3

BIOL 4122	Biometry
ECON 3100	Economic Data and Statistics
MATH 1320	Introduction to Probability and Statistics
MATH 1800	Analytic Geometry and Calculus I
PSYCH 2201	Psychological Statistics
SOC 3220	Quantitative Data Analysis in Social Science Research

#### Logic and Methodology

Select one of the following courses in either logic or methodology: 3-4

ANTHRO 4310	Laboratory Methods in Archaeology
HIST 3199	Introduction to Historical Inquiry
PHIL 3360	Formal Logic
PHIL 4460	Advanced Formal Logic
PSYCH 2219	Research Methods in Psychological Science
SOC 3230	Research Methods

#### Philosophy

PHIL 3380 Philosophy of Science 3

Select one of the following in the philosophy of science and technology: 3

PHIL 2280	Minds, Brains, and Machines
PHIL 3380	Philosophy of Science
PHIL 4452	Feminism And Science
PHIL 4479	Philosophy of Cognitive Science
PHIL 4480	Topics in Philosophy of Science
PHIL 4482	Philosophy Of Social Science
PHIL 4483	Topics In History And Philosophy Of Science

#### Science

Select 6 credit in the mathematical, physical, life, behavioral, or social sciences. <sup>1</sup> 6

Total Hours 18-19

<sup>1</sup> The science courses must be in addition to those satisfying the Gen Ed requirements and conditional upon their acceptance by the PST undergraduate advisor.

### Prerequisites

Some courses required by the Minor in PST have prerequisites. Some students may satisfy prerequisites by virtue of their prior curriculum. When this is not the case, students are responsible for either satisfying the prerequisites by adding courses to their curriculum or obtaining a waiver from the instructor.

## Physical Education BSEd PK-12 Emphasis

Through this degree teacher candidates are prepared to effectively teach health and physical education in K-12 settings. The requirements are listed below.

### Degree Requirements

B.S.Ed. degree candidates must complete the following General Education courses required by the College of Education and the Missouri Department of Elementary and Secondary Education.

### General Education and University Requirements:

#### CORE AREAS:

##### First Year Writing

ENGL 1100	First-Year Writing (MOTR ENGL 200)
or HIST 1111	Reacting to the Past

##### Math Proficiency (requirement varies by program)

MATH 1030	College Algebra (MOTR MATH 130)
or MATH 1020	Contemporary Mathematics (MOTR MATH 120)
or MATH 1021	Choice and Chance
or MATH 1025	Geometry in the Real World
or MATH 1045	PreCalculus (MOTR MATH 150)

##### Communication Proficiency

EDUC 2222	Interpretation: Connecting Audiences and Meaning
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)

##### Information Literacy

ED TECH 2230	Information Literacy
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##### American History or Government

HIST 1001	American Civilization to 1865 (MOTR HIST 101)
or HIST 1002	American Civilization 1865 to Present (MOTR HIST 102)

#### EXPLORE AREAS:

##### Humanities and Fine Arts

Three courses from two of the following fields: art, foreign language, music (excluding applied music), philosophy, theater, dance, and literature.

##### Social Science

ED PSY 2212	Child and Adolescent Development
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)
One additional 1000-2000 level course in Social Science Explore Area	
Math and Life/Natural Sciences	
BIOL 1012	General Biology (MOTR BIOL 100)
PHYSICS 1001	How Things Work (MOTR PHYS 100)
One additional 1000-2000 level course in Math and Life/Natural Sciences Explore Area	
<b>ADDITIONAL UNIVERSITY REQUIREMENT</b>	
ENGL 3100	Junior-Level Writing

## Program Requirements

Beginning with those students graduating in May, 2017 and receiving teacher certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

Professional Education courses must be completed with a grade of C or better (a grade of C- or below is unacceptable).

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

B.S.Ed. and B.A. degrees with certification candidates must complete the following:

### Introduction to Education

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1

### Level I: Exploring Education as a Profession

TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2

HLTH PE 3277	Foundations of Health and Physical Education Programs	3
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HLTH PE 3280	Human Anatomy and Physiology	4
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### Level II: Analyzing the Nature and Process of Education

ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
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ED TECH 3135	Technology for Educators	1
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SPEC ED 3318	Inclusive Classrooms	3
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TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
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TCH ED 3310	Introduction to Methods of Teaching	3
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TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3
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HLTH PE 3275	Psychological Aspects of Physical Education	3
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HLTH PE 3284	Physiology of Human Exercise	3
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HLTH PE 3285	Safety and Emergency Care for Health & Physical Education	3
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HLTH PE 3380	Introduction to Nutrition for Health and Performance	3
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PHY ED 2134	Personal Physical Fitness	3
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PHY ED 3267	Performance Analysis In Physical Education	3
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PHY ED 3282	Physical Growth and Motor Development	3
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PHY ED 3283	Kinesiology	3
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9 hours can be taken concurrently with Level III courses:

HLTH PE 3434	Teaching of Health and Wellness	4
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PHY ED 3261	Physical Activity for Diverse Learners	3
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PHY ED 3468	Curriculum and Methods of Teaching Physical Education	3
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### Level III: Synthesizing Theory and Practice in Education

The following Health and Physical Education courses are required:

PHY ED 3422	Teaching of Skills: Grades PK-4	4
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PHY ED 3423	Teaching of Skills: Grades 5-9	3
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PHY ED 3424	Teaching of Skills: Grades 9-12	3
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PHY ED 3425	Teaching Skills: Movement, Dance, and Rhythms	3
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HLTH PE 4989	Practicum I: Site-Based Experience in Physical Education	3
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HLTH PE 4990	Practicum II: 12-Week Site-Based Experience in Health and Physical Education	9
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HLTH PE 4992	Practicum II: 4-Week Site-Based Experience in Health and Physical Education	3
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Total Hours		89
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Minimum 124 hours

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Design learning experiences appropriate for curriculum goals and relevant to learners based on principles of effective instruction.
- Demonstrate professional dispositions and culturally and linguistically responsive strategies to engage all learners, recognizing inequalities in educational opportunity.
- Construct a curriculum that demonstrates the knowledge and disposition to differentiate instruction and adapt instruction for diverse student needs including accommodations and/or modifications for student exceptionalities and specialized needs.
- Design instruction that integrates technology, and varied formative and summative assessment tools to inform practice.
- Critically examine professional practice through systematic, reflective inquiry that can improve learning opportunities for all students.
- Utilize character and citizenship education principles in decision-making and classroom management.
- Practice ethics of the profession of teaching to increase resilience through engaged dialogue with colleagues.



## Physics BA

Physicists investigate fundamental nature of the forces and particles, and the resultant states of matter, that make up the physical world. The Department of Physics and Astronomy at UMSL provides undergraduates with a broad-based education in the fundamental concepts of physics and the experimental and theoretical skills essential to practicing scientists. The BA degree offers students an opportunity to combine the rigorous study of physics with additional studies of languages and the liberal arts. This degree is an ideal preparation for a career that combines science with other fields, such as science journalism, science policy, or patent law.

### General Education Requirements

Majors must complete the university and college general education requirements (p. 51). Any of the following courses may be used to satisfy the physical science requirement:

ASTRON 1001	Cosmic Evolution Introductory Astronomy	3
ASTRON 1011	Planets and Life in the Universe	3
ASTRON 1012	The Violent Universe and the New Astronomy	3
ASTRON 1050	Introduction to Astronomy I (MOTR ASTR 100)	3
ASTRON 1051	Introduction to Astronomy II	3
ATM SCI 1001	Elementary Meteorology	3
GEOL 1001	General Geology	3
GEOL 1002	Historical Geology	3
PHYSICS 1001	How Things Work (MOTR PHYS 100)	3
PHYSICS 1011	Basic Physics I	3
PHYSICS 1011L	Basic Physics I Laboratory	1
PHYSICS 1012	Basic Physics II	3
PHYSICS 1012L	Basic Physics II Laboratory	1
PHYSICS 2111	Physics: Mechanics and Heat	4
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	4

### Declaring the Physics Major

Students seeking to major in physics are first designated as 'pre-physics majors' until they have completed both PHYSICS 2111 and PHYSICS 2112 or equivalent courses. Upon successful completion of PHYSICS 2111 and PHYSICS 2112 with grades of C- or better, students will be allowed to declare physics as their major. Each of these courses must be completed successfully within two attempts.

### Degree Requirements

All physics majors in all programs must complete the physics core curriculum with the exception that majors pursuing the Physics Education option are not required to take PHYSICS 1099 and CMP SCI 1250. In addition to the core courses, each individual program has its own specific requirements. Required Physics, Mathematics, Chemistry, Biology, and Computer Science courses for a major or minor in physics may not be taken on a satisfactory/unsatisfactory grading basis.

#### Core Curriculum

The following physics courses are required: 23

PHYSICS 1099	Windows on Physics	
PHYSICS 2111	Physics: Mechanics and Heat	
PHYSICS 2111L	Mechanics and Heat Laboratory	
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	
PHYSICS 2112L	Electricity, Magnetism, and Optics Laboratory	
PHYSICS 3200	Mathematical Methods of Theoretical Physics	
PHYSICS 3221	Mechanics	
PHYSICS 3223	Electricity and Magnetism	
PHYSICS 3231	Introduction to Modern Physics I	
Also required are:		26
MATH 1800	Analytic Geometry and Calculus I	
MATH 1900	Analytic Geometry and Calculus II	
MATH 2000	Analytic Geometry and Calculus III	
MATH 2020	Introduction to Differential Equations	
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	
CMP SCI 1250	Introduction to Computing	
Total Hours		49

Note: Students are urged to begin the calculus sequence [MATH 1800, Analytic Geometry and Calculus I] as soon as possible to avoid delays in graduation.

Students with experience in digital computer programming may be excused from CMP SCI 1250.

### Bachelor of Arts in Physics

The B.A. program is tailored to students wishing to preserve the option for specialization in graduate school without sacrificing the advantages of a liberal arts education. In addition to the core curriculum, including the foreign language requirement, at least three electives at the 3000 or 4000 levels must be completed. It is recommended that at least one of these three electives include ASTRON 4322, PHYSICS 4311, or PHYSICS 4347 for the required capstone course. The Department of Physics and Astronomy will accept the three-course sequence in American Sign Language as a substitution for the foreign language requirement for the degree. At least 31 hours of physics courses, but no more than 45 hours, are required.

### B.S. Ed. in Secondary Education with Emphasis in Physics

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Physics with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education.

*Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

### Program Purpose

The purpose of the B.A. in Physics program at the University of Missouri at St. Louis is to prepare students for a professional career and/or graduate or professional studies in a field that combines the physical sciences with aspects of the humanities or other professions, such as science advocacy, science policy, patent law, or science journalism.

### Learning Outcomes

- Students will be able to demonstrate an of basic physics concepts including classical mechanics, electricity and magnetism, and modern physics
- Students will demonstrate proficiency in a foreign language
- Students will be able to demonstrate an understanding several advanced undergraduate areas of physics/astronomy, such as observational astrophysics, biophysics, quantum mechanics, or experimental design
- Students will be skilled in problem-solving, critical thinking and analytical reasoning as applied to scientific problems
- Students will be proficient in both written and oral communication of the results of scientific work
- Students will have the skills necessary for conducting original scientific research as part of an interdisciplinary problem-solving team
- Students will have the skills necessary to identify possible errors in scientific data, and to assess the significance of observed results

### Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 CHEM 1111	5
PHYSICS 1099		1 MATH 1800	5
MATH 1030		3 Foreign Language 1002	5
MATH 1035		2	
Foreign Language 1001		5	
ENGL 1100		3	
		15	15
Second Year			
Fall	Hours	Spring	Hours
PHYSICS 2111		4 PHYSICS 2112	4
PHYSICS 2111L		1 PHYSICS 2112L	1
MATH 1900		5 MATH 2000	5

CMP SCI 1250	3 CORE - US History and Government	3
Foreign Language 2101	3 EXPLORE - Social Sciences	3
	16	16

#### Third Year

Fall	Hours	Spring	Hours
PHYSICS 3200		3 PHYSICS 3221	3
PHYSICS 3231		3 PHYSICS 3223	3
MATH 2020		3 ENGL 3160	3
CORE - Communication Proficiency		3 EXPLORE - Social Sciences	3
EXPLORE - Humanities and Fine Arts		3 Cultural Diversity Requirement	3
		15	15

#### Fourth Year

Fall	Hours	Spring	Hours
PHYSICS/ASTRON 3000+ Physics or Astronomy Elective elective		3 PHYSICS/ASTRON 3000+Physics or Astronomy lective	3
PHYSICS/ASTRON 3000+ Physics or Astronomy Elective elective		3 EXPLORE - Humanities and Fine Arts	3
EXPLORE - Social Sciences		3 Elective or minor	3
EXPLORE - Social Sciences		3 Elective or minor	3
Elective or minor		1-3 Elective or minor	3
		13-15	15

Total Hours: 120-122

- <sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Physics BS, Astrophysics Emphasis

The study of astrophysics aims to understand the universe and everything within it in terms of the fundamental nature of forces and particles. The Department of Physics and Astronomy at UMSL is devoted to providing undergraduates with a broad-based education in astrophysics with the experimental, observational, and theoretical skills essential to practicing astronomers and astrophysicists. Undergraduate education in astrophysics prepares students for both graduate study and professional careers in astronomy, atmospheric science, image processing, cosmology, and instrumentation.

### General Education Requirements

Majors must complete the university and college general education requirements (p. 51). Any of the following courses may be used to satisfy the physical science requirement:

ASTRON 1001	Cosmic Evolution Introductory Astronomy	3
ASTRON 1011	Planets and Life in the Universe	3
ASTRON 1012	The Violent Universe and the New Astronomy	3
ASTRON 1050	Introduction to Astronomy I (MOTR ASTR 100)	3
ASTRON 1051	Introduction to Astronomy II	3
ATM SCI 1001	Elementary Meteorology	3

GEOL 1001	General Geology	3
GEOL 1002	Historical Geology	3
PHYSICS 1001	How Things Work (MOTR PHYS 100)	3
PHYSICS 1011	Basic Physics I	3
PHYSICS 1011L	Basic Physics I Laboratory	1
PHYSICS 1012	Basic Physics II	3
PHYSICS 1012L	Basic Physics II Laboratory	1
PHYSICS 2111	Physics: Mechanics and Heat	4
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	4

## Declaring the Physics Major

Students seeking to major in physics are first designated as 'pre-physics majors' until they have completed both PHYSICS 2111 and PHYSICS 2112 or equivalent courses. Upon successful completion of PHYSICS 2111 and PHYSICS 2112 with grades of C- or better, students will be allowed to declare physics as their major. Each of these courses must be completed successfully within two attempts.

## Degree Requirements

All physics majors in all programs must complete the physics core curriculum with the exception that majors pursuing the Physics Education option are not required to take PHYSICS 1099 and CMP SCI 1250. In addition to the core courses, each individual program has its own specific requirements. Required Physics, Mathematics, Chemistry, Biology, and Computer Science courses for a major or minor in physics may not be taken on a satisfactory/unsatisfactory grading basis.

### Core Curriculum

The following physics courses are required:		23
PHYSICS 1099	Windows on Physics	
PHYSICS 2111	Physics: Mechanics and Heat	
PHYSICS 2111L	Mechanics and Heat Laboratory	
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	
PHYSICS 2112L	Electricity, Magnetism, and Optics Laboratory	
PHYSICS 3200	Mathematical Methods of Theoretical Physics	
PHYSICS 3221	Mechanics	
PHYSICS 3223	Electricity and Magnetism	
PHYSICS 3231	Introduction to Modern Physics I	
Also required are:		26
MATH 1800	Analytic Geometry and Calculus I	
MATH 1900	Analytic Geometry and Calculus II	
MATH 2000	Analytic Geometry and Calculus III	
MATH 2020	Introduction to Differential Equations	
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	
CMP SCI 1250	Introduction to Computing	
Total Hours		49

Note: Students are urged to begin the calculus sequence [MATH 1800, Analytic Geometry and Calculus I] as soon as possible to avoid delays in graduation.

Students with experience in digital computer programming may be excused from CMP SCI 1250.

## Astrophysics Option

Students who have interests in the aerospace sciences or anticipate graduate studies in astrophysics may elect this option. At least 48 hours must be taken. In addition to the core curriculum, the following physics courses are required:

### Physics

PHYSICS 4323	Modern Optics	3
PHYSICS 4331	Intro to Quantum Mechanics	3
PHYSICS 4341	Thermal and Statistical Physics	3
PHYSICS 4350	Computational Physics	3

### Astronomy

ASTRON 1050	Introduction to Astronomy I (MOTR ASTR 100)	3
ASTRON 1051	Introduction to Astronomy II	3
ASTRON 4301	Astrophysics	3
ASTRON 4322	Observational Astronomy	4
Select one physics elective at or above the 4000 level. <sup>1</sup>		3

### Mathematics

MATH 2450	Elementary Linear Algebra	3
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Total Hours		31
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<sup>1</sup> With consent of the astronomy adviser, there may be substitution of ASTRON 1001, ASTRON 1011 or ASTRON 1012 for ASTRON 1050 or ASTRON 1051.

## Program Purpose

The purpose of the B.S. in Physics (Astrophysics Option) program at the University of Missouri at St. Louis is to prepare students for a professional career in astrophysics or a related field, or for graduate studies in astrophysics.

## Learning Outcomes

- Students will be able to demonstrate an understanding of basic physics concepts including classical mechanics, electricity and magnetism, thermal and statistical physics, modern optics, and quantum mechanics
- Students will be able to demonstrate an understanding of basic principles and concepts of modern astrophysics and observational astronomy
- Students will be able to perform astronomical observations, reduce and critically interpret their data
- Students will be skilled in problem-solving, critical thinking and analytical reasoning as applied to scientific problems
- Students will be proficient in both written and oral communication of the results of scientific work
- Students will have the skills necessary for conducting original scientific research as part of a problem-solving team
- Students will have the skills necessary to identify possible errors in scientific data, and to assess the significance of observed results

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 ASTRON 1051	3
PHYSICS 1099		1 MATH 1800	5
CHEM 1111		5 CORE - US History and Government	3
MATH 1030		3 EXPLORE - Social Sciences	3
MATH 1035		2	
ENGL 1100		3	
	15		14

### Second Year

Fall	Hours	Spring	Hours
PHYSICS 2111		4 PHYSICS 2112	4
PHYSICS 2111L		1 PHYSICS 2112L	1
MATH 1900		5 MATH 2000	5
ASTRON 1050		3 MATH 2450	3
CMP SCI 1250		3 CORE - Communication Proficiency	3
	16		16

### Third Year

Fall	Hours	Spring	Hours
PHYSICS 3200		3 PHYSICS 3221	3
PHYSICS 3231		3 PHYSICS 3223	3
MATH 2020		3 PHYSICS 4341	3
EXPLORE - Humanities and Fine Arts		3 PHYSIC/ASTRON 4XXX Physics or Astronomy Course	3
Cultural Diversity Requirement		3 EXPLORE - Humanities & Fine Arts	3
	15		15

### Fourth Year

Fall	Hours	Spring	Hours
PHYSICS 4331		3 ASTRON 4301 or 4322	3
PHYSICS 4323		3 PHYSICS 4350	3
PHYSICS 4XXX Physics or Astronomy Course		3 EXPLORE - Humanities and Fine Arts	3
ENGL 3160		3 EXPLORE - Social Sciences	3
EXPLORE - Social Sciences		3 Elective or minor	2
	15		14

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Physics BS, Biophysics Emphasis

The study of astrophysics aims to understand the universe and everything within it in terms of the fundamental nature of forces and particles. The Department of Physics and Astronomy at UMSL is devoted to providing undergraduates with a broad-based education in astrophysics with the experimental, observational, and theoretical skills essential to practicing astronomers and astrophysicists. Undergraduate education in astrophysics prepares students for both graduate study and professional careers in astronomy, atmospheric science, image processing, cosmology, and instrumentation.

## General Education Requirements

Majors must complete the university and college general education requirements (p. 51). Any of the following courses may be used to satisfy the physical science requirement:

ASTRON 1001	Cosmic Evolution Introductory Astronomy	3
ASTRON 1011	Planets and Life in the Universe	3
ASTRON 1012	The Violent Universe and the New Astronomy	3
ASTRON 1050	Introduction to Astronomy I (MOTR ASTR 100)	3
ASTRON 1051	Introduction to Astronomy II	3
ATM SCI 1001	Elementary Meteorology	3
GEOL 1001	General Geology	3
GEOL 1002	Historical Geology	3
PHYSICS 1001	How Things Work (MOTR PHYS 100)	3
PHYSICS 1011	Basic Physics I	3
PHYSICS 1011L	Basic Physics I Laboratory	1
PHYSICS 1012	Basic Physics II	3
PHYSICS 1012L	Basic Physics II Laboratory	1
PHYSICS 2111	Physics: Mechanics and Heat	4
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	4

## Declaring the Physics Major

Students seeking to major in physics are first designated as 'pre-physics majors' until they have completed both PHYSICS 2111 and PHYSICS 2112 or equivalent courses. Upon successful completion of PHYSICS 2111 and PHYSICS 2112 with grades of C- or better, students will be allowed to declare physics as their major. Each of these courses must be completed successfully within two attempts.

## Degree Requirements

All physics majors in all programs must complete the physics core curriculum with the exception that majors pursuing the Physics Education option are not required to take PHYSICS 1099 and CMP SCI 1250. In addition to the core courses, each individual program has its own specific requirements. Required Physics, Mathematics, Chemistry, Biology, and Computer Science courses for a major or minor in physics may not be taken on a satisfactory/unsatisfactory grading basis.

### Core Curriculum

The following physics courses are required:		23
PHYSICS 1099	Windows on Physics	
PHYSICS 2111	Physics: Mechanics and Heat	
PHYSICS 2111L	Mechanics and Heat Laboratory	
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	
PHYSICS 2112L	Electricity, Magnetism, and Optics Laboratory	
PHYSICS 3200	Mathematical Methods of Theoretical Physics	
PHYSICS 3221	Mechanics	
PHYSICS 3223	Electricity and Magnetism	



PHYSICS 3231	Introduction to Modern Physics I	
Also required are:		26
MATH 1800	Analytic Geometry and Calculus I	
MATH 1900	Analytic Geometry and Calculus II	
MATH 2000	Analytic Geometry and Calculus III	
MATH 2020	Introduction to Differential Equations	
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	
CMP SCI 1250	Introduction to Computing	
Total Hours		49

Note: Students are urged to begin the calculus sequence [MATH 1800, Analytic Geometry and Calculus I] as soon as possible to avoid delays in graduation.

Students with experience in digital computer programming may be excused from CMP SCI 1250.

## Biophysics Option

This option is designed for students who are interested in careers in various medical fields or biophysics. This option provides a strong preparation in physics, mathematics, chemistry, and biology for students who intend to apply for admission to medical schools. At least 41 hours of physics and biology combined, but no more than 51, are required. In addition to the core curriculum, the following physics and biology courses are required:

### Physics

PHYSICS 4310	Modern Electronics	3
PHYSICS 4347	Introduction to Biophysics	4
Select two additional physics electives at the 4000 level.		6

### Biology

BIOL 1831	Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L)	5
BIOL 1821	Introductory Biology: Organisms and the Environment (MOTR BIOL 150L)	5
BIOL/CHEM 4712	Biochemistry	3
BIOL 4713	Techniques in Biochemistry	2

### Chemistry

CHEM 1121	Introductory Chemistry II	5
CHEM 2612	Organic Chemistry I	3
Total Hours		36

## Program Purpose

The purpose of the B.S. in Physics (Biophysics Emphasis) program at the University of Missouri at St. Louis is to prepare students for a professional career in biophysics, biological physics, or a related interdisciplinary field, for graduate studies in in biophysics, biological physics, or a related interdisciplinary field, for training as a medical physicist, or for professional training such as medical school.

## Learning Outcomes

- Students will be able to demonstrate a solid understanding of basic physics concepts including classical mechanics, electricity and magnetism, thermal and statistical physics, modern electronics, and quantum mechanics

- Students will have an understanding of basic biological concepts, from organ systems to biochemistry
- Students will have an understanding of the basic concepts of biophysics, and the various areas of interdisciplinary science where biophysics concepts and techniques are applicable
- Students will be skilled in problem-solving, critical thinking and analytical reasoning as applied to scientific problems
- Students will be proficient in both written and oral communication of the results of scientific work
- Students will have the skills necessary for conducting original scientific research as part of an interdisciplinary problem-solving team
- Students will have the skills necessary to identify possible errors in scientific data, and to assess the significance of observed results

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 CHEM 1121	5
PHYSICS 1099		1 MATH 1800	5
CHEM 1111		5 BIOL 1831	5
MATH 1030	3		
MATH 1035	2		
ENGL 1100	3		
	15		15

### Second Year

Fall	Hours	Spring	Hours
PHYSICS 2111		4 PHYSICS 2112	4
PHYSICS 2111L		1 PHYSICS 2111L	1
MATH 1900		5 MATH 2000	5
CMP SCI 1250		3 CHEM 2612	3
BIOL 1821		5 CORE - US History and Government	3
	18		16

### Third Year

Fall	Hours	Spring	Hours
PHYSICS 3200		3 PHYSICS 3221	3
PHYSICS 3231		3 PHYSICS 3223	3
MATH 2020		3 PHYSICS 4341	3
BIOL 4712 or CHEM 4712		3 BIOL 4713	2
CORE - Communication Proficiency		3 EXPLORE - Social Sciences	3
	15		14

### Fourth Year

Fall	Hours	Spring	Hours
PHYSICS 4310		3 PHYSICS 4347	3
PHYSICS 4331		3 EXPLORE - Humanities and Fine Arts	3
ENGL 3160		3 EXPLORE - Humanities and Fine Arts	3
EXPLORE - Humanities and Fine Arts		3 EXPLORE - Social Sciences	3
Cultural Diversity Requirement		3 EXPLORE - Social Sciences	3
	15		15

Total Hours: 123

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are*

encouraged to meet with their advisor each semester. All requirements are subject to change.

## Physics BS, Engineering Physics Emphasis

Physicists strive to understand the fundamental nature of the forces and particles, and the resultant states of matter, that make up the physical world. Our Engineering Physics degree provides a grounding in this approach with an added emphasis on practical applications. The Department of Physics and Astronomy at UMSL provides a broad-based education in the fundamental concepts of engineering physics, with the experimental and theoretical skills essential to practicing scientists. Undergraduate education in physics prepares students for both graduate study and a wide variety of professional careers in fields such as applied physics and engineering.

### General Education Requirements

Majors must complete the university and college general education requirements (p. 51). Any of the following courses may be used to satisfy the physical science requirement:

ASTRON 1001	Cosmic Evolution Introductory Astronomy	3
ASTRON 1011	Planets and Life in the Universe	3
ASTRON 1012	The Violent Universe and the New Astronomy	3
ASTRON 1050	Introduction to Astronomy I (MOTR ASTR 100)	3
ASTRON 1051	Introduction to Astronomy II	3
ATM SCI 1001	Elementary Meteorology	3
GEOL 1001	General Geology	3
GEOL 1002	Historical Geology	3
PHYSICS 1001	How Things Work (MOTR PHYS 100)	3
PHYSICS 1011	Basic Physics I	3
PHYSICS 1011L	Basic Physics I Laboratory	1
PHYSICS 1012	Basic Physics II	3
PHYSICS 1012L	Basic Physics II Laboratory	1
PHYSICS 2111	Physics: Mechanics and Heat	4
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	4

### Declaring the Physics Major

Students seeking to major in physics are first designated as 'pre-physics majors' until they have completed both PHYSICS 2111 and PHYSICS 2112 or equivalent courses. Upon successful completion of PHYSICS 2111 and PHYSICS 2112 with grades of C- or better, students will be allowed to declare physics as their major. Each of these courses must be completed successfully within two attempts.

### Degree Requirements

All physics majors in all programs must complete the physics core curriculum with the exception that majors pursuing the Physics Education option are not required to take PHYSICS 1099 and CMP SCI 1250. In addition to the core courses, each individual program has its own specific requirements. Required Physics, Mathematics, Chemistry, Biology, and

Computer Science courses for a major or minor in physics may not be taken on a satisfactory/unsatisfactory grading basis.

### Core Curriculum

The following physics courses are required:		23
PHYSICS 1099	Windows on Physics	
PHYSICS 2111	Physics: Mechanics and Heat	
PHYSICS 2111L	Mechanics and Heat Laboratory	
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	
PHYSICS 2112L	Electricity, Magnetism, and Optics Laboratory	
PHYSICS 3200	Mathematical Methods of Theoretical Physics	
PHYSICS 3221	Mechanics	
PHYSICS 3223	Electricity and Magnetism	
PHYSICS 3231	Introduction to Modern Physics I	
Also required are:		26
MATH 1800	Analytic Geometry and Calculus I	
MATH 1900	Analytic Geometry and Calculus II	
MATH 2000	Analytic Geometry and Calculus III	
MATH 2020	Introduction to Differential Equations	
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	
CMP SCI 1250	Introduction to Computing	
Total Hours		49

Note: Students are urged to begin the calculus sequence [MATH 1800, Analytic Geometry and Calculus I] as soon as possible to avoid delays in graduation.

Students with experience in digital computer programming may be excused from CMP SCI 1250.

### Engineering Physics Option

Students interested in careers in the research and development field of industry should consider this option. This program exposes the student to a basic engineering curriculum, as well as to areas of physics with industrial applications, such as electronics, modern optics, and linear analysis. At least 49 hours, but no more than 51, are required. In addition to the core curriculum, the following courses are required:

<b>Joint Engineering</b>		
ENGR 2310	Statics	3
ENGR 2320	Dynamics	3
<b>Joint Electrical Engineering</b>		
J E ENGR 2300	Introduction to Electrical Networks	3
<b>Physics</b>		
PHYSICS 4310	Modern Electronics	3
PHYSICS 4311	Advanced Physics Laboratory I	3
PHYSICS 4323	Modern Optics	3
PHYSICS 4331	Intro to Quantum Mechanics	3
PHYSICS 4341	Thermal and Statistical Physics	3
<b>Mathematics</b>		
MATH 1320	Introduction to Probability and Statistics	3

MATH 2450	Elementary Linear Algebra	3
Select one elective in mathematics at or above the 3000 level, or in a computer science at or above the 2000 level.		3
Total Hours		33

## Program Purpose

The purpose of the B.S. in Physics (Engineering Physics Emphasis) program at the University of Missouri at St. Louis is to prepare students for a professional career in engineering, physics, or applied physics, or for graduate studies in engineering physics or a related field.

## Learning Outcomes

- Students will be able to demonstrate an understanding of basic physics concepts including classical mechanics, electricity and magnetism, thermal and statistical physics, quantum mechanics, and modern electronics
- Students will be able to design and perform basic physics experiments, assess the significance of their results, and interpret the observed outcome
- Students will be able to demonstrate an understanding of statics, dynamics, and electrical networks
- Students will be skilled in problem-solving, critical thinking and analytical reasoning as applied to scientific problems
- Students will be proficient in both written and oral communication of the results of scientific work
- Students will have the skills necessary for conducting original scientific research as part of a problem-solving team
- Students will have the skills necessary to identify possible errors in scientific data, and to assess the significance of observed results

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003		1 MATH 1800	5
PHYSICS 1099		1 CMP SCI 1250	3
CHEM 1111		5 CORE - US History and Government	3
MATH 1035		2 EXPLORE - Social Sciences	3
MATH 1030		3	
ENGL 1100		3	
		15	14
Second Year			
Fall	Hours	Spring	Hours
PHYSICS 2111		4 PHYSICS 2112	4
PHYSICS 2111L		1 PHYSICS 2111L	1
MATH 1900		5 MATH 2000	5
CMP SCI 1250		3 MATH 2450	3
CORE - Communication Proficiency		3 ENGR 2310	3
		16	16
Third Year			
Fall	Hours	Spring	Hours
PHYSICS 3200		3 PHYSICS 3221	3
PHYSICS 3231		3 PHYSICS 3223	3
MATH 2020		3 PHYSICS 4341	3
ENGR 2320		3 J E ENGR 2300	3
Cultural Diversity Requirement		3 Humanities and Fine Arts	3
		15	15

Fourth Year			
Fall	Hours	Spring	Hours
PHYSICS 4310		3 PHYSICS 4311	3
PHYSICS 4323		3 CMP SCI 2XXX Computer Science course or MATH 3XXX Mathematics course	3
PHYSICS 4331		3 EXPLORE - Humanities and Fine Arts2	3
ENGL 3160		3 EXPLORE - Humanities and Fine Arts2	3
EXPLORE - Social Sciences		3 EXPLORE - Social Sciences	3
		15	15

Total Hours: 121

- <sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.
- <sup>2</sup> One of these General Education courses must also fulfill the Cultural Diversity requirement.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Physics BS, General Physics Emphasis

Physicists investigate the fundamental nature of the forces and particles, and the resultant states of matter, that make up the physical world. The Department of Physics and Astronomy at UMSL is devoted to providing undergraduates with a broad-based education in the fundamental concepts of physics and with the experimental and theoretical skills essential to practicing scientists. Undergraduate education in physics prepares students for both graduate study and a wide variety of professional careers.

## General Education Requirements

Majors must complete the university and college general education requirements (p. 51). Any of the following courses may be used to satisfy the physical science requirement:

ASTRON 1001	Cosmic Evolution Introductory Astronomy	3
ASTRON 1011	Planets and Life in the Universe	3
ASTRON 1012	The Violent Universe and the New Astronomy	3
ASTRON 1050	Introduction to Astronomy I (MOTR ASTR 100)	3
ASTRON 1051	Introduction to Astronomy II	3
ATM SCI 1001	Elementary Meteorology	3
GEOL 1001	General Geology	3
GEOL 1002	Historical Geology	3
PHYSICS 1001	How Things Work (MOTR PHYS 100)	3
PHYSICS 1011	Basic Physics I	3
PHYSICS 1011L	Basic Physics I Laboratory	1
PHYSICS 1012	Basic Physics II	3

PHYSICS 1012L	Basic Physics II Laboratory	1
PHYSICS 2111	Physics: Mechanics and Heat	4
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	4

## Declaring the Physics Major

Students seeking to major in physics are first designated as 'pre-physics majors' until they have completed both PHYSICS 2111 and PHYSICS 2112 or equivalent courses. Upon successful completion of PHYSICS 2111 and PHYSICS 2112 with grades of C- or better, students will be allowed to declare physics as their major. Each of these courses must be completed successfully within two attempts.

## Degree Requirements

All physics majors in all programs must complete the physics core curriculum with the exception that majors pursuing the Physics Education option are not required to take PHYSICS 1099 and CMP SCI 1250. In addition to the core courses, each individual program has its own specific requirements. Required Physics, Mathematics, Chemistry, Biology, and Computer Science courses for a major or minor in physics may not be taken on a satisfactory/unsatisfactory grading basis.

### Core Curriculum

The following physics courses are required: 23

PHYSICS 1099	Windows on Physics	
PHYSICS 2111	Physics: Mechanics and Heat	
PHYSICS 2111L	Mechanics and Heat Laboratory	
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	
PHYSICS 2112L	Electricity, Magnetism, and Optics Laboratory	
PHYSICS 3200	Mathematical Methods of Theoretical Physics	
PHYSICS 3221	Mechanics	
PHYSICS 3223	Electricity and Magnetism	
PHYSICS 3231	Introduction to Modern Physics I	

Also required are: 26

MATH 1800	Analytic Geometry and Calculus I	
MATH 1900	Analytic Geometry and Calculus II	
MATH 2000	Analytic Geometry and Calculus III	
MATH 2020	Introduction to Differential Equations	
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	
CMP SCI 1250	Introduction to Computing	

Total Hours 49

Note: Students are urged to begin the calculus sequence [MATH 1800, Analytic Geometry and Calculus I] as soon as possible to avoid delays in graduation.

Students with experience in digital computer programming may be excused from CMP SCI 1250.

## General Physics Option

This option may be elected by students desiring a greater concentration in physics and mathematics and is recommended for students wishing to

enter graduate study in physics. At least 50 hours are required. In addition to the core curriculum, the following physics courses are required:

### Physics

PHYSICS 4310	Modern Electronics	3
PHYSICS 4311	Advanced Physics Laboratory I	3
PHYSICS 4323	Modern Optics	3
PHYSICS 4331	Intro to Quantum Mechanics	3
PHYSICS 4341	Thermal and Statistical Physics	3
PHYSICS 4350	Computational Physics	3
Select three electives at or above the 4000 level in physics or astronomy.		9

### Astronomy

ASTRON 1050	Introduction to Astronomy I (MOTR ASTR 100)	3
or ASTRON 1051	Introduction to Astronomy II	

### Mathematics

MATH 2450	Elementary Linear Algebra	3
Select one elective in mathematics at or above the 3000 level, or in computer science at or above the 2000 level.		3

### Chemistry

CHEM 1121	Introductory Chemistry II (or equivalent)	5
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Total Hours 41

## B.S. Ed. in Secondary Education with Emphasis in Physics

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Physics with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Program Purpose

The purpose of the B.S. in Physics (General Physics Option) program at the University of Missouri at St. Louis is to prepare students for a



professional career in physics or a related field, or for graduate studies in physics.

## Learning Outcomes

- Students will be able to demonstrate an understanding of basic physics concepts including classical mechanics, electricity and magnetism, thermal and statistical physics, quantum mechanics, and modern electronics
- Students will be able to design and perform basic physics experiments, assess the significance of their results, and interpret the observed outcomes
- Students will be able to demonstrate an understanding of some areas of the most recent physics research, such as advances in materials physics or nanoscience
- Students will be skilled in problem-solving, critical thinking and analytical reasoning as applied to scientific problems
- Students will be proficient in both written and oral communication of the results of scientific work
- Students will have the skills necessary for conducting original scientific research as part of a problem-solving team
- Students will have the skills necessary to identify possible errors in scientific data, and to assess the significance of observed results

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 ASTRON 1051	3
PHYSICS 1099		1 CHEM 1121	5
CHEM 1111		5 MATH 1800	5
MATH 1035		2 CORE - US History and Government	3
ENGL 1100		3	
EXPLORE - Humanities and Fine Arts		3	
	15		16

### Second Year

Fall	Hours	Spring	Hours
PHYSICS 2111		4 PHYSICS 2112	4
PHYSICS 2111L		1 PHYSICS 2111L	1
MATH 1900		5 MATH 2000	5
CMP SCI 1250		3 MATH 2450	3
EXPLORE – Social Sciences		3 CMP SCI 2XXX course or MATH 3XXX MATH course	3
	16		16

### Third Year

Fall	Hours	Spring	Hours
PHYSICS 3200		3 PHYSICS 3221	3
PHYSICS 3231		3 PHYSICS 3223	3
MATH 2020		3 PHYSICS 4341	3
EXPLORE - Humanities and Fine Arts		3 PHYSICS/ASTRON 4XXX Physics or Astronomy Course	3
CORE - Communication Proficiency		3 EXPLORE - Social Sciences	3
	15		15

### Fourth Year

Fall	Hours	Spring	Hours
PHYSICS 4331		3 PHYSICS 4311	3
PHYSICS 4310		3 PHYSICS 4350	3
PHYSICS 4323		3 PHYSICS/ASTRON 4XXX Physics or Astronomy Course	3
PHYSICS/ASTRON 4XXX Physics or Astronomy Course		3 EXPLORE - Humanities and Fine Arts <sup>2</sup>	3

ENGL 3160	3 EXPLORE - Social Sciences	3
	15	15

Total Hours: 123

- <sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.
- <sup>2</sup> This General Education course must also fulfill the Cultural Diversity Requirement.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Physics Minor

Students may complete a minor in physics with the flexibility of emphasis on classical physics, modern physics, or a combination of the two areas. The following physics courses are required:

PHYSICS 1099	Windows on Physics	1
PHYSICS 2111	Physics: Mechanics and Heat	4
PHYSICS 2112	Physics: Electricity, Magnetism, and Optics	4
PHYSICS 3200	Mathematical Methods of Theoretical Physics	3
Select two additional emphasis courses from the following:		6
PHYSICS 3221	Mechanics	
PHYSICS 3223	Electricity and Magnetism	
PHYSICS 3231	Introduction to Modern Physics I	
PHYSICS 4310	Modern Electronics	
Total Hours		18

A GPA of at least 2.0 is required in courses presented for a minor. It is required that a student completes a minimum of 6 hours of graded work in 2000 level or above courses on the UMSL campus.

## Program Purpose

The purpose of the Minor in Physics at the University of Missouri at St. Louis is to provide students with a core knowledge of physics concepts to complement their major degree program.

## Learning Outcomes

- Students will be able to demonstrate an understanding of basic physics concepts such as classical mechanics, electricity and magnetism, modern physics, and modern electronics
- Students will be skilled in problem-solving, critical thinking and analytical reasoning as applied to scientific problems
- Students will be proficient in both written and oral communication of the results of scientific work
- Students will have the skills necessary to identify possible errors in scientific data, and to assess the significance of observed results

## Physics MS

### Admission Requirements

The Department requires applicants to have adequate backgrounds in such areas as mechanics, thermodynamics, electromagnetism, optics, electronics, and modern physics. Students admitted to the program with deficiencies in these areas are required to take appropriate undergraduate courses. If necessary, a remedial program is determined in consultation with the department graduate studies director at the time of application for admission.

### Degree Requirements

A student must complete 30 credit hours in graduate physics courses with at least 15 of these at the 5000 or 6000 level. Writing a thesis is optional. A maximum of six (3) credit hours of Research, PHYSICS 6490, may be counted toward the minimum 15 hours with (or without) the thesis option. Students must pass a comprehensive examination, which includes a defense of the thesis for students who have chosen to write one. A grade point average of 3.0 must be maintained during each academic year. Students must complete their degree program within 130 percent of the semester hour requirements for the degree. The requirements must be fulfilled within six years from the time of admission. Two-thirds of required graduate credit must be taken in residence. There is no foreign language requirement.

### Typical Program

#### First Semester

PHYSICS: 6000 level and 4000, 5000 level course	6
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#### Second Semester

PHYSICS: 6000 level and 4000, 5000 level course	6
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#### Third Semester

PHYSICS: 6000 level and 4000, 5000 level course	6
PHYSICS 6490                      Research	3

#### Fourth Semester

PHYSICS: 6000 level and 4000 level course	6
PHYSICS 6490                      Research	3
<b>Total Hours</b>	<b>30</b>

## Physics PhD

### Admission Requirements

The Department requires applicants to have adequate backgrounds in such areas as mechanics, thermodynamics, electromagnetism, optics, electronics, and modern physics. Students admitted to the program with deficiencies in these areas are required to take appropriate undergraduate courses. If necessary, a remedial program is determined in consultation with the department graduate studies director at the time of application for admission.

### Degree Requirements

Students must complete a minimum of 48 hours past the master's degree with satisfactory performance. The university has a residency requirement of three years/six semesters (for those with master's degree, two years/four semesters) at UMSL and/or Missouri S&T. The Ph.D. qualifying exam, dissertation, and dissertation exam are administered in cooperation with Missouri S&T. All graduate work requires B grades or better. The

dissertation may be written in absentia, and there is no foreign language requirement.

## Policy and Program Evaluation Graduate Certificate

The Graduate Certificate in Policy and Program Evaluation (PPE) provides students the opportunity to gain expertise in policy and program evaluation methods, including completion of an applied evaluation project. In addition to the public and nonprofit sectors, the certificate is appropriate for individuals in disciplines such as criminology, education, economics, gerontology, social work, and sociology who need to conduct assessments of the programs for which they are responsible.

### Requirements

This program consists of a six-course sequence (18 credits): 5 required courses (15 credits) and 1 elective (3 credits). The Certificate may be taken by non-degree students or in conjunction with 1) the Master's in Public Policy Administration degree program; 2) the Master's in Social Work/Master's in Gerontology degree programs; or 3) the Master's in Economics.

Students with sufficient job experience in program/policy evaluation may submit a written request to waive the Applied Evaluation Project requirement. If granted, this requirement will be replaced with a three-credit elective.

Students pursuing a graduate degree along with the certificate should check with their graduate advisor regarding which courses will also count towards their degree.

A maximum of two courses at the 4000 level can count towards the Certificate.

At least 12 of the 18 credits must be taken in residence at UMSL.

#### Required Courses:

P P ADM 6000	Introduction to Policy Analysis	3
P P ADM 6010	Introduction to Policy Research	3
or SOC WK 5450	Social Work Research Methods and Analysis II	
or ECON 4100	Introduction to Econometrics	
or ECON 5100	Econometric Theory and Methods	
P P ADM 6750	Introduction to Evaluation Research Methods	3
or SOC WK 6400	Practice and Program Evaluation	
POL SCI 6402	Intermediate Techniques in Policy Research	3
P P ADM 6950	Internship (which must include an evaluation project) <sup>1</sup>	3
or P P ADM 6751	Applied Evaluation Project	
or SOC WK 6800	Graduate Field Practicum II	
or SOC WK 6850	Graduate Field Practicum III	

#### Electives 3

ECON 4110	Applied Econometrics
ECON 4160	Geospatial Analysis in the Social Sciences
ECON 4170	Fundamentals of Cost-Benefit Analysis

POL SCI 6403	Advanced Techniques in Policy Research	
POL SCI 6404	Multi-Method Research Design	
Total Hours		18

<sup>1</sup> SOC WK 6800 or SOC WK 6850 must include an evaluation project.

Requirements for admission to the graduate certificate program include an undergraduate degree and a GPA of 3.0 or better. Applicants must submit two letters of recommendation, preferably with at least one from a current or former college-level instructor. Applicants must submit a personal statement explaining how the certificate program fits in with the applicant's educational and professional goals. The letters and the personal statement should be sent directly to the Public Policy Administration Program.

## Political Science BA

A degree in Political Science is the perfect choice for students who want to change the world. Our students gain knowledge about politics and policy, and develop sought-after skills--such as information-gathering and processing, analysis, research, decision making, and oral and written communication--that are transferable to many career paths after graduation. Areas of concentration include American politics, international and comparative politics, urban politics, public law, public policy and administration, and gender and politics. In addition to formal course work, internships are available in which the student can apply classroom learning and gain practical field experience.

### Career Outlook

Our graduates work in a variety of settings, as lawyers in the legal system, staff for government agencies, legislatures, and political campaigns, managers of public, private and nonprofit organizations, and advocates for a wide variety of social, environmental, and economic organizations. The variety of skills students develop, coupled with internship experience, make our graduates strong candidates on the job market. Early and mid-career Political Science graduates enjoy higher average salaries than those in Business Management and other fields. Political Science is also a path to graduate school and the top major of law school applicants

### General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). Political science courses may be used to satisfy the social sciences requirement. The foreign language requirement for the B.A. degree may be satisfied in any language.

### Degree Requirements

All majors must complete at least 36, but no more than 51, hours of political science. All students are required to take the following core curriculum:

Political Science		
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	3
POL SCI 1800	World Politics (MOTR POSC 201)	3
POL SCI 3000	Political Analysis	3

POL SCI 4950	Senior Seminar in Political Science	3
Total Hours		15

Majors are urged to take POL SCI 1100, POL SCI 1500, and POL SCI 1800 as early as possible since these courses are designed to provide a substantive foundation as well as conceptual and analytical tools for subsequent course work. Because the seminar topics in POL SCI 4950 change from semester to semester, the course can be repeated as an elective. All majors must take at least one Seminar in Political Science.

Students also must complete at least one course in four of the following political science areas:

- Public Law (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level)
- American Politics (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).
- Public Policy and Administration (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).
- Comparative Politics (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).
- Political Theory (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).
- International Relations (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).
- Methodology (chosen from among courses listed in bulletin at the 1000, 2000, or 3000 or 4000 level).

At least 15 hours of political science course work must be at the 3000 or 4000 level, including POL SCI 4950 Senior Seminar. B.A. degree students may take a maximum of 3 hours of political science on a satisfactory/unsatisfactory basis; this can include any course except the required courses in the core curriculum.

Note: As early as possible, students should determine their educational objectives and consult with an adviser regarding a plan of study. Those students who are uncertain of their future plans are urged to include in their 36-45 hours of political science a broad set of courses in American politics, public policy and administration, public law, comparative politics, international politics, political theory, and methodology. In addition to this general course of study in political science, the department offers B.A. degree students several specialized programs of study in political science geared to various student academic and career interests.

### Departmental Honors

The department awards honors to students having a grade point average (GPA) of 3.2 in the major, an overall GPA of 3.2 (except in extraordinary circumstances), and successfully completed an honors thesis, project, or report.

### B.S. Ed. in Secondary Education with Emphasis in Social Studies

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification.

Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for

discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. in Political Science with Master’s Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master’s level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master’s Degree in Secondary Education, with additional coursework. Students interested in Master’s Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

### Learning Outcomes

Graduates of this program will be able to:

- Explain the history, characteristics, and impact of legal, economic, and political institutions and systems, including international, national, state, and local governance.
- Apply various methods, tools, and sources applicable to the discipline of political science to answer important policy and political questions.
- Compare and contrast different ideologies, theories, and interpretations of politics.
- Assess political issues, formulate evidence-based recommendations, and communicate them with clarity and coherence.
- Plan, execute, and defend a major research project.

### Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 POL SCI 1500	3
POL SCI 1100		3 CORE - Communication Proficiency	3
ENGL 1100		3 Elective or minor	3
CORE - Math Proficiency		3 EXPLORE - Humanities & Fine Arts	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 EXPLORE - Social Sciences	3
EXPLORE - Humanities & Fine Arts		3	
	16		15
Second Year			
Fall	Hours	Spring	Hours
POL SCI 1800		3 POL SCI XXXX Political Science Course	3
EXPLORE - Humanities & Fine Arts		3 POL SCI XXXX Political Science Course	3
EXPLORE - Mathematics & Life/ Natural Sciences		3 Foreign Language 1002	5
Foreign Language 1001		5 Cultural Diversity Requirement	3
		Elective or minor	1
	14		15

Third Year			
Fall	Hours	Spring	Hours
POL SCI 3000		3 POL SCI XXXX Political Science Course	3
POL SCI XXXX Political Science Course		3 POL SCI 3000+ level course	3
Foreign Language 2101		3 ENGL 3100	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		15

Fourth Year			
Fall	Hours	Spring	Hours
POL SCI XXXX Political Science Course		3 POL SCI 4950	3
POL SCI XXXX Political Science Course		3 POL SCI 3000+ level course	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		15

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Political Science BA/MA Dual Degree Program

The 2+3 Combined BA/MA program in Political Science provides an opportunity for students of recognized academic ability and educational maturity to complete the requirements for both degrees in 5 years of full-time study.

The combined program requires a minimum of 140 credit hours of which at least 33 must be at the graduate level in political science. In qualifying for the BA, students must meet all University and College requirements. Students in the combined 2+3 who successfully complete the requirements for the MA degree will be awarded a BA degree simultaneously upon completion of at least 107 hours of undergraduate credit.

Student should apply to the Department for admission to the 2+3 combined degree program in Political Science during the semester they will complete 60 undergraduate credit hours. A cumulative grade point average of 3.0 or higher and two letters of recommendation from faculty are required. Students will be admitted to the 2+3 program under provisional status until they have completed 30 hours in that program with a grade point of 3.0 or higher. After completion of the provisional period, with the recommendation of the Graduate Director, students can be granted full admission into the 2+3 program.

Students must maintain a grade point average of 3.0 or higher throughout the combined program. Students who officially withdraw from the 2+3 combined degree program, who have successfully completed all the



regular requirements for the BA degree (120 hours) will be awarded their BA degree.

## Undergraduate Requirements for Student in the 2+3 Program

### A. The following must be completed prior to enrolling in the 2+3 program

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	3
Select two of the following:		6
POL SCI 1800	World Politics (MOTR POSC 201)	
POL SCI 2300	State Politics	
POL SCI 2350	Introduction to Urban Politics	
POL SCI 2400	Public Administration	
Total Hours		12

### B. Undergraduate Requirements Within the 2+3 Program

Select two of the following:		6
POL SCI 2280	Judicial Politics	
POL SCI 3200	Constitutional Law	
POL SCI 3210	Civil Liberties	
POL SCI 2330	The American Presidency	
POL SCI 2331	Congressional Politics	
POL SCI 3350	Political Parties and Elections	
POL SCI 3470	Negotiation, Collective Bargaining, and Dispute Resolution	
POL SCI 3480	Environmental Policy	
Select two of the following:		6
POL SCI 2510	The Politics of European Union	
POL SCI 2530	Political Systems of South America	
POL SCI 2540	Political Systems of Mexico, Central America and the Caribbean	
POL SCI 2580	African Politics	
POL SCI 3500	The Politics of the Middle East: International and National Dynamics	
POL SCI 3830	International Political Economy	
POL SCI 3850	International Organizations and Global Problem-Solving	
POL SCI 4850	International Law	
Select one additional course from B-1 or B-2 .		3
Total Hours		15

### C. Graduate Requirements

POL SCI 6401	Introduction to Policy Research	3
Select three of the following:		9
POL SCI 6420	Proseminar in Public Law	
POL SCI 6430	Proseminar in American Politics	
POL SCI 6440	Public Administration: Theory & Practice	
POL SCI 6450	Proseminar in Comparative Politics	

POL SCI 6470	Proseminar in Urban Politics	
POL SCI 6480	Proseminar in International Relations	
Select five additional graduate Political Science classes. <sup>1</sup>		15
Select Exit Project or Internship or Thesis		6
Total Hours		33

<sup>1</sup> Students should select an emphasis in American Politics, Public Policy, Comparative Politics, Political Theory, or International Relations.

### Summary of Credits in Political Science:

- BA: 27 hours (12 completed in lower division courses before admission to the 2+3 program)
- MA: 33 hours at the graduate level
- TOTAL: 60 hours in Political Science classes

## Political Science MA

Admission Requirements: For admission, a student should have a baccalaureate degree with a minimum grade point average of 2.75 and an undergraduate background in the social sciences. The GRE is required, and scores should be submitted at the time of application. Two letters of recommendation are also requested for each student applying to the program. Students who do not meet these requirements may be admitted upon approval of the department and the dean of the Graduate School. Application materials may be obtained from and should be returned to the office of the director of admissions.

Deadlines are July 1 for the fall semester; December 1 for the winter semester; and May 1 for the summer term.

### Degree Requirements

Beyond the general requirements of the Graduate School, the department requires a minimum of 27 semester hours of course work, of which 18 hours must be at the 6400 level and 12 hours must be in core courses in political science, including:

POL SCI 6401	Introduction to Policy Research	3
Select three of the following:		9
POL SCI 6410	Introduction to Policy Analysis	
POL SCI 6420	Proseminar in Public Law	
POL SCI 6430	Proseminar in American Politics	
POL SCI 6440	Public Administration: Theory & Practice	
POL SCI 6450	Proseminar in Comparative Politics	
POL SCI 6470	Proseminar in Urban Politics	
POL SCI 6480	Proseminar in International Relations	
Total Hours		12

Students can plan their degree program to reflect the following six emphasis areas:

- American Politics
- Comparative Politics
- International Politics

- Political Process and Behavior
- Public Administration and Public Policy
- Urban and Regional Politics

Students must also select one of the following exit projects: a six-hour thesis, a six-hour internship, or six hours of additional course work and an approved paper. Students will have a mid-program review at the end of 12-15 hours of course work, at which time they will discuss their academic performance and program with a faculty committee and determine the most appropriate exit project. Each candidate is given a final oral review conducted by a faculty committee and focused on the course work completed and the student's chosen exit project.

## Political Science Minor

### Requirements for Political Science Minors

A general minor in political science can be arranged, as well as specialized minors in eight different subfields of the discipline. Interested students should see a faculty adviser to plan a coherent program of study as a minor field.

Students must achieve a cumulative 2.0 GPA in the political science courses chosen to qualify for the minor. Students may count no more than 3 hours in political science taken on a satisfactory/unsatisfactory basis toward the minor. Students taking an internship POL SCI 3940 may count no more than three hours of the internship toward the minor.

### Specific Requirements for the Minor

Fifteen hours, chosen from among all political science courses.

#### Learning Outcomes

- Explain the characteristics and impact of political institutions and systems.
- Analyze the actions of political actors and their motives.
- Assess political issues, formulate evidence-based recommendations, and communicate them with clarity and coherence.

## Political Science PhD

The doctoral program emphasizes theoretical, analytic, and substantive approaches to public policy analysis and administration. Students are provided an opportunity to link core skills in policy analysis and political science with substantive emphasis in specific policy areas. The program is designed to prepare pre-career and mid-career students for advanced positions in policy research and administration, as well as for academic research and teaching.

### Admission Requirements

Admission and financial aid decisions are made on the basis of past academic record, intellectual ability, and career commitment and performance. Applications are accepted from students who have either baccalaureate or master's degrees. Past graduate work will be credited toward degree requirements as appropriate. Applicants must submit:

1. complete academic transcripts,
2. three letters of recommendation,

3. aptitude tests of the GRE and
4. a statement of objectives for the course of study.

Application materials may be obtained from and should be returned to the office of the director of admissions. Applications for fall semester should be submitted by February 15 and for winter semester by October 15.

Graduate Assistantships Stipends for teaching and research assistantships (nine month/20 hours per week) are awarded on a competitive basis. Out-of-state educational fees are waived for graduate assistants.

## Degree Requirements

The department requires 60 credit hours beyond the baccalaureate degree for completion of the Ph.D. To ensure sufficient background for doctoral-level policy courses, students must demonstrate appropriate competence in computing and data analysis during their course of study. Course requirements are as follows:

### Core courses

#### (18 credit hours)

- 18 credit hours will be required in the areas of research methods, and policy process and institutions. Contact the department for specific courses.
- Additional Requirements (12 credit hours)
- In addition, students will select a minimum of 12 credit hours in public policy, theory, or process as they apply to major subfields in political science.

### Policy Concentration

#### (24 credit hours)

Students, in consultation with the program director, will develop expertise in a substantive policy area. Policy concentrations (many interdisciplinary) include but are not limited to:

- American National Policy
- Urban Politics and Planning
- Comparative/International Policy
- Policy Analysis and Research Social Welfare

### Internship

#### (6 credit hours) optional

The Ph.D. intern program offers an opportunity to gain first-hand experience in select research and administrative positions.

### General Examination and Dissertation

Upon completion of course work, students are advanced to candidacy by successfully completing three general examinations,

1. public policy institutions, processes, and analysis,
2. methodology, and
3. the student's chosen subfield and area of policy concentration.

The degree is awarded upon completion and defense of the Ph.D. dissertation.

## Primary Care Pediatric Post-Graduate Certificate

Post-graduate certificate (PGC) requirements are tailored to the individual student, depending on past academic work, experience, the student's goals, and specialty requirements. Upon completion of the PGC requirements, a certificate is awarded by the College of Nursing (CON) and Graduate School. Graduates are eligible to apply to take board certification exams in the advanced practice role and population for which they have been prepared.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html).

### Certificate Requirements

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
NURSE 6743	Pediatric Health I: Acute and Chronic Care	4
NURSE 6744	Pediatric Health II: Comprehensive Primary Care	4
NURSE 6954	Advanced Practice Nursing: Residency I	2-4
NURSE 6955	Advanced Practice Nursing: Residency II	2-4
NURSE 7954	Advanced Practice Nursing: Residency III	2-4

All students must complete 8 credit hours of Residency. One credit hours is equivalent to 75 residency hours.

## Professional Writing Undergraduate Certificate

### Requirements

Students earn the Professional Writing Certificate by completing 18 hours in selected writing courses with a grade point average of 3.0 or better. Twelve of the 18 hours must be taken at the University of Missouri–St. Louis. Courses may not be taken on a satisfactory/unsatisfactory basis.

Students may take a combination of Professional, Academic, and Creative Writing courses leading up to a Capstone course.

Students who wish to pursue a technical writing emphasis should contact the Coordinator for information about appropriate courses and internships.

#### Professional Writing Courses

ENGL/MEDIA ST 2080	Advertising Copywriting	3
ENGL/MEDIA ST 3150	Feature Writing	3
ENGL 3280/COMM 2180	Public Relations Writing	3

ENGL 4160	Special Topics in Writing	3
ENGL 4810	Descriptive English Grammar	3
ENGL 4850	Topics in the Teaching of Writing	1-3
ENGL 4860	Editing and the Production Process	3
ENGL 4870	Advanced Business and Technical Writing	3

ENGL 4880	Writing for Teachers	3
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#### Academic Writing Courses

ENGL 2120	Topics in Writing	3
ENGL 2810	Traditional Grammar	3
ENGL 3090	Turning the Kaleidoscope: How We Look at Texts	3
ENGL 3100	Junior-Level Writing	3
HONORS 3100	Honors Advanced Composition: Writing The City	3

ENGL 3110	Junior-Level Writing for International Students	3
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ENGL 3120	Business Writing	3
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ENGL 3130	Technical Writing	3
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ENGL 3160	Writing in the Sciences	3
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#### Creative Writing Courses

Students may take up to 2 creative writing courses.

ENGL 2040	Fiction Writing Jumpstart	3
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ENGL 3030	Improving on the Blank Page: Writing Poetry	3
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ENGL 3040	Lying to Tell a Truth: Writing Fiction	3
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ENGL 4130	A Machine Made of Words: Writing Your Best Poems	3
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ENGL 4140	Polishing Your Stories: Producing a Publishable Short Story	3
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ENGL 4895	Editing 'Litmag	3
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#### Capstone Course

ENGL 4890	Writing Internship (Required. Usually taken as the last course in the program. Must include an extensive final project.)	3
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ENGL 4892	Independent Writing Project	3
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When the student has completed requirements for the certificate, the coordinator will notify the university registrar and the college from which the student will graduate. Upon the student's graduation, completion of the Professional Writing Certificate will be noted on the official transcript and a certificate will be mailed to the student's residence. Students who have graduated before completing the Professional Writing Certificate will receive the certificate in the mail and will have the certificate entered on their official transcripts.

### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Write clearly, correctly, and concisely
- Develop knowledge of how writing impacts work and behavior in professional settings
- Employ a repertoire of writing strategies and practices in the workplace
- Effectively adapt content to a variety of professional audiences

- Discern the appropriate tone, style, and format needed for a given writing purpose, audience, and context
- Demonstrate advanced knowledge of rhetorical strategies to achieve specific results
- Practice solid revision and editing skills
- Integrate expectations about professional standards and persuasive, content-based thinking into their written communication
- Recognize and adjust to expectations in the global workplace setting.
- Develop a portfolio of professional writing that would serve in a job search
- Work independently and collaboratively on complex professional documents
- Adapt to new writing challenges quickly

## Program Evaluation in Education Graduate Certificate

The Graduate Certificate in Program Evaluation in Education provides specialized study in the theory and practice of program evaluation. The program will build on the content area knowledge base of the individual's bachelors and masters degree. The focus of the Program Evaluation in Education certificate will be on the skills delineated in the standards and guidelines of the American Evaluation Association and the Joint Committee on Standards in Educational Evaluation.

The certificate will consist of 18 hours of core courses and internship experiences. Graduate credits earned in equivalent courses in Education or related Social Science disciplines may meet some of these requirements.

### Research Methods

ED REM 6750	Advanced Research Design in Education	3
ED REM 7771	Quantitative Research Methods I	3
ED REM 7781	Qualitative Methods in Educational Research I	3

### Program Evaluation

ED REM 6730	Educational Program Development and Evaluation	3
ED REM 6732	Advanced Educational Program Development and Evaluation	3
ED REM 6990	Internship	1-10

Total Hours 16-25

Graduate Certificate programs are a minimum of 18 credit hours.

## Psychiatric Mental Health Nurse Practitioner Post-Graduate Certificate

Post-graduate certificate (PGC) requirements are tailored to the individual student, depending on past academic work, experience, the student's goals, and specialty requirements. Upon completion of the PGC requirements, a certificate is awarded by the College of Nursing (CON) and Graduate School. Graduates are eligible to apply to take board

certification exams in the advanced practice role and population for which they have been prepared.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html).

## Certificate Requirements

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
NURSE 6737	Psychiatric Mental Health I	4
NURSE 6738	Psychiatric Mental Health II	4
NURSE 6954	Advanced Practice Nursing: Residency I	2-4
NURSE 6955	Advanced Practice Nursing: Residency II	2-4
NURSE 7954	Advanced Practice Nursing: Residency III	2-4

All students must complete 8 credit hours of Residency. One credit hour is equal to 75 residency hours.

## Psychology BA

The Bachelor of Arts degree in Psychology is a large, diverse program ideal for students interested in understanding and solving problems in many different areas of behavior. Students earning a Bachelor of Arts degree in psychological sciences learn to write and speak about complex behavioral explanations that rely on scientific reasoning and evidence rather than anecdotes or common myths/misconceptions. Advanced coursework in the major can focus on a range of subdisciplines, including child/lifespan development, mental health, and business / workplace psychology.

## General Education Requirements

Majors must satisfy the university and college General Education curricular requirements (p. 51). Selected courses in Psychology may be used to meet General Education Social and Behavioral Sciences requirements.

## Degree Requirements

PSYCH 1000	Choosing A Career In Psychology <sup>1</sup>	1
PSYCH 1003	General Psychology (MOTR PSYC 100)	3
PSYCH 2201	Psychological Statistics	4
PSYCH 2211	Introduction to Biological Psychology	3
PSYCH 2219	Research Methods	3
PSYCH 2245	Abnormal Psychology	3
PSYCH 4999	Integrated Psychology	2
PSYCH 2268	Human Growth and Development (MOTR PSYC 200)	3



or PSYCH 2270	Developmental Psychology: Infancy, Childhood and Adolescence	
Select four Psychology courses numbered 3000 to 4998 <sup>2</sup>		12
Total Hours		34

<sup>1</sup> PSYCH 1000 requirement must be satisfied before the student completes 24 hours of course work.

<sup>2</sup> No more than 3 hours can be PSYCH 3295 or PSYCH 3390.

## Additional Notes

Psychology majors must not take courses in excess of 50 hours in Psychology. Credits completed in Psychology in excess of 50 will not count toward graduation. For example, students earning 53 hours in Psychology will consequently be required to earn a minimum of 123 hours to graduate.

The three course sequence of Math, Psychological Statistics (PSYCH 2201), and Research Methods (PSYCH 2219) require a minimum of three semesters to complete. Students must satisfy the current University mathematical skills requirement before taking PSYCH 2201, Psychological Statistics. PSYCH 2201 is a prerequisite for PSYCH 2219, and hence, PSYCH 2201 must be completed with a grade of C- or higher PRIOR to enrollment in PSYCH 2219.

PSYCH 2201 and PSYCH 2219 cannot be taken concurrently. Students are advised to plan accordingly and to seek assistance from Psychology Academic Advising whenever needed.

Candidates for the B.A. must complete at least 34, but no more than 50, hours of courses taught by or cross-listed with the Department of Psychological Sciences.

Candidates must have a cumulative grade point average of 2.0 or higher in the major overall, and must earn a C- or above in each of the courses comprising the 34 credits applied to the B.A. degree in Psychology. Failure to earn a C- or above in the required courses will necessitate re-taking them for a satisfactory completion of the C- requirement. No Psychology courses taken on a satisfactory/unsatisfactory basis may be applied to the major.

In addition, candidates for the B.A. are required to satisfactorily complete 13 credit hours in one foreign language.

## Graduate School Preparation

In addition to the required courses listed above, students interested in applying to graduate school in Psychology are strongly encouraged to become involved in a research project with a Psychology faculty member by securing enrollment in PSYCH 3390, Directed Studies. These positions are available on a limited and competitive basis. No enrollments in PSYCH 3390 are possible without special Instructor permission. Those invited to participate must obtain a special consent form from the instructor in order to enroll. Contact the Psychology Academic Advising office for more information on such positions (psy\_advising@umsl.edu).

## Learning Outcomes

Upon completion of the degree, graduates of the BA in Psychology program at UM-St. Louis will be able to:

- Demonstrate an integrative understanding of psychological concepts, theories, research, and historical trends in psychology and the prediction of behavior across the scientific subdisciplines (e.g.,

behavioral neuroscience, clinical, developmental, industrial/organizational, social, etc.). **(Psychological Science Knowledge Base)**

- Summarize and explain use of the scientific approach to solve behavioral problems and articulate how behavioral explanations rely on critical thinking, scientific reasoning, weighing evidence and tolerating ambiguity. **(Critical Thinking)**
- Identify and evaluate appropriate research methods in psychology, including research design, data analysis (i.e., selecting, conducting, and interpreting basic statistical tests) and data interpretation. **(Scientific Inquiry)**
- Communicate using a variety of formats in a clear, concise way. **(Communication)**
- Demonstrate respect for members of diverse groups with sensitivity to issues of power, privilege and discrimination, while adopting social and ethical values that build community at local, national and global levels. **(Ethical and Social Responsibility)**
- Display professionalism and ownership of professional growth and learning through an evolving career development plan tailored to one's accurate self-assessment of abilities, achievements, motivations and work habits. **(Professional Development)**

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 PSYCH 2268 or 2270	3
PSYCH 1000		1 PSYCH 2245	3
PSYCH 1003		3 BIOL 1012	3
ENGL 1100		3 EXPLORE - Mathematics and Life/ Natural Sciences	3
MATH 1030		3 Foreign Language 1001	5
EXPLORE - Humanities and Fine Arts		3	
	14		17
Second Year			
Fall	Hours	Spring	Hours
PSYCH 2201		4 PSYCH 2219	3
CORE - US History and Government		3 CORE - Communication Proficiency	3
Foreign Language 1002		5 Foreign Language 2101	3
Cultural Diversity Requirement		3 EXPLORE - Humanities and Fine Arts	3
		Elective or minor	3
	15		15
Third Year			
Fall	Hours	Spring	Hours
ENGL 3100		3 PSYCH 3XXX Psychology Sub Area Requirement	3
PSYCH 2211		3 PSYCH 3XXX Psychology Sub Area Requirement	3
PSYCH 3XXX Psychology Sub Area Requirement		3 EXPLORE - Mathematics and Life/ Natural Sciences	3
EXPLORE - Humanities and Fine Arts		3 Elective or minor	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 Elective or minor	3
	15		15
Fourth Year			
Fall	Hours	Spring	Hours
PSYCH 3000+ level course		3 PSYCH 4999	2
Elective or minor		12 Elective or minor	12
	15		14
Total Hours: 120			

- <sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student pursuing the B.A. degree. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Psychology BS

The Psychological Sciences involve the study of mental processes, the brain, and behavior in human and other animals. Students earning a Bachelor of Science degree in psychological sciences learn to analyze data, communicate complex information, understand human behavior and think and write scientifically. The BS degree involves the application of foundational knowledge and skills from math and the natural sciences to the study of behavior. Students can concentrate their advanced coursework in a specific disciplinary subfield, including behavioral neuroscience, child psychology, clinical psychology, health psychology/pre-health, business & work psychology.

### General Education Course Requirements

Majors must satisfy the university and college [General Education curricular requirements](#). Selected courses in Psychology may be used to meet General Education Social and Behavioral Sciences requirements.

### Degree Requirements

#### Core

MATH 1030	College Algebra (MOTR MATH 130) <sup>1</sup>	3
MATH 1035	Trigonometry <sup>1</sup>	2
PSYCH 1000	Choosing A Career In Psychology <sup>3</sup>	1
PSYCH 1003	General Psychology (MOTR PSYC 100)	3
PSYCH 2201	Psychological Statistics	4
PSYCH 2211	Introduction to Biological Psychology	3
PSYCH 2219	Research Methods	3
PSYCH 2245	Abnormal Psychology	3
PSYCH 2250	Social Psychology	3
PSYCH 2268	Human Growth and Development (MOTR PSYC 200)	3
or PSYCH 2270	Developmental Psychology: Infancy, Childhood and Adolescence	
PSYCH 4999	Integrated Psychology	2

#### Additional Requirements

PHIL 2256	Bioethics	3
or PHIL 3380	Philosophy of Science	
Select four Psychology courses numbered 3000 to 4998 <sup>2</sup>		12
In addition, select at least one of the following Psychology courses:		3

#### Neuroscience

PSYCH 4300	Introduction to Psychopharmacology: Drugs and Mental Illness	
PSYCH 4314	Behavioral Neuroscience	
PSYCH 4330	Hormones, The Brain and Behavior	
PSYCH 4340	Introduction to Human Neuroanatomy	

PSYCH 4349	Human Learning and Memory	
PSYCH 4350	Emotions and the Brain	
PSYCH 4372	Introduction to Social Neuroscience	
<b>Clinical</b>		
PSYCH 3340	Clinical Problems of Childhood	
PSYCH 3500	Health Psychology	
PSYCH 3820	Cross-Cultural Psychology	
PSYCH 4374	Introduction to Clinical Neuropsychology	
<b>Applied</b>		
PSYCH 3318	Industrial and Organizational Psychology	
PSYCH 4250	Stereotyping, Prejudice, and Discrimination	
PSYCH 4365	Psychological Testing and Assessment	
<b>Math and Natural Science</b>		<b>4-5</b>

Choose one of the following:

BIOL 1141	Human Physiology and Anatomy II	
BIOL 1831	Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L)	
CHEM 1111	Introductory Chemistry I (MOTR CHEM 150L)	
CHEM 1121	Introductory Chemistry II	
MATH 1100	Basic Calculus	
MATH 1800	Analytic Geometry and Calculus I	
PHYSICS 1011	Basic Physics I (MOTR PHYS 150L)	

#### Social Science **3**

Select one course from Anthropology, Criminology & Criminal Justice, Economics, Political Science, and Sociology

Total Hours 55-56

Candidates for the B.S. in Psychology must complete at least 40, but no more than 50, hours of courses taught by or cross-listed with the Department of Psychological Sciences. In addition to the above courses, students must complete the following:

- Students who test into MATH 1045 may meet the math core requirement in lieu of taking MATH 1030 and MATH 1035.
- No more than 3 hours can be PSYCH 3295 or PSYCH 3390.
- PSYCH 1000 requirement must be satisfied before the student completes 24 hours of course work.

Candidates must have a cumulative grade point average of 2.0 or higher in the major overall, and must earn a C- or above in each of the courses comprising the 40 credits applied to the B.S. degree in Psychology. Failure to earn a C- or above in these required courses will necessitate re-taking them for a satisfactory completion of the C- requirement in all 40 hours. No Psychology courses taken on a satisfactory/unsatisfactory basis may be applied to the major.

### Graduate School Preparation

In addition to the required courses listed above, students interested in applying to graduate school in Psychology are strongly encouraged to become involved in a research project with a Psychology faculty member by securing enrollment in PSYCH 3390, Directed Studies. These positions

are available on a limited and competitive basis. No enrollments in PSYCH 3390 are possible without special Instructor permission. Those invited to participate must obtain a special consent form from the instructor in order to enroll. Contact the Psychology Academic Advising office for more information on such positions (psy\_advising@umsl.edu).

### Learning Outcomes

Upon completion of the degree, graduates of the BS in Psychology program at UM-St. Louis will be able to:

- Demonstrate an integrative understanding of psychological concepts, theories, research, and historical trends in psychology and the prediction of behavior across the scientific subdisciplines (e.g., behavioral neuroscience, clinical, developmental, industrial/organizational, social, etc.). **(Psychological Science Knowledge Base)**
- Summarize and explain use of the scientific approach to solve behavioral problems and articulate how behavioral explanations rely on critical thinking, scientific reasoning, weighing evidence and tolerating ambiguity. **(Critical Thinking)**
- Evaluate and identify appropriate research methods in psychology and at least one other STEM discipline, including research design, data analysis (i.e., selecting, conducting, and interpreting basic statistical tests) and data interpretation. **(Scientific Inquiry)**
- Communicate using a variety of formats in a clear, concise way. **(Communication)**
- Demonstrate respect for members of diverse groups with sensitivity to issues of power, privilege and discrimination, while adopting social and ethical values that build community at local, national and global levels. **(Ethical and Social Responsibility)**
- Display professionalism and ownership of professional growth and learning through an evolving career development plan tailored to one's accurate self-assessment of abilities, achievements, motivations and work habits. **(Professional Development)**

### Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 PSYCH 2245	3
PSYCH 1000		1 PSYCH 2268 or 2270	3
PSYCH 1003		3 BIOL 1012	3
ENGL 1100		3 MATH 1035	2
MATH 1030		3 CORE - Communication Proficiency	3
EXPLORE - Humanities & Fine Arts		3 EXPLORE - Mathematics and Life/Natural Sciences	3
	14		17
Second Year			
Fall	Hours	Spring	Hours
PSYCH 2201		4 PSYCH 2219	3
CORE - US History and Government		3 PSYCH 2250	3
EXPLORE - Mathematics and Life/Natural Sciences		3 PSYCH XXXX Mathematics and Natural Science Major Requirement	3
EXPLORE - Humanities and Fine Arts		3 EXPLORE - Humanities and Fine Arts	3
Cultural Diversity Requirement		3 Elective or minor	3
	16		15
Third Year			
Fall	Hours	Spring	Hours
PSYCH 2211		3 PSYCH 3XXX Psychology Sub Area Requirement	3
PHIL 2256 or 3380		3 PSYCH 3XXX Psychology Sub Area Requirement	3

PSYCH 3XXX Psychology Sub Area Requirement	3 PSYCH 3XXX Social Science Major Requirement	3
ENGL 3100	3 EXPLORE - Mathematics and Life/Natural Sciences	3
Elective or minor	3 Elective or minor	3
	15	15

Fourth Year			
Fall	Hours	Spring	Hours
PSYCH 3000+ course		3 PSYCH 4999	2
Additional Neuroscience, Clinical, or Applied Psychology course		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		14

Total Hours: 121

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Psychology Clinical-Respecialization Graduate Certificate

This program is designed for graduates of accredited doctoral programs in psychology who wish to receive training in the specialty field of clinical psychology. Respecialization students are trained within the context of the UMSL Clinical Psychology Doctoral Program, which is accredited by the American Psychological Association. The program provides an integrated sequence of training experiences, including didactic course work and practicum placements. Core graduate-level psychology educational requirements not completed elsewhere are included in the respecialization student's course of study.

## Psychology MA, Behavioral Neuroscience Emphasis

The University of Missouri-St. Louis offers a program of studies leading to a Master of Arts Degree in Psychology with a specialization in Behavioral Neuroscience. Masters students take classes with Doctoral level students. Students will choose between a thesis and a non-thesis option.

Thesis students conduct research in a core area of study including neurophysiological correlates of posttraumatic stress disorder, self-reflection and default mode network, the neurocognition of emotion and romantic love, prejudice and discrimination, and health disparities. We soon will have training on the neuroscience of substance abuse and addiction. Students are enrolled into a research group headed by a faculty member with research interests in one of the areas identified above. That professor serves as the student's primary mentor throughout their graduate training, though communication and collaboration with other laboratories are encouraged.

Research Facilities: The Department is equipped with several EEG systems, physiological research suites including eye-tracking, cardiovascular measures, and skin conductance. Many faculty have connections to facilities with magnetic resonance imaging equipment.

## Degree Requirements

A total of 32 credit hours is required for the MA degree with an emphasis in the behavioral-neuroscience field of experimental psychology. Students will choose between a thesis and a non-thesis option.

## Thesis Option

Students are required to complete a master's thesis for this program. Theses should follow the procedures in the Behavioral-Neuroscience Handbook and on the Graduate School website.

### Required Coursework

PSYCH 5001	Neuropsychological Assessment	3
PSYCH 5340	Human Neuroanatomy	3
PSYCH 5400	Seminar: Special Topics in Behavioral Neuroscience <sup>1</sup>	4
PSYCH 5407	Psychopharmacology	3
PSYCH 5465	Seminar: Behavioral Neuroscience	3
PSYCH 5468	Seminar: Cognitive Processes	3
PSYCH 7421	Quantitative Methods I	4
PSYCH 7422	Quantitative Methods II	4
PSYCH 7483 or PSYCH 7484	Directed Research Directed Readings	3
PSYCH 7491	MA Thesis Research	2
Total Hours		32

<sup>1</sup> One credit hour taken per semester.

## Non-Thesis Option

### Required Coursework

PSYCH 5001	Neuropsychological Assessment	3
PSYCH 5340	Human Neuroanatomy	3
PSYCH 5407	Psychopharmacology	3
PSYCH 5465	Seminar: Behavioral Neuroscience	3
PSYCH 5468	Seminar: Cognitive Processes	3
PSYCH 7421	Quantitative Methods I	4
PSYCH 7422	Quantitative Methods II	4
<b>Electives</b> <sup>1</sup>		<b>9</b>
Choose three of the following courses:		
PSYCH 4330	Hormones, The Brain and Behavior	
PSYCH 4350	Emotions and the Brain	
PSYCH 4372	Introduction to Social Neuroscience	
PSYCH 4250	Stereotyping, Prejudice, and Discrimination	
PSYCH 4349	Human Learning and Memory	
Total Hours		32

<sup>1</sup> Related coursework may count toward the electives with approval of the graduate program director.

## Psychology MA, Industrial/Organizational Emphasis

Effective Fall 2018, the Industrial Organizational Psychology program will no longer be accepting applications.

## Master of Arts in Psychology

The psychology department at the University of Missouri-St. Louis offers a program of studies leading to the Master of Arts degree with a specialization in either Behavioral Neuroscience or Industrial/Organizational Psychology. The M.A. degree is a terminal degree and is separate from the Ph.D. program in Psychology. There is no thesis or language requirement. The M.A. degree does not constitute a license to practice in Missouri or elsewhere as a professional Psychologist. The M.A. program does not offer course work in Counseling or Clinical Psychology.

The M.A. in Psychology requires a total of 32 semester hours of graduate course work in Behavioral Neuroscience or 45 semester hours of course work in Industrial/Organizational Psychology. All students in the Master's program must take the course work prescribed by their emphasis area. All programs of study for M.A. students require the approval of the Director of the Behavioral Neuroscience program or Director of the Industrial/Organization program.

## Emphasis in Industrial/Organizational Psychology

Effective Fall 2018, the Industrial Organizational Psychology program will no longer be accepting applications.

The University of Missouri-St. Louis offers a program of studies leading to a Masters of Arts degree in Psychology with an emphasis in Industrial/Organizational Psychology. This program embraces the scientist-practitioner model and provides a balanced training in I/O. This emphasis provides 'industrial' training in areas such as personnel selection, training, and test development/validation, as well as 'organizational' training in areas such as work motivation, leadership, mentoring, and group processes. Conducting research with faculty and other training experiences are also incorporated. Masters students take 45 hours of courses. Completion of the Masters program does not qualify one for admittance to the doctoral program. Masters students must reapply for consideration to the doctoral program. Additionally, Masters students are not required to complete an empirical research thesis.

PSYCH 5468	Seminar: Cognitive Processes	3
PSYCH 7412	Social Psychology	3
PSYCH 7421	Quantitative Methods I	4
PSYCH 7422	Quantitative Methods II	4
PSYCH 7449	Research Methods and Project Development In Applied Psychology	3
PSYCH 7454	Seminar: Personnel Psychology	3
PSYCH 7455	Seminar: Organizational Psychology	3
PSYCH 7457	Seminar: Special Topics in Industrial Psychology	3
PSYCH 7458	Seminar: Special Topics in Organizational Psychology	3
PSYCH 7466	Seminar Series in Industrial/Organizational Psychology	4



MGMT 5611	Advanced Organizational Behavior and Administrative Processes	3
MGMT 5621	Managing Human Resources	3
MGMT 5625	Selected Topics in Human Resource Management	3
<b>Electives</b>		<b>3</b>
Choose one of the following:		
PSYCH 7429	Psychometric Theory	
PSYCH 7469	I/O Professional Issues and Ethics	
PSYCH 7423	Quantitative Methods III	
PSYCH 7465	Applied Issues in Organizational Psychology	
PSYCH 7472	Special Topics in Psychology	
Total Hours		45

## Psychology Minor

### Requirements for the Minor

Candidates must complete a minimum of 15 hours of courses taught by or cross-listed with the Psychology Department, including at least 6 hours at the 3000 or 4000 level (no more than 3 of these can be PSYCH 3390). Candidates must have a cumulative grade point average of 2.0 or higher in the minor. Psychology courses taken on a satisfactory/unsatisfactory basis may not be applied to the minor.

### Learning Outcomes

Graduates of the Minor in Psychology at UM-St. Louis will be able to:

#### Psychological Sciences Knowledge Base:

- Apply basic psychological terminology, concepts and theories to explain behavior and mental processes.
- Discuss practical applications of psychological principles and science within their major area of study and to everyday life.

#### Scientific Inquiry and Critical Thinking:

- Identify and describe the potential for flaws in behavioral explanations based on simplistic, personal theories and demonstrate an appreciation for psychology as a science.
- Summarize criteria and strategies for identifying objective sources of psychological information.

#### Communication:

- Express in writing basic concepts and findings from the psychological sciences.
- Interpret quantitative data displayed in graphs and tables.

#### Ethical and Social Responsibility:

- Consider ethical issues that reflect principles in the APA Ethics Code.

#### Professional Development:

- Describe how knowledge and skills from the psychological sciences apply to business, health care, educational, and other workplace settings.

## Psychology PhD, Behavioral Neuroscience Emphasis

The Behavioral Neuroscience program provides opportunities for study, research, and training in various areas including psychophysiology, psychopharmacology, neuroendocrinology, cognitive neuroscience, and neuropsychology. This program prepares students for research careers in academia or industries, such as pharmaceutical firms and medical schools. Full-time enrollment is required.

### Admission Requirements

In addition to meeting the general admission requirements of the Graduate School, applicants should have completed undergraduate courses at minimum in general psychology, psychological statistics, and research methods. Each doctoral program has additional admission requirements specific to that program.

The Application Deadline for the Behavioral Neuroscience Program is January 15.

### Teaching and Research Assistantships

Stipends for teaching and research assistantships are available for the doctoral programs only.

### Learning Outcomes for the Ph.D. in Behavioral Neuroscience

The graduate program in Behavioral Neuroscience has the following goals. Outcome measures for each goal allow the faculty to assess the students.

**Goal 1.** Students will gain a broad-based foundation of terminology and basic and conceptual knowledge necessary for teaching and research in the Behavioral Neuroscience field. Outcome measures include grades in coursework, performance on both the written and oral segments of the qualifying exam, as well as active participation in our journal reading groups.

**Goal 2.** Beginning early in their studies, students will learn the basic skills to conduct research in a variety of different paradigms. Outcome measures include successful accomplishments in the laboratories of mentor professors.

**Goal 3.** Beginning early in their studies, students will come to recognize the key to success in the Behavioral Neuroscience field is publishing and seeking grant support. Outcome measures include an easily observable mindset that assesses all scholarly activities in regard to possible publication and/ or a suitable idea for submission to a grant agency. Also, regular attendance is expected at all relevant colloquia on campus and at the grant writing seminars offered by the Behavioral Neuroscience faculty.

**Goal 4.** Students will come to recognize the importance of writing and will be constantly developing their writing skills as applied to manuscript preparations and grant applications. Outcome measures are the numbers of manuscripts written and submitted to journals or grant agencies each year.

**Goal 5.** As they progress through the program, students will show increasing self-reliance to initiate a research project and carry it to its completion. Outcome measures are numbers and quality of self-initiated research projects.

**Goal 6.** At the end of their graduate studies, the students will have grown into full colleagues of the faculty and be ready for careers in research and teaching. Outcome measures are a quality dissertation that is successfully defended before peers and being hired for a suitable position (post-doc, assistant professor, junior-level researcher) in the field.

## Psychology PhD, Clinical Community Psychology Emphasis

The Clinical Psychology program has been fully accredited by the American Psychological Association since 1977 and is patterned upon the scientist-practitioner model of clinical training. Students are not considered for admission on a part-time basis. Through the medium of courses, practicums, and research experiences, this emphasis area prepares Clinical Psychologists for careers in research, teaching, and clinical practice.

### Admission Requirements

In addition to meeting the general admission requirements of the Graduate School, applicants should have completed undergraduate courses at minimum in general psychology, psychological statistics, and research methods. Each doctoral program has additional admission requirements specific to that program.

The Application Deadline for the Clinical Psychology Program is January 15.

### Teaching and Research Assistantships

Stipends for teaching and research assistantships are available for the doctoral programs only.

### Degree Requirements

Students in the Clinical Psychology program participate for three years in the Psychology Department's Community Psychological Services clinic. This facility provides psychological services to the public and consultation to outside agencies. Students also receive clinical experience in clerkships and during a full-time, year-long internship. Research requirements include an initial independent research project, a major critical review of research in a specialty area, and a dissertation.

The Clinical Psychology graduate program is accredited by the American Psychological Association and the course offerings fulfill specific training domains associated with APA accreditation.

I. Broad-based foundation of knowledge and conceptual skills necessary for psychological research and practice.

The following courses address this goal:

PSYCH 5465	Seminar: Behavioral Neuroscience	3
PSYCH 5468	Seminar: Cognitive Processes	3
PSYCH 6466	Seminar: Developmental Psychology	3
PSYCH 7403	Psychopathology	3
PSYCH 7412	Social Psychology	3
PSYCH 7405	History and Systems in Psychology	3

II. Trained to evaluate and conduct methodologically sound research of potential benefit to the practice of psychology.

PSYCH 7421	Quantitative Methods I	4
PSYCH 7422	Quantitative Methods II	4
PSYCH 7474	Clinical Research in Applied Settings	3
PSYCH 7485	Research Team (2 semesters)	6
PSYCH 7487	Thesis Research Project (5 semesters)	5
PSYCH 7488	Specialty Examination Research (3 semesters)	3
PSYCH 7492	Ph D Thesis Research (per semester)	1

III. Training in multiple approaches to assessment and treatment that is theory-based and research-supported.

PSYCH 7404	Introduction to Clinical Assessment I	4
PSYCH 7406	Introduction to Clinical Assessment II	4
PSYCH 7430	Introduction to Clinical Skills	1
PSYCH 7434	Foundations of Clinical Interventions	3
PSYCH 7442	Seminar: Cognitive and Behavioral Interventions	3
PSYCH 7439	Summer Supervision (3 semesters)	3
PSYCH 7433	Clerkship in Clinical Psychology (6 semesters)	6
PSYCH 7431	Clinical Supervision (7 semesters)	19
PSYCH 7450	Clinical Internship I (2 semesters)	2
PSYCH 7451	Clinical Internship II	1
Choose 3 courses from offerings that may include:		9
PSYCH 7447	Trauma and Recovery	
PSYCH 6415	Seminar in Health Psychology & Behavioral Medicine	
PSYCH 6410	Gender, Sexuality, and Mental Health	
PSYCH 7419	Existential Issues in Clinical Psychology	
PSYCH 5407	Psychopharmacology	
PSYCH 5001	Neuropsychological Assessment	

IV. Develop a firm basis for ethical decision-making and adherence to professional standards of conduct in research and practice.

PSYCH 7432	Ethics and Professional Issues	3
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V. Develop and display sensitivity and adaptability in the applications of research, assessment and treatment approaches to diverse populations.

PSYCH 6448	Multicultural Issues in Clinical Psychology	3
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## Psychology PhD, Industrial and Organizational Psychology Emphasis

**Effective Fall 2018, the Industrial Organizational Psychology program will no longer be accepting applications.**

## Industrial/Organizational Psychology

The Industrial/Organizational Psychology program is offered in cooperation with selected faculty from the College of Business to prepare students for careers in industry or academia. This program embraces the scientist-practitioner model and provides a balanced training in I/O. This emphasis provides 'industrial' training in areas such as personnel selection, training, and test development/validation, as well as 'organizational' training in areas such as work motivation, leadership, and group processes. Research and other training experiences in various settings are also incorporated.

### Learning Outcomes for the Ph.D. in Industrial/Organizational Psychology:

The Ph.D. in Industrial/Organizational (IO) Psychology has the following goals:

**Goal 1.** Students will gain a broad-based foundation of knowledge and conceptual skills necessary for applied psychological research and practice.

**Goal 2.** Students will develop the ability to evaluate and conduct methodologically sound research of potential benefit to the theory and practice of psychology.

**Goal 3.** Students will develop the ability to apply psychological principles that are theory-based and research-supported to individuals and groups in organizational settings.

**Goal 4.** Students will develop a firm basis for ethical decision-making in research and practice.

**Goal 5.** Students will display adaptability in their applications of research, assessment and practical psychological approaches to individuals and groups in organizational settings.

## Public Administration Minor

### Requirements for Political Science Minors

A general minor in political science can be arranged, as well as specialized minors in eight different subfields of the discipline. Interested students should see a faculty adviser to plan a coherent program of study as a minor field.

Students must achieve a cumulative 2.0 GPA in the political science courses chosen to qualify for the minor. Students may count no more than 3 hours in political science taken on a satisfactory/unsatisfactory basis toward the minor. Students taking an internship POL SCI 3940 may count no more than three hours of the internship toward the minor.

### Minor in Public Administration

POL SCI 2400	Public Administration	3
Select four of the following:		12
POL SCI 2420	Introduction to Public Policy	
POL SCI 3420	Public and NonProfit Personnel Management	
POL SCI 3440	Public and NonProfit Budgeting	
POL SCI 3450	Urban Administration	
POL SCI 3900	Special Readings (when appropriate)	

POL SCI 3940	Public Affairs Internship (when appropriate)	
POL SCI 4460		
POL SCI 4510	Comparative Public Policy and Administration	
Total Hours		15

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Demonstrate understanding of theories, concepts and practices relevant to public administration.
- Assess issues in the public sector, formulate evidence-based solutions, and communicate them with clarity and coherence.

## Public Law Minor

### Requirements for Political Science Minors

A general minor in political science can be arranged, as well as specialized minors in eight different subfields of the discipline. Interested students should see a faculty adviser to plan a coherent program of study as a minor field.

Students must achieve a cumulative 2.0 GPA in the political science courses chosen to qualify for the minor. Students may count no more than 3 hours in political science taken on a satisfactory/unsatisfactory basis toward the minor. Students taking an internship POL SCI 3940 may count no more than three hours of the internship toward the minor.

### Specific Requirements for the Minor

Select five of the following:		15
POL SCI 1200	Foundations of Law: an Introduction to Legal Studies	
POL SCI 2260	Law, Politics and Society	
POL SCI 2280	Judicial Politics	
POL SCI 2290	Gender and the Law	
POL SCI 3200	Constitutional Law	
POL SCI 3210	Civil Liberties	
POL SCI 3220	Labor Law	
POL SCI 3260	The Supreme Court	
POL SCI 3900	Special Readings (when appropriate) <sup>1</sup>	
POL SCI 3940	Public Affairs Internship <sup>1</sup>	
POL SCI 4850	International Law	
Total Hours		15

<sup>1</sup> May be taken with approval of the faculty advisor.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

#### • Explain key topics concerning public law.

- Describe the evolution of legal principles to used to determine the liberties and rights of individuals and groups.

- Locate, apply, and clearly communicate information relative to aspects of judicial system, including statutes, court decisions, and constitutional provisions.

## Public Policy Administration BSPPA

The BSPPA degree has two emphasis areas and a track. The first is a public administration emphasis, which emphasizes management in both the public and nonprofit sectors; it may produce a terminal degree or be a precursor to graduate training. The second is a public policy emphasis in which a student may focus on a particular policy area and also acquire specialized analytic training and research skills, in preparation for relevant entry-level jobs in the public or the voluntary sector as well as in certain parts of the private sector. The track area focuses explicitly on the administrative and leadership concerns of organizations in the nonprofit sector, which constitutes a growing field of research and employment opportunities.

### General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). Political science courses may be used to satisfy the social sciences requirement.

### Degree Requirements

All BSPPA majors must complete at least 33 but no more than 51, hours in political science. The following core curriculum is required of all BSPPA majors:

#### Political Science

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	3
POL SCI 3000	Political Analysis	3
POL SCI 2400	Public Administration	3
POL SCI 2420	Introduction to Public Policy	3
POL SCI 3940	Public Affairs Internship	1-6
POL SCI 4950	Senior Seminar in Political Science	3
ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
Total Hours		25-30

In addition, students must provide a demonstration of computer proficiency through one of the following:

- INFSYS 1800 Computers and Information Systems, extension courses, or other study approved by the BSPPA coordinator.
- BSPPA students may take a maximum of 3 hours of political science on a satisfactory/ unsatisfactory basis, except for the following (which may not be taken on a satisfactory/unsatisfactory basis):

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	3

POL SCI 3000	Political Analysis	3
POL SCI 2400	Public Administration	3
POL SCI 2420	Introduction to Public Policy	3
POL SCI 3940	Public Affairs Internship	1-6
POL SCI 4950	Senior Seminar in Political Science	3

### Nonprofit Track

In addition to the core curriculum requirements for all BSPPA majors, students in the nonprofit academic track are required to complete the following courses:

POL SCI 3420	Public and NonProfit Personnel Management	3
POL SCI 3440 or POL SCI 2400	Public and NonProfit Budgeting Public Administration	3
POL SCI 3700	NonProfit Organizations and Public Policy	3
POL SCI 3710	NonProfits, Civil Society and Volunteerism	3
Total Hours		12

In addition, the Public Affairs Internship (POL SCI 3940) required for the BSPPA must be conducted through a nonprofit organization.

Note: Students considering the B.S. in public policy and administration should see a political science adviser as early as possible to plan their program.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Explain the characteristics and impact of policy-making institutions and systems, including national, state, and local governments.
- Demonstrate an understanding of administrative systems and processes.
- Apply various methods, tools, and sources to answer important management and policy questions.
- Analyze policies, programs, and relevant issues, formulate evidence-based recommendations, and communicate them with clarity and coherence.
- Apply public policy administration knowledge and engage in real-world problem solving through an internship.
- Plan, execute, and defend a major research project.

### Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 POL SCI 1500	3
POL SCI 1100	3	ECON 1001	3
CORE - Math Proficiency		3 ENGL 1100	3
CORE - Communicating Proficiency		3 EXPLORE - Math and Science	3
EXPLORE - Math and Life Sciences		3 EXPLORE - Social Sciences	3
EXPLORE - Humanities	3		
		16	15
Second Year			
Fall	Hours	Spring	Hours
POL SCI 2400		3 POL SCI 2420	3
ECON 1002		3 Policy Concentration course	3



EXPLORE - Humanities and Fine Arts	3	CORE - Information Literacy	3
EXPLORE - Math and Sciences	3	EXPLORE - Humanities and Fine Arts	3
Elective or minor	3	EXPLORE - Social Science	3
15		15	

**Third Year**

Fall	Hours	Spring	Hours
POL SCI 3000		3 Policy Concentration Courses	6
Policy Concentration Course	3	ENGL 3100	3
EXPLORE - Social Sciences	3	Elective or minor	6
Elective or minor	6		
15		15	

**Fourth Year**

Fall	Hours	Spring	Hours
POL SCI 3940		3 POL SCI 4950	3
Policy Concentration Course	3	Political Science Policy Course	3
POL SCI elective	3	Elective or minor	9
Elective or minor	6		
15		15	

Total Hours: 121

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Public Policy Administration BSPPA, Public Administration Emphasis

The BSPPA degree is designed for students who are interested in working in government or nonprofit organizations, and who have a passion for making a positive impact on society. In this program, students gain understanding of public and nonprofit administration and policymaking in the United States. Students will develop skills for leading in public and nonprofit organizations, and will have the chance to utilize those skills through an internship. The public administration emphasis area focuses explicitly on the administrative and leadership concerns of government organizations and prepares students to work and manage in the public sector.

The BSPPA degree has two emphasis areas and a track. The first is a public administration emphasis, which emphasizes management in both the public and nonprofit sectors; it may produce a terminal degree or be a precursor to graduate training. The second is a public policy emphasis in which a student may focus on a particular policy area and also acquire specialized analytic training and research skills, in preparation for relevant entry-level jobs in the public or the voluntary sector as well as in certain parts of the private sector. The track area focuses explicitly on the administrative and leadership concerns of organizations in the nonprofit sector, which constitutes a growing field of research and employment opportunities.

## General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). Political science courses may be used to satisfy the social sciences requirement.

## Degree Requirements

All BSPPA majors must complete at least 33 but no more than 51, hours in political science. The following core curriculum is required of all BSPPA majors:

### Political Science

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	3
POL SCI 3000	Political Analysis	3
POL SCI 2400	Public Administration	3
POL SCI 2420	Introduction to Public Policy	3
POL SCI 3940	Public Affairs Internship	1-6
POL SCI 4950	Senior Seminar in Political Science	3
ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
Total Hours		25-30

In addition, students must provide a demonstration of computer proficiency through one of the following:

- INFSYS 1800 Computers and Information Systems, extension courses, or other study approved by the BSPPA coordinator.
- BSPPA students may take a maximum of 3 hours of political science on a satisfactory/ unsatisfactory basis, except for the following (which may not be taken on a satisfactory/unsatisfactory basis):

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	3
POL SCI 3000	Political Analysis	3
POL SCI 2400	Public Administration	3
POL SCI 2420	Introduction to Public Policy	3
POL SCI 3940	Public Affairs Internship	1-6
POL SCI 4950	Senior Seminar in Political Science	3

## Public Administration Emphasis Area

In addition to the core curriculum requirements for all BSPPA majors, students in the public administration emphasis area are required to complete the following courses:

POL SCI 2430	Public and Nonprofit Organizational Behavior	3
POL SCI 3420	Public and NonProfit Personnel Management	3
POL SCI 3440	Public and NonProfit Budgeting	3
POL SCI 3450	Urban Administration	3

Select at least one additional Political Science Course	3
<b>Total Hours</b>	<b>15</b>

Elective or minor	3	Elective or minor	3
	15		14

Total Hours: 120

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Explain the characteristics and impact of policy-making institutions and systems, including national, state, and local governments.
- Demonstrate an understanding of administrative systems and processes.
- Apply various methods, tools, and sources to answer important management and policy questions.
- Analyze policies, programs, and relevant issues, formulate evidence-based recommendations, and communicate them with clarity and coherence.
- Apply public policy administration knowledge and engage in real-world problem solving through an internship.
- Plan, execute, and defend a major research project.
- Demonstrate an understanding of theories, concepts and practices relevant to public administration.
- Apply critical skills for working in public administration such as interpreting budget documents and making budget choices, creating communications plans, and developing recruitment and hiring policies.

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Public Policy Administration BSPPA, Public Policy Emphasis

The BSPPA degree is designed for students who are interested in understanding and influencing public policy and administration, and who have a passion for making a positive impact on society. Students will gain understanding of developing, implementing, and evaluating public policy, and leading in public and nonprofit organizations. Students will have the chance to utilize those skills through an internship. In the public policy track, students work with a faculty advisor to develop a focus on a particular policy area in preparation for relevant jobs in the public, nonprofit or private sector.

## Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>	1	POL SCI 1500	3
CORE - Mathematics Proficiency	3	ECON 1001	3
ENGL 1100	3	CORE - Communication Proficiency	3
POL SCI 1100	3	EXPLORE - Mathematics and Life/ Natural Sciences	3
EXPLORE - Mathematics and Life/ Natural Sciences	3	Elective or minor	3
EXPLORE - Humanities and Fine Arts	3		
	16		15

### Second Year

Fall	Hours	Spring	Hours
POL SCI 2400	3	POL SCI 2420	3
POL SCI 2430	3	INFSYS 1800	3
ECON 1002	3	EXPLORE - Humanities and Fine Arts	3
EXPLORE - Humanities and Fine Arts	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
	15		15

### Third Year

Fall	Hours	Spring	Hours
POL SCI 3420	3	POL SCI 3440	3
POL SCI 3000	3	POL SCI 3450	3
Elective or minor	3	ENGL 1100	3
Elective or minor	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
	15		15

### Fourth Year

Fall	Hours	Spring	Hours
POL SCI 3940	3	POL SCI 4950	3
POL SCI XXXX Policy and Institutions Course	3	Elective or minor	2
Elective or minor	3	Elective or minor	3
Elective or minor	3	Elective or minor	3

The BSPPA degree has two emphasis areas and a track. The first is a public administration emphasis, which emphasizes management in both the public and nonprofit sectors; it may produce a terminal degree or be a precursor to graduate training. The second is a public policy emphasis in which a student may focus on a particular policy area and also acquire specialized analytic training and research skills, in preparation for relevant entry-level jobs in the public or the voluntary sector as well as in certain parts of the private sector. The track area focuses explicitly on the administrative and leadership concerns of organizations in the nonprofit sector, which constitutes a growing field of research and employment opportunities.

## General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). Political science courses may be used to satisfy the social sciences requirement.

## Degree Requirements

All BSPPA majors must complete at least 33 but no more than 51, hours in political science. The following core curriculum is required of all BSPPA majors:

### Political Science

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	3
POL SCI 3000	Political Analysis	3
POL SCI 2400	Public Administration	3
POL SCI 2420	Introduction to Public Policy	3
POL SCI 3940	Public Affairs Internship	1-6
POL SCI 4950	Senior Seminar in Political Science	3

ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ECON 1002	Principles of Macroeconomics (MOTR ECON 101)	3
Total Hours		25-30

In addition, students must provide a demonstration of computer proficiency through one of the following:

- INFSYS 1800 Computers and Information Systems, extension courses, or other study approved by the BSPPA coordinator.
- BSPPA students may take a maximum of 3 hours of political science on a satisfactory/ unsatisfactory basis, except for the following (which may not be taken on a satisfactory/unsatisfactory basis):

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
POL SCI 1500	Introduction to Comparative Politics (MOTR POSC 202)	3
POL SCI 3000	Political Analysis	3
POL SCI 2400	Public Administration	3
POL SCI 2420	Introduction to Public Policy	3
POL SCI 3940	Public Affairs Internship	1-6
POL SCI 4950	Senior Seminar in Political Science	3

### Public Policy Emphasis Area

Students will adopt a policy concentration of at least 15 credit hours with approval from the BSPPA coordinator. Possible areas of specialization include, but are not limited to, environmental policy, government and business, society and the legal system, urban policy, labor studies, health care, human services, and nonprofit service provision. In fulfilling the concentration requirement, students, in consultation with the BSPPA coordinator, will select courses from related disciplines including at least two political science courses related to the policy area.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Explain the characteristics and impact of policy-making institutions and systems, including national, state, and local governments.
- Demonstrate an understanding of administrative systems and processes.
- Apply various methods, tools, and sources to answer important management and policy questions.
- Analyze policies, programs, and relevant issues, formulate evidence-based recommendations, and communicate them with clarity and coherence.
- Apply public policy administration knowledge and engage in real-world problem solving through an internship.
- Plan, execute, and defend a major research project.
- Demonstrate an understanding of theories, concepts and practices relevant to the student's chosen policy area.
- Compare and contrast different approaches and frameworks relevant to the student's chosen policy area.

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 POL SCI 1500	3
POL SCI 1100	3	ECON 1001	3
ENGL 1100	3	CORE - Communication Proficiency	3
CORE - Mathematics Proficiency	3	EXPLORE - Mathematics and Life/ Natural Sciences	3
EXPLORE - Mathematics and Life/ Natural Sciences	3	Elective or minor	3
EXPLORE - Humanities and Fine Arts	3		
		16	15

Second Year			
Fall	Hours	Spring	Hours
POL SCI 2400	3	POL SCI 2420	3
ECON 1002	3	INFSYS 1800	3
EXPLORE - Humanities and Fine Arts	3	POL SCI XXXX Policy Concentration Course	3
EXPLORE - Mathematics and Life/ Natural Sciences	3	EXPLORE - Humanities and Fine Arts	3
Elective or minor	3	Elective or minor	3
		15	15

Third Year			
Fall	Hours	Spring	Hours
POL SCI 3000	3	ENGL 3100	3
POL SCI XXXX Policy Concentration Course	3	POL SCI XXXX Policy Concentration Course	3
Elective or minor	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
		15	15

Fourth Year			
Fall	Hours	Spring	Hours
POL SCI 3940	3	POL SCI 4950	3
POL SCI XXXX Policy Concentration Course	3	POL SCI XXXX Policy Concentration Course	3
Elective or minor	3	Elective or minor	3
Elective or minor	3	Elective or minor	3
Elective or minor	3	Elective or minor	2
		15	14

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Public Policy Administration BSPPA/MPPA Dual Degree Program

The BSPPA / MPPA 2+3 program is an accelerated program that allows outstanding BSPPA students to complete a baccalaureate degree and Master of Public Policy Administration (MPPA) degree in five years. The program allows students to apply 12 of the MPPA credit hours towards the BSPPA at UMSL, reducing the overall required hours for the two degrees

from the standard 160 – 120 for the BS plus 40 for the MPPA – to 148 hours.

## Core Curriculum

All candidates for the MPPA degree must complete 25 hours in the core curriculum sequence composed of the following public policy administration courses:

### Policy Analysis and Economics

P P ADM 6000	Introduction to Policy Analysis	3
ECON 5550	Economics for Public Policy Analysis	3
P P ADM 6900	Cases in Public Policy Administration	3

### Public Administration and Budgeting

P P ADM 6400	Public Administration: Theory & Practice	3
P P ADM 6490	Human Resources in the Public Sector	3
P P ADM 6180	Governmental Budgeting and Financial Control	3

### Statistics, Research Methods, and Information Technology

P P ADM 6010	Introduction to Policy Research	3
P P ADM 6750	Applied Research Design	3
P P ADM 6850	E-Governance in the Public Sector	1

Total Hours		25
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A thesis is not required to complete the program. However, writing is an important component of the degree, and students will complete written analyses as part of their coursework and/or internships.

## Electives

Twelve credit hours are taken as electives based on a student's interest. The electives are organized into emphasis areas, listed above in the MPPA program.

For each student in this program, the MPPA Director and the BSPPA advisor in the Department of Political Science at UMSL, will jointly identify and approve four MPPA courses (totaling 12 credits) that cover, at a more advanced level, undergraduate courses that would otherwise be taken for the BSPPA degree. These courses will substitute for (and should not duplicate) BSPPA courses, and will count toward completion of both BSPPA and MPPA requirements.

Degree requirements remain the same for the two degrees, but students admitted into this accelerated program will be able to earn 12 graduate credits prior to completing their undergraduate degrees. Upon completion of the required coursework for the MPPA, the BSPPA and MPPA degrees will be awarded.

## Admission Requirements

BSPPA majors must have completed between 60 and 108 credit hours before applying for admission into this dual degree program. It is recommended that applicants apply after completing 90 credit hours. Applicants must have a minimum 3.0 overall GPA as well as a minimum 3.0 GPA in the major. Applications will be submitted to the Master of Public Policy Administration program and decisions will be made by the director in consultation with the BSPPA advisor in the Department of Political Science. Applicants must demonstrate proficiency in college algebra or equivalent. The application must be accompanied by three

letters of recommendation, including at least one from a current, full-time faculty member, and a two- to three-page statement explaining how the BSPPA/MPPA program fits in with the applicant's educational and professional goals.

## Public Policy Administration MPPA

### Admissions Requirements

Applicants must meet the following program admission requirements in addition to the general requirements of the Graduate School.

The MPPA admissions committee carefully evaluates each applicant record using the five following criteria:

- **Bachelor's Degree** by the time of enrollment, prospective students must have obtained a baccalaureate degree or the equivalent from an accredited college or university. Applicants must submit official transcripts documenting the baccalaureate degree and all other prior college and graduate-level coursework completed.
- **Grade Point Average:** A minimum GPA of 3.0 on a 4.0 scale is required to be considered for regular admission. This GPA is higher than the minimum for the Graduate School. An undergraduate GPA below 3.0 will be considered on an individual basis for restricted admission.
- **Demonstrated proficiency in college algebra or the equivalent.** Applicants must demonstrate proficiency in college algebra or the equivalent. Graduate coursework also will be taken into consideration. Applicants who do not meet these criteria may be admitted on a restricted basis and asked to satisfactorily complete a math proficiency test.
- **Letters of Recommendation.** Applicants must obtain three letters of recommendation. The letters should be from those who are familiar with your professional and/or academic skills. At least one of the letters must be from a current or former college-level instructor.
- **Personal Statement.** Applicants are required to submit a 2-3 page personal statement to demonstrate competence in writing. The statement should explain how the MPPA program fits in with the applicant's educational and professional goals. This personal statement may be sent directly to the MPPA program; a short statement of purpose in the web-based admission application is not sufficient.

## Degree Requirements

The MPPA degree consists of 40 credit hours, 25 of which are taken as part of the core curriculum and 15 that are electives. Students who complete the degree must demonstrate the following:

- Design, research, write, and defend analyses of substantive public policy problems and/or potential solutions
- Use data and sophisticated analytic tools (qualitative and quantitative) to conduct research in public policy and administration
- Understand the policy and internal/external environments of public and nonprofit organizations
- Develop expertise in a substantive area of public policy administration



## Curriculum

All candidates for the MPPA degree must complete 25 hours in the core curriculum sequence composed of the following public policy administration courses:

### Policy Analysis and Economics

P P ADM 6000	Introduction to Policy Analysis	3
ECON 5550	Economics for Public Policy Analysis	3
P P ADM 6900	Cases in Public Policy Administration	3

### Public Administration and Budgeting

P P ADM 6400	Public Administration: Theory & Practice	3
P P ADM 6490	Human Resources in the Public Sector	3
P P ADM 6180	Governmental Budgeting and Financial Control	3

### Statistics, Research Methods, and Information Technology

P P ADM 6010	Introduction to Policy Research	3
P P ADM 6750	Applied Research Design	3
P P ADM 6850	E-Governance in the Public Sector	1

Total Hours		25
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A thesis is not required to complete the program. However, writing is an important component of the degree, and students will complete written analyses as part of their coursework and/or internship.

P P ADM 6000 should be taken at the beginning of the program. It is strongly recommended that P P ADM 6010 and ECON 5550 be taken early in a student's course plan. P P ADM 6900 is a capstone course and must be taken toward the end of the program.

Students may select one of three emphasis areas in which to concentrate their advanced studies:

- Policy Research and Analysis,
- Local Government Management,
- Nonprofit Organization Management.

Students may also select an individualized emphasis area in consultation with their advisor and with approval of the Director.

Prior to the completion of 15 hours in the MPPA program, students should identify an emphasis area. In each of the emphasis areas students may be able to substitute another course for a specified elective, with the MPPA Director's approval. Specific requirements for each emphasis area are as follows:

## Internships

An internship is required for students without substantial experience in the public or nonprofit sectors. Interns may be placed in planning agencies, city managers' offices, administrative departments, or nonprofit agencies. Credit is granted after successful completion of the internship and a written paper at the end of the semester.

MPPA students currently employed in public agencies or nonprofit organizations can receive 3 hours of credit for internships with their employer. To do so, students must develop, in consultation with the

internship coordinator, special research projects outside the scope of their regular employment duties.

Students who have significant relevant experience in the public or nonprofit sector may request the internship requirement be waived. To request a waiver, students must submit a written request outlining the student's professional or managerial field experience with appropriate documentation. Any request for a waiver from the internship requirement must be approved by the program director. Students who receive a waiver must take an additional 3 hours of electives in lieu of the internship.

Prior to the completion of 15 hours in the MPPA program, the student must present a proposal for 15 hours of specific coursework for approval by the student's advisor and the MPPA program director. The 15 hours must include P P ADM 6950, Internship (in an assignment relevant to the emphasis area). Students with significant public or nonprofit sector experience may request permission to waive the internship and replace it with an additional three-credit hour elective.

## Public Policy Administration MPPA, Individualized Emphasis

### Admissions Requirements

Applicants must meet the following program admission requirements in addition to the general requirements of the Graduate School.

The MPPA admissions committee carefully evaluates each applicant record using the five following criteria:

- **Bachelor's Degree** by the time of enrollment, prospective students must have obtained a baccalaureate degree or the equivalent from an accredited college or university. Applicants must submit official transcripts documenting the baccalaureate degree and all other prior college and graduate-level coursework completed.
- **Grade Point Average:** A minimum GPA of 3.0 on a 4.0 scale is required to be considered for regular admission. This GPA is higher than the minimum for the Graduate School. An undergraduate GPA below 3.0 will be considered on an individual basis for restricted admission.
- **Demonstrated proficiency in college algebra or the equivalent.** Applicants must demonstrate proficiency in college algebra or the equivalent. Graduate coursework also will be taken into consideration. Applicants who do not meet these criteria may be admitted on a restricted basis and asked to satisfactorily complete a math proficiency test.
- **Letters of Recommendation.** Applicants must obtain three letters of recommendation. The letters should be from those who are familiar with your professional and/or academic skills. At least one of the letters must be from a current or former college-level instructor.
- **Personal Statement.** Applicants are required to submit a 2-3 page personal statement to demonstrate competence in writing. The statement should explain how the MPPA program fits in with the applicant's educational and professional goals. This personal statement may be sent directly to the MPPA program; a short statement of purpose in the web-based admission application is not sufficient.

## Degree Requirements

The MPPA degree consists of 40 credit hours, 25 of which are taken as part of the core curriculum and 15 that are electives. Students who complete the degree must demonstrate the following:

- Design, research, write, and defend analyses of substantive public policy problems and/or potential solutions
- Use data and sophisticated analytic tools (qualitative and quantitative) to conduct research in public policy and administration
- Understand the policy and internal/external environments of public and nonprofit organizations
- Develop expertise in a substantive area of public policy administration

## Curriculum

All candidates for the MPPA degree must complete 25 hours in the core curriculum sequence composed of the following public policy administration courses:

### Policy Analysis and Economics

P P ADM 6000	Introduction to Policy Analysis	3
ECON 5550	Economics for Public Policy Analysis	3
P P ADM 6900	Cases in Public Policy Administration	3

### Public Administration and Budgeting

P P ADM 6400	Public Administration: Theory & Practice	3
P P ADM 6490	Human Resources in the Public Sector	3
P P ADM 6180	Governmental Budgeting and Financial Control	3

### Statistics, Research Methods, and Information Technology

P P ADM 6010	Introduction to Policy Research	3
P P ADM 6750	Applied Research Design	3
P P ADM 6850	E-Governance in the Public Sector	1

Total Hours		25
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A thesis is not required to complete the program. However, writing is an important component of the degree, and students will complete written analyses as part of their coursework and/or internship.

P P ADM 6000 should be taken at the beginning of the program. It is strongly recommended that P P ADM 6010 and ECON 5550 be taken early in a student's course plan. P P ADM 6900 is a capstone course and must be taken toward the end of the program.

Students may select one of three emphasis areas in which to concentrate their advanced studies:

- Policy Research and Analysis,
- Local Government Management,
- Nonprofit Organization Management.

Students may also select an individualized emphasis area in consultation with their advisor and with approval of the Director.

Prior to the completion of 15 hours in the MPPA program, students should identify an emphasis area. In each of the emphasis areas students may be able to substitute another course for a specified elective, with the MPPA

Director's approval. Specific requirements for each emphasis area are as follows:

## Internships

An internship is required for students without substantial experience in the public or nonprofit sectors. Interns may be placed in planning agencies, city managers' offices, administrative departments, or nonprofit agencies. Credit is granted after successful completion of the internship and a written paper at the end of the semester.

MPPA students currently employed in public agencies or nonprofit organizations can receive 3 hours of credit for internships with their employer. To do so, students must develop, in consultation with the internship coordinator, special research projects outside the scope of their regular employment duties.

Students who have significant relevant experience in the public or nonprofit sector may request the internship requirement be waived. To request a waiver, students must submit a written request outlining the student's professional or managerial field experience with appropriate documentation. Any request for a waiver from the internship requirement must be approved by the program director. Students who receive a waiver must take an additional 3 hours of electives in lieu of the internship.

## Emphasis Area Requirements

Prior to the completion of 15 hours in the MPPA program, the student must present a proposal for 15 hours of specific coursework for approval by the student's advisor and the MPPA program director. The 15 hours must include P P ADM 6950, Internship (in an assignment relevant to the emphasis area). Students with significant public or nonprofit sector experience may request permission to waive the internship and replace it with an additional three-credit hour elective.

## Public Policy Administration MPPA, Local Government Management Emphasis

### Admissions Requirements

Applicants must meet the following program admission requirements in addition to the general requirements of the Graduate School.

The MPPA admissions committee carefully evaluates each applicant record using the five following criteria:

- **Bachelor's Degree** by the time of enrollment, prospective students must have obtained a baccalaureate degree or the equivalent from an accredited college or university. Applicants must submit official transcripts documenting the baccalaureate degree and all other prior college and graduate-level coursework completed.
- **Grade Point Average:** A minimum GPA of 3.0 on a 4.0 scale is required to be considered for regular admission. This GPA is higher than the minimum for the Graduate School. An undergraduate GPA below 3.0 will be considered on an individual basis for restricted admission.
- **Demonstrated proficiency in college algebra or the equivalent.** Applicants must demonstrate proficiency in college algebra or the equivalent. Graduate coursework also will be taken into consideration. Applicants who do not meet these criteria may be

admitted on a restricted basis and asked to satisfactorily complete a math proficiency test.

- **Letters of Recommendation.** Applicants must obtain three letters of recommendation. The letters should be from those who are familiar with your professional and/or academic skills. At least one of the letters must be from a current or former college-level instructor.
- **Personal Statement.** Applicants are required to submit a 2-3 page personal statement to demonstrate competence in writing. The statement should explain how the MPPA program fits in with the applicant's educational and professional goals. This personal statement may be sent directly to the MPPA program; a short statement of purpose in the web-based admission application is not sufficient.

## Degree Requirements

The MPPA degree consists of 40 credit hours, 25 of which are taken as part of the core curriculum and 15 that are electives. Students who complete the degree must demonstrate the following:

- Design, research, write, and defend analyses of substantive public policy problems and/or potential solutions
- Use data and sophisticated analytic tools (qualitative and quantitative) to conduct research in public policy and administration
- Understand the policy and internal/external environments of public and nonprofit organizations
- Develop expertise in a substantive area of public policy administration

## Curriculum

All candidates for the MPPA degree must complete 25 hours in the core curriculum sequence composed of the following public policy administration courses:

### Policy Analysis and Economics

P P ADM 6000	Introduction to Policy Analysis	3
ECON 5550	Economics for Public Policy Analysis	3
P P ADM 6900	Cases in Public Policy Administration	3

### Public Administration and Budgeting

P P ADM 6400	Public Administration: Theory & Practice	3
P P ADM 6490	Human Resources in the Public Sector	3
P P ADM 6180	Governmental Budgeting and Financial Control	3

### Statistics, Research Methods, and Information Technology

P P ADM 6010	Introduction to Policy Research	3
P P ADM 6750	Applied Research Design	3
P P ADM 6850	E-Governance in the Public Sector	1
Total Hours		25

A thesis is not required to complete the program. However, writing is an important component of the degree, and students will complete written analyses as part of their coursework and/or internship.

P P ADM 6000 should be taken at the beginning of the program. It is strongly recommended that P P ADM 6010 and ECON 5550 be taken early in a student's course plan. P P ADM 6900 is a capstone course and must be taken toward the end of the program.

Students may select one of three emphasis areas in which to concentrate their advanced studies:

- Policy Research and Analysis,
- Local Government Management,
- Nonprofit Organization Management.

Students may also select an individualized emphasis area in consultation with their advisor and with approval of the Director.

Prior to the completion of 15 hours in the MPPA program, students should identify an emphasis area. In each of the emphasis areas students may be able to substitute another course for a specified elective, with the MPPA Director's approval. Specific requirements for each emphasis area are as follows:

## Internships

An internship is required for students without substantial experience in the public or nonprofit sectors. Interns may be placed in planning agencies, city managers' offices, administrative departments, or nonprofit agencies. Credit is granted after successful completion of the internship and a written paper at the end of the semester.

MPPA students currently employed in public agencies or nonprofit organizations can receive 3 hours of credit for internships with their employer. To do so, students must develop, in consultation with the internship coordinator, special research projects outside the scope of their regular employment duties.

Students who have significant relevant experience in the public or nonprofit sector may request the internship requirement be waived. To request a waiver, students must submit a written request outlining the student's professional or managerial field experience with appropriate documentation. Any request for a waiver from the internship requirement must be approved by the program director. Students who receive a waiver must take an additional 3 hours of electives in lieu of the internship.

## Emphasis Area Requirements

### Required <sup>1</sup>

P P ADM 6340	Seminar in City Administration	3
or P P ADM 6350	Issues in Urban Management	
P P ADM 6470	Proseminar in Urban Politics	3
or P P ADM 6471	Seminar In Urban Politics	

### Electives

Select three of the following:		9
P P ADM 6600	Managing People in Organizations	
P P ADM 6300	Leadership and Management in Nonprofit Organizations	
P P ADM 6340	Seminar in City Administration	
P P ADM 6350	Issues in Urban Management	
P P ADM 6470	Proseminar in Urban Politics	
P P ADM 6471	Seminar In Urban Politics	
P P ADM 6510	Urban and Regional Planning and Public Policy	
P P ADM 6800	Management Information Systems	
P P ADM 6950	Internship (in assignment relevant to emphasis area)	

ECON 4160

Geospatial Analysis in the Social  
Sciences

Total Hours 15

<sup>1</sup> For Local Government Management specialization, a course not taken to fulfill the "required six hours" may be taken as an elective.

## Public Policy Administration MPPA, Nonprofit Organization Management Emphasis

### Admissions Requirements

Applicants must meet the following program admission requirements in addition to the general requirements of the Graduate School.

The MPPA admissions committee carefully evaluates each applicant record using the five following criteria:

- **Bachelor's Degree** by the time of enrollment, prospective students must have obtained a baccalaureate degree or the equivalent from an accredited college or university. Applicants must submit official transcripts documenting the baccalaureate degree and all other prior college and graduate-level coursework completed.
- **Grade Point Average:** A minimum GPA of 3.0 on a 4.0 scale is required to be considered for regular admission. This GPA is higher than the minimum for the Graduate School. An undergraduate GPA below 3.0 will be considered on an individual basis for restricted admission.
- **Demonstrated proficiency in college algebra or the equivalent.** Applicants must demonstrate proficiency in college algebra or the equivalent. Graduate coursework also will be taken into consideration. Applicants who do not meet these criteria may be admitted on a restricted basis and asked to satisfactorily complete a math proficiency test.
- **Letters of Recommendation.** Applicants must obtain three letters of recommendation. The letters should be from those who are familiar with your professional and/or academic skills. At least one of the letters must be from a current or former college-level instructor.
- **Personal Statement.** Applicants are required to submit a 2-3 page personal statement to demonstrate competence in writing. The statement should explain how the MPPA program fits in with the applicant's educational and professional goals. This personal statement may be sent directly to the MPPA program; a short statement of purpose in the web-based admission application is not sufficient.

### Degree Requirements

The MPPA degree consists of 40 credit hours, 25 of which are taken as part of the core curriculum and 15 that are electives. Students who complete the degree must demonstrate the following:

- Design, research, write, and defend analyses of substantive public policy problems and/or potential solutions
- Use data and sophisticated analytic tools (qualitative and quantitative) to conduct research in public policy and administration
- Understand the policy and internal/external environments of public and nonprofit organizations
- Develop expertise in a substantive area of public policy administration

### Curriculum

All candidates for the MPPA degree must complete 25 hours in the core curriculum sequence composed of the following public policy administration courses:

#### Policy Analysis and Economics

P P ADM 6000	Introduction to Policy Analysis	3
ECON 5550	Economics for Public Policy Analysis	3
P P ADM 6900	Cases in Public Policy Administration	3

#### Public Administration and Budgeting

P P ADM 6400	Public Administration: Theory & Practice	3
P P ADM 6490	Human Resources in the Public Sector	3
P P ADM 6180	Governmental Budgeting and Financial Control	3

#### Statistics, Research Methods, and Information Technology

P P ADM 6010	Introduction to Policy Research	3
P P ADM 6750	Applied Research Design	3
P P ADM 6850	E-Governance in the Public Sector	1

Total Hours 25

A thesis is not required to complete the program. However, writing is an important component of the degree, and students will complete written analyses as part of their coursework and/or internship.

P P ADM 6000 should be taken at the beginning of the program. It is strongly recommended that P P ADM 6010 and ECON 5550 be taken early in a student's course plan. P P ADM 6900 is a capstone course and must be taken toward the end of the program.

Students may select one of three emphasis areas in which to concentrate their advanced studies:

- Policy Research and Analysis,
- Local Government Management,
- Nonprofit Organization Management.

Students may also select an individualized emphasis area in consultation with their advisor and with approval of the Director.

Prior to the completion of 15 hours in the MPPA program, students should identify an emphasis area. In each of the emphasis areas students may be able to substitute another course for a specified elective, with the MPPA Director's approval. Specific requirements for each emphasis area are as follows:

### Internships

An internship is required for students without substantial experience in the public or nonprofit sectors. Interns may be placed in planning agencies, city managers' offices, administrative departments, or nonprofit agencies. Credit is granted after successful completion of the internship and a written paper at the end of the semester.

MPPA students currently employed in public agencies or nonprofit organizations can receive 3 hours of credit for internships with their employer. To do so, students must develop, in consultation with the



internship coordinator, special research projects outside the scope of their regular employment duties.

Students who have significant relevant experience in the public or nonprofit sector may request the internship requirement be waived. To request a waiver, students must submit a written request outlining the student's professional or managerial field experience with appropriate documentation. Any request for a waiver from the internship requirement must be approved by the program director. Students who receive a waiver must take an additional 3 hours of electives in lieu of the internship.

## Emphasis Area Requirements

### Required

P P ADM 6300	Leadership and Management in Nonprofit Organizations	3
P P ADM 6310	American Philanthropy and Nonprofit Resources Development	3
P P ADM 6311	Staff Management Issues in Nonprofit Organizations	1
P P ADM 6312	Legal Issues in Managing Nonprofit Organizations	1
P P ADM 6313	Financial Issues in Managing Nonprofit Organizations	1

### Electives

Select two of the following:		6
ACCTNG 3451	Accounting for Governmental and Not-For-Profit Entities	
BUS AD 5100	Managerial Communication	
BUS AD 5900	Law, Ethics and Business	
MKTG 5700	Contemporary Marketing Concepts	
P P ADM 6501	Selected Topics in Nonprofit Management and Leadership	
P P ADM 6550	Strategic and Program Planning for Nonprofit Organizations	
P P ADM 6600	Managing People in Organizations	
P P ADM 6800	Management Information Systems	
P P ADM 6950	Internship (in assignment relevant to the emphasis area)	
PSYCH 7412	Social Psychology	

Total Hours 15

# Public Policy Administration MPPA, Policy Research and Analysis Emphasis

## Admissions Requirements

Applicants must meet the following program admission requirements in addition to the general requirements of the Graduate School.

The MPPA admissions committee carefully evaluates each applicant record using the five following criteria:

- **Bachelor's Degree** by the time of enrollment, prospective students must have obtained a baccalaureate degree or the equivalent from an accredited college or university. Applicants must submit official

transcripts documenting the baccalaureate degree and all other prior college and graduate-level coursework completed.

- **Grade Point Average:** A minimum GPA of 3.0 on a 4.0 scale is required to be considered for regular admission. This GPA is higher than the minimum for the Graduate School. An undergraduate GPA below 3.0 will be considered on an individual basis for restricted admission.
- **Demonstrated proficiency in college algebra or the equivalent.** Applicants must demonstrate proficiency in college algebra or the equivalent. Graduate coursework also will be taken into consideration. Applicants who do not meet these criteria may be admitted on a restricted basis and asked to satisfactorily complete a math proficiency test.
- **Letters of Recommendation.** Applicants must obtain three letters of recommendation. The letters should be from those who are familiar with your professional and/or academic skills. At least one of the letters must be from a current or former college-level instructor.
- **Personal Statement.** Applicants are required to submit a 2-3 page personal statement to demonstrate competence in writing. The statement should explain how the MPPA program fits in with the applicant's educational and professional goals. This personal statement may be sent directly to the MPPA program; a short statement of purpose in the web-based admission application is not sufficient.

## Degree Requirements

The MPPA degree consists of 40 credit hours, 25 of which are taken as part of the core curriculum and 15 that are electives. Students who complete the degree must demonstrate the following:

- Design, research, write, and defend analyses of substantive public policy problems and/or potential solutions
- Use data and sophisticated analytic tools (qualitative and quantitative) to conduct research in public policy and administration
- Understand the policy and internal/external environments of public and nonprofit organizations
- Develop expertise in a substantive area of public policy administration

## Curriculum

All candidates for the MPPA degree must complete 25 hours in the core curriculum sequence composed of the following public policy administration courses:

### Policy Analysis and Economics

P P ADM 6000	Introduction to Policy Analysis	3
ECON 5550	Economics for Public Policy Analysis	3
P P ADM 6900	Cases in Public Policy Administration	3

### Public Administration and Budgeting

P P ADM 6400	Public Administration: Theory & Practice	3
P P ADM 6490	Human Resources in the Public Sector	3
P P ADM 6180	Governmental Budgeting and Financial Control	3

### Statistics, Research Methods, and Information Technology

P P ADM 6010	Introduction to Policy Research	3
P P ADM 6750	Applied Research Design	3

P P ADM 6850	E-Governance in the Public Sector	1
Total Hours		25

A thesis is not required to complete the program. However, writing is an important component of the degree, and students will complete written analyses as part of their coursework and/or internship.

P P ADM 6000 should be taken at the beginning of the program. It is strongly recommended that P P ADM 6010 and ECON 5550 be taken early in a student's course plan. P P ADM 6900 is a capstone course and must be taken toward the end of the program.

Students may select one of three emphasis areas in which to concentrate their advanced studies:

- Policy Research and Analysis,
- Local Government Management,
- Nonprofit Organization Management.

Students may also select an individualized emphasis area in consultation with their advisor and with approval of the Director.

Prior to the completion of 15 hours in the MPPA program, students should identify an emphasis area. In each of the emphasis areas students may be able to substitute another course for a specified elective, with the MPPA Director's approval. Specific requirements for each emphasis area are as follows:

### Internships

An internship is required for students without substantial experience in the public or nonprofit sectors. Interns may be placed in planning agencies, city managers' offices, administrative departments, or nonprofit agencies. Credit is granted after successful completion of the internship and a written paper at the end of the semester.

MPPA students currently employed in public agencies or nonprofit organizations can receive 3 hours of credit for internships with their employer. To do so, students must develop, in consultation with the internship coordinator, special research projects outside the scope of their regular employment duties.

Students who have significant relevant experience in the public or nonprofit sector may request the internship requirement be waived. To request a waiver, students must submit a written request outlining the student's professional or managerial field experience with appropriate documentation. Any request for a waiver from the internship requirement must be approved by the program director. Students who receive a waiver must take an additional 3 hours of electives in lieu of the internship.

### Emphasis Area Requirements

#### Required

POL SCI 6402	Intermediate Techniques in Policy Research	3
or ECON 4100	Introduction to Econometrics	

#### Electives

Select four of the following:		12
BUS AD 5001	Managerial Economic Analysis	
POL SCI 6403	Advanced Techniques in Policy Research	
or ECON 4110	Applied Econometrics	
or ECON 5110	Topics in Applied Econometrics	

ECON 4160	Geospatial Analysis in the Social Sciences	
ECON 4170	Fundamentals of Cost-Benefit Analysis	
ECON 4550	Natural Resource Economics	
POL SCI 6404	Multi-Method Research Design	
POL SCI 6422	Law, Courts and Public Policy	
POL SCI/P P ADM 6444	Seminar in Public Policy and Aging	
POL SCI 6452	Public Policy of Conservation and Sustainable Development	
SOC WK 6443	Health Care Policy	
or POL SCI 6443	Health Care Policy	
P P ADM 6950	Internship (in assignment relevant to the emphasis area)	
HIGHERED 6422	Policy Analysis of Higher Education	
Total Hours		15

## Public Policy Minor

### Requirements for Political Science Minors

A general minor in political science can be arranged, as well as specialized minors in eight different subfields of the discipline. Interested students should see a faculty adviser to plan a coherent program of study as a minor field.

Students must achieve a cumulative 2.0 GPA in the political science courses chosen to qualify for the minor. Students may count no more than 3 hours in political science taken on a satisfactory/unsatisfactory basis toward the minor. Students taking an internship POL SCI 3940 may count no more than three hours of the internship toward the minor.

#### Minor in Public Policy

POL SCI 2420	Introduction to Public Policy	3
Select four of the following:		12
POL SCI 2300	State Politics	
POL SCI 2350	Introduction to Urban Politics	
POL SCI 2400	Public Administration	
POL SCI 2330	The American Presidency	
POL SCI 3440	Public and NonProfit Budgeting	
POL SCI 3450	Urban Administration	
POL SCI 3455	Metropolitan Planning	
POL SCI 3460	The Politics of Poverty and Welfare	
POL SCI 3480	Environmental Policy	
POL SCI 3900	Special Readings (when appropriate)	
POL SCI 3940	Public Affairs Internship (when appropriate)	
Total Hours		15

### Learning Outcomes

- Demonstrate understanding of theories, concepts and practices relevant to public policy.
- Describe and apply the models used to analyze and create public policy.

- Assess public policy issues, formulate evidence-based recommendations, and communicate them with clarity and coherence.

## Public Relations Undergraduate Certificate

The Certificate in Public Relations offers a sequence of courses that will prepare students for a successful career in public relations. This writing-intensive certificate program includes a selection of required and elective courses that integrate practical knowledge of the public relations industry with communication planning and research tactics needed in today's ever-changing world. The sequence of courses is based upon the latest report from the Commission on Public Relations Education and the certification requirements of the Public Relations Society of America. To earn the certificate, student must complete a minimum of 21 credits in the designated courses with a grade of "C" or better.

### Required Courses

COMM 1150	Introduction to Public Relations	3
COMM 2180	Public Relations Writing	3
COMM 3330	Research Methods in Communication I	3
COMM 4100	Communication Campaigns	3
COMM 4199	Applied Strategic Communication <sup>1</sup>	3
Elective Coursework (minimum of 6 credit hours required):		6
COMM 1369	Introduction to Health Communication	
COMM 3150	Crisis, Disaster, and Risk Communication	
COMM 3370	Social Media in Public Relations	
MEDIA ST 3355	Media Law and Regulation	
MKTG 3700	Basic Marketing	
MKTG 3721	Introduction to Digital Marketing Strategies	
Total Hours		21

<sup>1</sup> COMM 4199 may count toward internship credit for the BA Communication degree.

For more information on this certificate, please contact the Department of Communication and Media's Public Relations Coordinator.

## Learning Outcomes

Students will be able to:

- Interpret and apply basic public relations principles to design, research and plan public relations campaigns.
- Compose written public relations materials that are written in a clear, brief, concise format following the appropriate format and style.
- Make use of broad knowledge combined with principles of public relations in order to evaluate and create effective public relations campaigns.
- Plan and implement research projects; read and interpret research data as applied to public relations campaigns and message strategy.
- Create and conduct ethically sound and socially responsible public relations strategies and campaigns.

## School Psychology EdS

The Educational Specialist in School Psychology (Ed.S.) degree program at the University of Missouri-St. Louis is a National Association of School Psychologists-approved program whose primary goal is to prepare future school psychologists to assume a wide array of professional roles in schools. Built upon a foundation of data-based decision making and problem solving methodology, the program highlights the critical importance of providing timely prevention, early intervention, and intensive research-based interventions to address academic and mental/behavioral health difficulties within a framework of multitiered systems of support.

### Degree Requirements

The Ed. S. in School Psychology degree program consists of 60 graduate semester hours that includes coursework in psychological and educational foundations, psychoeducational assessment, and direct and indirect service delivery. Prevention and early intervention of academic, behavioral, and social-emotional problems through consultation, interdisciplinary collaboration, and systems-level interventions are highlighted throughout the program. The Ed. S. degree is a small-cohort program consisting of 10-12 candidates per cohort that maximizes close relationships with faculty and field-based practitioners to develop professional skills and competencies.

Admission requirements include a 3.0 undergraduate GPA, current GRE General Test scores (Verbal, Quantitative and Analytical Writing scores at or above the 50th percentile), three letters of recommendation, a personal statement describing personal goals (not to exceed five double-spaced typed pages) and a curriculum vita detailing relevant experience with children, adolescents, and families. Prerequisite coursework in the areas of Developmental Psychology, and Psychological Statistics is required for admission. Following initial screening, finalists will be invited for an on-campus interview with the School Psychology Program faculty and current Ed. S. candidates. All required application materials will be considered equally when making admission decisions. Applications are reviewed annually with a **January 15** deadline. The program may review additional applications until all spaces in the cohort are filled.

Transfer credit may be granted for graduate coursework completed prior to entering the program, but strict limitations apply. The Ed. S. in School Psychology degree program involves a minimum of three years of intensive study. Though it is possible to complete the first year of the curriculum on a part-time basis, please note that practicum during the second year involves two days per week working in a school with a school psychologist, and internship is a yearlong fulltime supervised experience. Consequently, full-time study is recommended and preferred. Graduates of the program are immediately eligible for School Psychologist Certification from the Missouri Department of Elementary and Secondary Education and the Nationally Certified School Psychologist credential from the National Association of School Psychologists. As such, graduates from the program will meet or exceed certification requirements in the majority if not all states in the country.

### Requirements

ED PSY 6111	Educational Psychology	3
ED PSY 6115	Personality and Social Development	3
ED PSY 6226	Mental Health and Development of Children and Youth	3
ED PSY 6530	Foundations of School Psychology	3
ED PSY 6532	Psychoeducational Differences	3

ED PSY 6540	Psychoeducational Interventions	3
ED PSY 6542	Social-Emotional and Behavior Interventions	3
ED PSY 6545	Consultation in Schools and Related Settings	3
ED PSY 6550	Professional Issues in School Psychology	3
ED PSY 6590	School Psychology Practicum I	3
ED PSY 6591	School Psychology Practicum II	3
ED PSY 6598	School Psychology Internship I	3
ED PSY 6599	School Psychology Internship II	3
ED REM 6718	Psychoeducational Assessment and Intervention	3
ED REM 6719	Advanced Psychoeducational Assessment and Intervention	3
ED REM 6710	Educational Research Methods and Design	3
ED REM 6730	Educational Program Development and Evaluation	3
ED REM 6732	Advanced Educational Program Development and Evaluation	3
CNS ED 6220	Counseling Individuals with Disabilities	3
Elective		3
Total Hours		60

## Learning Outcomes

The UMSL School Psychology Program promotes development of advanced student- and systems-level knowledge and skills to support all students via the following learning outcomes:

### A. Improved Academic and Mental/Behavioral Health Outcomes

Candidates will develop advanced skills in the areas of multifaceted assessment and data collection techniques, treatment planning and implementation, and evaluation of student responses to academic and mental/behavioral health prevention and intervention efforts.

### B. Culturally-Responsive Practice and Social Justice

Candidates will understand identity development and develop the skills necessary to work with and advocate for culturally- and linguistically-diverse students and families in a competent and socially-just manner.

### C. Program Development and Evaluation

Candidates will learn qualitative, quantitative, and mixed methods data collection and research methodologies that will enable them to develop, implement, and evaluate a wide array of school-based interventions and programs for students, educators, and parents.

### D. Facilitation of Organizational/Systems Change

Candidates will acquire a systems-level perspective of the educational, social, and political influences on development and will use this knowledge to promote systemic and policy changes that will improve educational and psychological outcomes for all students.

## Secondary Education BSEd English Emphasis

The Bachelor's of Science in Secondary Education degree prepares students to teach in secondary school settings, grades 9-12. This program requires the selection and completion of required coursework in a specific content area.

## University General Education and Graduation Requirements

B.S.Ed. degree candidates must complete the following General Education (p. 51) requirements (p. 51) and Graduation requirements (p. 19) of the University as outlined in this Bulletin.

The courses listed below fulfill General Education requirements and best prepare students for advanced education coursework and licensure exams.

### Core Areas:

#### First Year Writing

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
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#### Communication Proficiency

EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	

#### Math Proficiency

MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
or MATH 1030	College Algebra (MOTR MATH 130)	

#### Information Literacy

ED TECH 2230	Information Literacy	3
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#### American History or Government

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	

#### Humanities and Fine Arts

Choose any 9 hours from approved fields.		9
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#### Social Science

Choose any 9 hours. At least one course must meet the cultural diversity requirement		9
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#### Math and Life/Natural Sciences

Choose any 9 hours.		9
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#### Junior Level Writing

ENGL 3100	Junior-Level Writing	3
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Total Hours		45
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## Program Requirements

All students in the B.S.Ed. in Secondary Education program are required to take the following Teacher Education courses. Each student must also select a content area and complete the required courses and certification assessments for that area as specified by the Missouri Department of Elementary and Secondary Education.



## Grade Requirement

Professional Education courses must be completed with a grade of C or better (courses completed with a grade of C- or below must be retaken).

## GPA Requirement

Beginning with those students graduating in May 2017 who will also receive teaching certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

## Assessment Requirement

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

## Preparing for the Teacher Education Program

The following courses must be completed prior to applying for admission to the teacher education program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3
Total Hours		9

## Teacher Education Program

The following courses are completed after acceptance into the teacher education program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
TCH ED 3310	Introduction to Methods of Teaching	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3
SEC ED 4880	Writing for Teachers <sup>1</sup>	3
Total Hours		16

<sup>1</sup> SEC ED 4880 is not required for foreign language emphasis areas.

In addition to the above courses, students must complete 30-50 hours of required coursework in one specific content area (English, French K-12, Spanish K-12, mathematics, biology, chemistry, physics, or social studies), as well as the appropriate methods course:

SEC ED 4011	The Curriculum and Methods of Teaching History and Social Studies	3
SEC ED 4240	Curriculum and Methods of Teaching Physical Sciences	3
SEC ED 4589	Curriculum and Methods of Teaching Foreign Languages	3

SEC ED 4646	The Curriculum and Methods of Teaching Math	3
SEC ED 4885	The Curriculum and Methods of Teaching English	3
SEC ED 4985	Curriculum and Methods of Teaching Life Sciences	3

The program will culminate in the following practicum courses:

SEC ED 4989	Practicum I: Site-Based Experience	3
SEC ED 4990	Practicum II: Site-Based Experience	12

**Total Credit Hours: 120 Minimum**

## B.S. Ed. in Secondary Education with Emphasis in English

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. in English with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.

- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Secondary Education BSEd Mathematics Emphasis

The Bachelor's of Science in Secondary Education degree prepares students to teach in secondary school settings, grades 9-12. This program requires the selection and completion of required coursework in a specific content area.

### University General Education and Graduation Requirements

B.S.Ed. degree candidates must complete the following General Education (p. 51) requirements (p. 51) and Graduation requirements (p. 19) of the University as outlined in this Bulletin.

The courses listed below fulfill General Education requirements and best prepare students for advanced education coursework and licensure exams.

#### Core Areas:

##### First Year Writing

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
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##### Communication Proficiency

EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	

##### Math Proficiency

MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
or MATH 1030	College Algebra (MOTR MATH 130)	

##### Information Literacy

ED TECH 2230	Information Literacy	3
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##### American History or Government

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	

##### Humanities and Fine Arts

Choose any 9 hours from approved fields.		9
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##### Social Science

Choose any 9 hours. At least one course must meet the cultural diversity requirement		9
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##### Math and Life/Natural Sciences

Choose any 9 hours.		9
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##### Junior Level Writing

ENGL 3100	Junior-Level Writing	3
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Total Hours		45
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## Program Requirements

All students in the B.S.Ed. in Secondary Education program are required to take the following Teacher Education courses. Each student must also select a content area and complete the required courses and certification assessments for that area as specified by the Missouri Department of Elementary and Secondary Education.

### Grade Requirement

Professional Education courses must be completed with a grade of C or better (courses completed with a grade of C- or below must be retaken).

### GPA Requirement

Beginning with those students graduating in May 2017 who will also receive teaching certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

### Assessment Requirement

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

### Preparing for the Teacher Education Program

The following courses must be completed prior to applying for admission to the teacher education program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3
Total Hours		9

### Teacher Education Program

The following courses are completed after acceptance into the teacher education program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
TCH ED 3310	Introduction to Methods of Teaching	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3
SEC ED 4880	Writing for Teachers <sup>1</sup>	3
Total Hours		16

<sup>1</sup> SEC ED 4880 is not required for foreign language emphasis areas.

In addition to the above courses, students must complete 30-50 hours of required coursework in one specific content area (English, French K-12, Spanish K-12, mathematics, biology, chemistry, physics, or social studies), as well as the appropriate methods course:

SEC ED 4011	The Curriculum and Methods of Teaching History and Social Studies	3
SEC ED 4240	Curriculum and Methods of Teaching Physical Sciences	3
SEC ED 4589	Curriculum and Methods of Teaching Foreign Languages	3
SEC ED 4646	The Curriculum and Methods of Teaching Math	3
SEC ED 4885	The Curriculum and Methods of Teaching English	3
SEC ED 4985	Curriculum and Methods of Teaching Life Sciences	3

The program will culminate in the following practicum courses:

SEC ED 4989	Practicum I: Site-Based Experience	3
SEC ED 4990	Practicum II: Site-Based Experience	12

**Total Credit Hours: 120 Minimum**

## B.S. Ed. in Secondary Education with Emphasis in Mathematics

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Mathematics with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.

- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Secondary Education BSEd Modern Foreign Language-French Emphasis

The Bachelor's of Science in Secondary Education degree prepares students to teach in secondary school settings, grades 9-12. This program requires the selection and completion of required coursework in a specific content area.

## University General Education and Graduation Requirements

B.S.Ed. degree candidates must complete the following General Education (p. 51) requirements (p. 51) and Graduation requirements (p. 19) of the University as outlined in this Bulletin.

The courses listed below fulfill General Education requirements and best prepare students for advanced education coursework and licensure exams.

### Core Areas:

First Year Writing		
ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
Communication Proficiency		
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	
Math Proficiency		
MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
or MATH 1030	College Algebra (MOTR MATH 130)	
Information Literacy		
ED TECH 2230	Information Literacy	3
American History or Government		
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	
Humanities and Fine Arts		
Choose any 9 hours from approved fields.		9
Social Science		

Choose any 9 hours. At least one course must meet the cultural diversity requirement 9

#### Math and Life/Natural Sciences

Choose any 9 hours. 9

#### Junior Level Writing

ENGL 3100 Junior-Level Writing 3

Total Hours 45

## Program Requirements

All students in the B.S.Ed. in Secondary Education program are required to take the following Teacher Education courses. Each student must also select a content area and complete the required courses and certification assessments for that area as specified by the Missouri Department of Elementary and Secondary Education.

### Grade Requirement

Professional Education courses must be completed with a grade of C or better (courses completed with a grade of C- or below must be retaken).

### GPA Requirement

Beginning with those students graduating in May 2017 who will also receive teaching certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

### Assessment Requirement

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

### Preparing for the Teacher Education Program

The following courses must be completed prior to applying for admission to the teacher education program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3
Total Hours		9

### Teacher Education Program

The following courses are completed after acceptance into the teacher education program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
TCH ED 3310	Introduction to Methods of Teaching	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3

SEC ED 4880	Writing for Teachers <sup>1</sup>	3
Total Hours		16

<sup>1</sup> SEC ED 4880 is not required for foreign language emphasis areas.

In addition to the above courses, students must complete 30-50 hours of required coursework in one specific content area (English, French K-12, Spanish K-12, mathematics, biology, chemistry, physics, or social studies), as well as the appropriate methods course:

SEC ED 4011	The Curriculum and Methods of Teaching History and Social Studies	3
SEC ED 4240	Curriculum and Methods of Teaching Physical Sciences	3
SEC ED 4589	Curriculum and Methods of Teaching Foreign Languages	3
SEC ED 4646	The Curriculum and Methods of Teaching Math	3
SEC ED 4885	The Curriculum and Methods of Teaching English	3
SEC ED 4985	Curriculum and Methods of Teaching Life Sciences	3

The program will culminate in the following practicum courses:

SEC ED 4989	Practicum I: Site-Based Experience	3
SEC ED 4990	Practicum II: Site-Based Experience	12

**Total Credit Hours: 120 Minimum**

## B.S. Ed. in Secondary Education with Emphasis in a Foreign Language

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. degree in the language; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. in a Foreign Language with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*



## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Secondary Education BSEd Modern Foreign Language- Spanish Emphasis

The Bachelor's of Science in Secondary Education degree prepares students to teach in secondary school settings, grades 9-12. This program requires the selection and completion of required coursework in a specific content area.

### University General Education and Graduation Requirements

B.S.Ed. degree candidates must complete the following General Education (p. 51) requirements (p. 51) and Graduation requirements (p. 19) of the University as outlined in this Bulletin.

The courses listed below fulfill General Education requirements and best prepare students for advanced education coursework and licensure exams.

#### Core Areas:

##### First Year Writing

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
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##### Communication Proficiency

EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	

##### Math Proficiency

MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
or MATH 1030	College Algebra (MOTR MATH 130)	

##### Information Literacy

ED TECH 2230	Information Literacy	3
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##### American History or Government

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	

##### Humanities and Fine Arts

Choose any 9 hours from approved fields.	9
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##### Social Science

Choose any 9 hours. At least one course must meet the cultural diversity requirement	9
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##### Math and Life/Natural Sciences

Choose any 9 hours.	9
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##### Junior Level Writing

ENGL 3100	Junior-Level Writing	3
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Total Hours	45
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## Program Requirements

All students in the B.S.Ed. in Secondary Education program are required to take the following Teacher Education courses. Each student must also select a content area and complete the required courses and certification assessments for that area as specified by the Missouri Department of Elementary and Secondary Education.

### Grade Requirement

Professional Education courses must be completed with a grade of C or better (courses completed with a grade of C- or below must be retaken).

### GPA Requirement

Beginning with those students graduating in May 2017 who will also receive teaching certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

### Assessment Requirement

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

### Preparing for the Teacher Education Program

The following courses must be completed prior to applying for admission to the teacher education program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3
Total Hours		9

### Teacher Education Program

The following courses are completed after acceptance into the teacher education program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
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ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
TCH ED 3310	Introduction to Methods of Teaching	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3
SEC ED 4880	Writing for Teachers <sup>1</sup>	3
Total Hours		16

<sup>1</sup> SEC ED 4880 is not required for foreign language emphasis areas.

In addition to the above courses, students must complete 30-50 hours of required coursework in one specific content area (English, French K-12, Spanish K-12, mathematics, biology, chemistry, physics, or social studies), as well as the appropriate methods course:

SEC ED 4011	The Curriculum and Methods of Teaching History and Social Studies	3
SEC ED 4240	Curriculum and Methods of Teaching Physical Sciences	3
SEC ED 4589	Curriculum and Methods of Teaching Foreign Languages	3
SEC ED 4646	The Curriculum and Methods of Teaching Math	3
SEC ED 4885	The Curriculum and Methods of Teaching English	3
SEC ED 4985	Curriculum and Methods of Teaching Life Sciences	3

The program will culminate in the following practicum courses:

SEC ED 4989	Practicum I: Site-Based Experience	3
SEC ED 4990	Practicum II: Site-Based Experience	12

**Total Credit Hours: 120 Minimum**

## B.S. Ed. in Secondary Education with Emphasis in a Foreign Language

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. degree in the language; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. in a Foreign Language with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework.

Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education.

*Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Secondary Education BSEd Science-Biology Emphasis

The Bachelor's of Science in Secondary Education degree prepares students to teach in secondary school settings, grades 9-12. This program requires the selection and completion of required coursework in a specific content area.

## University General Education and Graduation Requirements

B.S.Ed. degree candidates must complete the following General Education (p. 51) requirements (p. 51) and Graduation requirements (p. 19) of the University as outlined in this Bulletin.

The courses listed below fulfill General Education requirements and best prepare students for advanced education coursework and licensure exams.

### Core Areas:

First Year Writing		
ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
Communication Proficiency		
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
	or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)
Math Proficiency		
MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3

or MATH 1030	College Algebra (MOTR MATH 130)	
<b>Information Literacy</b>		
ED TECH 2230	Information Literacy	3
<b>American History or Government</b>		
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	
<b>Humanities and Fine Arts</b>		
Choose any 9 hours from approved fields.		
9		
<b>Social Science</b>		
Choose any 9 hours. At least one course must meet the cultural diversity requirement		
9		
<b>Math and Life/Natural Sciences</b>		
Choose any 9 hours.		
9		
<b>Junior Level Writing</b>		
ENGL 3100	Junior-Level Writing	3
Total Hours		45

## Program Requirements

All students in the B.S.Ed. in Secondary Education program are required to take the following Teacher Education courses. Each student must also select a content area and complete the required courses and certification assessments for that area as specified by the Missouri Department of Elementary and Secondary Education.

### Grade Requirement

Professional Education courses must be completed with a grade of C or better (courses completed with a grade of C- or below must be retaken).

### GPA Requirement

Beginning with those students graduating in May 2017 who will also receive teaching certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

### Assessment Requirement

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

## Preparing for the Teacher Education Program

The following courses must be completed prior to applying for admission to the teacher education program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3
Total Hours		9

## Teacher Education Program

The following courses are completed after acceptance into the teacher education program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
TCH ED 3310	Introduction to Methods of Teaching	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3
SEC ED 4880	Writing for Teachers <sup>1</sup>	3
Total Hours		16

<sup>1</sup> SEC ED 4880 is not required for foreign language emphasis areas.

In addition to the above courses, students must complete 30-50 hours of required coursework in one specific content area (English, French K-12, Spanish K-12, mathematics, biology, chemistry, physics, or social studies), as well as the appropriate methods course:

SEC ED 4011	The Curriculum and Methods of Teaching History and Social Studies	3
SEC ED 4240	Curriculum and Methods of Teaching Physical Sciences	3
SEC ED 4589	Curriculum and Methods of Teaching Foreign Languages	3
SEC ED 4646	The Curriculum and Methods of Teaching Math	3
SEC ED 4885	The Curriculum and Methods of Teaching English	3
SEC ED 4985	Curriculum and Methods of Teaching Life Sciences	3

The program will culminate in the following practicum courses:

SEC ED 4989	Practicum I: Site-Based Experience	3
SEC ED 4990	Practicum II: Site-Based Experience	12

**Total Credit Hours: 120 Minimum**

## B.S. Ed. in Secondary Education with Emphasis in Biology

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Biology with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education.

*Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Secondary Education BSEd Science-Chemistry Emphasis

The Bachelor's of Science in Secondary Education degree prepares students to teach in secondary school settings, grades 9-12. This program requires the selection and completion of required coursework in a specific content area.

### University General Education and Graduation Requirements

B.S.Ed. degree candidates must complete the following General Education (p. 51) requirements (p. 51) and Graduation requirements (p. 19) of the University as outlined in this Bulletin.

The courses listed below fulfill General Education requirements and best prepare students for advanced education coursework and licensure exams.

#### Core Areas:

##### First Year Writing

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
<b>Communication Proficiency</b>		
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	
<b>Math Proficiency</b>		
MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
or MATH 1030	College Algebra (MOTR MATH 130)	
<b>Information Literacy</b>		
ED TECH 2230	Information Literacy	3
<b>American History or Government</b>		
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	
<b>Humanities and Fine Arts</b>		
Choose any 9 hours from approved fields.		9
<b>Social Science</b>		
Choose any 9 hours. At least one course must meet the cultural diversity requirement		9
<b>Math and Life/Natural Sciences</b>		
Choose any 9 hours.		9
<b>Junior Level Writing</b>		
ENGL 3100	Junior-Level Writing	3
Total Hours		45

### Program Requirements

All students in the B.S.Ed. in Secondary Education program are required to take the following Teacher Education courses. Each student must also select a content area and complete the required courses and certification assessments for that area as specified by the Missouri Department of Elementary and Secondary Education.

### Grade Requirement

Professional Education courses must be completed with a grade of C or better (courses completed with a grade of C- or below must be retaken).

### GPA Requirement

Beginning with those students graduating in May 2017 who will also receive teaching certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

### Assessment Requirement

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

### Preparing for the Teacher Education Program

The following courses must be completed prior to applying for admission to the teacher education program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
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TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3
Total Hours		9

## Teacher Education Program

The following courses are completed after acceptance into the teacher education program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
TCH ED 3310	Introduction to Methods of Teaching	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3
SEC ED 4880	Writing for Teachers <sup>1</sup>	3
Total Hours		16

<sup>1</sup> SEC ED 4880 is not required for foreign language emphasis areas.

In addition to the above courses, students must complete 30-50 hours of required coursework in one specific content area (English, French K-12, Spanish K-12, mathematics, biology, chemistry, physics, or social studies), as well as the appropriate methods course:

SEC ED 4011	The Curriculum and Methods of Teaching History and Social Studies	3
SEC ED 4240	Curriculum and Methods of Teaching Physical Sciences	3
SEC ED 4589	Curriculum and Methods of Teaching Foreign Languages	3
SEC ED 4646	The Curriculum and Methods of Teaching Math	3
SEC ED 4885	The Curriculum and Methods of Teaching English	3
SEC ED 4985	Curriculum and Methods of Teaching Life Sciences	3

The program will culminate in the following practicum courses:

SEC ED 4989	Practicum I: Site-Based Experience	3
SEC ED 4990	Practicum II: Site-Based Experience	12

**Total Credit Hours: 120 Minimum**

## B.S. Ed. in Secondary Education with Emphasis in Chemistry

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact

the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Chemistry with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Secondary Education BSed Science-Physics Emphasis

The Bachelor's of Science in Secondary Education degree prepares students to teach in secondary school settings, grades 9-12. This program requires the selection and completion of required coursework in a specific content area.

## University General Education and Graduation Requirements

B.S.Ed. degree candidates must complete the following General Education (p. 51) requirements (p. 51) and Graduation requirements (p. 19) of the University as outlined in this Bulletin.

The courses listed below fulfill General Education requirements and best prepare students for advanced education coursework and licensure exams.

#### Core Areas:

##### First Year Writing

ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
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##### Communication Proficiency

EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	

##### Math Proficiency

MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
or MATH 1030	College Algebra (MOTR MATH 130)	

##### Information Literacy

ED TECH 2230	Information Literacy	3
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##### American History or Government

POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	

##### Humanities and Fine Arts

Choose any 9 hours from approved fields.		9
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##### Social Science

Choose any 9 hours. At least one course must meet the cultural diversity requirement		9
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##### Math and Life/Natural Sciences

Choose any 9 hours.		9
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##### Junior Level Writing

ENGL 3100	Junior-Level Writing	3
Total Hours		45

## Program Requirements

All students in the B.S.Ed. in Secondary Education program are required to take the following Teacher Education courses. Each student must also select a content area and complete the required courses and certification assessments for that area as specified by the Missouri Department of Elementary and Secondary Education.

### Grade Requirement

Professional Education courses must be completed with a grade of C or better (courses completed with a grade of C- or below must be retaken).

### GPA Requirement

Beginning with those students graduating in May 2017 who will also receive teaching certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

### Assessment Requirement

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

## Preparing for the Teacher Education Program

The following courses must be completed prior to applying for admission to the teacher education program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3
Total Hours		9

## Teacher Education Program

The following courses are completed after acceptance into the teacher education program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
TCH ED 3310	Introduction to Methods of Teaching	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3
SEC ED 4880	Writing for Teachers <sup>1</sup>	3
Total Hours		16

<sup>1</sup> SEC ED 4880 is not required for foreign language emphasis areas.

In addition to the above courses, students must complete 30-50 hours of required coursework in one specific content area (English, French K-12, Spanish K-12, mathematics, biology, chemistry, physics, or social studies), as well as the appropriate methods course:

SEC ED 4011	The Curriculum and Methods of Teaching History and Social Studies	3
SEC ED 4240	Curriculum and Methods of Teaching Physical Sciences	3
SEC ED 4589	Curriculum and Methods of Teaching Foreign Languages	3
SEC ED 4646	The Curriculum and Methods of Teaching Math	3
SEC ED 4885	The Curriculum and Methods of Teaching English	3
SEC ED 4985	Curriculum and Methods of Teaching Life Sciences	3

The program will culminate in the following practicum courses:

SEC ED 4989	Practicum I: Site-Based Experience	3
SEC ED 4990	Practicum II: Site-Based Experience	12

**Total Credit Hours: 120 Minimum**

## B.S. Ed. in Secondary Education with Emphasis in Physics

The B.S. Ed. is a professional education degree designed for students who wish to pursue a teaching career in secondary schools. Much of the discipline-specific coursework parallels the B.A. or B.S. degree in the discipline; however, the Missouri Department of Elementary and Secondary Education (DESE) requires specific coursework for teacher certification. Therefore, students interested in the B.S. Ed. should contact the advising office (OASIS) 314-516-5937 in the College of Education for discipline-specific requirements. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## B.A. or B.S. in Physics with Master's Level Coursework for Secondary Teacher Certification

In addition to the B.S. Ed., students may opt to complete a B.A. or B.S. degree in their discipline as an undergraduate, followed by admission to the Graduate School for Master's level teaching certification. The College of Education has a one-year accelerated program for post-graduate certification called Teach in 12, or students can choose a traditional path to certification. Graduate coursework for certification can apply towards a Master's Degree in Secondary Education, with additional coursework. Students interested in Master's Level teacher certification should contact the advising office (OASIS) 314-516-5937 in the College of Education. *Note: To obtain teaching certification, DESE requires a 3.0 GPA in the discipline and professional education coursework, as well as a 2.75 GPA overall.*

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Secondary Education BSEd Social Studies Emphasis

The Bachelor's of Science in Secondary Education degree prepares students to teach in secondary school settings, grades 9-12. This program

requires the selection and completion of required coursework in a specific content area.

## University General Education and Graduation Requirements

B.S.Ed. degree candidates must complete the following General Education (p. 51) requirements (p. 51) and Graduation requirements (p. 19) of the University as outlined in this Bulletin.

The courses listed below fulfill General Education requirements and best prepare students for advanced education coursework and licensure exams.

### Core Areas:

<b>First Year Writing</b>		
ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
<b>Communication Proficiency</b>		
EDUC 2222	Interpretation: Connecting Audiences and Meaning	3
or COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	
<b>Math Proficiency</b>		
MATH 1020	Contemporary Mathematics (MOTR MATH 120)	3
or MATH 1030	College Algebra (MOTR MATH 130)	
<b>Information Literacy</b>		
ED TECH 2230	Information Literacy	3
<b>American History or Government</b>		
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
or HIST 1001	American Civilization to 1865 (MOTR HIST 101)	
<b>Humanities and Fine Arts</b>		
Choose any 9 hours from approved fields.		9
<b>Social Science</b>		
Choose any 9 hours. At least one course must meet the cultural diversity requirement		9
<b>Math and Life/Natural Sciences</b>		
Choose any 9 hours.		9
<b>Junior Level Writing</b>		
ENGL 3100	Junior-Level Writing	3
Total Hours		45

## Program Requirements

All students in the B.S.Ed. in Secondary Education program are required to take the following Teacher Education courses. Each student must also select a content area and complete the required courses and certification assessments for that area as specified by the Missouri Department of Elementary and Secondary Education.

## Grade Requirement

Professional Education courses must be completed with a grade of C or better (courses completed with a grade of C- or below must be retaken).

## GPA Requirement

Beginning with those students graduating in May 2017 who will also receive teaching certification, the Missouri Department of Elementary and Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

## Assessment Requirement

Students must pass the required DESE certification assessments to receive the B.S.Ed. degree.

## Preparing for the Teacher Education Program

The following courses must be completed prior to applying for admission to the teacher education program:

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1
TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2
ED PSY 2212	Child and Adolescent Development	3
Total Hours		9

## Teacher Education Program

The following courses are completed after acceptance into the teacher education program:

TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
TCH ED 3310	Introduction to Methods of Teaching	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3
SEC ED 4880	Writing for Teachers <sup>1</sup>	3
Total Hours		16

<sup>1</sup> SEC ED 4880 is not required for foreign language emphasis areas.

In addition to the above courses, students must complete 30-50 hours of required coursework in one specific content area (English, French K-12, Spanish K-12, mathematics, biology, chemistry, physics, or social studies), as well as the appropriate methods course:

SEC ED 4011	The Curriculum and Methods of Teaching History and Social Studies	3
SEC ED 4240	Curriculum and Methods of Teaching Physical Sciences	3
SEC ED 4589	Curriculum and Methods of Teaching Foreign Languages	3
SEC ED 4646	The Curriculum and Methods of Teaching Math	3
SEC ED 4885	The Curriculum and Methods of Teaching English	3

SEC ED 4985	Curriculum and Methods of Teaching Life Sciences	3
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The program will culminate in the following practicum courses:

SEC ED 4989	Practicum I: Site-Based Experience	3
SEC ED 4990	Practicum II: Site-Based Experience	12

**Total Credit Hours: 120 Minimum**

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Secondary Education MEd

The Masters in Secondary Education, General emphasis program, is appropriate for secondary teachers, specialists, department chairpersons, and those who work in informal learning or international educational settings. Candidates choose concentration areas that will support their personal growth and development as an educational leader. It is important that both students and advisors plan ahead to insure courses in concentration areas are taken when they are offered in the schedule. Programs must be planned with the academic advisor and meet the approval of the faculty advisor, adhering to the College of Education and UMSL Graduate School policies.

Concentration area choices will appear at the end of the M.Ed. transcript.

## General Curricular Program for SEC ED areas

The M.Ed. in Secondary Education consists of 15 required hours (5 courses) plus student choice of two 9 hour concentrations from the list below. The general program option requirements are met by (a) completing three required foundation courses (9 hrs.) toward the beginning of the M.Ed. program, (b) completing the coursework for two choice concentration areas (18 hrs.), and (c) completing the two exit research capstone classes (6 hrs.) for a total of 33 hours.

Most concentration areas indicate 0-3 REQUIRED courses; a list of course CHOICE selections are then provided as a menu to choose your remaining hours for that concentration. In addition, an Elective Concentration allows students, with advisor sign-off, to construct an individualized set of target courses for 1 of their 2 concentration areas.



Transfer graduate credit from another institution could also fit into this concentration choice. Finally, those who want to take 9 graduate hours in an academic content area may use the Discipline Content Area Concentration to integrate this advanced work into their M.Ed. program.

Students who wish to focus intensively (18 hrs) in one area of expertise may choose a concentration that has two sequential Concentration blocks I & II. **Emphasis areas** offered in SEC ED include Reading, Teaching English to Speakers of Other Languages (TESOL), Teaching of Writing, and Middle Level Education. Reading and TESOL require signing up for two 9 hour sequenced concentrations (Literacy I and II and TESOL I and II, respectively) and may require additional coursework for licensure, as noted. For a C & I emphasis, students just select the C & I concentration and an additional choice concentration.

Required 15 hours of M.Ed. core courses plus two 9-Hour Concentrations

#### Required Core

Students are required to complete the following courses within the first 15 hours of study:

TCH ED 6010	Examining History, Community and Social Justice in Education	3
TCH ED 6020	Teacher Action, Advocacy and Leadership	3
ED PSY 6030	Instruction, Learning and Assessment	3

#### Required Research Courses

These two research courses should be taken in sequence (not together) at the end of your program since the first course prepares you with the knowledge and skills to successfully complete an Action Research project in the capstone exit course. You will design and execute a piece of original practitioner research and present your findings in a public forum.

TCH ED 6909	Teacher Action Research I (Take semester prior to Teacher Action Research Capstone, TCH ED 6910.)	3
TCH ED 6910	Teacher Action Research Capstone <sup>1</sup>	3
Total Hours		15

<sup>1</sup> This course not offered in summer sessions.

Students seeking a professional Masters in Education Degree choose two 9-hour concentrations in consultation with their advisors that will enhance teacher leadership capacity in practice. The following 9-hour concentrations include an interdepartmental range of concentration areas that can support a candidate's development of a broad range of skills, knowledge, and dispositions.

### 3) 9 hour Concentration Choices

- Curriculum and Instruction Concentration
- Literacy Concentrations I and II (Certificates in Reading and Writing available)
- Special Education Concentration
- Social Justice Issues Concentration (College of Education Social Justice Certificate available)
- Leadership in Education Concentration
- Supporting Language Learners: TESOL Concentrations I and II (DESE TESOL endorsement available)
- STEM Concentration

h.) Discipline Content Area Concentration

i.) Elective Concentration

### Curriculum and Instruction:

In order for all students to optimally achieve, teachers must develop integrated, standards based, innovative curriculum delivered as engaging instruction that equips students to develop the knowledge and skills for a global society. This concentration explores common issues in curriculum design and implementation. Educators will create curriculum and design instruction for their own educational settings.

SEC ED 6415	Curriculum Leadership in Education	3
SEC ED 6416	Curriculum Design for Educational Programs	3
SEC ED 6420	Improving Teaching and Learning	3

### Literacy Concentrations I and II: 9 hours Each

Concentration I is designed for educators who want a deeper understanding of reading and writing processes across the lifespan. This area emphasizes the preparation of leaders in a wide range of school and community settings, including literacy coaches or grade-level leaders. Concentration I emphasizes cutting-edge theory, research and instructional practices in literacy education. Concentration II, for those wanting a Literacy endorsement, applies these understandings through a variety of readings, writings and experiences, both in Clinical and online settings. There are two choices for Concentration II: Writing and Reading. Students who complete Concentrations I and II in Literacy can apply these courses to a K-12 DESE Reading Certificate or the UMSL Graduate Certificate in the Teaching of Writing, but additional coursework may be required.

#### Literacy Concentration I:

ELE ED 6387	Literacy Acquisition and Learning for Diverse Students	3
ELE ED 6684	Instructional Strategies for Teaching Reading	3
ELE ED 6686	Analysis and Correction of Reading Disabilities	3

#### Concentration II: Choice A:

#### Courses to complete the Reading Certification emphasis

The M.Ed. program with emphasis in reading (literacy) is designed to enable candidates to further their competencies as teachers of reading, writing, and the other communication arts. The program also prepares them for positions as literacy coaches, reading specialists, curriculum specialists in communication arts and reading areas, consultants in areas of communication arts, and/or for further graduate study. Concentration II enables a student to earn a master's degree in education with credit towards an emphasis in reading as per requirements laid out by the Department of Elementary and Secondary Education (DESE) for special reading certification in Missouri. Students must complete the required 15 hours of M.Ed. courses, an educational psychology course, plus 18 hours of literacy courses.

ELE ED 6493	Reading Specialist Practicum I	3
ELE ED 6494	Reading Specialist Practicum II	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3

## Concentration II: Choice B:

### Courses to complete the Graduate Certificate in the Teaching of Writing

#### Admission

Applicants who wish to earn a Graduate Certificate in the Teaching of Writing must apply for admission to the certificate program. Applicants must have a 2.75 GPA in undergraduate coursework to be admitted. A background in K-12 or adult education is desirable.

TCH ED 6880	Gateway Writing Project	6
TCH ED 6890	Seminar in Professional Writing for Teachers	3

### Special Education:

For educators who are not receiving a degree in Special Education, but would like to expand their understanding of Special Education law and the needs of students with cross-categorical disabilities and those with Autism Spectrum Disorders, this concentration offers coursework on the characteristics and effective strategies for teaching students with varied abilities in educational settings. Those interested in the M.Ed. in Special Education or the Graduate Certificate in Autism and Developmental Disabilities should choose concentrations in those designated programs under the Masters in Special Education.

#### Choose three of the following:

SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3
SPEC ED 6345	Characteristics and Education of Students with High-Incidence Disabilities	3
SPEC ED 6415	The Law and Special Education	3
SPEC ED 6610	Foundations of Autism Spectrum Disorder: Research to Practice	3

### Social Justice Issues:

Educators need to challenge themselves to understand the variety of assets diverse students and their families bring to educational contexts. An interdisciplinary group of courses is offered for this concentration that invite personal growth and academic knowledge in the area of social justice. An emphasis on engagement and action permeates the course activities.

With completion of TCH ED 6010, TCH ED 6020 and TCH ED 6910 and these 9 hours, students will meet the requirements for the Social Justice in Education Certificate. Applicants who wish to earn a Graduate Certificate in Social Justice in Education must apply for admission to the certificate program.

#### Choose three of the following:

CNS ED 6820	Counseling Women Toward Empowerment	3
CNS ED 6850	Social Class and Poverty Issues in Counseling	3
ED FND 6203	Political Contexts of Education	3
GS 5053	Advanced Studies In African-American History	3
TCH ED 6230	Cross-Cultural Communication in the Classroom	3

## Leadership in Education:

Organizations need leaders who understand the complexities of systems and working with diverse staff and families within situated communities in a dynamic and changing educational environment. Leadership skills can be taught and nurtured. This Leadership in Education concentration allows educators in various roles and career levels to apply principles of leadership to creating effective communities of practice.

#### Required Courses:

ED ADM 6503	Organizational Change in Education	3
Choose two of the following:		
ED ADM 6205	Legal Contexts of Education	3
ED FND 6200	Demographic Contexts of Education	3
ED FND 6203	Political Contexts of Education	3
ED ADM 6401	School Staff Development and Supervision	3

## Supporting Language Learners: TESOL Concentrations I and II: 9 hours each

This concentration is designed for those who want to better understand Second Language Acquisition (SLA) and Teaching English to Speakers of Other Languages (TESOL) processes. Courses emphasize the theoretical foundations of Second Language Acquisition and TESOL and their practical application to practice. Concentration I is open to all Masters in Education students.

In order to get a Missouri TESOL endorsement, complete BOTH Concentration I and Concentration II (18 hours). The graduate certificate in Teaching English to Speakers of Other Languages (TESOL) is intended for individuals with a bachelor's degree who would like to advance their knowledge about language learning in culturally and linguistically diverse classrooms. The program is a combination of theory and practice, covering the key concepts, issues and innovative strategies required to apply this knowledge. Students may seek this Graduate Certificate simultaneously with the M.Ed. in Secondary Education with a specialization in TESOL.

#### Admission

Applicants who wish to earn a Graduate Certificate in TESOL must apply for admission to the certificate program and to the Graduate School at the UM-St. Louis as a non-degree student or as a master's or doctoral student. Applicants must have a 2.75 GPA in undergraduate coursework to be admitted. A background in K-12 or adult education is desirable.

#### Requirements

Students must maintain a minimum GPA of 3.0 to remain in the certificate program. The DESE endorsement is awarded after completion of Concentrations I and II. A program of study, or M-1, should be filed in the first one-third of the program. Students should file the Intent to Complete a Graduate Certificate form at the beginning of their last semester. The Graduate Certificate in TESOL requires 18 credit hours of course work, including an entry course.

## TESOL Concentration I:

TCH ED 6210	Foundations of Teaching English to Speakers of Other Languages	3
TCH ED 6220	Principles of Second/Foreign Language Acquisition	3
TCH ED 6230	Cross-Cultural Communication in the Classroom	3

## TESOL Concentration II:

TCH ED 6240	Assessment for Teaching English to Speakers of Other Languages	3
TCH ED 6250	Methods and Materials for Teaching English to Speakers of Other Languages	3
TCH ED 6260	Practicum in Teaching English to Speakers of Other Languages	3

## STEM Concentration:

Many challenges remain in the attraction and preparation of youth for the careers in fields of science, technology, engineering and mathematics (STEM). Those who teach in these areas need to continually work toward developing and implementing relevant curricula and develop new instructional strategies as well as revise and upgrade current methodology. The STEM Concentration focuses on professional development with respect to instructional research and best practices for all involved in enhancing STEM literacy.

SEC ED 6431	STEM Instruction in Secondary Education	3
or ELE ED 6431	STEM Instruction in Elementary Education	
ED TECH 5340	Selection and Utilization of Educational Multimedia	3
ED TECH 6436	Computer-Mediated Communication in Education	3
ED TECH 6448	Technology-Supported Inquiry Learning	3
Graduate Level Science or Math Course		3

## Discipline Content Area Concentration:

Educators recognize the importance of staying current in their field of teaching. This Discipline Content Concentration allows for 9 hours of graduate level credit in a content area related to one's field of practice. This includes graduate credit in areas such as history, English, math, science, foreign language, health and PE, and art and music. Courses for this concentration need to be approved by advisors before they are included on the M-1 program form.

## Elective Concentration:

To insure maximum flexibility in course selection to meet the individual needs of professional educator's development, this concentration represents an opportunity to select three unique courses from the various concentration areas in an eclectic and personalized way. Choices to include in this concentration need to be approved by advisors and signed off on by the program director.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually and systematically reflect on professional growth to enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply advanced content and pedagogical knowledge to create authentic and deep learning experiences.
- Extend learning science principles to design, implement, and evaluate curriculum based on learning standards.

- Create and foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Utilize equitable frameworks and inclusive practices to expertly create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

# Secondary Education MEd with Teacher Certification

Those holding a baccalaureate degree or major in the teaching field who would like to pursue initial teacher preparation and a Master's degree take the following program. The exact number of hours required will depend upon certification requirements for the chosen teaching field.

Admission Requirements for the Option in Teacher Certification:

- A passing score on the designated Missouri Content Examination or an approved program of study
- A 2.75 or higher overall GPA
- Approved results of the Family Care Safety Registry
- A clear TB test or chest x-ray, if appropriate

Application Deadline: April 1st

## Required Certification Courses

30

TCH ED 5311	Foundations of Education
TCH ED 5310	Instructional Design
TCH ED 5312	Teaching Reading in the Content Areas
ED PSY 6222	Advanced Studies in Child and Adolescent Development
SEC ED/CoFac 4xxx	Curriculum and Methods of Teaching [Subject Area]
SEC ED 5XXX	Advanced Teaching Seminar [Subject Area]
SEC ED 5989	Practicum I: Site-Based Experience
SEC ED 5990	Practicum II: Site Based Experience

## Master of Education Required Core Courses

9

Students should complete initial teacher certification courses before enrolling in the following:

TCH ED 6010	Examining History, Community and Social Justice in Education
TCH ED 6020	Teacher Action, Advocacy and Leadership
ED PSY 6030	Instruction, Learning and Assessment

## Required Research Courses

6

TCH ED 6909	Teacher Action Research I
Take semester prior to Teacher Action Capstone, TCH ED 6910.	

TCH ED 6910	Teacher Action Research Capstone <sup>1</sup>	
Students must enroll in the capstone course during their last semester and after completing Teacher Action Research TCH ED 6909		
Total Hours		45

<sup>1</sup> This course is not offered in summer sessions.

## Secondary Education MEd, Curriculum and Instruction Emphasis

### Master of Education: Secondary Education with Emphasis in Curriculum and Instruction

The M.Ed. with an emphasis in curriculum and instruction is designed for graduate students who wish to further their competencies as teacher or curriculum specialist or instructional leaders.

#### Required Core requirements

Students are required to complete the following courses within the first 15 hours of study

TCH ED 6010	Examining History, Community and Social Justice in Education	3
TCH ED 6020	Teacher Action, Advocacy and Leadership	3
ED PSY 6030	Instruction, Learning and Assessment	3

#### Curriculum and Instruction Core

SEC ED 6415	Curriculum Leadership in Education	3
SEC ED 6416	Curriculum Design for Educational Programs	3
SEC ED 6420	Improving Teaching and Learning	3

#### Specialization Areas (Optional) 6

Same as above

#### Electives

Students can elect hours in their teaching field or other areas such as: Character Education, Assessment, or Problems courses.

#### Required Research Course

TCH ED 6909	Teacher Action Research I (Take semester prior to Teacher Action Research Capstone, TCH ED 6910.)	3
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#### Action Research Capstone Course

Students must enroll in their capstone course during their last semester and after completing Teacher Research. TCH ED 6909.

TCH ED 6910	Teacher Action Research Capstone <sup>1</sup>	3
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Total Hours		30
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<sup>1</sup> This course is not offered in summer sessions.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually and systematically reflect on professional growth to enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply advanced content and pedagogical knowledge to create authentic and deep learning experiences.
- Extend learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Create and foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Utilize equitable frameworks and inclusive practices to expertly create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Secondary Education MEd, Reading Emphasis

The M.Ed. program with emphasis in reading (literacy) is designed to enable candidates to further their competencies as teachers of reading, writing and other communication arts. The program also prepares them for positions as literacy coaches, reading specialists, curriculum specialist in communication arts and reading areas, consultants in areas of communication arts, and/or for further graduate study. The following program enables the student to earn a M.Ed. with an emphasis in Reading while fulfilling the Department of Elementary and Secondary Education's requirements for special reading certification in Missouri. A course in reading in the content area is required for secondary certification. If this has not been taken as an undergraduate, it must be selected as an elective in the program for a Masters in Secondary Education with a Reading Emphasis. The minimum required and recommended courses are as follows:

#### Required Core requirements

Students are required to complete the following courses within the first 15 hours of study:

TCH ED 6010	Examining History, Community and Social Justice in Education	3
TCH ED 6020	Teacher Action, Advocacy and Leadership	3
ED PSY 6030	Instruction, Learning and Assessment	3

#### Required Research Course - Evaluation of Abilities and Achievement 3

Select one of the following:

ED REM 6707	Classroom Measurement and Evaluation	
ED REM 6709		
ED REM 6716	Academic Assessment and Intervention	

#### Reading Concentration

ELE ED 6684	Instructional Strategies for Teaching Reading	3
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ELE ED 6686	Analysis and Correction of Reading Disabilities	3
SEC ED 6387		3
SEC ED 6493		3
SEC ED 6494		3
And at least one course from the literacy-related elective list or from the certification-related elective list below:		3
Literacy Related Electives include:		
ELE ED 6436	Children's Literature I: Survey and Analysis	
ELE ED 6688		
ENGL/TCH ED 6880	Gateway Writing Project	
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	
One course needed to complete certification <sup>1</sup>		
Certification Related Electives include:		
CNS ED 3220	Counseling Individuals with Special Needs	
ED PSY 6220	Development of School-Age Students	
ED PSY 6225	The Psychology of Adolescence	
ED REM 6707	Classroom Measurement and Evaluation	
ED REM 6709		
SPEC ED 4315	Language and Communication of Children with Special Needs	
<b>Capstone Course</b>		
SEC ED 6482		3
Total Hours		33

<sup>1</sup> To be recommended for Missouri Department of Elementary and Secondary Education special reading certification, teachers must have a valid Missouri teacher's certificate and two years of classroom teaching experience, and they must have had the following at either the undergraduate or graduate level: two additional courses in reading; language acquisition or development; classroom management techniques; counseling techniques (to include exceptional children and their families: child AND adolescent psychology; and testing, evaluation, and achievement. These certification requirements might be in addition to the courses listed in the program of study above. See your graduate advisor for information about these courses. M.Ed. Students needing any of the above can elect to take these courses at the graduate level where available and apply them to their concentration area.

Note: Only one 4000 level course can be applied to the M.Ed.

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually and systematically reflect on professional growth to enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply advanced content and pedagogical knowledge to create authentic and deep learning experiences.

- Extend learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Create and foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Utilize equitable frameworks and inclusive practices to expertly create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Secondary Education MEd, Teaching English to Speakers of Other Languages Emphasis

The M.Ed. program with emphasis in Teaching English to Speakers of Other Languages (TESOL) is designed to meet the need for teachers who can apply knowledge about language learning to their culturally and linguistically diverse classrooms. This program meets the requirements for a Missouri Department of Elementary and Secondary Education Teaching endorsement in English to Speakers of Other Languages (ESOL).

### Required Core

Students are required to complete the following courses within the first 15 hours of study:

TCH ED 6010	Examining History, Community and Social Justice in Education	3
ED PSY 6030	Instruction, Learning and Assessment	3

### Required Research Courses

These two research courses should be taken in sequence (not concurrently) at the end of the program. Candidates will design and execute a piece of original practitioner research and present their findings in a public forum.

TCH ED 6909	Teacher Action Research I (Take semester prior to Teacher Action Research Capstone, TCH ED 6910.)	3
TCH ED 6910	Teacher Action Research Capstone	3

Total Hours		12
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In addition to the Required Core (12 hours), Candidates seeking an emphasis in TESOL are required to complete the following coursework (18 hours), a program total of 30 hours.

### TESOL Core

TCH ED 6210	Foundations of Teaching English to Speakers of Other Languages	3
TCH ED 6220	Principles of Second/Foreign Language Acquisition	3
TCH ED 6230	Cross-Cultural Communication in the Classroom	3
TCH ED 6240	Assessment for Teaching English to Speakers of Other Languages	3
TCH ED 6250	Methods and Materials for Teaching English to Speakers of Other Languages	3

TCH ED 6260	Practicum in Teaching English to Speakers of Other Languages	3
Total Hours		18

### State Certification

For TESOL state certification, the students may need additional coursework. Please consult your academic or faculty advisor.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Continually and systematically reflect on professional growth to enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply advanced content and pedagogical knowledge to create authentic and deep learning experiences.
- Extend learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Create and foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Utilize equitable frameworks and inclusive practices to expertly create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Secondary School Teaching Graduate Certificate

The Graduate Certificate in Secondary School Teaching prepares those with at least a bachelor's degree for teaching in high school. Normally this Graduate Certificate is taken by students who are not simultaneously pursuing the M.Ed. and teacher certification.

This program of study is for individuals with a Bachelor's degree who would like to prepare for teacher certification in Secondary School Teaching. This graduate certificate program option leads to Missouri Initial Professional Teacher Certification in the specified discipline.

Admission Requirements for the Graduate Certificate in Secondary School Teaching:

- A passing score on the designated Missouri Content Examination or an approved program of study
- A 2.75 or higher overall GPA
- Approved results of the Family Care Safety Registry
- A clear TB test or chest X-ray, if appropriate
- Students must meet the application deadlines set by the Graduate School

#### Graduate Level Certification Courses

TCH ED 5310	Instructional Design	3
TCH ED 5311	Foundations of Education	3

TCH ED 5312	Teaching Reading in the Content Areas	3
ED PSY 6222	Advanced Studies in Child and Adolescent Development	3
SEC ED 4XXX	Curriculum and Methods of Teaching [Subject area]	3
SEC ED 5989	Practicum I: Site-Based Experience	2
SEC ED 5990	Practicum II: Site Based Experience	8
TCH ED 5000	Advanced Early Clinical Experience	1
TCH ED 5001	Advanced Mid-Level Clinical Experience: Diverse Learners	1
SPEC ED 6412	Psychology of Exceptional Children	3

### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Social Justice in Education Graduate Certificate

The Graduate Certificate in Social Justice in Education supports the understanding, knowledge, and skills needed to create a just and equitable society. The curriculum focuses on institutional and personal processes, values, attitudes, and behaviors that sustain injustice while encouraging the development of positive educational, familial, community-centric, and social group advocacy and action.

The Graduate Certificate in Social Justice is an 18 credit hour program. To earn a certificate, one must a) complete 6 credit hours in the Foundations Choice Sequence, b) complete 12 credit hours in the Elective Choice Sequences, and as a capstone c) submit during the final semester of the program, for review by a faculty panel, an artifact/assignment from a Certificate course together with a written reflection that articulates in what ways it represents one's learning to become more culturally competent and socially just.

#### Foundations Sequence

Select 2 of 3 courses		6
ED FND 6430	Ecological Context of Urban Education	

TCH ED 6010	Examining History, Community and Social Justice in Education
TCH ED 6350	Gender, Language and Identity
<b>Social Justice Electives</b>	<b>12</b>

Select four courses from the list of electives. The elective courses are organized into three categories: Social Justice and Action, Diversity, and Culture and Context. You may select your electives from any or all categories.

<b>Social Justice and Action Elective Courses</b>	
CNS ED 6830	Counseling African American Clients
CNS ED 6840	Counseling Sexual and Gender Minorities
CNS ED 6850	Social Class and Poverty Issues In Counseling
TCH ED 6020	Teacher Action, Advocacy and Leadership

Or other approved elective

<b>Diversity Elective Courses</b>	
CNS ED 6030	Foundations for Multicultural Counseling
ED FND 6430	Ecological Context of Urban Education <sup>1</sup>
GS 4100	Introduction to Feminist and Gender Theory
TCH ED 6010	Examining History, Community and Social Justice in Education <sup>1</sup>
TCH ED 6350	Gender, Language and Identity <sup>1</sup>

Or other approved elective

<b>Culture and Context Elective Courses</b>	
CNS ED 6220	Counseling Individuals with Disabilities
ED ADM 6200	
ED ADM 6203	
ED FND 6430	Ecological Context of Urban Education
ED REM 7712	Discourse Analysis in Education
ED TECH 6434	Technology and Privilege

Or other approved elective

<b>Culture and Context Elective Courses</b>	
CNS ED 6220	Counseling Individuals with Disabilities
ED ADM 6200	
ED ADM 6203	
ED FND 6430	Ecological Context of Urban Education
ED REM 7712	Discourse Analysis in Education
ED TECH 6434	Technology and Privilege

Or other approved elective

<sup>1</sup> Course not taken for the Foundations Sequence requirement may be taken as an Elective course.

## Social Work BSW

### General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51), although proficiency in a foreign language is recommended but not required.

Courses required for the BSW degree may not be taken on a satisfactory/unsatisfactory basis except SOC WK 4800 and SOC WK 4850.

### Admission Requirements

Students entering UMSL as freshman and as transfer students should indicate a pre-social work major. Students must apply to the program

concurrently with SOC WK 3100. Admission to the program is conditional upon the successful completion of all necessary requirements.

Requirements for Admission to the Social Work program:

- Junior standing
- GPA of 2.75 or higher in social work related areas and an overall GPA of 2.5 or higher.
- Submission of:
  - Application for admission to the social work program.
  - Two letters of reference: one from a college or university professor and one other from a work or volunteer experience supervisor.
- Completion of SOC WK 2000, SOC WK 2001, and SOC WK 2200 or their equivalents or completion of an A.A. in Human Services,
- Completion of PSYCH 1003 and SOC 1010 with a C- or better.
- Attendance at Professional Development Workshop held in the School of Social Work.

Applicants may be asked to meet with the Social Work Admissions Committee.

### Degree Requirements

Students must have a minimum GPA of 2.5 in social work and related-area requirement courses to enter field practicum. Candidates for this degree program must complete the core requirements including the following social work courses:

SOC WK 2000	Social Work and Social Issues	3
SOC WK 2001	Social Work and Social Issues Lab	1
SOC WK 2200	Social Welfare as a Social Institution	3
SOC WK 3100	Introduction to Strategies for Social Work Practice	3
SOC WK 3210	Social Issues and Social Policy Development	3
SOC WK 3410	Research Design in Social Work	3
SOC WK 3510	Human Behavior in the Social Environment	3
SOC WK 3700	Diversity and Social Justice	3
SOC WK 4110	Social Work Practice with Individuals, Families, and Groups	3
SOC WK 4300	Social Work Practice with Communities	3
SOC WK 4350	Human Service Organizations	3
SOC WK 4800 & SOC WK 4850	Supervised Field Experience in Social Work I and Supervised Field Experience in Social Work II	8
SOC WK 4801 & SOC WK 4851	Integrative Field Experience Seminar I and Integrative Field Seminar II	4

Total Hours 43

A minimum of 43 hours or a maximum of 50 hours must be taken in social work. A minimum of 30 hours is required in related area departments.

Evaluation of social work transfer credits will be done by a social work adviser on an individual basis.

## Related Area Requirements

The following courses, or their alternatives, are required:

ECON 1000	Economics in Everyday Life (MOTR ECON 100)	3
or ECON 1005	Family Economics and Household Development	
POL SCI 1100	Introduction to American Politics (MOTR POSC 101)	3
PSYCH 1003	General Psychology (MOTR PSYC 100)	3

### Biology

Select one of the following: 3-4

BIOL 1012	General Biology (MOTR BIOL 100)	
BIOL 1102	Human Biology (MOTR LIFS 150)	
BIOL 1131	Human Physiology and Anatomy I	
BIOL 1141	Human Physiology and Anatomy II	

### Sociology

SOC 1010 Introduction to Sociology (MOTR SOCI 101) 3

SOC 2160 Social Psychology 3

Select one of the following: 3-4

SOC 3220	Social Statistics	
PSYCH 2201	Psychological Statistics	
CRIMIN 2220	Statistical Analysis In Criminology And Criminal Justice	

At least 9 additional hours must be taken in social work, sociology, political science, psychology, gender studies, anthropology, criminology and criminal justice, economics, gerontology, or child advocacy studies at the 2000 level or above. 9

Total Hours 30-32

Hours taken in social work will apply toward the maximum of 50 hours that may be taken in social work courses. The Social Work program may require students to pass a placement test to enroll in the next level course, provided this test or its equivalent is administered to all students seeking to enroll in that course.

Social work majors must have a grade of C- or better and maintain a cumulative grade point average of 2.5 or better in all course work specifically required for the major, with satisfactory grades in practicum.

Note: Anthropology, biological sciences, economics, and Spanish courses are strongly recommended by graduate schools of social work.

## Latin Honors Requirements

In accordance with the University's Latin Honors policy (p. 26), candidates graduating from the School of Social Work in the 2020-2021 Academic Year must meet the following GPA qualifications:

Summa Cum Laude	3.984
Magna Cum Laude	3.884
Cum Laude	3.645

## Objectives of the BSW Program

The BSW program has the following educational outcomes. Students who graduate with a BSW will be generalist practitioners who:

- Identify as professional social workers and conduct themselves accordingly.
- Understand the values and ethics of the social work profession and the relationship between personal beliefs and values, professional values and ethics, and professional social work practice.
- Utilize critical thinking, capacity building, and analytical and communication skills to synthesize and analyze information to inform social work practice.
- Understand the importance of diversity, difference, power, and privilege in shaping life experiences for diversity-competent practice.
- Possess the knowledge and skills to fight effectively against human oppression, discrimination, and social inequity and to formulate and foster social change initiatives to advance social and economic justice.
- Engage in research-informed practice and practice-informed research to evaluate professional practice and /or the professional practice of others.
- Apply knowledge of human behavior and the social environment to guide assessment and intervention.
- Understand major social and welfare policies and analyze and formulate policies to advocate for social and economic justice.
- Use leadership skills to respond to the changing context of social work practice.
- Utilize skills of engagement, assessment, intervention and evaluation, including theory and practice skills, across all levels of practice.

## Sample Four Year Plan

First Year			
Fall	Hours	Spring	Hours
BIOL 1012		3 ECON 1000 or 1005	3
SOC 1010		3 BIOL 1102	3
ENGL 1100		3 MATH 1020 or 1030	3
PSYCH 1003		3 General Education	3
General Education		3 Elective or minor	3
		15	15

Second Year			
Fall	Hours	Spring	Hours
SOC WK 2000		3 SOC WK 2200	3
SOC WK 2001		1 PSYCH 2250	3
POL SCI 1100		3 Social Science elective <sup>1</sup>	3
General Education		6 General Education	3
Elective or minor		3 Elective or minor	3
		16	15

Third Year			
Fall	Hours	Spring	Hours
SOC WK 3100		3 SOC WK 3210	3
SOC WK 3510		3 SOC WK 3700	3
SOC 3220, CRIMIN 2220, or PSYCH 2201		3-4 SOC WK 4110	3
ENGL 3100		3 SOC WK 3410	3
Social Science elective <sup>1</sup>		3 Social Science elective <sup>1</sup>	3
		15-16	15

Fourth Year			
Fall	Hours	Spring	Hours
SOC WK 4300		3 SOC WK 4850	4
SOC WK 4350		3 SOC WK 4851	2
SOC WK 4800		4 Elective or Minor	9



SOC WK 4801	2	
Elective or minor	3	
	15	15

Total Hours: 121-122

- <sup>1</sup> Nine hours must be taken in SOC WK, ANTHRO, CAST, CRIMIN, ECON, GERON, GS, MVS, POL SCI, PSYCH or SOC at the 2000 level or above.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are required to meet with their advisor each semester. All requirements are subject to change.*

## Social Work Minor

### Requirements for the Minor

Candidates must complete the following social work courses:

SOC WK 2000	Social Work and Social Issues	3
SOC WK 2200	Social Welfare as a Social Institution	3
SOC WK 3100	Introduction to Strategies for Social Work Practice	3
SOC WK 3700	Diversity and Social Justice	3
Select one additional social work course at the 3000 level or above.		3
Total Hours		15

## Social Work MSW

### Master of Social Work

#### Admission Requirements

Admission to the MSW Program requires admission to the University of Missouri-St. Louis Graduate School and acceptance by the School of Social Work. Applicants to the program must meet the following requirements to be considered for admission:

- Completion of a bachelor's degree from a college or university accredited by a recognized regional accrediting organization.
- Completion of a liberal arts education including courses in the humanities, the social and behavioral sciences, and the physical sciences. These courses must include one in statistics.
- Attainment of a cumulative grade point average of at least 3.0 on a 4.0 scale for all undergraduate course work and a grade point average of 3.0 on a 4.0 scale in the major field.
- Submission of the following documents by the admission deadline:
  - A completed application to the UMSL Graduate School and a completed MSW supplemental application.
  - Two written essays.
  - Three letters of reference. – One from a professor in your major field of study, and one from a work or volunteer supervisor or other professional reference. Letters from employees/supervisees, friends, and family may not be used.
  - Official transcripts from all colleges and university attended.
  - Applicable fees.

### Application Deadline

The deadline for application to the MSW program is March 1 for admission in the following fall semester and October 15 for admission in the following Spring semester. See School of Social Work's website for more details.

### Admissions to the Program with Advanced Standing

Applicants with a BSW, BASW, or BSSW, from an accredited social work program may be given up to 24 credit hours of advanced standing for foundation social work courses. Admission to the advanced standing program is available to applicants who meet the general admission requirements and who:

1. have earned a bachelor's degree in social work from a program accredited by the Council on Social Work Education within five years of applying to the MSW Program, and
2. have earned a grade point average of at least 3.0 on a 4.0 scale in the social work foundation curriculum, and no less than a B in all courses that are applicable.

### Course Waivers

A student who does not have a bachelor's degree in social work but who can document successful completion (with at least a B) of foundation courses from an accredited BSW program within the last five years will be given course waivers and be allowed to replace these courses with electives.

Students from non-accredited BSW programs or students who have taken comparable course work in other undergraduate programs may take test-out examinations for select foundation courses; waivers will be given if students successfully pass test-out examinations. The waiver does not provide graduate credit; it is a mechanism for allowing elective courses to be substituted for required foundation courses.

Academic credit cannot be given for life experience and/or previous work experience, in whole or in part, in lieu of field practicum or foundation year courses.

### Degree Requirements

The MSW is a two-year program comprising a foundation year and a concentration year. All students are required to take the foundation year courses. These provide a common base of knowledge across all practice settings and populations. Beyond the general requirements of the Graduate School, the department requires a minimum of 60 semester hours of course work, of which 48 must be at the 5000 or 6000 level and 48 must be in social work or cross-listed with social work, including the following foundation courses:

SOC WK 5100	Generalist Social Work Practice	3
SOC WK 5200	Social Policy and Social Services	3
SOC WK 5300	Community Practice and Social Change	3
SOC WK 5350	Social Work and Human Service Organizations	3
SOC WK 5410	Social Work Research Methods and Analysis I	3
SOC WK 5450	Social Work Research Methods and Analysis II	3

SOC WK 5500	Foundations of Human Behavior in the Social Environment	3
SOC WK 5700	Diversity and Social Justice for Social Work	3
SOC WK 5800	Graduate Field Practicum I	4
SOC WK 5801	Foundation Field Practicum Seminar	2
Total Hours		30

Upon completion of the 30 credits of foundation year requirements, students move into a year of advanced study, called the concentration. The concentration year requires 30 hours of course work that includes up to 12 hours of elective graduate-level courses approved by the adviser. Students plan their degree program to reflect their career interests in the following concentration areas:

- Family Practice
- Leadership and Social Change

Additionally, if students choose, they may elect to participate in one of the following areas of emphasis:

- Aging and Social Work Practice
- Health & Behavioral Health
- School Social Work

To remain in good standing, students must maintain a cumulative GPA of 3.0 or better.

The field practicum is an integral part of the concentration year. Students will complete 300 hours (20 hours of work per week) of MSW supervised practice in an agency during the second semester of the foundation year and 600 hours total (20 hours of work per week) in the concentration year. A student must receive a grade of B or better in the first-year field practicum course in order to be eligible to enter the second year field practicum. S/U grades are given for the concentration practicum.

### Part Time Status

Students who enter the program as part-time students complete the foundation year in two years and the concentration course work in an additional two years.

All students must complete the MSW in four years.

### Goals of the Master of Social Work

The goals of the MSW program of the University of Missouri- St. Louis are consistent with the land-grant public service mission of the University, the MSW feasibility study, and the educational policy statement of CSWE and are to:

- Prepare students with the professional knowledge, skills, values and ethics for effective social work practice.
- Prepare students to utilize critical thinking and capacity building skills at all levels of social work practice.
- Prepare students to analyze and address dynamic issues and challenges facing diverse populations and to promote social justice and positive social change.
- Prepare students to conduct and utilize research to respond effectively to dynamic social contexts, issues and problems found in social work practice.
- Assist and support faculty in the advancement of social work knowledge, teaching, and service.

- Develop and participate in collaborative activities with social agencies, communities, organizations, and governments that will enhance student learning, enrich faculty research and teaching, and promote human and societal well-being.

## Sociology BA

Sociology will enable you to see the world in a new light; it is the scientific study of human social relationships, interactions, and institutions. Whether they be friendships, families, church groups, socioeconomic classes, complex organizations, or nations, much of our lives are socially constructed. And in a society where individualism is celebrated, it is easy to forget that the way we behave and feel is socially produced. This is the basic premise of sociology. After your core courses, a BA in Sociology will focus on qualitative tools like interviews, stories, and community engagement to answer that critical question "What is this all about?"

### General Education Requirements

Majors must satisfy the university and college general education requirements (p. 51). Any foreign language may be used to meet the language requirement for the B.A. degree.

All required courses for the major must be completed with a grade of C- or better. Courses counting toward the major requirements may not be taken on a satisfactory/unsatisfactory basis.

The minimum number of Sociology hours required for the B.A. degree is 36.

Core Courses: 21 hours  
 Concentration Courses: 9 hours  
 Elective Courses: 6 hours

#### Sociology B.A. Core

SOC 1010	Introduction to Sociology (MOTR SOCI 101)	3
SOC 1040 or SOC 1241	Social Problems Globalization and Social Change	3
SOC 2160	Social Psychology	3
SOC 3210	Sociological Theory	3
SOC 3221	Qualitative Methods in Social Research	3
SOC 3230	Research Methods	3
SOC 4307	Community-Based Research in Sociology	3
Total Hours		21

### Concentrations (9 hours)

Students seeking a BA in Sociology must complete one of the following concentration choices:

- A. Urban Sociology
- B. Sociology of Health and Aging
- C. Gender and Families
- D. Military Sociology

#### A. Urban Sociology

SOC 2203	The City	3
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SOC 2202	Urban Sociology	3
SOC 3344	Problems of Urban Community	3
Total Hours		9

### B. Sociology of Health and Aging

SOC/GERON 2170	Aging in America: Concepts & Controversies	3
SOC/GERON 2300	Social and Community Services for an Aging Population	3
SOC/GERON 3400	Environment, Society, and Aging	3
Total Hours		9

### C. Gender and Families

SOC/GS 2102	Introduction to Gender Studies	3
SOC/GS 2103	Gender Roles in Society	3
SOC 3243	Marriage, Family and Kinship	3
Total Hours		9

### D. Military Sociology

SOC 2801/MVS 2100	Veterans in American Society	3
SOC 2802/MVS 2130	Gender and the Military	3
SOC 3801	Military Sociology	3
Total Hours		9

## Electives (6 hours)

Students must complete at least 3 hours of SOC at the 4000-level and an additional 3 hours of SOC at the 2000-level or above. GERON, GS, MVS or other courses may be substituted with approval of the faculty advisor.

Pursuing a second concentration is encouraged.

## Sociology Program Learning Outcomes

The Sociology Gerontology and Gender Department offers the following programs and has identified what students will know and be able to do after completing each program. Explore this page to learn more about the opportunities each program provides. Click the shortcut to jump down to view the outcomes for minor.

BA and BS in Sociology (p. 628)  
Sociology Minor (p. 628)

## Bachelor of Arts (B.A.) and Bachelor of Science (B.S.) in Sociology

Upon Completion of the Bachelor of Arts, or Bachelor of Science in Sociology, a student will be able to:

Identify and apply sociological theories to understand social phenomena by:

- Recognizing the differences between “folk” explanations of social phenomena and sociological theories of those phenomena
- Distinguishing modes of sociological inquiry from other disciplinary modes of inquiry
- Applying key concepts and key themes in sociological theory to analyze social phenomena

- Discerning the role of social structures in creating and reproducing social inequality and examining how social structures change
- Distinguishing among micro, meso, and macro levels of observation, inquiry, and analysis

Apply scientific principles to understand the social world by:

- Effectively utilizing evidence-based knowledge and sociological theories and concepts to generate research questions and/or hypotheses
- Identifying the strengths and weaknesses of scientific methodology and methods for analyzing social phenomena in different contexts
- Explaining disciplinary standards for the qualitative and quantitative analysis of data

Critically evaluate explanations of human behavior and social phenomena by:

- Identifying and appraising major theoretical perspectives, including their assumptions, key concepts, and main arguments in terms of historical context and interpretive and explanatory capacities
- Employing the sociological imagination to analyze social problems in context and evaluate solutions to social problems

Use sociological knowledge to inform social change by:

- Engaging with the world around them, including everyday life, work, policy debates, stakeholders, and the public
- Constructing and proposing real world solutions to social issues;
- Expressing sociological ideas in a clear and coherent manner in written and oral communication
- Demonstrating informal, technological, qualitative, and quantitative literacy

## Minor in Sociology

Upon completion of the [Minor in Sociology](#), a student will be able to:

Identify and apply sociological theories to understand social phenomena by:

- Recognizing the differences between “folk” explanations of social phenomena and sociological theories of those phenomena
- Distinguishing modes of sociological inquiry from other disciplinary modes of inquiry
- Applying key concepts and key themes in sociological theory to analyze social phenomena
- Discerning the role of social structures in creating and reproducing social inequality and examining how social structures change
- Distinguishing among micro, meso, and macro levels of observation, inquiry, and analysis

Apply scientific principles to understand the social world by:

- Effectively utilizing evidence-based knowledge and sociological theories and concepts to generate research questions and/or hypotheses
- Identifying the strengths and weaknesses of scientific methodology and methods for analyzing social phenomena in different contexts
- Explaining disciplinary standards for the qualitative and quantitative analysis of data

Critically evaluate explanations of human behavior and social phenomena by:

- Identifying and appraising major theoretical perspectives, including their assumptions, key concepts, and main arguments in terms of historical context and interpretive and explanatory capacities
- Employing the sociological imagination to analyze social problems in context and evaluate solutions to social problems

## Sample Four Year Plans

Urban Sociology Concentration (p. 629)

Sociology of Health and Aging Concentration (p. 629)

Military Sociology Concentration (p. 629)

Gender and Families Concentration (p. 630)

### Urban Sociology Concentration

First Year			
Fall	Hours	Spring	Hours
ENGL 1100		3 SOC 1040 or 1241	3
CORE - Mathematics Proficiency		3 SOC 2160	3
INTDSC 1003		1 EXPLORE - Humanities and Fine Arts	3
SOC 1010		3 Foreign Language 1002	5
Foreign Language 1001		5	
			15
			14
Second Year			
Fall	Hours	Spring	Hours
SOC 2202		3 SOC 3210	3
SOC 2203		3 SOC 2000+ level course	3
Foreign Language 2101		3 EXPLORE - Humanities and Fine Arts	3
EXPLORE - Math and Sciences		3 CORE - US History and Government	3
EXPLORE - Humanities and Fine Arts		3 CORE - Information Literacy	3
			15
Third Year			
Fall	Hours	Spring	Hours
SOC 3221		3 SOC 3230	3
SOC 3344		3 EXPLORE - Math and Sciences	3
ENGL 3100		3 Cultural Diversity Requirement	3
EXPLORE - Math and Sciences		3 Elective or minor	6
Elective or minor		4	
			16
			15
Fourth Year			
Fall	Hours	Spring	Hours
SOC 4000-level course		3 SOC 4307	3
Elective or minor		12 Elective or minor	12
			15
			15
Total Hours: 120			

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

### Sociology of Health and Aging Concentration

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 SOC 1040 or 1241	3
SOC 1010		3 SOC 2160	3
Mathematics Proficiency		3 Foreign Language 1002	5
ENGL 1100		3 EXPLORE - Humanities and Fine Arts	3
Foreign Language 1001		5 Elective or minor	1
			15
			15
Second Year			
Fall	Hours	Spring	Hours
EXPLORE - Math and Sciences		3 SOC 3210	3
EXPLORE - Humanities and Fine Arts		3 SOC 2000+ level course	3
Foreign Language 2102		3 EXPLORE - Humanities and Fine Arts	3
SOC 2170 or GERON 2170		3 CORE - US History and Government	3
SOC 4400 or GERON 4400		3 CORE - Information Literacy	3
			15
			15
Third Year			
Fall	Hours	Spring	Hours
SOC 3221		3 SOC 3230	3
SOC 3400 or GERON 3400		3 EXPLORE - Math and Sciences	3
ENGL 3100		3 Cultural Diversity	3
EXPLORE - Math and Sciences		3 Elective or minor	6
Elective or minor		3	
			15
			15
Fourth Year			
Fall	Hours	Spring	Hours
SOC 4000-level course		3 SOC 4307	3
Elective or minor		12 Elective or minor	12
			15
			15
Total Hours: 120			

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

### Military Sociology Concentration

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003		1 SOC 1040 or 1241	3
ENGL 1100		3 SOC 2160	3
SOC 1010		3 FGN LANG 1002	5
Foreign Language 1001		5 EXPLORE - Humanities and Fine Arts	3
CORE - Mathematics Proficiency		3	
			15
			14



**Second Year**

Fall	Hours	Spring	Hours
SOC 2801 or MVS 2100	3	SOC 3210	3
SOC 2802 or MVS 2130	3	SOC 2000+ level course	3
Foreign Language 2101	3	EXPLORE - Humanities and Fine Arts	3
EXPLORE - Math and Sciences	3	CORE - US History and Government	3
EXPLORE - Humanities and Fine Arts	3	CORE - Information Literacy	3
	15		15

**Third Year**

Fall	Hours	Spring	Hours
SOC 3221	3	SOC 3230	3
SOC 3801	3	EXPLORE - Math and Sciences	3
ENGL 3100	3	Cultural Diversity Requirement	3
CORE - Math and Sciences	3	Elective or minor	6
Elective or minor	4		
	16		15

**Fourth Year**

Fall	Hours	Spring	Hours
SOC 4000-level course	3	SOC 4307	3
Elective or minor	12	Elective or minor	12
	15		15

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

**Gender and Families Concentration****First Year**

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>	1	SOC 1040 or 1241	3
ENGL 1100	3	SOC 2160	3
CORE - Mathematics Proficiency	3	Foreign Language 1002	5
SOC 1010	3	EXPLORE - Humanities and Fine Arts	3
Foreign Language 1001	5	Elective or minor	1
	15		15

**Second Year**

Fall	Hours	Spring	Hours
SOC 2102 or GS 2102	3	SOC 3210	3
SOC 2103	3	SOC 2000+ level course	3
Foreign Language 2101	3	CORE - US History and Government	3
EXPLORE - Math and Sciences	3	CORE - Information Literacy	3
EXPLORE - Humanities and Fine Arts	3	EXPLORE - Humanities and Fine Arts	3
	15		15

**Third Year**

Fall	Hours	Spring	Hours
SOC 3221	3	SOC 3230	3
SOC 3243	3	EXPLORE - Math and Sciences	3
ENGL 3100	3	Cultural Diversity Requirement	3
EXPLORE - Math and Sciences	3	Elective or minor	6
Elective or minor	3		
	15		15

**Fourth Year**

Fall	Hours	Spring	Hours
SOC 4000-level course	3	SOC 4307	3
Elective or minor	12	Elective or minor	12
	15		15

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*PLEASE NOTE: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

**Sociology BS**

Sociology will enable you to see the world in a new light; it is the scientific study of human social relationships, interactions, and institutions. Whether they be friendships, families, church groups, socioeconomic classes, complex organizations, or nations, much of our lives are socially constructed. And in a society where individualism is celebrated, it is easy to forget that the way we behave and feel is socially produced. This is the basic premise of sociology. After your core courses, a BS in Sociology will focus on quantitative research tools like surveys, statistics, and data analysis to answer that critical question "What is this all about?"

**General Education Requirements**

Majors must satisfy the university and college general education requirements (p. 51). Foreign language proficiency is not required, although students are encouraged to take foreign language courses.

All required courses for the major must be completed with a grade of C- or better. Courses counting toward the major requirements may not be taken on a satisfactory/unsatisfactory basis.

The minimum number of Sociology hours required for the B.S. degree is 36.

Core Courses: 21 hours  
Concentration Courses: 9 hours  
Elective Courses: 6 hours

**Sociology B.S. Core (21 hours)**

SOC 1010	Introduction to Sociology (MOTR SOCI 101)	3
SOC 1040 or SOC 1241	Social Problems Globalization and Social Change	3
SOC 2160	Social Psychology	3
SOC 3210	Sociological Theory	3
SOC 3220	Quantitative Data Analysis in Social Science Research <sup>1</sup>	3
SOC 3230	Research Methods	3
SOC 4040	Survey Research Practicum for Sociology	3
Total Hours		21

<sup>1</sup> A statistics class from another social science department may be substituted with approval of the faculty advisor.

### Concentration (9 hours)

Students seeking a B.S. in Sociology must complete one of the following concentration choices:

- A. Urban Sociology
- B. Sociology of Health and Aging
- C. Gender and Families
- D. Military Sociology

#### A. Urban Sociology

SOC 1999	The City	3
SOC 2202	Urban Sociology	3
SOC 3344	Problems of Urban Community	3
Total Hours		9

#### B. Sociology of Health and Aging

SOC/GERON 2170	Aging in America: Concepts & Controversies	3
SOC/GERON 2300	Social and Community Services for an Aging Population	3
SOC/GERON 3400	Environment, Society, and Aging	3
Total Hours		9

#### C. Gender and Families

SOC/GS 2102	Introduction to Gender Studies	3
SOC 2103/GS 2102	Gender Roles in Society	3
SOC 3243	Marriage, Family and Kinship	3
Total Hours		6

#### D. Military Sociology

SOC 2801/MVS 2100	Veterans in American Society	3
SOC 2802/MVS 2130	Gender and the Military	3
SOC 3801	Military Sociology	3

### Electives (6 hours)

Students must complete at least 3 hours of SOC at the 4000-level and an additional 3 hours of SOC at the 2000-level or above. GERO, GS, MVS or other courses may be substituted with approval of the faculty advisor.

Pursuing a second concentration is encouraged.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

Identify and apply sociological theories to understand social phenomena by:

- Recognizing the differences between “folk” explanations of social phenomena and sociological theories of those phenomena
- Distinguishing modes of sociological inquiry from other disciplinary modes of inquiry

- Applying key concepts and key themes in sociological theory to analyze social phenomena
- Discerning the role of social structures in creating and reproducing social inequality and examining how social structures change
- Distinguishing among micro, meso, and macro levels of observation, inquiry, and analysis

Apply scientific principles to understand the social world by:

- Effectively utilizing evidence-based knowledge and sociological theories and concepts to generate research questions and/or hypotheses
- Identifying the strengths and weaknesses of scientific methodology and methods for analyzing social phenomena in different contexts
- Explaining disciplinary standards for the qualitative and quantitative analysis of data

Critically evaluate explanations of human behavior and social phenomena by:

- Identifying and appraising major theoretical perspectives, including their assumptions, key concepts, and main arguments in terms of historical context and interpretive and explanatory capacities
- Employing the sociological imagination to analyze social problems in context and evaluate solutions to social problems

Use sociological knowledge to inform social change by:

- Engaging with the world around them, including everyday life, work, policy debates, stakeholders, and the public
- Constructing and proposing real world solutions to social issues;
- Expressing sociological ideas in a clear and coherent manner in written and oral communication
- Demonstrating informal, technological, qualitative, and quantitative literacy

### Sample Four Year Plans

Urban Sociology Concentration (p. 631)

Sociology of Health and Aging Concentration (p. 632)

Gender and Families Concentration (p. 632)

Military Sociology Concentration (p. 633)

### Urban Sociology Concentration

First Year			
Fall	Hours	Spring	Hours
INTDSC 1003		1 SOC 1040 or 1241	3
SOC 1010		3 SOC 2160	3
ENGL 1100		3 EXPLORE - Humanities and Fine Arts	3
CORE - Mathematics Proficiency		3 FGN LANG 1002 Language and Culture II	5
FGN LANG 1001 Language and Culture	5		
		15	14

**Second Year**

Fall	Hours	Spring	Hours
SOC 2202		3 SOC 3210	3
SOC 2203		3 SOC 3230	3
EXPLORE - Humanities and Fine Arts		3 CORE - Information Literacy	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 CORE - US History and Government	3
FGN LANG 2101 Language and Culture III		3 EXPLORE - Humanities and Fine Arts	3
		Elective or minor	2
			15
			17

**Third Year**

Fall	Hours	Spring	Hours
SOC 3221		3 SOC 2XXX Sociology Elective	3
ENGL 3100		3 Urban Studies Minor or other Elective	3
CORE - Communication Proficiency		3 GEN ED EXPLORE - Mathematics and Life/Natural Sciences	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 Cultural Diversity Requirement	3
Elective or minor		3 Elective or minor	3
		Elective or minor	1
			15
			16

**Fourth Year**

Fall	Hours	Spring	Hours
SOC 3344		3 SOC 4307	3
SOC 4XXX Sociology 4000-level Course		3 Urban Studies Minor or other Elective	3
Urban Studies Minor or other elective		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	2
			15
			14

Total Hours: 121

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

**Sociology of Health and Aging Concentration****First Year**

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 SOC 1040 or 1241	3
SOC 1010		3 SOC 2160	3
ENGL 1100		3 EXPLORE - Humanities and Fine Arts	3
CORE - Math Proficiency		3 EXPLORE - Mathematics and Life/ Natural Sciences	3
EXPLORE - Humanities and Fine Arts		3 Elective or minor	3
Elective or minor		3	
			16
			15

**Second Year**

Fall	Hours	Spring	Hours
SOC 2170 or GERON 2170		3 SOC 3210	3
SOC 4400 or GERON 4400		3 SOC 3230	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 CORE - US History and Government	3
EXPLORE - Humanities and Fine Arts		3 CORE - Information Literacy	3
Elective or minor		3 Elective or minor	3
			15
			15

**Third Year**

Fall	Hours	Spring	Hours
SOC 3220		3 SOC 2XXX+ Sociology Elective	3
ENGL 3100		3 Cultural Diversity Requirement	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 Gerontology Minor or other Elective	3
CORE - Communication Proficiency		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
			15
			15

**Fourth Year**

Fall	Hours	Spring	Hours
SOC 4XXX Sociology course		3 SOC 4040	3
SOC 3400 or GERON 3400		3 Gerontology Minor or other Elective	3
Gerontology Minor or other Elective		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	2
			15
			14

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

**Gender and Families Concentration****First Year**

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 SOC 1040	3
SOC 1010		3 SOC 2160	3
ENGL 1100		3 EXPLORE - Humanities and Fine Arts	3
CORE - Mathematics Proficiency		3 EXPLORE - Mathematics and Life/ Natural Sciences	3
CORE - US History and Government		3 Elective or minor	3
EXPLORE - Humanities and Fine Arts		3	
			16
			15

**Second Year**

Fall	Hours	Spring	Hours
SOC 2102 or GS 2102		3 SOC 3210	3
SOC 2103 or 2103		3 SOC 3230	3
EXPLORE - Humanities and Fine Arts		3 CORE - Information Literacy	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 EXPLORE - Social Sciences	3
Elective or minor		3 Cultural Diversity Requirement	3
			15
			15

**Third Year**

Fall	Hours	Spring	Hours
SOC 3220		3 SOC 2XXX+ Sociology Elective	3
ENGL 3100		3 Gender Studies Minor or other Elective	3
CORE - Communication Proficiency		3 Elective or minor	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
			15
			15

**Fourth Year**

Fall	Hours	Spring	Hours
SOC 3243		3 SOC 4040	3
SOC 4XXX Sociology Course		3 Gender Studies Minor or other Elective	3

Gender Studies Minor or other Elective	3 Elective or minor	3
Elective or minor	3 Elective or minor	3
Elective or minor	3 Elective or minor	2
	15	14

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

### Military Sociology Concentration

#### First Year

Fall	Hours	Spring	Hours
INTDSC 1003 <sup>1</sup>		1 SOC 1040 or 1241	3
SOC 1010		3 SOC 2160	3
ENGL 1100		3 CORE - US History and Government	3
CORE - Mathematics Proficiency		3 EXPLORE Humanities and Fine Arts	3
EXPLORE - Humanities and Fine Arts		3 Elective or minor	3
EXPLORE - Social Sciences		3	
	16		15

#### Second Year

Fall	Hours	Spring	Hours
SOC 2801 or MVS 2100		3 SOC 3210	3
SOC 2802 or MVS 2130		3 SOC 3230	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 CORE - Information Literacy	3
EXPLORE - Humanities and Fine Arts		3 EXPLORE - Mathematics and Life/ Natural Sciences	3
Elective or minor		3 Elective or minor	3
	15		15

#### Third Year

Fall	Hours	Spring	Hours
SOC 3220		3 SOC 2XXX+ Sociology Elective	3
ENGL 3100		3 Cultural Diversity Requirement	3
EXPLORE - Mathematics and Life/ Natural Sciences		3 Veterans Studies Minor or other Elective	3
CORE - Communication Proficiency		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
	15		15

#### Fourth Year

Fall	Hours	Spring	Hours
SOC 3801		3 SOC 4040 or 4307	3
SOC 4XXX Sociology Course		3 Veterans Studies Minor or other Elective	3
Veterans Studies Minor or other Elective		3 Elective or minor	3
Elective or minor		3 Elective or minor	3
Elective or minor		3 Elective or minor	2
	15		14

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 26 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in*

*the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Sociology Minor

### Requirements for the Minor

A minor in sociology requires 15 hours of course work: 12 hours of required courses and 3 hours of electives.

Candidates must have a cumulative grade point average of 2.0 or better in the minor. Courses taken on a satisfactory/ unsatisfactory basis may not be applied to the minor.

#### Required Courses

SOC 1010	Introduction to Sociology (MOTR SOCI 101)	3
SOC 1040 or SOC 1241	Social Problems Globalization and Social Change	3
SOC 2160	Social Psychology	3
SOC 3210	Sociological Theory	3

#### Elective Course(s):

Select three additional sociology hours at the 3000 level or above. Special topics courses or other courses relevant to sociology may be included as electives when approved in advance by the faculty advisor.

Students in the Bachelor of Liberal Studies program must take one additional 4000 level course in Sociology not used in the minor, excluding SOC 4350 (Special Study) or SOC 4385 (Internship) for the capstone course requirement.

### Learning Outcomes

Upon completion of the Minor in Sociology, a student will be able to:

Identify and apply sociological theories to understand social phenomena by:

- Recognizing the differences between “folk” explanations of social phenomena and sociological theories of those phenomena
- Distinguishing modes of sociological inquiry from other disciplinary modes of inquiry
- Applying key concepts and key themes in sociological theory to analyze social phenomena
- Discerning the role of social structures in creating and reproducing social inequality and examining how social structures change
- Distinguishing among micro, meso, and macro levels of observation, inquiry, and analysis

Apply scientific principles to understand the social world by:

- Effectively utilizing evidence-based knowledge and sociological theories and concepts to generate research questions and/or hypotheses
- Identifying the strengths and weaknesses of scientific methodology and methods for analyzing social phenomena in different contexts



- Explaining disciplinary standards for the qualitative and quantitative analysis of data

Critically evaluate explanations of human behavior and social phenomena by:

- Identifying and appraising major theoretical perspectives, including their assumptions, key concepts, and main arguments in terms of historical context and interpretive and explanatory capacities
- Employing the sociological imagination to analyze social problems in context and evaluate solutions to social problems

## Spanish Minor

A minor in French, German, Japanese or Spanish requires the completion of four courses in the language beyond the basic foundation sequence (Language 1001, Language 1002, and Language 2101). Transfer students must complete at least two courses for the minor at UMSL. All courses must be passed with a grade of C- or better.

### Specific Requirements for the Spanish Minor

Select two of the following:	7-8
SPANISH 2172	Spanish Composition
SPANISH 2180	Readings In Spanish
SPANISH 2199	Special Topics: Language Immersion: Spanish
Plus two Spanish courses on the 3000-level or above	6
Total Hours	13-14

Minimum total hours required for the minor in Spanish is 12 beyond SPANISH 2101.

### Learning Outcomes

Graduates with a minor in French, German, Spanish, or Modern Languages from the University of Missouri-St. Louis can use the language to interact with native speakers on familiar topics related to their daily lives. They have an emerging understanding of the target cultures fostered through engaging courses and opportunities such as study abroad. They can apply their linguistic and cultural competencies in real-life situations such as travel and work.

### Skills and Knowledge Areas

Upon completion of the minor, students should be able to:

#### Linguistic Goals:

- In listening/speaking:
  - identify the main ideas and supporting details of texts about familiar and concrete topics, such as those on radio, television, and podcasts;
  - take part in basic conversations on topics related to work, school, home, leisure activities, and culture and;
  - produce uncomplicated descriptions and narrations on familiar topics.
- In reading/writing:
  - identify the main idea and supporting details in a variety of non-complex authentic texts of various genres;

- apply reading strategies to glean key information from more challenging texts;
- compose simple practical texts, such as messages and letters, requests for information, and notes on topics of personal and professional interest and;
- assess language reference resources and use them effectively.

#### Cultural Goals:

- recognize some of the key historical, social, economic, and political forces in the target cultures;
- demonstrate awareness of some of the linguistic, ethnic, racial, religious, cultural, and social diversity of the target cultures and;
- discuss film, media, literature, art, etc. in their socio-historical contexts.

The specific language minor goals are based on the National Standards for Foreign Language Learning and the American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines. Minors are expected to reach the Intermediate-Mid level proficiency in speaking, listening, reading and writing, according to the ACTFL Proficiency Guidelines.

## Special Education MEd, Autism and Developmental Disabilities Emphasis

The M. Ed. Program in Special Education explores important core knowledge in Special Education. The program's primary goal is to empower professionals as thoughtful educators who use best practices when assisting and empowering students with disabilities. Research and data-based decision-making are emphasized throughout the program. Graduate students will apply learned and evaluated research into practice in their courses, and learn to analyze multiple types of assessment data. The M.Ed. Program in Special Education consists of an initial required core of courses, a concentration area corresponding to the chosen emphasis area, and a capstone or exit course block.

When graduate students are accepted into the program, their transcripts may be reviewed, as necessary, to identify compliance with state education certification guidelines. Students who wish to be certified in the education of children with cross-categorical disabilities will be required to fulfill general certification requirements, as well as graduate coursework. Upon completion of this advanced degree, professionals will have developed an in-depth knowledge-base related to

- various learning contexts within and outside of the school setting
- the multiple influences on educational practices in schools
- the characteristics and instructional needs of learners with disabilities
- assessment strategies for monitoring instruction
- instructional best practices
- using research to inform practice in the classroom
- diversity awareness
- contexts that affect student learning
- the powerful interactions between setting events and specific learner outcomes

- a life-perspective of students with exceptional learning needs, both young children who transition into kindergarten and those transitioning into adulthood.

### Required Foundation Courses

Students are required to complete the following courses within the first 15 hours of study.

TCH ED 6010	Examining History, Community and Social Justice in Education	3
ED PSY 6030	Instruction, Learning and Assessment	3

### Required Special Education Courses

ED PSY 6545	Consultation in Schools and Related Settings	3
SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3
or SPEC ED 6437	Applied Behavior Analysis: Functional Assessment and Interventions	
SPEC ED 6415	The Law and Special Education	3

### Special Education Concentration Electives 9

Choose one of the following concentrations:

#### Autism and Developmental Disabilities Concentration

SPEC ED 6620	Assessment and Interventions for Children and Youth with Autism Spectrum Disorder
SPEC ED 6610	Foundations of Autism Spectrum Disorder: Research to Practice
SPEC ED 6430	Characteristics and Education of Individuals with Low-Incidence Disabilities

#### Early Childhood Special Education Concentration

SPEC ED 6372	Screening and Diagnosis of Developmental Delays: Birth to 5 Years
SPEC ED 6462	Introduction to Early Childhood Special Education
SPEC ED 6463	Curriculum, Methods, and Materials for Early Childhood Special Ed

#### Cross Categorical Disabilities Concentration

Choose two courses from the following and an additional course from any concentration for a total of three courses.

SPEC ED 6315	Understanding/Implementing Speech and Language Interventions that Assist Children with Special Needs
SPEC ED 6345	Characteristics and Education of Students with High-Incidence Disabilities
SPEC ED 6342	Transition Education for Adult Life
SPEC ED 6346	Reading Instruction and Intervention in Special Education
ED PSY 6542	Social-Emotional and Behavior Interventions

### Required Research Courses (6 hours)

These two research courses should be taken in sequence (not concurrently) at the end of the program. Candidates will design and execute a piece of original practitioner research and present their findings in a public forum.

TCH ED 6909	Teacher Action Research I	3
TCH ED 6910	Teacher Action Research Capstone	3
Total Hours		30

## Special Education MEd, Cross Categorical Disabilities Emphasis

The M. Ed. Program in Special Education explores important core knowledge in Special Education. The program's primary goal is to empower professionals as thoughtful educators who use best practices when assisting and empowering students with disabilities. Research and data-based decision-making are emphasized throughout the program. Graduate students will apply learned and evaluated research into practice in their courses, and learn to analyze multiple types of assessment data. The M.Ed. Program in Special Education consists of an initial required core of courses, a concentration area corresponding to the chosen emphasis area, and a capstone or exit course block.

When graduate students are accepted into the program, their transcripts may be reviewed, as necessary, to identify compliance with state education certification guidelines. Students who wish to be certified in the education of children with cross-categorical disabilities will be required to fulfill general certification requirements, as well as graduate coursework. Upon completion of this advanced degree, professionals will have developed an in-depth knowledge-base related to

- various learning contexts within and outside of the school setting
- the multiple influences on educational practices in schools
- the characteristics and instructional needs of learners with disabilities
- assessment strategies for monitoring instruction
- instructional best practices
- using research to inform practice in the classroom
- diversity awareness
- contexts that affect student learning
- the powerful interactions between setting events and specific learner outcomes
- a life-perspective of students with exceptional learning needs, both young children who transition into kindergarten and those transitioning into adulthood.

### Required Foundation Courses

Students are required to complete the following courses within the first 15 hours of study.

TCH ED 6010	Examining History, Community and Social Justice in Education	3
ED PSY 6030	Instruction, Learning and Assessment	3

### Required Special Education Courses

ED PSY 6545	Consultation in Schools and Related Settings	3
SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3
or SPEC ED 6437	Applied Behavior Analysis: Functional Assessment and Interventions	

SPEC ED 6415	The Law and Special Education	3
<b>Special Education Concentration Electives</b>		<b>9</b>

Choose one of the following concentrations:

#### Autism and Developmental Disabilities Concentration

SPEC ED 6620	Assessment and Interventions for Children and Youth with Autism Spectrum Disorder
SPEC ED 6610	Foundations of Autism Spectrum Disorder: Research to Practice
SPEC ED 6430	Characteristics and Education of Individuals with Low-Incidence Disabilities

#### Early Childhood Special Education Concentration

SPEC ED 6372	Screening and Diagnosis of Developmental Delays: Birth to 5 Years
SPEC ED 6462	Introduction to Early Childhood Special Education
SPEC ED 6463	Curriculum, Methods, and Materials for Early Childhood Special Ed

#### Cross Categorical Disabilities Concentration

Choose two courses from the following and an additional course from any concentration for a total of three courses.

SPEC ED 6315	Understanding/Implementing Speech and Language Interventions that Assist Children with Special Needs
SPEC ED 6345	Characteristics and Education of Students with High-Incidence Disabilities
SPEC ED 6342	Transition Education for Adult Life
SPEC ED 6346	Reading Instruction and Intervention in Special Education
ED PSY 6542	Social-Emotional and Behavior Interventions

#### Required Research Courses (6 hours)

These two research courses should be taken in sequence (not concurrently) at the end of the program. Candidates will design and execute a piece of original practitioner research and present their findings in a public forum.

TCH ED 6909	Teacher Action Research I	3
TCH ED 6910	Teacher Action Research Capstone	3
Total Hours		30

#### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Interpret and apply historic and current special education laws and policies related to student identification, rights and responsibilities, access, support, and transition.
- Design student-centered programming that facilitates the active involvement and empowerment of individuals with disabilities and their families in the educational planning process.
- Describe how abilities/disabilities may interact with development and learning and apply this knowledge to provide meaningful and challenging learning experiences for individuals with disabilities across curricular content areas.

- Identify a variety of formal and informal assessments, data sources, and practices to implement and guide educational decisions for individuals with disabilities.
- Select, adapt, and implement a repertoire of evidence-based practices to advance learning and quality of life of individuals with disabilities.
- Collaborate with families as well as partners in the school system, service system, and community to improve student and post-school outcomes.
- Develop essential skills and dispositions (e.g., attitudes, perceptions, values, and beliefs) to guide professional practice, engage in lifelong learning, and advance positive change as leaders in classrooms and communities.
- Utilize inclusive frameworks, strategies, and practices, including alignment of individualized education program goals, in grade level curriculum/standards and assessments within an inclusive educational environment;
- Analyze policies and research to guide the use of inclusive education evidence-based practices as well as to support advocacy skills as a leader in the field;
- Develop collaborative partnerships with families, educators, related service providers, and paraprofessionals to support academic and social inclusion for individuals with disabilities.

## Special Education MEd, Early Childhood Special Education Emphasis

The M. Ed. Program in Special Education explores important core knowledge in Special Education. The program's primary goal is to empower professionals as thoughtful educators who use best practices when assisting and empowering students with disabilities. Research and data-based decision-making are emphasized throughout the program. Graduate students will apply learned and evaluated research into practice in their courses, and learn to analyze multiple types of assessment data. The M.Ed. Program in Special Education consists of an initial required core of courses, a concentration area corresponding to the chosen emphasis area, and a capstone or exit course block.

When graduate students are accepted into the program, their transcripts may be reviewed, as necessary, to identify compliance with state education certification guidelines. Students who wish to be certified in the education of children with cross-categorical disabilities will be required to fulfill general certification requirements, as well as graduate coursework. Upon completion of this advanced degree, professionals will have developed an in-depth knowledge-base related to

- various learning contexts within and outside of the school setting
- the multiple influences on educational practices in schools
- the characteristics and instructional needs of learners with disabilities
- assessment strategies for monitoring instruction
- instructional best practices
- using research to inform practice in the classroom
- diversity awareness
- contexts that affect student learning
- the powerful interactions between setting events and specific learner outcomes

- a life-perspective of students with exceptional learning needs, both young children who transition into kindergarten and those transitioning into adulthood.

### Required Foundation Courses

Students are required to complete the following courses within the first 15 hours of study.

TCH ED 6010	Examining History, Community and Social Justice in Education	3
ED PSY 6030	Instruction, Learning and Assessment	3

### Required Special Education Courses

ED PSY 6545	Consultation in Schools and Related Settings	3
SPEC ED 6325	Advanced Studies in Classroom & Behavior Management	3
or SPEC ED 6437	Applied Behavior Analysis: Functional Assessment and Interventions	
SPEC ED 6415	The Law and Special Education	3

### Special Education Concentration Electives 9

Choose one of the following concentrations:

#### Autism and Developmental Disabilities Concentration

SPEC ED 6620	Assessment and Interventions for Children and Youth with Autism Spectrum Disorder	
SPEC ED 6610	Foundations of Autism Spectrum Disorder: Research to Practice	
SPEC ED 6430	Characteristics and Education of Individuals with Low-Incidence Disabilities	

#### Early Childhood Special Education Concentration

SPEC ED 6372	Screening and Diagnosis of Developmental Delays: Birth to 5 Years	
SPEC ED 6462	Introduction to Early Childhood Special Education	
SPEC ED 6463	Curriculum, Methods, and Materials for Early Childhood Special Ed	

#### Cross Categorical Disabilities Concentration

Choose two courses from the following and an additional course from any concentration for a total of three courses.

SPEC ED 6315	Understanding/Implementing Speech and Language Interventions that Assist Children with Special Needs	
SPEC ED 6345	Characteristics and Education of Students with High-Incidence Disabilities	
SPEC ED 6342	Transition Education for Adult Life	
SPEC ED 6346	Reading Instruction and Intervention in Special Education	
ED PSY 6542	Social-Emotional and Behavior Interventions	

### Required Research Courses (6 hours)

These two research courses should be taken in sequence (not concurrently) at the end of the program. Candidates will design and execute a piece of original practitioner research and present their findings in a public forum.

TCH ED 6909	Teacher Action Research I	3
TCH ED 6910	Teacher Action Research Capstone	3
Total Hours		30

## Sport Management BS

### General Education Requirements

Students must satisfy the university general education requirements (p. 51).

As part of meeting the university's general education requirements, the following courses prerequisite courses must be completed:

BUS AD 1000	Introduction to Business	3
COMM 1040	Introduction to Public Speaking (MOTR COMM 110)	3
ECON 1001	Principles of Microeconomics (MOTR ECON 102)	3
ENGL 1100	First-Year Writing (MOTR ENGL 200)	3
MATH 1030	College Algebra (MOTR MATH 130)	3
PSYCH 1003	General Psychology (MOTR PSYC 100)	3

There is no foreign language requirement for the degree.

### Degree Requirements

#### Required Courses

MGMT 3600	Management and Organizational Behavior	3
MKTG 3700	Basic Marketing	3
PSYCH 3200	Sports Psychology	3
SPMGT 1113	Introduction to Sport Management and Administration	3
SPMGT 2200	Legal and Ethical Issues in Sports	3
SPMGT 4113	Educational and Community Athletics	3
SPMGT 4999	Sport Management Internship	6

#### Electives

Choose five of the following courses: <sup>1</sup> 15

CNS ED 3200	Interpersonal Skills in Helping Relationships	
COMM 3395	Special Topics in Communication	
ECON 3610	Economics of Sports, Gaming, and Gambling	
MGMT 3611	Advanced Management and Organizational Behavior	
MGMT 3621	Human Resource Management	
MKTG 3721	Introduction to Digital Marketing Strategies	
MKTG 3765	Sports Marketing	
PHY ED 2134	Personal Physical Fitness	



PHY ED 2136	Facilities Management
SPMGT 3285	Sports Medicine
SPMGT 3380	Sports Nutrition
SPMGT 3731	Sports Media and Technology
SPMGT 4213	Athletic Compliance
SPMGT 4990	Sport Management Field Experience

Total Hours 39

- Students may take up to six hours from any area as pre-approved by advisor.
- Students may take up to six hours of SPMGT 4990.

## Learning Outcomes

This program is planning for accreditation by the Commission on Sport Management Accreditation (COSMA). Upon completion of the program, graduates will be able to:

- Apply an interdisciplinary foundation of management, sports, and marketing theories to a variety of sports management settings.
- Develop a marketing toolbox that integrates theories with the fundamental aspects of sports, sports products, consumer and market research, sponsorship, promotion and media.
- Examine and explore the legal environments of amateur, collegiate, and professional sports programs with respect to state and federal legislation, liability, risk management, contracts, and collective bargaining.
- Demonstrate the ability to manage sports facilities to apply key concepts of planning, design, and evaluation of a sports program or sports-related event.
- Develop and refine leadership and communication skills necessary within a sports organization and team-oriented sports institutions.
- Recognize and evaluate ethical decision-making, balancing economic priorities and social responsibilities of sports organizations.
- Demonstrate socio-cultural commitment and responsibility in any given sports management environment.

### First Year

Fall	Hours	Spring	Hours
ENGL 1100		3 BUS AD 1000	3
SPMGT 1113		3 BIOL 1012 & BIOL 1013	4
COMM 1040		3 ECON 1001	3
MATH 1030		3 EXPLORE - Math and Life/Natural Sciences	3
EXPLORE- Math and Life/Natural Sciences		3 Elective	2
	15		15

### Second Year

Fall	Hours	Spring	Hours
PSYCH 1003		3 Program Elective	3
SPMGT 2200		3 CORE - US History and Government	3
CORE - Information Literacy		3 EXPLORE - Humanities and Fine Arts	3
EXPLORE - Math and Life/Natural Sciences		3 Elective or minor	6
EXPLORE - Humanities and Fine Arts		3	
Elective or minor		3	
	18		15

### Third Year

Fall	Hours	Spring	Hours
Program Elective		3 PSYCH 3200	3

EXPLORE - Humanities and Fine Arts	3 MKTG 3700	3
Elective or Minor	9 Program Elective	3
	Elective or minor	6
	15	15

### Fourth Year

Fall	Hours	Spring	Hours
MGMT 3600		3 SPMGT 4113	3
SPMGT 4999		3 SPMGT 4999	3
Program Elective		6 Elective or minor	6
Elective or minor		3	
	15		12

Total Hours: 120

## Statistics Minor

### Minor Requirements

The department offers minors in computer science, mathematics, and statistics. All courses presented for any of these minors must be completed with a grade of C- or better.

The requirements for the minor are:

MATH 4200	Mathematical Statistics I	3
MATH 4210	Mathematical Statistics II	3
Select two additional courses in statistics numbered above 3000		6
Total Hours		12

A minimum of two statistics courses numbered above 3000 must be taken in residence in the Department of Mathematics and Computer Science at UMSL.

### Learning Outcomes

A successful undergraduate should, upon completion, be able to:

- Reformulate problems or questions in relevant statistical terms.
- Solve problems which involve probability or statistical concepts and procedures.

## Student Affairs Administration and Leadership Graduate Certificate

The Graduate Certificate in Student Affairs Administration & Leadership (SAAL) would prepare participants to develop the knowledge, skills and abilities necessary to pursue entry-level staff and administrative positions with a concentrated emphasis in student affairs administration and leadership.

Students would develop the requisite knowledge and skills upon completion of an 18-hour curriculum which is outlined below:

HIGHERED 5402	Student Affairs Administration (Introductory course)	3
HIGHERED 6406	Governance of Higher Education	3
HIGHERED 6408	Legal Issues in Student Affairs	3
HIGHERED 6409	Critical Issues in Student Affairs	3
HIGHERED 6410	Ethics in Higher Education Administration	3

HIGHERED 6476	Organization and Administration of Higher Education (Exit course)	3
Total Hours		18

## Studio Art BFA, Art Education Emphasis

This degree prepares students for a career in Art Education; students who successfully complete the program will be eligible for K-12 Art teacher certification in Missouri. Art Education students complete a foundation art program plus additional courses that provide experience with a broad range of studio processes.

Candidates for the B.F.A. degree must complete a Foundation and Core Art Program (which is largely satisfied by the A.F.A. degree) and an emphasis area in one of the following: art education, graphic design, or general fine arts studio practice. Studio Art majors are required to take 69 hours in studio art (this includes 27 hours in the foundation and core art program) and 12 hours in Art History. The final 30 hours must be completed in residence at UMSL. Graduating students must also pass a faculty portfolio review.

**Advanced Placement in Studio Art Classes:** Studio Art Majors who have professional Graphic Design or other professional studio experience may wish to submit a portfolio to a committee of Studio Art faculty. Depending on the nature and the quality of the student's portfolio, they may be able to obtain exemptions from selected lower level Studio Art courses. Students applying for these exemptions must submit their portfolios prior to the first day of class of their first semester in the BFA Program. Students will be notified in writing if an exemption is granted. Students informed of these waivers will be advised of their requirements in the studio art major. All decisions of the portfolio reviews are final.

### General Education

Majors in Studio Art must meet the college and university general education requirements (p. 51). A foreign language is not required. Studio Art courses required for the degree may not be taken on a satisfactory/unsatisfactory (S/U) basis. A minimum of 120 hours is required for graduation. Certain Studio Art courses fulfill the humanities and fine arts general education requirement.

An art education emphasis leading toward K-12 Art teacher certification is available. Students choosing this option must complete degree requirements for the B.F.A. Students must complete ENGL 3100 (Advanced Expository Writing) and the general education requirements of the College of Education. A foreign language is not required.

Students will take a specialized program of Foundation Art (30 hours) that includes courses required for certification to teach art. They will also take studio art electives, including a minimum of three courses in one of the studio emphasis areas: drawing, graphic design, painting, photography, or printmaking. A minimum of 50 credit hours must be completed in studio art. In addition, students must complete 15 hours of art history. The final 30 hours of coursework must be completed in residence at UMSL. Major area courses, including studio art, art history, art education, teacher education, and secondary education, must be completed with a minimum grade point average of 2.5; no grade lower than a C is acceptable in major area coursework.

Beginning with those students graduating in May 2017 and receiving teacher certification, the Missouri Department of Elementary and

Secondary Education requires a 3.0 GPA in professional education courses, a 3.0 GPA in the teaching content field, and a 2.75 overall GPA.

### Foundations

ST ART 1020	Expanded Artforms	3
ST ART 1140	Drawing I (MOTR PERF 105D)	3
ST ART 1150	2D Design: Surface	3
ST ART 1151	3D Design: Space	3

### Core

ST ART 2220 or ST ART 2205	Computer Design I Graphic Design I	3
ST ART 2230	Drawing II	3
ST ART 2245	Painting I	3
ST ART 2252	Printmaking I	3
ST ART 2260	Photography I	3
ST ART 2270	Ceramics I	3
ST ART 2278	Introduction to Fibers and Textiles	3
ST ART 3332	Figure Drawing I	3

### History of Art and Visual Culture

ART HS 1100	Introduction to Western Art (MOTR ARTS 100)	3
ART HS 2280	Modern to Contemporary Art	3

Choose one course from the following: 3

ART HS 1120	Global Art and Visual Culture (MOTR ARTS 101)	3
ART HS 1140	Indigenous Arts of the Americas	3
ART HS 1150	Introduction to the Art and Visual Cultures of Africa	3
ART HS 1160	Introduction to the Art and Visual Cultures of Asia	3

Choose one course from the following: 3

ART HS 2211	Art and Archaeology of The Ancient World	3
ART HS 2212	Greek Art and Archaeology	3
ART HS 2225	Medieval Art	3
ART HS 2235	Italian and Northern European Renaissance Art	3
ART HS 2250	Nineteenth Century European Art	3
ART HS 3390	Special Study	3
ART HS 3395	Sophomore/Junior Seminar: Research in Art History	3

### Electives

Two 2000 or 3000-level ST ART or ART HS courses	6
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### Education Courses (Art Education Emphasis)

TCH ED 1000	Building Community, Culture, and Learning in Education	1
TCH ED 1001	Early Clinical Experience: Community Agency	1

### Level I: Exploring Education as a Profession

TCH ED 2000	Becoming a Professional Educator	1
TCH ED 2001	Early Clinical Experience: Schools	1
TCH ED 2209	Foundations of Teaching in American Schools	2

### Level II: Analyzing the Nature and Process of Education

ART ED 3328	Art Education: Theory to Practice	3
ART ED 4260	Art Museum as Teaching Resource	3
ED PSY 3312	Psychology of Learning, Instruction, and Assessment	3
SPEC ED 3318	Inclusive Classrooms	3
TCH ED 3001	Mid-Level Clinical Experience: Diverse Learners	1
TCH ED 3310	Introduction to Methods of Teaching	3
TCH ED 4391	Literacy for Adolescent Learners in Content Areas	3
<b>Level III: Synthesizing Theory and Practice in Education</b>		
ART ED 4273	Curriculum and Methods of Teaching Art	3
SEC ED 4995	Practicum I: Site-Based Experience in Art	3
SEC ED 4996	Practicum II: 12-Week Site-Based Experience in Art	9
SEC ED 4997	Practicum II: 4-Week Site-Based Experience in Art	3
<b>Total Hours</b>		<b>97</b>

BIOL 1012	3				
	15		15		6
<b>Third Year</b>					
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>	<b>Summer</b>	<b>Hours</b>
ST ART 2252	3	ART ED 3328	3	ART HS 1120	3
ST ART 2278	3	ART ED 4260	3	EXPLORE - Mathematics and Life/ Natural Sciences	3
ART HS 1100	3	ST ART 2220	3		
TCH ED 3001	1	ST ART XXXX Studio Art Elective	3		
TCH ED 4391	3	ART HS 2280	3		
SPEC ED 3318	3				
	16		15		6
<b>Fourth Year</b>					
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>		
ART ED 4273	3	SEC ED 4996	9		
ST ART 2260	3	SEC ED 4997	3		
ST ART 2270	3				
ART HS 2000+ Art History Elective	3				
SEC ED 4995	3				
	15		12		

Total Hours: 136

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- To develop visual and verbal responses to visual phenomena, and organize perceptions and conceptualizations both rationally and intuitively
- To explain the major achievements in the history of art and design, including the works and intentions of leading artists and designers in the past and present
- To develop the capacity to identify and/or solve visual problems within a variety of physical, technological, social, and cultural contexts
- To explain and evaluate contemporary thinking about art or design
- To develop competence in a number of art or design techniques
- To make valid assessments of quality and effectiveness in design projects and works of art, especially their own

## Sample Four Year Plan

<b>First Year</b>					
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>	<b>Summer</b>	<b>Hours</b>
ST ART 1140	3	ST ART 1020	3	PSYCH 1003	3
ST ART 1150	3	ST ART 1151	3	EXPLORE - Mathematics and Life/ Natural Sciences	3
TCH ED 1000	1	ST ART 2230	3		
ENGL 1100	3	TCH ED 1001	1		
MATH 1020	3	TCH ED 2000	1		
HIST 1001	3	POL SCI 1100	3		
	16		14		6
<b>Second Year</b>					
<b>Fall</b>	<b>Hours</b>	<b>Spring</b>	<b>Hours</b>	<b>Summer</b>	<b>Hours</b>
ST ART 2245	3	ST ART 2275	3	ED TECH 2230	3
ST ART 1142	3	ST ART XXXX Studio Art Elective	3	ENGL 3100	3
TCH ED 2001	1	ED PSY 3312	3		
TCH ED 2209	2	TCH ED 3310	3		
ED PSY 2212	3	COMM 1040	3		

## Studio Art BFA, Graphic Design Emphasis

The Art & Design department at UMSL welcomes students to explore essential cultural and professional systems through creative visual practice. Students encounter both traditional and new technologies as means to study and create the visual world in which we live. Students in the Graphic Design program enjoy the benefits of close relationships with the St. Louis graphic design professional community. Our professors maintain a rigorous program that prepares students for immediate employment as creative design professionals.

### Career Outlook

Students with degrees in studio art (Graphic Design emphasis) find careers as graphic designers, art directors, creative directors, marketing professionals, user experience designers, web designers and other creative professionals.

Candidates for the B.F.A. degree must complete a Foundation and Core Art Program (which is largely satisfied by the A.F.A. degree) and an emphasis area in one of the following: art education, graphic design, or general fine arts studio practice. Studio Art majors are required to take 69 hours in studio art (this includes 27 hours in the foundation and core art program) and 12 hours in Art History. The final 30 hours must be completed in residence at UMSL. Graduating students must also pass a faculty portfolio review.

**Advanced Placement in Studio Art Classes:** Studio Art Majors who have professional Graphic Design or other professional studio experience may wish to submit a portfolio to a committee of Studio Art faculty. Depending on the nature and the quality of the student's portfolio, they may be able to obtain exemptions from selected lower level Studio Art courses. Students applying for these exemptions must submit their portfolios prior to the first day of class of their first semester in the BFA Program. Students will be notified in writing if an exemption is granted.

Students informed of these waivers will be advised of their requirements in the studio art major. All decisions of the portfolio reviews are final.

## General Education

Majors in Studio Art must meet the college and university general education requirements (p. 51). A foreign language is not required. Studio Art courses required for the degree may not be taken on a satisfactory/unsatisfactory (S/U) basis. A minimum of 120 hours is required for graduation. Certain Studio Art courses fulfill the humanities and fine arts general education requirement.

### Foundations

ST ART 1020	Expanded Artforms	3
ST ART 1140	Drawing I (MOTR PERF 105D)	3
ST ART 1150	2D Design: Surface	3
ST ART 1151	3D Design: Space	3

### Core

ST ART 2205	Graphic Design I	3
ST ART 2220	Computer Design I	3

Select three courses from the following: 9

ST ART 2230	Drawing II	
ST ART 2245	Painting I	
ST ART 2252	Printmaking I	
ST ART 2260	Photography I	
ST ART 2270	Ceramics I	
ST ART 2275	Sculpture I	
ST ART 2278	Introduction to Fibers and Textiles	
ST ART 2285	Entrepreneurship for the Visual Arts	

### History of Art and Visual Culture

ART HS 1100	Introduction to Western Art (MOTR ARTS 100)	3
ART HS 2280	Modern to Contemporary Art	3
ART HS 2261	History of Graphic Design	3
Choose one of the following courses:		3

ART HS 1120	Global Art and Visual Culture (MOTR ARTS 101)	
ART HS 1140	Indigenous Arts of the Americas	
ART HS 1150	Introduction to the Art and Visual Cultures of Africa	
ART HS 1160	Introduction to the Art and Visual Cultures of Asia	

### Major (Graphic Design Emphasis)

ST ART 2210	Typography	3
ST ART 2221	Computer Design II	3
ST ART 3305	Graphic Design II	3
ST ART 3310	Graphic Design III	3
ST ART 3311	Graphic Design IV	3
ST ART 3320	Advanced Problems in Graphic Design I	3
ST ART 3321	Advanced Problems in Graphic Design II	3
Choose three courses from the following:		9

ST ART 3312	Advanced Topics in Graphic Design	
ST ART 3313	Introduction to Motion	
ST ART 3315	Image Making for Graphic Design	

### ST ART 3316

<b>Electives</b>		
Two 2000 or 3000-level ST ART or ART HS course		6
<b>Capstone</b>		
ST ART 4497	Senior Seminar in Graphic Design I	3
ST ART 4498	Senior Seminar in Graphic Design II	3
Total Hours		81

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Develop visual and verbal responses to visual phenomena, and organize perceptions and conceptualizations both rationally and intuitively
- Explain the major achievements in the history of art and design, including the works and intentions of leading artists and designers in the past and present
- Develop the capacity to identify and/or solve visual problems within a variety of physical, technological, social, and cultural contexts
- Explain and evaluate contemporary thinking about art or design
- Develop competence in a number of art or design techniques
- Make valid assessments of quality and effectiveness in design projects and works of art, especially their own

## Sample Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003		1 ST ART 3305	3
ST ART 2205		3 ST ART 2221	3
ST ART 2220		3 ST ART 1151	3
ST ART 1140		3 ST ART 1020	3
ST ART 1150		3 MATH 1020	3
ENGL 1100	3		
	16		15

### Second Year

Fall	Hours	Spring	Hours
ST ART 3310		3 ST ART 3311	3
ST ART 3306		3 ST ART 2260	3
ST ART 2285		3 ST ART 2230	3
ART HS 1100		3 ART HS Non-western Art History Course	3
CORE - US History and Government		3 EXPLORE - Math and Sciences	3
	15		15

### Third Year

Fall	Hours	Spring	Hours
ST ART 3320		3 ST ART 3321	3
ST ART 3315		3 ST ART 3316	3
ART HS 2261		3 ST ART elective	3
ENGL 3100		3 ART HS 2280	3
CORE - Communication Proficiency		3 EXPLORE - Social Sciences	3
	15		15

### Fourth Year

Fall	Hours	Spring	Hours
ST ART 4497		3 ST ART 4498	3
ST ART 3314		3 CORE - Information Literacy	3
ST ART elective		3 EXPLORE - Social Sciences	3
EXPLORE - Social Sciences		3 EXPLORE - Math and Sciences	3



EXPLORE - Math and Sciences	3 Elective or minor	2
	15	14

Total Hours: 120

<sup>1</sup> INTDSC 1003 is required only for first-time freshmen and transfer students with less than 24 college credits.

*Please Note: This plan is an example of what a four year plan could look like for a typical student. Placement exam scores in math as well as the completion of coursework may change the plan. It should not be used in the place of regular academic advising appointments. All students are encouraged to meet with their advisor each semester. All requirements are subject to change.*

## Studio Art BFA, Studio Practice Emphasis

The Art & Design department at UMSL welcomes students to explore essential cultural and professional systems through creative visual practice. Students encounter both traditional and new technologies as means to study and create the visual world in which we live. Students in the Studio Practice program enjoy the benefits of close relationships with the St. Louis visual arts professional community. Our professors maintain a rigorous program that prepares students for immediate employment as creative professionals and enriches lives through creative practice.

Candidates for the B.F.A. degree must complete a Foundation and Core Art Program (which is largely satisfied by the A.F.A. degree) and an emphasis area in one of the following: art education, graphic design, or general fine arts studio practice. Studio Art majors are required to take 69 hours in studio art (this includes 27 hours in the foundation and core art program) and 12 hours in Art History. The final 30 hours must be completed in residence at UMSL. Graduating students must also pass a faculty portfolio review.

**Advanced Placement in Studio Art Classes:** Studio Art Majors who have professional Graphic Design or other professional studio experience may wish to submit a portfolio to a committee of Studio Art faculty. Depending on the nature and the quality of the student's portfolio, they may be able to obtain exemptions from selected lower level Studio Art courses. Students applying for these exemptions must submit their portfolios prior to the first day of class of their first semester in the BFA Program. Students will be notified in writing if an exemption is granted. Students informed of these waivers will be advised of their requirements in the studio art major. All decisions of the portfolio reviews are final.

### General Education

Majors in Studio Art must meet the college and university general education requirements (p. 51). A foreign language is not required. Studio Art courses required for the degree may not be taken on a satisfactory/unsatisfactory (S/U) basis. A minimum of 120 hours is required for graduation. Certain Studio Art courses fulfill the humanities and fine arts general education requirement.

#### Foundations

ST ART 1020	Expanded Artforms	3
ST ART 1150	2D Design: Surface	3
ST ART 1151	3D Design: Space	3
ST ART 1140	Drawing I (MOTR PERF 105D)	3

**Core** 15

Select five 2000-level courses from the following:

ST ART 2205	Graphic Design I
ST ART 2220	Computer Design I
ST ART 2230	Drawing II
ST ART 2235	Comics and Cartoon Illustration
ST ART 2245	Painting I
ST ART 2252	Printmaking I
ST ART 2260	Photography I
ST ART 2270	Ceramics I
ST ART 2275	Sculpture I
ST ART 2285	Entrepreneurship for the Visual Arts
ST ART 2278	Introduction to Fibers and Textiles

#### History of Art and Visual Culture

ART HS 1100	Introduction to Western Art (MOTR ARTS 100)	3
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ART HS 2280	Modern to Contemporary Art	3
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Choose one non-Western History of Art and Visual Culture course from the following: 3

ART HS 1120	Global Art and Visual Culture (MOTR ARTS 101)
ART HS 1140	Indigenous Arts of the Americas
ART HS 1150	Introduction to the Art and Visual Cultures of Africa
ART HS 1160	Introduction to the Art and Visual Cultures of Asia

Choose one course from the following: 3

ART HS 2211	Art and Archaeology of The Ancient World
ART HS 2212	Greek Art and Archaeology
ART HS 2225	Medieval Art
ART HS 2235	Renaissance and Baroque Art
ART HS 2250	Rococo to Realism
ART HS 2270	Art of the United States
ART HS 2275	History of Illustration
ART HS 3390	Special Study
ART HS 3395	Selected Themes in the History of Art and Visual Culture

#### Major (Studio Art Emphasis)

Select ten of the following courses: 30

ST ART 3330	Drawing III
ST ART 3332	Figure Drawing I
ST ART 3333	Figure Drawing II
ST ART 3342	Painting II
ST ART 3343	Painting III
ST ART 3344	Watercolor Painting
ST ART 3351	Printmaking II
ST ART 3352	Printmaking: Screenprinting
ST ART 3354	Printmaking: Lithography
ST ART 3356	Printmaking: Etching
ST ART 3360	Photography II
ST ART 3362	Digital Color Process
ST ART 3364	Non-Silver Photography

ST ART 3366	Commercial Applications in Photography	
ST ART 3382	Advanced 2D Practices	
ST ART 3385	Advanced 3D Practices	
<b>Electives</b>		
Choose two elective courses from any 2000- or 3000-level Studio Practice or History of Art and Visual Culture courses		6
<b>Capstone</b>		
ST ART 4495	Senior Studio Seminar	3
ST ART 4496	Senior Studio Seminar	3
Total Hours		81

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- To develop visual and verbal responses to visual phenomena, and organize perceptions and conceptualizations both rationally and intuitively
- Explain the major achievements in the history of art and design, including the works and intentions of leading artists and designers in the past and present
- Develop the capacity to identify and/or solve visual problems within a variety of physical, technological, social, and cultural contexts
- Explain and evaluate contemporary thinking about art or design
- Develop competence in a number of art or design techniques
- Make valid assessments of quality and effectiveness in design projects and works of art, especially their own

## Four Year Plan

### First Year

Fall	Hours	Spring	Hours
INTDSC 1003		1 ST ART 1020	3
ST ART 1140		3 ST ART 1151	3
ST ART 1150		3 ST ART 2230	3
ST ART 1142		3 ST ART 1143	3
ENGL 1100		3 ART HS 1100	3
MATH 1020		3	
	16		15

### Second Year

Fall	Hours	Spring	Hours
ST ART 2XXX Course in 2D or 3D Practice		3 ST ART 2235	3
ST ART 2240		3 ST ART 2285	3
ART HS XXXX Non-western Art History Course		3 ST ART 3XXX Course in 2D or 3D Practice	3
CORE - US History and Government		3 ART HS 2280	3
EXPLORE - Mathematics and Life/Natural Sciences		3 EXPLORE - Social Sciences	3
	15		15

### Third Year

Fall	Hours	Spring	Hours
ST ART 2245		3 ST ART 1181	3
ST ART 3382		3 ST ART 2283	3
ART HS 2XXX Art History Course		3 ST ART 3385	3
ENGL 3100		3 ST ART XXXX Studio Art Elective	3
CORE - Communication Proficiency		3 CORE - Information Literacy	3
	15		15

### Fourth Year

Fall	Hours	Spring	Hours
ST ART 3352		3 ST ART 2273	3
ST ART 4495		3 ST ART 4496	3
ST ART XXXX Studio Art Elective		3 EXPLORE - Social Sciences	3
EXPLORE - Social Sciences		3 EXPLORE - Mathematics and Life/Natural Sciences	3
EXPLORE - Mathematics and Life/Natural Sciences		3 Elective or minor	2
	15		14

Total Hours: 120

## Studio Art Minor

Students who wish to minor in studio art must take a minimum of 18 hours with a grade point average of 2.0 or better. Six hours must be taken at the 2000 level or above, in residence at UMSL. The requirements for the minor are as follows:

ST ART 1020	Expanded Artforms	3
ST ART 1140	Drawing I (MOTR PERF 105D)	3
ST ART 1150	Design I	3
ST ART 1151	Design II	3

Select two consecutive courses in any single area from the following: <sup>1</sup>

Painting
Printmaking (any one subfield)
Photography
Graphic Design
Advanced Drawing

Total Hours 18

## Supply Chain Management Minor

### General Requirements

- All minors are 15 credit hours or 5 courses, including business core courses.
- Students must attain a 2.0 grade point average for all courses in the minor.
- Students must attain a minimum grade of C- in each course included in the minor.
- All courses in the minor must be on a graded basis.
- A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.
- One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.
- A minor may be added for up to two years following completion of the baccalaureate degree

### Specific Requirements for the Minor

Available to all students except those pursuing the Bachelor of Science in Business Administration degree. Students must complete:

SCMA 3301	Introduction to Supply Chain Management	3
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Select any four additional 3000 level and higher Supply Chain Management and Analytics courses.	12
Total Hours	15

## Learning Outcomes

Upon completion of the program, graduates will be able to:

- Interpret basic concepts in supply chain management such as purchasing, production, operations, logistics, integration and reverse supply chains.
- Describe analytical methods for decision-making in supply chains, such as demand planning, supply chain network design, production planning, inventory control and transportation.
- Describe the role of global supply chains, and principles of effective supply chain management, in the economy to match supply and demand.
- Describe the role of data, analytics and technology in modern supply chains.

## Talent Management Graduate Certificate

The Graduate Certificate in Talent Management is designed for both Human Resource professionals at all levels and non-Human Resource professionals who plan on taking on Human Resource positions with an interest in enhancing their Human Resource competencies to meet current workplace challenges and advancing their careers. The certificate will help you to develop a deep understanding of the Human Resource field so that you can effectively lead and manage talent in business, nonprofit, union and government organizations by evaluating HR systems and aligning HR systems with overall business strategies.

### Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

### Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs. All 12 credit hours taken as part of this certificate transfer to the MBA degree program.

Choose four of the following courses:	12
MGMT 5621	Managing Human Resources
MGMT 5624	Training and Development
MGMT 5625	Talent Acquisition and Retention
MGMT 5627	Employment Law
MGMT 5628	Authentic Leadership
Total Hours	12

## Taxation Graduate Certificate

The Certificate Program in Taxation provides students with the skills and technical knowledge for a career in tax compliance and representation. This program is ideal for accounting and law students interested in careers in taxation, business professionals seeking to enter the tax profession, tax preparers who need

additional training to advance their careers, and investment professionals seeking to better serve clients.

### Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

### Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs. All 12 credit hours taken as part of this certificate transfer to the MBA degree program.

ACCTNG 4401	Financial Accounting and Reporting III	3
ACCTNG 4441	Advanced Federal Income Tax: Business Taxation	3
ACCTNG 5441	Tax Research	3
ACCTNG 6441	Graduate Topics in Taxation	3
Total Hours		12

## Teaching English to Speakers of Other Languages Graduate Certificate

The Graduate Certificate in Secondary School Teaching prepares those with at least a bachelor's degree for teaching in high school. Normally this Graduate Certificate is taken by students who are not simultaneously pursuing the M.Ed. and teacher certification.

The M.Ed. program with emphasis in Teaching English to Speakers of Other Languages (TESOL) is designed to meet the need for teachers who can apply knowledge about language learning to their culturally and linguistically diverse classrooms. This program meets the requirements for a Missouri Department of Elementary and Secondary Education Teaching endorsement in English to Speakers of Other Languages (ESOL).

### Required Core

Students are required to complete the following courses within the first 15 hours of study:

TCH ED 6010	Examining History, Community and Social Justice in Education	3
ED PSY 6030	Instruction, Learning and Assessment	3

### Required Research Courses

These two research courses should be taken in sequence (not concurrently) at the end of the program. Candidates will design and execute a piece of original practitioner research and present their findings in a public forum.

TCH ED 6909	Teacher Action Research I (Take semester prior to Teacher Action Research Capstone, TCH ED 6910.)	3
TCH ED 6910	Teacher Action Research Capstone	3
Total Hours		12

In addition to the Required Core (12 hours), Candidates seeking an emphasis in TESOL are required to complete the following coursework (18 hours), a program total of 30 hours.

TESOL Core		
TCH ED 6210	Foundations of Teaching English to Speakers of Other Languages	3
TCH ED 6220	Principles of Second/Foreign Language Acquisition	3
TCH ED 6230	Cross-Cultural Communication in the Classroom	3
TCH ED 6240	Assessment for Teaching English to Speakers of Other Languages	3
TCH ED 6250	Methods and Materials for Teaching English to Speakers of Other Languages	3
TCH ED 6260	Practicum in Teaching English to Speakers of Other Languages	3
Total Hours		18

## State Certification

For TESOL state certification, the students need to add TCH ED 6224, and ELE ED 6338 for those who have the middle and the secondary school teaching certificates. Those who have the elementary teaching certificates need to add TCH ED 6224 if they are UMSL teacher education graduates. Otherwise, please consult the faculty advisor and/or academic advisor.

### Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Continually reflect on professional growth to improve student learning outcomes/enhance student learning.
- Integrate technology to create meaningful student learning within the context of a global digital society.
- Apply content and pedagogical knowledge to create authentic and deep learning experiences.
- Use learning science principles to design, implement, and evaluate curriculum based on learning standards.
- Foster effective working relationships with students, school colleagues, families, and community members to enhance student learning and well-being.
- Design and establish a safe, inclusive, and respectful learning environment that nurtures the intellectual, social, and personal development of all students.
- Use equitable frameworks and inclusive practices to create a variety of instructional and assessment opportunities adapted to diverse learners to encourage all students' critical thinking, problem solving, and performance skills.

## Teaching English to Speakers of Other Languages K12 Minor

A minor in Teaching English to Speakers of Other Languages (TESOL) can be earned by successfully completing 18 hours of coursework that is identified to prepare the student to earn a TESOL teaching endorsement

as an additional area of teaching certification by the Missouri Department of Elementary and Secondary Education (DESE).

TCH ED 3210	General Linguistics in Tchg English to Speakers of Other Languages	3
TCH ED 3211	Basic Principles of Second and Foreign Language Acquisition	3
TCH ED 3212	Sociolinguistics and Communication in the Classroom	3
TCH ED 3213	Performance-based Assessment for TESOL	3
TCH ED 3214	Material Development and Methods for TESOL	3
TCH ED 3215	Field Experiences in TESOL	3

## Teaching of Writing Graduate Certificate

Jointly housed in the Division of Teaching and Learning and the Department of English, this Graduate Certificate prepares teachers at all levels (K-12, college, adult) to improve their students' performance in writing. The program also emphasizes using writing as a means to promote learning in all content areas. All courses provide opportunities for teachers to write, revise, share feedback, and reflect on their own writing development. Based on the National Writing Project's core belief that teachers of writing must themselves be writers, the Graduate Certificate in the Teaching of Writing brings together sound pedagogy, composition theory, and writing practice.

The Certificate is an 18-hour program through the Gateway Writing Project (GWP); it may also be coordinated with other graduate programs. Certificate courses may be applicable to the M.A. in English with emphasis in composition or to various M.Ed. programs. The GWP Certificate is especially appropriate for post-master's candidates who wish to pursue a specialization in teaching writing. The Graduate Certificate in the Teaching of Writing requires a 12 semester-hour core of courses developed by the Gateway Writing Project: The GWP invitational institute (6 hrs), a designated "topics" course (3 hrs.), and an exit course (3 hrs.). The Certificate requires a minimum of 12 semester hours at the 5000 or 6000 level or above. Electives (6 hrs.) may be chosen from approved offerings in English or Education.

### Admission

Applicants must be admitted to Graduate School and be selected by the faculty admissions committee for the Gateway Writing Project's Certificate in the Teaching of Writing. The committee will review candidates on the basis of an interview, an application essay, and supporting documentation. Criteria include experience teaching writing at any level and academic record, especially in writing and the teaching of writing.

### Prerequisites

ENGL/SEC ED 4880	Writing for Teachers (or an equivalent course in teaching writing )	3
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Coursework or competency in basic computer application.

### Required Core Courses

ENGL 4850/TCH ED 5850	Topics in the Teaching of Writing (designated topics)	3
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ENGL 6880	Gateway Writing Project	6
TCH ED 6890	Seminar in Professional Writing for Teachers (exit course)	3
Total Hours		12

## Electives

Electives may be chosen from other Gateway Writing Project offerings or from courses offered by the appropriate academic department with advisor's approval. These electives must include at least one more 5000-6000 level course.

Electives 6

Suggested electives applicable to an MA in English with writing emphasis:

ENGL 5800	Modern Linguistics
ENGL 5840	Theories of Writing
ENGL 5860	Writing/Reading Theory
ENGL 5870	Composition Research
ENGL 5890	Teaching College Writing

Suggested electives applicable to an M.Ed. in Elementary or Secondary Education ELE:

ELE ED 6387	Literacy Acquisition and Learning for Diverse Students
ELE ED 6482	Problems and Research in Teaching Elementary School
ED REM 6714	Action Research In Education

Total Hours 6

Courses in adult and higher education may also be appropriate. For complete information, see The GatewayWriting Project's Graduate Certificate in Teaching Writing, available from the English Department, the Division of Teaching and Learning, and the GWP Director.

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Write, revise, and prepare writing for publication and identify as a writer.
- Summarize current theory/research, especially research by teachers of writing.
- Design curriculum and assessment that uses writing to promote learning in all subject areas.
- Demonstrate leadership for promoting better writing in school settings.
- Reflect on own teaching and own writing in service of improving student writing.

# Technical Writing Undergraduate Certificate

## Requirements

Students earn the Online Certificate in Technical Writing by completing 18 hours in selected online writing courses with a grade point average of 3.0 or better, including a capstone course. Twelve of the 18 hours must be taken at the University of Missouri-St. Louis. Courses may not be taken on a satisfactory/unsatisfactory basis.

## UMSL Courses

ENGL 3120	Business Writing	3
ENGL 3130	Technical Writing	3
ENGL 3160	Writing in the Sciences	3
ENGL 4870	Advanced Business and Technical Writing	3
ENGL 4871	Publishing: Writers, Editors, and Readers	3
ENGL 4872	Technical Presentations	3
ENGL 4890	Writing Internship	3
ENGL 4892	Independent Writing Project	3

## Missouri S&T Courses

ENGLISH 3560	Technical Writing	3
TCH COM 2560	Technical Marketing Communication	3
TCH COM 3440	Theory of Visual Technical Communication	3
TCH COM 4085	Internship in Technical Communication (individual enrollment)	3
TCH COM 4450	International Dimensions of Technical Communication	3
TCH COM 4530	Help Authoring	3
TCH COM 4450	Proposal Writing	3
TCH ED 5510	Technical Editing	3
TCH COM 5530	Usability Studies	3
TCH ED 5560	Web-Based Communication	3
TCH COM 5610	History of Technical Communication	3
TCH COM 5620	Research Methods in Technical Communication	3

Students may use ENGL 4890, ENGL 4892, ENGL 4870, ENGL 4871, and ENGL 4872 as their capstone course.

When the student has completed requirements for the certificate, the coordinator will notify the university registrar and the college from which the student will graduate. Upon the student's graduation, completion of the Online Technical Writing Certificate will be noted on the official transcript and a certificate will be mailed to the student's residence. Students who have graduated before completing the Online Technical Writing Certificate will receive the certificate in the mail and will have the certificate entered on their official transcripts.

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Revise and edit texts efficiently
- Adjust style, tone, and format to best suit a professional context
- Develop rhetorical flexibility as it pertains to shifting professional writing expectations
- Identify various readers and stakeholders, and the situations in which they both operate
- Accurately compose language that meets the needs of readers and stakeholders
- Identify and solve real world problems via writing/composition
- Design and create texts in various modes (e.g. digital, videos, alphabetic, auditory, and multiple/combined modes)

- Demonstrate an ability to apply contextually appropriate rhetorical strategies and technologies to solve communication problems successfully and safely

## Theatre Arts BA

Effective Fall 2018, the Bachelor of Arts in Theatre Arts will no longer be accepting applications.

### Bachelor of Arts in Theatre Arts

#### General Education Requirements

All Theatre Arts majors must satisfy the University and College of Arts and Sciences' 42-hour General Education (p. 51) core requirements, which include ENGL 1100 and the Math proficiency requirement.

Junior-level writing class is required.

The Cultural Diversity requirements may be satisfied by General Education (p. 51) courses or lower-or upper-level courses in various departments.

State Government/History graduation requirements may be satisfied by General Education (p. 51) courses or by other lower-or upper-level courses in various departments.

13 hours of a foreign language.

#### Degree Requirements

Theatre Arts majors must choose an emphasis area within the Department of Theatre and Cinema Arts. They may choose from the following options: Acting/Directing, Design, Playwriting/Screenwriting, and Cinema.

Each student must complete the required core courses as well as the requirements for each emphasis area. At least 24 hours in the major must be taken at UMSL and must include 6 hours at the 2000 or higher level and 9 hours at the 3000 or higher level. All courses required for the major must be completed with a minimum grade of C- to be accepted, and the overall total grade point average must be at least 2.0 to graduate. To be eligible to participate in Internship classes, each student must have a minimum overall grade point average of 3.0

In addition to the major's required core curriculum and emphasis area requirements, all students must participate in the Department's productions through their required credit hours in practicum each semester.

#### Required Core Courses for all Theatre Arts Majors

THEATR 1070	Introduction to Cinema	3
THEATR 1210	Fundamentals Of Acting	3
THEATR 1800	Introduction to Theatre (MOTR THEA 100A)	3
THEATR 1900	Introduction to Theatre Technology	3
THEATR 1910	Introduction to Theatrical Design	3
Total Hours		15

#### Emphasis in Acting/Directing

In addition to the required Theatre Arts core curriculum, students must complete the following:

THEATR 1600	Voice Ad Diction/Vocal Performance	3
THEATR 2300	Stage Management	3
THEATR 2810	History of World Theatre and Drama Through the Restoration	3
THEATR 2820	History Of World Theatre & Drama from 18Th C To Contemporary Time	3
THEATR 3257	Makeup for Theatrical Productions	2
THEATR 3399	Stage Combat	3
THEATR 4900	Senior Project	3
Select one of the following:		3
THEATR 2244	Introduction to Directing	
THEATR 2210	Ensemble Acting	
Select four of the following:		12
THEATR 2020	Acting for the Camera	
THEATR 2112		
THEATR 3210		
THEATR 3211		
THEATR 3218		
THEATR 4020	Directing for the Camera	
THEATR 4220	Directing for the Theatre	
ENGL 4370	Shakespeare: Tragedies and Romances	
ENGL 4380	Shakespeare: Comedies and Histories	
Practicum <sup>1</sup>		16
THEATR 2195	Practicum in Performance Studies	
THEATR 3195	Advanced Practicum in Performance Studies	
Total Hours		51

<sup>1</sup> At least 8 hours must be at the 3000-level.

#### Emphasis in Cinema

In addition to required Theatre Arts core curriculum, students must complete the following:

THEATR 1080	Introduction to World Cinema	3
THEATR 2271	History of American Film	3
THEATR 3070	International Cinema	3
Select two of the following:		6
THEATR 2272	Contemporary Cinema	
THEATR 2273	Survey of Film Genres	
THEATR 2274	African-American Cinema	
THEATR 3370	Documentary Film	
THEATR 4900	Senior Project	
Select five of the following:		15
MEDIA ST 1500	Entertainment Economics: The Movie Industry	
MEDIA ST 2113	Media Production I	
MEDIA ST 2210	Video Production I	
MEDIA ST 2211	Introduction to Digital Multimedia Production	
MEDIA ST 2225	Live Events Media	
THEATR 2270	Audio Recording for Live Production	

THEATR 2020	Acting for the Camera	
THEATR 4020	Directing for the Camera	
THEATR 4271		
THEATR 4272	Feature Film Post Production	
Practicum <sup>1</sup>		10
THEATR 2195	Practicum in Performance Studies	
THEATR 3195	Advanced Practicum in Performance Studies	
THEATR 4390	Theatre Internship	
Total Hours		40

<sup>1</sup> At least 5 hours must be completed at or above the 3000-level.

## Emphasis in Playwriting/Screenwriting

In addition to the required Theatre Arts core curriculum, students must complete the following:

THEATR 3305	Writing for Performance	3
THEATR 2214	Screenwriting	3
THEATR 3362	Storytelling	3
THEATR 3380		
THEATR 4270	Feature Film Writing	3
THEATR 2112		
THEATR 2244	Introduction to Directing	3
THEATR 2810	History of World Theatre and Drama Through the Restoration	3
THEATR 2820	History Of World Theatre & Drama from 18Th C To Contemporary Time	3
THEATR 4900	Senior Project	3
Select two of the following:		6
ENGL 2040	Fiction Writing Jumpstart	
ENGL 3150	Feature Writing	
ENGL 4550	Novels into Films: The Nineteenth Century	
THEATR 2300	Stage Management	
Practicum <sup>1</sup>		10
THEATR 2195	Practicum in Performance Studies	
THEATR 3195	Advanced Practicum in Performance Studies	
Total Hours		40

<sup>1</sup> At least 5 hours must be completed at the 3000-level.

## Transportation Studies Minor

### General Requirements

- All minors are 15 credit hours or 5 courses, including business core courses.
- Students must attain a 2.0 grade point average for all courses in the minor.
- Students must attain a minimum grade of C- in each course included in the minor.
- All courses in the minor must be on a graded basis.
- A minimum of 9 credit hours of coursework included in the minor must be taken in residence at UMSL.

- One must complete a baccalaureate degree at UMSL in order for a minor to be conferred.
- A minor may be added for up to two years following completion of the baccalaureate degree

### Specific Requirements for the Minor

Available to all students.

SCMA 3370/MKTG 3770	Introduction to Transportation	3
SCMA 3371/MKTG 3771	Traffic and Transportation Management	3
Select three of the following:		9
SCMA 3301	Introduction to Supply Chain Management	
SCMA 3320	Advanced Supply Chain and Operations Management	
SCMA 3376	Transportation Security and Risk	
SCMA 3390	Internship in Supply Chain and Analytics <sup>1</sup>	
SCMA 3398	Seminar in Supply Chain Management and Analytics <sup>1</sup>	
SCMA 3399	Independent Study in Supply Chain and Analytics <sup>1</sup>	
SCMA 4330	Business Logistics	
SCMA/INTL BUS 4381	Global Supply Chain Management	
SCMA 4398	Advanced Topics in Supply Chain and Analytics <sup>1</sup>	
MKTG 3700	Basic Marketing	
MKTG 3790	Internship in Marketing <sup>2</sup>	
MKTG 3798	Seminar in Marketing <sup>2</sup>	
MKTG 3799	Independent Study in Marketing <sup>2, 3</sup>	
Total Hours		15

<sup>1</sup> With approval of the Department chair of Supply Chain & Analytics.

<sup>2</sup> With approval of the Department chair of Marketing.

<sup>3</sup> No more than one approved independent study course may count towards the minor.

### Learning Outcomes

Upon completion of the program, graduates will be able to:

- Explain the history and importance of global and domestic transportation on society from policy, regulatory, economic, legal, sustainability, and demographic perspectives.
- Describe the role of transportation in supply chain management, the key elements of transportation, basic processes in managing strategic and tactical transportation management operations, and digital transformation of transportation operations.
- Define and explain basic concepts of supply chain and transportation risk management, and their impacts on shareholder value and corporate performance.
- Explain the role of data, analytics and technology in transportation.

# Trauma Studies Graduate Certificate

The graduate certificate is awarded upon the completion of 18 credit hours of graduate coursework on the topic of trauma studies. No more than nine hours of graduate level independent research or fieldwork may be used for the certificate. The coursework for the certificate must be taken in at least two departments and may include no more than three hours at the undergraduate 3000 or 4000 level.

## Urban Politics Minor

### Requirements for Political Science Minors

A general minor in political science can be arranged, as well as specialized minors in eight different subfields of the discipline. Interested students should see a faculty adviser to plan a coherent program of study as a minor field.

Students must achieve a cumulative 2.0 GPA in the political science courses chosen to qualify for the minor. Students may count no more than 3 hours in political science taken on a satisfactory/unsatisfactory basis toward the minor. Students taking an internship POL SCI 3940 may count no more than three hours of the internship toward the minor.

### Minor in Urban Politics

POL SCI 2350	Introduction to Urban Politics	3
Select four of the following:		12
POL SCI 2320	African Americans and the Political System	
POL SCI 3450	Urban Administration	
POL SCI 3460	The Politics of Poverty and Welfare	
POL SCI 3900	Special Readings (when appropriate)	
POL SCI 3940	Public Affairs Internship (when appropriate)	
POL SCI 4460		
Total Hours		15

### Learning Outcomes

- Explain key topics in urban politics.
- Demonstrate an understanding of events and factors that have influenced the development of urban politics in the US.
- Analyze the actions of political actors impacting urban politics and their motives.
- Assess issues facing urban communities, formulate evidence-based recommendations, and communicate them with clarity and coherence.

## Urban Studies Minor

### Requirements

A minor in urban studies requires 15 hours of course work. Candidates must have a cumulative grade point average of 2.0 or better in the minor. Courses taken on a satisfactory/unsatisfactory basis may not be applied to the minor. Special topics courses or other courses relevant to urban

studies may be included as electives when approved in advance by the urban studies coordinator.

Students must take:

<b>Core Courses:</b>		<b>9</b>
SOC 2203	The City	
SOC 2202	Urban Sociology	
SOC 3344	Problems of Urban Community	
<b>Electives: select two from the following:</b>		<b>6</b>
SOC 2280	Technology and Society	
SOC 3400	Environment, Society, and Aging	
SOC/CRIMIN 4300	Communities and Crime	
HIST 2008	History of St. Louis	
POL SCI 2350	Introduction to Urban Politics	
POL SCI 3450	Urban Administration	
Total Hours		15

## Veterans Studies Minor

The Minor in Veterans Studies is a multi-disciplinary program whose course work enhances students' majors to prepare them to work for or with veterans. It is also designed to encourage and enable veteran students to reflect more deeply on their service experiences. This minor includes a foundation course, a series of elective courses, and a capstone. Electives may be chosen from four areas, or from any MVS course above the 2000 level.

*Cultural:* exploring perspectives and experiences of veterans through various media

*Relational:* understanding how veterans relate among various aspects of our society

*Institutional:* understanding the context and structure of military service and veteran institutions now and in the past

*Clinical:* establishing effective skills to better serve for, with, and in veteran populations

Alternative elective courses could be included with the consent of the department chair. While it is encouraged, students are not required to limit their electives to a single area.

MVS 2100	Veterans in American Society	3
<b>Electives</b>		<b>9</b>
Cultural		
ANTHRO 1011	Introduction to Cultural Anthropology (MOTR ANTH 201)	
ANTHRO 1025	World Cultures	
ANTHRO 1041	Sex and Gender Across Cultures	
ENGL 4650	Modern American Fiction	
PHIL 1030	Present Moral Problems	
PHIL 1125	Islamic Philosophy	
PHIL 4430	Social and Political Philosophy	
Institutional		
POL SCI 1800	World Politics (MOTR POSC 201)	
POL SCI 3860	Studies in War and Peace	
POL SCI 4850	International Law	



CRIMIN 3305	Crime and Justice in a Globalized World	
CRIMIN 4300	Communities and Crime	
Relational		
COMM 2332	Intercultural Communication	
PSYCH 3280	Psychology of Death and Dying	
PSYCH 3232	Psychology of Trauma	
PSYCH 3820	Cross-Cultural Psychology	
PSYCH 4300	Introduction to Psychopharmacology: Drugs and Mental Illness	
SOC 2102	Introduction to Gender Studies	
SOC 4600	Masculinities	
Clinical		
SOC WK 2000	Social Work and Social Issues	
SOC WK 2200	Social Welfare as a Social Institution	
NURSE 2105	Communication in the Nursing Profession	
GERON 2256	Bioethics	
GERON 4680	Introduction to Gerontological Practice	
Veterans Studies courses at 2000 level or higher		
<b>Capstone</b>		
MVS 4100	Veterans Studies Capstone Seminar	3
Total Hours		15

## Women's Health Nurse Practitioner Post-Graduate Certificate

Post-graduate certificate (PGC) requirements are tailored to the individual student, depending on past academic work, experience, the student's goals, and specialty requirements. Upon completion of the PGC requirements, a certificate is awarded by the College of Nursing (CON) and Graduate School. Graduates are eligible to apply to take board certification exams in the advanced practice role and population for which they have been prepared.

Due to higher education regulation changes, the University of Missouri–St. Louis cannot admit students from all states for online programs. Please see the Center for Teaching and Learning for additional information: [http://www.umsl.edu/services/ctl/onlinelearning/state\\_authorization.html](http://www.umsl.edu/services/ctl/onlinelearning/state_authorization.html).

### Certificate Requirements

NURSE 6518	Pathophysiology for Advanced Nursing Practice	3
NURSE 6520	Pharmacology for Advanced Nursing Practice	3
NURSE 6524	Health Assessment for Advanced Nursing Practice	3
NURSE 6530	Clinical Diagnostics for Advanced Nursing Practice	3
NURSE 6746	Women's Health I	4
NURSE 6747	Women's Health II	4

NURSE 6954	Advanced Practice Nursing: Residency I	2-4
NURSE 6955	Advanced Practice Nursing: Residency II	2-4
NURSE 7954	Advanced Practice Nursing: Residency III	2-4

All students must complete 8 credit hours of Residency. One credit hour is equivalent to 75 residency hours.

## Workplace and Organizational Science Undergraduate Certificate

This certificate can prepare individuals for graduate studies in industrial-organizational psychology, management, or other areas with a focus on behavior in organizations. It also provides training relevant to managing individuals in organizations that can be applied broadly to business, military, non-profit, health care, law enforcement, and other settings.

Note: **No more than 6 credit hours may be applied from the student's major.**

### Required Courses

MGMT/SOC 3600	Management and Organizational Behavior	3
PSYCH 3318/MGMT 3623	Industrial and Organizational Psychology	3

### Goal 1: Breadth of Study **9**

Choose three courses from the following:

AERO 2001	Team Leadership Fundamentals I
COMM 2231	Communication in the Organization
MIL SCI 1101	Introduction to Leadership I
MIL SCI 2201	Innovative Team Leadership
MVS 2100	Veterans in American Society
MGMT 3611	Advanced Management and Organizational Behavior
MGMT 3621	Human Resource Management
MGMT 3622	Industrial and Labor Relations
MGMT 3624	Employee Training and Development
MGMT 3625	Leadership in Organization
PSYCH 4365	Psychological Testing and Assessment
POL SCI 4060	Theory of Decisions and Games
SOC 4354	Sociology of Business and Work Settings

### Goal 2: Cultural Competency **3**

Choose one course from the following:

COMM 2332	Intercultural Communication
COMM 3337	Male/Female Communication
MGMT/INTL BUS 3680	International Management
PSYCH 3820	Cross-Cultural Psychology
PSYCH 4250	Stereotyping, Prejudice, and Discrimination

SOC 1241

Globalization and Social Change

Total Hours

18

## Learning Outcomes

Upon completion of the program, certificate earners will be able to:

- Describe the application of theories and methods from workplace and organizational sciences to job analysis, recruitment/selection, training, retention and performance appraisal processes.
- Identify factors that influence motivation and work performance of employees.
- Identify teamwork processes, challenges and strategies.
- Summarize models of leadership and fit for specific organizational needs.
- Compare and contrast at least two disciplinary specific (e.g., communications, industrial/organizational psychology, management, sociology) approaches to understanding workplace and organizational needs and challenges.
- Write and speak clearly and concisely about theories and research in workplace and organizational sciences.
- Evaluate appropriateness of quantitative and qualitative research methods for specific questions in workplace and organizational sciences.
- Relate concepts and empirical findings from workplace and organizational sciences to personal work experiences and career goals.

# Courses of Instruction

## Accounting

### Courses

**ACCTNG 2400 Fundamentals of Financial Accounting: 3 semester hours**

Prerequisites: MATH 1030 and completion of 27 credit hours. MATH 1030 may be taken concurrently. This is a one semester course in financial accounting theory and practice. The primary emphasis is on the corporate financial statements of income, financial position and cash flow-their content and interpretation; and the impact of financial transactions upon them.

**ACCTNG 2410 Managerial Accounting: 3 semester hours**

Prerequisites: MATH 1030 and ACCTNG 2400. This is an advanced course that goes beyond the scope of a second-semester course in fundamentals of accounting. The development, interpretation, and use of relevant cost behavior, control, and traceability concepts for management planning, controlling and decision making are emphasized. Topics include: an introduction to product costing, the contribution concept, direct costing, performance standards and variance analysis, responsibility accounting, segment profitability, alternative choice decisions, and capital budgeting.

**ACCTNG 2430 Accounting Ethics: 3 semester hours**

Same as PHIL 2249. Prerequisites: ACCTNG 2400 and ACCTNG 2410 (may be taken concurrently). This course examines moral problems as they relate to the profession of accounting and the professional Codes of Conduct that govern the accounting profession. Students will apply the requirements of the Codes of Conduct to cases where ethical dilemmas or violations of professional standards may be present.

**ACCTNG 3401 Financial Accounting and Reporting I: 3 semester hours**

Prerequisites: MATH 1030, ACCTNG 2410, minimum 2.0 campus GPA and 57 credit hours. Review of the foundations of financial accounting theory and of the financial statement preparation process. Accounting theory and practice related to current assets (except for investments in securities). The course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

**ACCTNG 3402 Financial Accounting and Reporting II: 3 semester hours**

Prerequisites: MATH 1030 and ACCTNG 3401, minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL and minimum campus GPA of 2.0. Accounting theory and practice related to topics such as investments in securities, operational assets, current and long-term liabilities, and leases. The course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

**ACCTNG 3411 Cost Accounting: 3 semester hours**

Prerequisites: MATH 1030, ACCTNG 3401 and a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. The study of the basic principles of cost determination for, and control of, manufacturing and distribution activities. Topics include job-order costing, process costing, cost allocations, and the development and use of standard costs within a system of absorption costing.

**ACCTNG 3421 Accounting Information Systems: 3 semester hours**

Prerequisites: MATH 1030, INFSYS 2800, ACCTNG 2410, ACCTNG 3401, and a minimum campus GPA of 2.0. Examines the fundamentals of accounting information systems, including hardware and software considerations, internal controls, and transaction processing cycles. Also focuses upon the development of efficient spreadsheets as applied to financial and managerial accounting concepts.

**ACCTNG 3441 Income Taxes: 3 semester hours**

Prerequisites: MATH 1030 and ACCTNG 3401 and a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. Fundamentals of Federal income taxation. Topics include taxable entities, income, deductions, tax accounting methods, tax basis, and property transactions at both the conceptual and operational levels.

**ACCTNG 3451 Accounting for Governmental and Not-For-Profit Entities: 3 semester hours**

Prerequisites: MATH 1030, ACCTNG 3402, a minimum 2.3 GPA in all accounting courses at the 3000-level and above taken at UMSL and a minimum 2.0 campus GPA. Principles of fund accounting and financial reporting for governmental and nonprofit entities. This course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

**ACCTNG 3490 Internship in Accounting: 1-3 semester hours**

Prerequisites: ACCTNG 3401, a minimum campus GPA of 2.0, a minimum GPA of 2.7 in all accounting courses at the 3000-level and above taken at UM-St. Louis, consent of supervising instructor and accounting internship coordinator. Students are employed in the field of Accounting where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience are primary goals. An accounting faculty member will monitor the student's program with the student providing a formal written report at the end of the project.

**ACCTNG 3495 Special Administration Problems - Accounting (VITA) Program: 1-3 semester hours**

Prerequisites: ACCTNG 2400, ACCTNG 2410 and ACCTNG 3401; minimum campus GPA of 2.0, minimum GPA of 2.2 in all accounting courses at the 2000-level and above taken at UMSL; completion of nine semester hours of accounting. Enrollment in the course is restricted to Volunteer Income Tax Assistance (VITA) program student participants. The class offers practical tax experience, networking opportunities, potential managerial experience, and personal satisfaction derived from community service. It is taken on a satisfactory/unsatisfactory basis. The course offers one to three hours of undergraduate business elective credit and may be repeated for up to 3 hours credit.

**ACCTNG 3499 Independent Study in Accounting: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0, a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL and approval by the supervising professor and the department chair. Special individual study in accounting under the supervision of a full-time accounting faculty member.

**ACCTNG 4401 Financial Accounting and Reporting III: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 3402; a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. Accounting theory and practice related to topics such as income taxes, pensions, owners' equity, earnings per share, and the statement of cash flows. The course includes an emphasis on unstructured case problem solving skills, communication skills, and interpersonal skills.

**ACCTNG 4402 Financial Accounting and Reporting IV: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 3402; a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. Accounting theory and practice related to topics such as business combinations, consolidated financial statements, multinational operations, foreign exchange transactions, and governmental and nonprofit organizations. The course includes an emphasis on unstructured problem solving skills, communication skills, and interpersonal skills.

**ACCTNG 4405 Professional Accounting Research: 3 semester hours**

Prerequisites: ACCTNG 4401, a minimum campus GPA of 2.0 and minimum GPA of 2.2 in all accounting courses at the 3000-level and above taken at UM-St. Louis. Discussion of the research tools and methods available to resolve questions concerning accounting standards and practices. Critical analysis of topics of current interest and importance in accounting practice is the focal point of the course.

**ACCTNG 4435 Auditing: 3 semester hours**

Prerequisites: MATH 1105; ACCTNG 3402; ACCTNG 3421 or INFSYS 3810; a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. An introduction to auditing practice. Includes the social role of auditing and the services offered by auditors in internal, governmental, and public accounting practice. Emphasis is on the financial auditing process, including professional ethics, audit risk assessment, study and evaluation of internal control, gathering and evaluating audit evidence, and audit reporting decisions.

**ACCTNG 4441 Advanced Federal Income Tax: Business Taxation: 3 semester hours**

Prerequisites: ACCTNG 3441 with a grade of B- or above; a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UM-St. Louis. Focuses on federal income taxation of corporations, S corporations, partnerships, LLCs and their owners.

**ACCTNG 4450 Prescriptive Analytics and Optimization: 3 semester hours**

Same as SCMA 4350. Prerequisites: MATH 1105 and a minimum campus GPA of 2.0. This course covers the construction and application of prescriptive analytical models for optimizing business decisions in a wide range of areas such as manufacturing, service, supply chains, logistics and finance. Topics include performance metrics, linear programming, integer programming, network optimization, simulation, and implementation using Excel.

**ACCTNG 5400 Financial and Managerial Accounting: 3 semester hours**

This course provides an introduction to accounting, with emphasis on preparation of financial statements for external parties (financial accounting) and accumulation of cost information to aid internal planning and control (managerial accounting). Topics covered include measurement of assets and liabilities, revenues and expenses, the accounting cycle, financial statements, cost terminology, cost behavior, product costing, and relevant costs for decision making. This course provides the necessary background for ACCTNG 5401.

**ACCTNG 5401 Financial Reporting and Analysis: 3 semester hours**

Prerequisites: ACCTNG 5400 or the equivalent. This course builds on the foundations covered in ACCTNG 5400, emphasizing in-depth analysis of published financial statements. The course begins with discussion of the role of financial accounting information in capital markets and contracting, and continues with examination of a number of specific accounting issues. Students are encouraged to look behind the numbers to better understand the economics of the underlying transactions, and properly interpret what the reported numbers mean about a firm's future prospects.

**ACCTNG 5402 Professional Accounting Research: 3 semester hours**

Prerequisites: ACCTNG 4401; a minimum campus GPA of 2.0; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. Discussion of the research tools and methods available to resolve questions concerning accounting standards and practices. Critical analysis of topics of current interest and importance in accounting practice.

**ACCTNG 5403 Graduate Topics in Financial Accounting: 3 semester hours**

Prerequisites: ACCTNG 4401; a minimum campus GPA of 2.0; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. A study of current financial reporting issues. Analysis of current problems and approaches pertaining to the communication of corporate financial information to the U.S. and international investment communities.

**ACCTNG 5404 Professional Accountancy I: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 2410; a minimum 2.0 campus GPA; graduate standing. This is the first professional-level course in financial reporting. The course includes a study of the conceptual framework underlying Generally Accepted Accounting Principles (GAAP) and issues pertaining to accounting for current assets and liabilities.

**ACCTNG 5405 Professional Accountancy II: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 3401; a minimum campus GPA of 2.0; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL; graduate standing. This is the second professional-level course in financial reporting. The course includes an in-depth study of issues pertaining to accounting for operational assets, liabilities and owners equity.

**ACCTNG 5406 Research and Professional Writing in Accounting: 3 semester hours**

Prerequisites: ACCTNG 4401 and enrollment in Master of Accounting Program. This course employs the professional accounting literature and authoritative databases to analyze contemporary issues in accounting. Students will refine their communication skills in preparation for leadership roles in the accounting profession.

**ACCTNG 5408 Fraud Examination: 3 semester hours**

Prerequisites: ACCTNG 3402 or ACCTNG 5405; a minimum campus GPA of 2.0; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. This course is designed for graduate students who are interested in fraud and its effects. Students will be introduced to theoretical concepts of fraud and practical responses to it. Course coverage includes an overview of the fraud problem; prevention and detection of fraud; elements of fraud investigation, interview techniques, fraud types, and laws governing the prosecution of fraud cases.



**ACCTNG 5411 Cost Systems Analysis: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 3401; a minimum campus GPA of 2.0; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL; graduate standing. The development, interpretation, and use of accounting reports and supplementary information for management planning, control and decision making. Emphasizes the application of relevant cost behavior, control and traceability concepts in the preparation of internal accounting reports, with a secondary emphasis upon product costing techniques as appropriate to financial accounting needs. Topics include break-even analysis, operational budgeting, direct costing, absorption costing, standard costs and variance analysis, business segment analysis, responsibility accounting distribution cost accounting, and gross profit analysis.

**ACCTNG 5412 Graduate Topics in Management Accounting: Controllership: 3 semester hours**

Prerequisite: ACCTNG 3411 or ACCTNG 5411; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. A study of advanced managerial accounting techniques useful in facilitating the planning and control process in the modern organization. Emphasis on the implementation and administration of these techniques, their integration with management information systems, and the organizational role of the corporate accountant.

**ACCTNG 5421 Information Systems in Accounting: 3 semester hours**

Prerequisites: MATH 1030; INFSYS 1800; ACCTNG 2410; ACCTNG 3401; a minimum campus GPA of 2.0; graduate standing. This is a professional-level course in accounting information systems. The course includes examination of transaction cycles, structured analysis and design of accounting information systems, and internal controls.

**ACCTNG 5435 Graduate Topics in Auditing: 3 semester hours**

Prerequisite: ACCTNG 4435; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. A study of advanced auditing and attestation issues, with an emphasis on operational auditing. Topics include professional ethics, risk analysis, internal control, fraud detection, analytical procedures, determining and assessing operational objectives, and reporting and implementing audit findings.

**ACCTNG 5436 Systems Auditing: 3 semester hours**

Prerequisite: ACCTNG 5400, INFSYS 6800 or consent of instructor. Study of techniques involved in the control and audit of computer-based systems. Emphasis on the review of internal controls at operational and administrative levels and on computer-assisted audit techniques.

**ACCTNG 5441 Tax Research: 3 semester hours**

Prerequisite: ACCTNG 3441; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL; or consent of instructor. Application of the research tools and methods available to resolve questions pertaining to the tax laws. Addresses techniques for locating and evaluating relevant authority. Students will be expected to complete written tax research memos. A basic understanding of federal income tax law is presumed.

**ACCTNG 5443 Decision Support Systems for Business Intelligence: 3 semester hours**

Same as INFSYS 6833. Prerequisites: SCMA 5300. This course examines the applications of data and analytics (models) to support the needs of decision makers. Descriptive, predictive and prescriptive analytics tools are coupled with big data and well-designed user interfaces to provide the necessary tools. Topics such as how to construct the data warehouse, how to clean and store data in the appropriate form, how to construct and implement a useful visualization of data, and how to construct and support decision makers are included. DSS component design in response to decision making and business intelligence needs are discussed. Credit cannot be granted for both INFSYS 3843 and INFSYS 6833.

**ACCTNG 5444 Business Analytics and Data Mining: 3 semester hours**

Same as SCMA 6345. Prerequisites: SCMA 5300 and INFSYS 5800. This course concentrates on methods for converting data into business intelligence. It provides knowledge of the principles and techniques for business analytics and data mining. Topics include clustering, pattern recognition, visualization of relationships, predictive modeling, optimization techniques and simulation.

**ACCTNG 5446 Advanced Topics in Taxation: 3 semester hours**

Prerequisites: ACCTNG 3441. Address advanced topics in taxation selected by the instructor.

**ACCTNG 5447 Taxation of Individuals and Businesses: 3 semester hours**

Prerequisites: MATH 1030; ACCTNG 3401 or both ACCTNG 5400 and FINANCE 6590 with the topic 'Practice of Personal Financial Planning' with grades of B or better in both; graduate standing. This is the first professional-level course in taxation. The course includes a general introduction to the concepts of taxation. It will enable students to understand the role of taxes in evaluating decisions typically confronted by individual taxpayers and businesses.

**ACCTNG 5451 Accounting and Auditing in Governmental and Not-for-Profit Entities: 3 semester hours**

Prerequisite: ACCTNG 3402 and graduate standing; a minimum campus GPA of 2.0 and minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. A study of accounting for use in the public sector and in not-for-profit organizations. Principles of fund accounting and financial reporting for governmental and not-for-profit entities, as well as auditing in the public sector.

**ACCTNG 5465 Principles of Information Security: 3 semester hours**

Prerequisites: INFSYS 5800 (may be taken concurrently) or permission of instructor. This course is a survey of the vast field of Information Security (InfoSec). It intersects both management and technical aspects of security as relevant to organizations, governments, individuals, and society. Topics covered include fundamental principles of InfoSec and cyber defense, the threat environment, management of InfoSec in organizations, technologies and tools in InfoSec, cryptology/cryptography, web application security, vulnerability management, and current issues. Hands-on labs expose students to basics of penetration testing, applications of cryptography, and vulnerability management. A graduate research paper is required. This course is open to all majors. Credit can only be granted for one of INFSYS 3848, INFSYS 6828, and ACCTNG 5465.

**ACCTNG 5466 Management of Accounting Networks and Security: 3 semester hours**

Prerequisites: INFSYS 5800 (may be taken concurrently) or permission of instructor. This course focuses on the 'big-picture' implications and challenges of data networking and network security within contemporary Information Technology environments. It covers fundamentals of networking and security implications of data networks with hands-on exercises. Topics include networking layers and standardization of functionality across layers, wired and wireless Local Area Networks (LANs) along with switching and physical layer technologies, Internetworking, supporting and supervisory protocols, application layer protocols, network design and management, and fundamentals of network security. Students will also learn about network protocol analyzers such as Wireshark, virtualization, networking in virtual environments, and how some common networked applications operate by utilizing the network infrastructure. Credit can only be granted for one of INFSYS 3842, INFSYS 6836, and ACCTNG 5466.

**ACCTNG 5467 Advanced Data Security Concepts: 3 semester hours**

Prerequisites: ACCTNG 5465 or INFSYS 6828. This course provides an in-depth examination of advanced principles of cybersecurity. A broad range of topics are covered, including penetration testing, formal verification of systems, formal models of information flow and protection, distributed system authentication, protocol design and attack, computer viruses and malware, as well as intrusion and anomaly detection models. Multi-level security architecture, active defenses, investigation and forensics, network firewalls, virtualization, anonymity and identity, mobile security, and database security models and mechanisms are also studied. The course content is largely influenced by the latest research in the field. Credit can only be granted for one of INFSYS 3858, INFSYS 6858, and ACCTNG 5467.

**ACCTNG 5468 Accounting Software Assurance: 3 semester hours**

Prerequisites: INFSYS 6805 or INFSYS 6806 or permission of instructor. This course provides an overview of the vast field of software assurance. The goal is to make students aware of the fundamentals of the secure software lifecycle enabling them to apply principles of secure software development and management. The course also provides practical applications that allow the learners to experience the secure software lifecycle process by developing concrete artifacts. Credit can only be granted for one of INFSYS 3868, INFSYS 6868, and ACCTNG 5468.

**ACCTNG 5469 Management of Accounting Data Security: 3 semester hours**

Prerequisites: ACCTNG 5465 or INFSYS 6828. This course provides students the necessary background knowledge and skills to develop and run a systematic information security management program that is in line with organization strategy, structure, processes, and culture. Specifically, the course introduces governance, strategy, policies, implementation, operation, evaluation, and improvement of an organization's information security to achieve business objectives and be resilient to information security threats. Credit can only be granted for one of INFSYS 3878, INFSYS 6878, and ACCTNG 5469.

**ACCTNG 5490 Graduate Internship in Accounting: 1-3 semester hours**

Prerequisites: ACCTNG 3401 or ACCTNG 5404; a minimum graduate GPA of 3.0; a minimum GPA of 3.0 in all accounting courses at the 3000-level and above taken at UMSL; consent of supervising instructor and accounting internship coordinator. The student works in an accounting internship that contains sufficient content and rigor to merit graduate credit. The student's program will be monitored by a member of the Graduate Faculty in Accounting. The course requires several meetings with the faculty advisor and a graduate-level written assignment. The course will be graded on a Satisfactory/Unsatisfactory basis. A student who has previously taken ACCTNG 3490 may not take ACCTNG 5490.

**ACCTNG 5498 Graduate Seminar in Accounting: 3 semester hours**

Prerequisites: To be determined each time the course is offered and to include a minimum 2.0 overall GPA and a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. Study of selected special problems in accounting. May be repeated for credit with different topics.

**ACCTNG 5499 Individual Research in Accounting: 1-3 semester hours**

Prerequisites: Consent of instructor, department chair and graduate director; a minimum 3.0 graduate GPA; a minimum GPA of 3.0 in all accounting courses at the 3000-level and above taken at UMSL. Special individual research topics in Accounting under the guidance of a specific professor.

**ACCTNG 6441 Graduate Topics in Taxation: 3 semester hours**

Prerequisites: At least a B in ACCTNG 3441 or ACCTNG 5447; enrollment in Masters of Accountancy program; a minimum GPA of 2.3 in all accounting courses at the 3000-level and above taken at UMSL. This course examines the role taxes play in evaluating decisions confronted by individuals. Students will apply basic tools learned in accounting and finance to settings impacted by tax laws with the goal of not minimizing taxes but maximizing the present value of a taxpayer's wealth.

**ACCTNG 6460 Advanced Data Integration: 3 semester hours**

Same as INFSYS 6860. Prerequisites: Graduate standing. This course discusses the theories and techniques for blending unstructured and structured data including big data and social media streams with relational databases, data warehouses, spreadsheets, and other sources of data. It provides hands-on experience in integrating data from diverse sources, screening and cleaning it, and producing descriptive and visual summaries in tables, graphs, maps, and text for business intelligence. Students will be introduced to tools that integrate data from different sources and provide input to dashboards for rich visualization and advanced analytics. Students may not receive credit for both INFSYS 3860 and INFSYS 6860.

## Adult Education

### Courses

**ADULT ED 4311 Teaching Basic Reading Skills to Adults: 3 semester hours**

A study of the reading process and of the characteristics of adult learners with a focus on instructional techniques and materials useful in upgrading the performance of adults with deficient reading skills.

**ADULT ED 6230 Adult Learning and Development: 3 semester hours**

Prerequisites: ED PSY 6210 or ED PSY 6111, or ADULT ED 6410. A study of how life stage theories and theories of learning pertain to the adult learner. The research bases of these theories will be explored in relationship to instructional practice with adult learners.

***ADULT ED 6404 Seminar in Adult Education Research: 1-10 semester hours***

Prerequisites: ADULT ED 6410 or consent of instructor. A review of current research on various topics in the field of adult education. An in-depth study of these research topics will be conducted. Application to the field of adult education will be considered. Special focus will be placed on assessing and improving competency in educational, corporate and community settings.

***ADULT ED 6410 The Adult Learner: 3 semester hours***

This course is designed for those who help adults learn in a variety of settings. A study will be made of the characteristics of Adult Learners and various theories of how they learn, as well as the implications of these characteristics and theories for Adult Education Research, Programming, Curriculum, Planning, and Instructional Practice.

***ADULT ED 6411 History of Adult Education: 3 semester hours***

Prerequisites: ADULT ED 6410. In this course the historical foundation of the field of Adult Education in America will be studied. This will include the major theorists and their contributions; together with the continuing education of the adult in a progressive social context.

***ADULT ED 6412 Philosophical Foundations of Adult Education: 3 semester hours***

Prerequisites: ADULT ED 6410 or consent of instructor. A comprehensive, systematic philosophical foundation for adult education. In this course the philosophical underpinnings of the various approaches to the education of adults will be explored. These include the role of the learner, the teacher, and overall objectives within each philosophy.

***ADULT ED 6413 Improvement of Instruction in Adult Education: 3 semester hours***

Prerequisite: ADULT ED 6410 or consent of instructor. A study of selected methods and instructional techniques appropriate for the teaching of adults. An examination of current research will be made as it relates to the problems of instructing adults.

***ADULT ED 6414 Curriculum Theory and Development in Adult Education: 3 semester hours***

Prerequisite: ADULT ED 6410 or consent of instructor. A study of curriculum theory and its application to adult education. Particular emphasis will be placed on the development of model curricula for various programs in adult education.

***ADULT ED 6415 Adult Literacy Perspectives: 3 semester hours***

Prerequisites: ADULT ED 6410. Students will draw upon a variety of disciplines in considering the ideological, political, economic, moral, and pedagogical dimensions of literacy education. This is significant since popular, as well as scholarly, views of literacy assert its importance to a variety of personal and societal goals. In addition to a theoretical perspective, students will explore practical applications of literacy.

***ADULT ED 6416 Survey of Adult Distance Education: 3 semester hours***

Prerequisites: ADULT ED 6410. This course is designed as a survey of distance education covering the concept, theories, history, present practice, delivery systems, major issues and future directions of the field of distance learning. Emphasis is on research and practice in the U.S.; however, since much of the literature in the field has been written by educators in other countries, the course will explore topics and issues in distance education from an international perspective, identifying similarities and differences among countries as they relate to adult learning.

***ADULT ED 6417 Multicultural Issues in Adult Education: 3 semester hours***

Prerequisites: ADULT ED 6410. In this course the learners will discuss cultural diversity from an adult education perspective. Topics include cultural self-awareness, challenges/issues in intercultural educational settings, theoretical perspectives of multicultural education, and practitioner concerns and strategies for implementing multiculturalism in adult education settings.

***ADULT ED 6418 Assessment in the Adult Classroom: 3 semester hours***

Prerequisites: ADULT ED 6410 and ED REM 6707 or consent of instructor. This course addresses assessing how effectively adult educators are facilitating adult learning. Emphasis will be on knowledge and skills, learner characteristics, and learner reactions to instruction through the use of formative assessment of both student learning and instructional effectiveness in the adult classroom. Special attention will focus this assessment in the adult classroom within educational, corporate, community, and non-formal settings.

***ADULT ED 6419 Developing Intercultural Competence: 3 semester hours***

Prerequisites: ADULT ED 6410. The focus of this course is on intercultural competence theories and concepts designed to build personal, academic, and professional skills. It is intended to enable the individual to function more successfully in a global environment.

***ADULT ED 6420 Survey of Human Resource Development and Adult Education: 3 semester hours***

Prerequisites: Graduate standing and permission of instructor. This course provides an overview of the fields of human resource development and adult education. The many societal contexts within which the training of adults and organization development occur will be examined. The systems theory that frames a discussion of adult education, training, and organization development is also explored. The unique characteristics of each field will be represented as well as the ways in which the two fields come together along some general concepts: Definitions, philosophies, goals, sponsoring agencies, professional roles, processes, participants, and resources.

***ADULT ED 6440 Developing Critical Thinking Through Reading and Writing: 3 semester hours***

Prerequisites: Graduate standing. A study of developing critical thinking through focusing upon reading and writing instructional techniques and materials useful in upgrading the performance of secondary, higher education, and adult learners.

***ADULT ED 6494 Directed Readings in Adult Learning: 1-6 semester hours***

Prerequisites: ADULT ED 6410, graduate standing, and consent of instructor. Self-directed learning, as a key concept in Adult Education, is encouraged as a means of understanding the adult experience, both personally and professionally, and is a recognized core competency in the field of Adult Education. This course consists of supervised, independent study into the current research, literature, and issues in the area of Adult Learning. Learners are given the opportunity to meet with other learners and the instructor on a regular basis to share resources, ideas, and to gain feedback.

***ADULT ED 6497 Problems in Adult Education: 1-10 semester hours***

Prerequisite: ADULT ED 6410 or consent of instructor. Independent study on topics in adult education.

**ADULT ED 6990 Internship: 1-10 semester hours**

Prerequisite: ADULT ED 6410 or consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

**ADULT ED 7820 Policy Issues in Adult Education: 3 semester hours**

This course should be taken immediately after admittance into the doctoral program. In this course, students will engage in a systematic examination of issues related to adult education. This will include, but not be limited to, legislative policies, delivery systems, and occupational issues. Students will be expected to examine trends in adult education practice and/or related fields.

**ADULT ED 7822 Advance Research in Adult Education: 3 semester hours**

Prerequisites: ADULT ED 7820. This course will build on ADULT ED 7820 in which students will engage in a systematic and critical examination and discussion of research related to adult education and related area topics.

## Air Science

### Courses

**AERO 1001 Heritage and Values of the US Air Force I: 2 semester hours**

This course introduces students to contemporary military issues and overall Air Force structure. Contracting with AFROTC is not required for this course.

**AERO 1002 Heritage and Values of the US Air Force II: 2 semester hours**

This course introduces students to military concepts such as strategic offensive and defense forces, general purpose forces, aerospace support forces, and the Air Force relationship with U.S. Army forces. Contracting with AFROTC is not required for this course.

**AERO 1500 Leadership Laboratory: 0 semester hours**

Prerequisites: Students must be enrolled in an AERO course. Instruction is conducted within the framework of an organized cadet corps with a progression of experiences designed to develop each student's leadership potential. Course work includes a study of Air Force customs and courtesies, drill and ceremonies, career opportunities in the Air Force, and the life and work of an Air Force junior officer. Students develop their leadership potential in a practical, supervised laboratory, which typically includes field trips to Air Force installations throughout the United States. This course is generally taught at St. Louis University. It is required for all AF ROTC students.

**AERO 2001 Team Leadership Fundamentals I: 2 semester hours**

This course lays the foundation for teams and leadership. The topics include skills that will allow cadets to improve their leadership on a personal level and within a team. The course will prepare cadets for their field training experience where they will be able to put the concepts learned into practice. The purpose is to instill a leadership mindset and to motivate sophomore students to transition from AFROTC cadet to AFROTC officer candidate.

**AERO 2002 Team Leadership Fundamentals II: 2 semester hours**

Prerequisites: AERO 2001 or consent of instructor. This course lays the foundation for Air Force leadership and prepares AFROTC students for their field training experience where they will be able to put the concepts learned into practice. Contracting with AFROTC is not required for this course.

**AERO 3001 Leading People & Effective Communications I: 3 semester hours**

Prerequisites: Membership in the AFROTC Program or consent of instructor. This course focuses on training students to be effective managers in Air Force context. Professional concepts that will be emphasized include the use of managerial processes involving decision-making and the use of analytic aids to support planning, organizing, and controlling systems in a changing environment.

**AERO 3002 Leading People & Effective Communications II: 3 semester hours**

Prerequisites: AERO 3001 and membership in the AFROTC Program, or consent of instructor. This course continues the management training from AERO 3001. Using actual Air Force cases, students focus on the management of forces in change and managerial strategy within the context of the military organization.

**AERO 4001 Air Force in National Security Affairs I: 3 semester hours**

Prerequisites: AERO 3002 and membership in the AFROTC Program, or consent of instructor. This course explores the role of the armed forces as an integral element of American society, including civil-military relations, defense policy, and Air Force responsibilities in national defense. It is part of the final educational experience for AF ROTC Cadets before commissioning.

**AERO 4002 Air Force in National Security Affairs II: 3 semester hours**

Prerequisites: AERO 4001 and membership in the AFROTC Program, or consent of instructor. This course explores the importance of maintaining adequate national security forces and teaches students how to effectively design and implement Air Force-focused national security policies. It is part of the final educational experience for AF ROTC Cadets before commissioning.

## Anthropology

### Courses

**ANTHRO 1005 Introduction to Biological Anthropology: 4 semester hours**

Topics include evolutionary theory and its development, the evolution/creationist debate, Mendelian & population genetics, the evolutionary place of humans within the animal kingdom, anatomical and behavioral characteristics of primates, fossilization, primate evolution, the human evolutionary fossil record, biological variability in modern humans, race as a biological concept, and applied biological anthropology. In addition to 3 hours of lecture, 1 hour per week is spent in lab classifying ancient human fossils, observing monkeys and apes at the zoo, and doing other projects. Satisfies the Natural Science and Mathematics (SM) breadth of study requirement.



**ANTHRO 1011 Introduction to Cultural Anthropology (MOTR ANTH 201): 3 semester hours**

Cultural anthropology is the study of human beings as creatures and creators of society. This course is an introduction to that study which aims to demonstrate how the basic concepts and techniques developed by cultural anthropologists help us to understand societies of various degrees of complexity, including our own. We will consider topics such as language, kinship, gender, ethnicity, economics, politics, religion, and social change in a broad comparative framework. Major goals are an increased awareness of the social and cultural dimensions of human experience, the diversity and flexibility of human cultures, and processes of intercultural communication and conflict. This course satisfies the Cultural Diversity requirement.

**ANTHRO 1019 Introduction to Archaeology: 3 semester hours**

Archaeology is a subfield of anthropology that studies past human societies from their material remains. Explores the development of archaeology as a scientific discipline. Archaeological methods and theories will be explained using case studies from the continents of Africa, Asia, Australia, Europe and the Americas. This course satisfies the Cultural Diversity requirement.

**ANTHRO 1021 The Body in Culture: 3 semester hours**

This course will compare uses of the body as a social signifier in Western and non-Western cultures. It will explore how culture shapes the images, uses and meanings of the human body. It concentrates on different historical and beliefs in five areas: how the body works; sex and gender; eating manners and food; pain and punishment; beauty and bodily mutilation. This course satisfies the Cultural Diversity requirement.

**ANTHRO 1025 World Cultures: 3 semester hours**

An ethnographic survey of the major culture areas of the world (Africa, North and South America, Europe and Oceania). This course satisfies the Cultural Diversity requirement.

**ANTHRO 1030 Democracy and War: 3 semester hours**

Using the world's first democracy in ancient Greece as a case study, this course will address questions about the origins of democracy, the key elements of a successful democratic government, the mechanisms by which democratic and non-democratic states go to war, the manner in which they cope with war and the psychological effects of war on warriors and civilian populations that will help us learn how our own democracy works and affects our lives.

**ANTHRO 1033 World Archaeology: 3 semester hours**

Discusses some of the greatest discoveries in archaeology from prehistoric cultures to ancient civilizations of Africa, Asia, Australia, Europe and the Americas. Archaeological examples may include early human origins at Olduvai Gorge in Tanzania, the pyramids of ancient Egypt, the Maya and Aztec of Mexico, the rise of civilization in Mesopotamia, England's Stonehenge, the Roman city of Pompeii, upper Paleolithic cave paintings in France and Spain, and American Indian pueblos of the Southwest. This introductory course is designed for non-anthropology majors, or for those who are considering the major. This course satisfies the Cultural Diversity requirement.

**ANTHRO 1034 Introduction to Ancient Egypt and Its Civilization: 3 semester hours**

Same as HIST 1034. This course will survey ancient Egyptian history and culture from predynastic times to Greco-Roman rule, roughly 3000 BCE to 30 BCE. Students will discuss archaeological sites, mummification, religion, architecture, texts, and more. Through comparing ancient Egyptian culture with our own, students will explore what has changed in the world and what has endured for millennia.

**ANTHRO 1037 The Wonders of Greece: Introduction to Greek History and Culture: 3 semester hours**

Same as HIST 1037. Our democracy and culture have been heavily influenced by Greek civilization. This course will introduce students to the culture and civilization of Greece in order to provide a better understanding of our own society. The course will cover the political and military history, art, literature, philosophy, and science of Greece from prehistoric to modern times, with special emphasis on Greek civilization's enduring democratic and cultural ideals. The course will include screening of films and use of online resources.

**ANTHRO 1041 Sex and Gender Across Cultures: 3 semester hours**

This course considers womanhood, manhood, third genders, and sexuality in a broad cross-cultural perspective. The focus of the course is on the diverse cultural logics that separate females, males, and sometimes third genders into different groups in different societies, with the male group usually being the more prestigious one. Focusing on the indigenous non-Western cultures, this course examines gender roles and sexuality within the broader cultural contexts of ritual and symbolism, family, marriage and kinship, economy, politics, and public life. This course will help students understand what it is like to be male or female in non-Western cultures. This course satisfies the Cultural Diversity Requirement.

**ANTHRO 1091 Introductory Topics in Anthropology: 3 semester hours**

This course features special and current topics at the introductory level in the areas of social, cultural and physical anthropology and archaeology. The course examines the basic concepts and provides an understanding of the development of new trends and areas of study in the field of Anthropology. Topics will focus on the comparative study of non-Western cultures such as ecological practices in tribal societies; religious practices in prehistoric cultures; the roles of women across cultures; etc. Topics may vary and the course may be repeated provided topic is different. This course satisfies the Cultural Diversity requirement.

**ANTHRO 1095 Brief Overview of the Four Fields of Anthropology: 1 semester hour**

Through the use of videos, readings, and the online course management system, this course provides a brief overview of the four traditional fields of anthropology: biological, archaeological, cultural, and linguistic anthropology. This course is designed for video instruction and offers minimal direct interaction with the instructor.

**ANTHRO 1271 Food and Drink: Anthropological Perspective: 3 semester hours**

This course explores the social and cultural aspects of foods and drinks. Topics may include the origins of food production; the evolution of diets, foods, and production systems around the world; the interrelationships between food and identity, gender, race, and class; food and globalization; food politics and food justice movements; water scarcity; and the push for a sustainable future. This course satisfies the Cultural Diversity requirement.

**ANTHRO 2003 Careers in Health and Medicine: 1 semester hour**

Same as INTDSC 2003, GERON 2003, SOC 2003. In this course, students will learn about occupations in such fields as medicine, the allied health professions, health non-profit organizations, and global healthcare delivery. Students will understand the education and skills necessary for various careers and for application to medical, professional, and graduate schools, and will become familiar with majors, certificates and minors that are available at UMSL. They will learn about employment opportunities in the healthcare industry in the St. Louis metropolitan area, and will be introduced to members of the local community who give guest lectures. Students will gain practical experience by shadowing a healthcare professional in their job.

**ANTHRO 2035 Ancient Greek Civilization and Culture: 3 semester hours**

A survey of the history, language, literature, art, science, and philosophy of the ancient Greeks from prehistory to the Roman conquest. It covers the glamorous Minoan-Mycenaean civilization, the rise of classical Greek civilization and the golden age, the history of the city states such as Athens and Sparta, and the Hellenistic period under Alexander the Great and his descendants. Examines the nature of the ancient Greek language, surveys literary classics such as the Iliad and the Odyssey, and describes the archaeology of Greek myths based on the ongoing UM-St. Louis archaeological project in Greece. Discusses the rise of humanism, the ancient Olympic Games, and the legacy of ancient Greece in Western civilization.

**ANTHRO 2100 Languages and World View: 3 semester hours**

Same as FGN LANG 2100 and SOC 2200. Prerequisites: Completion of two semesters of one foreign language at the college level. This course investigates the extent to which peoples' linguistic and cultural background informs their understanding of the world. Experts on a variety of major Western and non-Western languages will introduce students to differences in ideas about time, space, human relationships, and other issues based on language. The course will also analyze common cultural misunderstandings among native speakers of English and speakers of other languages.

**ANTHRO 2101 Girl Cultures: 3 semester hours**

Same as HIST 2120. This course explores themes of identity and gender construction, media representation, and cultural production found in a spectrum of historic and modern international and US girl cultures. 1950s British Teddy Girls, 1970s Japanese Takanokozoku, 1990s American Riot Grrrls, 2000s Mexican American Cholas, and other girl cultures teach us about the many strategies teens and young women use to construct their own forms of identity through music, language, zines, fashion, and other diverse activities. This course satisfies the Cultural Diversity requirement.

**ANTHRO 2104 Medicine in Culture and History: 3 semester hours**

Students will explore the diverse beliefs and practices related to anatomy, disease, sexual reproduction, gender, sport, and food. Western biomedicine will be compared with traditional Chinese medicine and other non-Western traditions such as shamanic, Native American, Tibetan, and Ayurvedic systems. The clash between traditional and modern medical systems will also be examined. This course satisfies the Cultural Diversity Requirement.

**ANTHRO 2105 Human Variation: 3 semester hours**

This course will look at the variation that exists within our own species, both between and within populations. It will investigate the evolutionary and genetic basis of human variation, as well as its diversity, adaptive significance, and distribution. Topics covered will include: body shape and physiology, blood groups, susceptibility to disease, and skin color. It will survey historical attempts to classify humans into different 'races'; assess definitions of race as a solely cultural construct; and critique attempts to link race, intelligence and performance.

**ANTHRO 2109 Archaeological Field School: 3-6 semester hours**

Prerequisites: Consent of instructor. Introduction to field methods in archaeology and to the techniques of recording, storing, analyzing, and reporting archaeological findings. Experience is gained through participation in a field research project including excavation and survey projects. Emphasis is placed upon research design and implementation and upon the use of archaeological data in describing and explaining human behavior.

**ANTHRO 2111 Cultures of East Asia: 3 semester hours**

An ethnographic and historical survey of the various people of East Asia including Japan, China, North and South Korea, Hong Kong and Macau. Includes an examination of the varying cultural and social developments within and through the historical, geographical, and cultural environments. This course satisfies the Cultural Diversity requirement.

**ANTHRO 2117 Greek History and Culture: 3 semester hours**

Same as HIST 2117. Greek civilization has had a deep impact on contemporary society in art; social; political; and economic organization; philosophy; law; medicine; and science. This course covers major aspects of Greek history and culture from antiquity to the present. It considers the major political and military events of Greek history, as well as important aspects of Greek culture, including sports and the history of the Olympic Games, literature, philosophy, and mythology.

**ANTHRO 2120 Native Peoples of North America: 3 semester hours**

A survey of Native Peoples of North America including the prehistory, ethnographic and linguistic groupings, social organization, and cultural systems of these cultures.

**ANTHRO 2124 Introduction to Contemporary African Cultures: 3 semester hours**

This introductory course focuses on multiple representations within contemporary African cultures and societies. Students have an opportunity to study and learn about African cultural expressions in belief systems, gender constructions, nationality and ethnicity, socioeconomic class systems, politics, environmental challenges, and cultural adaptations and change. This course satisfies the Cultural Diversity requirement.

**ANTHRO 2132 Archaeology of North America: 3 semester hours**

Examines the archaeological record of human developments throughout prehistoric North America. Topics of discussion include the origins of human culture in America, the processes of prehistoric cultural development in the different regions of the continent, and archaeological approaches to explaining the behavior of North America's prehistoric inhabitants. Satisfies the Cultural Diversity requirement.

**ANTHRO 2134 Archaeology of The Inca, Aztec, and Maya: 3 semester hours**

Provides an overview of human social and cultural developments in Mesoamerica and Andean South America from the first settlements over 20,000 years ago to the Spanish conquest. Focuses on events leading to and including the establishment of Classic Mayan and Aztec societies, and discusses changes that led to what was perhaps the largest nation on earth for its time, the Inca. This course satisfies the Cultural Diversity requirement.

**ANTHRO 2150 Zombies, Vampires, and Monsters: The Supernatural in Popular Culture: 3 semester hours**

Beliefs in the unseen world are universal. Zombies, vampires, and monsters are all elements of the supernatural in popular culture that we can analyze to discover deeper meanings about what it means to be human. This course will also cover magic, witchcraft, ghosts, possession, exorcism, and other beliefs and practices that reveal the views that humans have about their place in the world. This course will use anthropological concepts to make the familiar strange, and the strange familiar.

**ANTHRO 2191 Special Topics in Non-Western Culture: 3 semester hours**

This course focuses on a specific non-western culture, or geographically related groups of cultures. Ethnographic and/or archaeological cultures are chosen and their ecological economic, social, religious, cosmological, political, ethnic, linguistic and other cultural domains are examined. Students are exposed to basic concepts and knowledge for understanding diverse cultures in their historical and/or contemporary contexts of development and relationship. Topics will vary. Satisfies Cultural Diversity Requirement.

**ANTHRO 2192 Anthropological Perspectives on Western Culture: 3 semester hours**

This course focuses on a specific Western culture or geographically-related group of cultures utilizing ethnographic and/or archaeological sources. Ecological, economic, social, political, ethnic, religious, linguistic and cultural domains will be examined. Students are exposed to basic anthropological concepts for understanding diverse cultures in their historical and/or contemporary contexts. Topics will vary.

**ANTHRO 2232 Analysis of Archaeological Artifacts: 3 semester hours**

Prerequisites: ANTHRO 1019 or ANTHRO 2109 or consent of instructor.

This course teaches the methods and techniques for analyzing the artifacts from an archaeological dig. Students learn to process, analyze, and interpret ceramics, stone tools, plant and animal debris according to form, design, use wear, and associations. This analysis will form the basis of interpretations about human behaviors and cultural and temporal affiliations. The student will prepare a report of the examined collection.

**ANTHRO 2420 Maiko, Maids, and Masako: Women in Japanese Cultural History: 3 semester hours**

Same as HIST 2420. This course offers perspectives on famous Japanese women who have captured the public eye at various historical junctures. Students will learn to critically assess representations of these mythological, religious, occupational, and subcultural figures, as well as their linkage to notions of nationhood and modernity. This course satisfies the cultural diversity requirement.

**ANTHRO 2425 Food and Drink in Japan: A Cultural History: 3 semester hours**

Same as HIST 2425. This course explores food and drink as core aspects of intimate and public life in Japan and as key elements of nationalism. It examines distinct class, ethnic, and regional dimensions of food and drink that have their own unique histories. Students will learn how food and drink encode a spectrum of historical meanings as well as great cultural hybridity. This course satisfies the Cultural Diversity requirement.

**ANTHRO 2430 Ghosts, Goblins, and Godzillas: 3 semester hours**

Same as HIST 2430. This course explores the spirits, ghouls, and animal tricksters who populate the historic and modern Japanese imagination. Students will learn about the supernatural beings, and the exceptional humans who interact with or control them, who are found in centuries of Japanese religion, folklore, literature, and art, and are also frequent themes in modern art, film, anime and manga. This course satisfies the Cultural Diversity requirement.

**ANTHRO 3209 Forensic Anthropology: 4 semester hours**

Same as CRIMIN 3209. Prerequisites: ANTHRO 1005, or BIOL 1102, or junior standing, or consent of instructor. Students learn basic dental and skeletal anatomy and the methods used by biological anthropologists and archaeologists to collect and analyze human skeletal remains, including how to determine age and sex of skeletal remains, identify ethnic markers, determine stature and handedness, and identify the presence of trauma and/or pathology. Also covers the role of the forensic anthropologist in crime scene investigations and human rights issues. In the weekly lab section students will have an opportunity for hands-on application of techniques to analyze skeletal remains.

**ANTHRO 3212 Medical Anthropology: 3 semester hours**

Same as GERON 3212 and SOC 3212. Prerequisites: ANTHRO 1011 or GERON 2170 or PSYCH 1003 or SOC 1010 or consent of instructor or program director. An examination of the growing interaction between anthropology and medicine, and the increasing use of anthropologists in medical and health-care settings. In addition to teaching current theory in medical anthropology, the course focuses on anthropologically-based skills essential to those working in health-related fields.

**ANTHRO 3214 Writing Systems of the World: 3 semester hours**

Same as HIST 3214. This course studies the writing systems from around the world leads to appreciation for one of humankind's most important technological inventions. Students will explore the origins and development of writing systems over time, the linguistic classification of writing, and the transmission of writing across languages and cultures. This course satisfies the Cultural Diversity requirement.

**ANTHRO 3215 Aging Across Cultures: 3 semester hours**

Same as GERON 3215. Prerequisites: ANTHRO 1011 or PSYCH 1003 or SOC 1010, or consent of instructor. This course examines the wide ranging variability in the roles of older people across different cultures and the effects these have on older people, their families, and their societies.

**ANTHRO 3218 Visual and Material Culture of Japan: 3 semester hours**

Same as HIST 3218. This course offers students the opportunity to research Japanese visual genres and material artifacts, from the iconography of Buddhism and fifteenth century pottery to postwar political cartoons, advertising posters, and etiquette comics. Students will discover how artifacts and images provide a means for communicating cultural meaning, while also reflecting aesthetics, humor, and cultural norms. This course satisfies the Cultural Diversity requirement.

**ANTHRO 3220 Quantitative Data Analysis in Social Science Research: 3 semester hours**

Same as SOC 3220. Prerequisites: SOC 1010 or ANTHRO 1011 and MATH 1030 (or higher). This course examines issues and techniques of statistical analysis relevant to quantitative sociological research, such as elementary probability, measurements of central tendency and dispersion, measures of relationships including linear regression and correlation, inferential and nonparametric statistics. The course includes an introduction to computer-based statistical analysis.



**ANTHRO 3228 People and Plants: 3 semester hours**

Prerequisites: ANTHRO 1011 or ANTHRO 1019 or consent of instructor.

This course is designed to introduce students to complex relationships between people and plants. We will focus on how plants are perceived, managed, and used across human societies. Topics span the ages and include collection of wild plants and 'Stone Age' diets; the origins of agriculture in Ancient Egypt, Mesopotamia, China, and the Americas; the development of crops and GMOs; industrial agriculture; organic gardening; and the wilderness-to-table movement. While emphasis will be on food plants, we will also discuss the use of plants as medicines, cosmetics, dyes, and construction materials.

**ANTHRO 3235 Women in Sub-Saharan Africa: A Contemporary Perspective: 3 semester hours**

Prerequisites: ANTHRO 1011, or introductory course in another social science, or consent of instructor. Examines important traditional concerns of anthropologists such as the nature of kinship obligation and privilege; gender as a basis for the division of labor; social organization for formal and informal networks; and ritual and ceremony. In addition we look closely at the changing role of African women, as related by African women testing the very limits of what is 'socially and culturally acceptable.' The roles women continue to play in politics, comprehensive development (i.e. cultural and economic), and evolving social structures are reviewed to gain an understanding of the historical and contemporary mandates for their social action. This course satisfies the Cultural Diversity requirement.

**ANTHRO 3241 Myths and Monuments: 3 semester hours**

This course will provide an overview of Greek myths and legends, as well as their reception in architecture, the visual arts, and literature. Particular emphasis will be given to: 1) the theology and the creation myths of the Greeks and how these relate to the Bible; 2) heroic myths from the Trojan War to Atlantis, and their historicity; 3) famous monuments, works of art, and texts from Greek and world literature, that advance our understanding of Greek myths and the culture that created them.

**ANTHRO 3243 Marriage, Family, and Kinship: 3 semester hours**

Same as SOC 3243 and GS 3243. Prerequisites: ANTHRO 1019, SOC 1010, or consent of the instructor. This course will examine the construction of kinship systems, marriages, families and other forms of intimate relationships from anthropological and sociological perspectives. The cross-cultural structure of this class will incorporate global case studies, including U.S. and European marriage and family structures. Students will have the opportunity to explore topics including love, dating, cohabitation, kinship calculation, alternative lifestyles, and divorce.

**ANTHRO 3244 Religion, Magic and Science: 3 semester hours**

Prerequisites: ANTHRO 1011, or introductory course in another social science, or consent of instructor. A consideration of the roles of religion, magic, and science in culture and social organization.

**ANTHRO 3246 Medicine and Disease in the Ancient World: 3 semester hours**

Prerequisites: ANTHRO 1005 or consent of the instructor. This course explores medicine and disease through case studies from civilizations of the ancient world such as Egypt, Greece, and Peru. Students will discuss how these cultures conceptualized disease, and, in turn, how they contended with illness. This course addresses different ways of identifying disease through medical texts, art, and human remains.

**ANTHRO 3255 Oral History and Urban Culture in St. Louis: 3 semester hours**

Prerequisites: ANTHRO 1011 or instructor's consent. This course involves students in background research and active fieldwork in urban anthropology within the metropolitan area. The focus will be on learning and applying oral history techniques in the city of St. Louis and its neighborhood. They will learn fieldwork methodologies and how to conduct social, cultural, and historical research in preparation for fieldwork. This includes learning to research, conduct, and process interviews. They will also learn to work in teams to construct a group project to be presented to the class.

**ANTHRO 3290 Advanced Topics in Archaeology: 3 semester hours**

Prerequisites: ANTHRO 1019, or consent of instructor. Selected topics in archeology with a strong theoretical and methodological approach. Requires substantial reading and writing. May be repeated with consent of department.

**ANTHRO 3291 Current Issues in Anthropology: 3 semester hours**

Prerequisites: ANTHRO 1011, or introductory course in another social science, or consent of instructor. Selected topics in social, cultural and physical anthropology, with emphasis on current issues and trends in the field of anthropology. May be repeated provided topic is different.

**ANTHRO 4000 Ethnographic Field Research Methods: 3 semester hours**

Prerequisites: ANTHRO 1011, SOC 1010, or consent of instructor. Ethnographic field research is the basis of cultural anthropological inquiry. This course emphasizes hands-on training in the collection and analysis of ethnographic data, including participant observation, taking and managing field notes, key informant interviewing, content analysis and the preparation of ethnographic field reports.

**ANTHRO 4005 Special Research Methods in Cultural Anthropology: 1-3 semester hours**

Prerequisites: ANTHRO 1011 or consent of instructor. Advanced instruction in specialized technical and analytical skills and methods used to conduct research in cultural anthropology and/or linguistic anthropology. May be repeated provided the topic is different.

**ANTHRO 4015 Data Analytics in the Social Sciences: 3 semester hours**

Same as SOC 4015. Prerequisites: MATH 1020 or higher. This course integrates traditional statistical methods with new software and original datasets relevant to students of the social sciences. Students will learn to load, clean, and describe datasets using common software packages and programming languages employed in data science and data analytics. Students will also learn basic descriptive and inferential statistics as well as the visualization tools to successfully graph outputs and present findings. Students with no background in statistics, data analytics, or programming are welcome in the course.

**ANTHRO 4021 Anthropology of Current World Issues: 3 semester hours**

Prerequisites: ANTHRO 1011. This course enhances your understanding of world issues by using an anthropological lens. Students will learn about human adaptations and rationalities, and the way in which anthropology can shed new perspectives on current world issues including ethics, food and water crises, and racial, ethnic, and gender disparities.



**ANTHRO 4100 Field Methods in Archaeology: 3 semester hours**

Prerequisites: ANTHRO 1019 or consent of instructor. Advanced instruction in archaeological field methods including techniques of recording, storing, analyzing, and reporting archaeological findings. Experience is gained through participation in excavations and/or surveys. Emphasis is placed upon research design and implementation and the use of archaeological data in describing and explaining human behavior.

**ANTHRO 4105 Special Research Methods in Archaeology: 1-3 semester hours**

Prerequisites: ANTHRO 1019 or consent of instructor. Advanced instruction in specialized technical and analytical skills and methods used to conduct research in archaeology. May be repeated provided the topic is different.

**ANTHRO 4200 Field Methods in Biological Anthropology: 3 semester hours**

Prerequisites: ANTHRO 1005 or consent of instructor. Course material is based on human skeletal biology and bioarchaeology. The course focuses on 1) training a biological anthropologist; 2) bibliographic research; 3) research methods including skeletal pathology, geographic morphological variants, and developmental changes; 4) giving academic presentations and writing research reports. Students are required to conduct self-directed research on human skeletal remains.

**ANTHRO 4205 Special Research Methods in Biological Anthropology: 1-3 semester hours**

Prerequisites: ANTHRO 1005 or consent of instructor. Advanced instruction in specialized technical and analytical skills and methods used to conduct research in biological anthropology. May be repeated provided the topic is different.

**ANTHRO 4307 Community Based Research in Anthropology: 3 semester hours**

Prerequisites: Junior standing, ANTHRO 1011, ANTHRO 3202, and completion of junior-level writing requirement. An advanced course in qualitative/ethnographic modes of inquiry, building on research and analytical skills learned in previous courses. Some quantitative methods may supplement the research when appropriate. Students experience the process of discovery, representation, presentation, and justification based on fieldwork and/or archival research. The focus is on applying anthropological knowledge to practical issues faced by communities and institutions in the St. Louis area. May be repeated provided the topic is repeated.

**ANTHRO 4310 Laboratory Methods in Archaeology: 3 semester hours**

Prerequisites: ANTHRO 1019, SOC 3220 or equivalent, or consent of instructor. An advanced laboratory analysis and curation methods class. The emphases are 1) mastery of general lab methods and procedures, and 2) development of independent analysis skills in one or more specialty areas such as lithics, ceramics, computer graphics, statistical methods, paleoethnobotany, experimental analysis, and soils.

**ANTHRO 4314 The Archaeology of Death: 3 semester hours**

Prerequisites: ANTHRO 1005 or consent of the instructor. This course will survey some of the different ways people have buried their dead over time. Using archaeology as their foundation, students will explore what burials can tell us about culture and society. During field trips to local cemeteries, they will study current perceptions of death and future archaeological records. Students will conduct demographic analysis of both local and global cemeteries to help them understand the relationships between death, burial, and aging.

**ANTHRO 4315 Anthropology Past, Present, and Future: 3 semester hours**

Prerequisites: Senior standing, one of the following method courses: ANTHRO 4000, ANTHRO 4100, ANTHRO 4200, and consent of the instructor. The capstone course for anthropology majors, ideally to be taken in the final semester of the senior year. In this course, students will 1) explore where anthropology has come from and where it may be going; 2) discuss a series of topics that can be addressed from the perspectives of different subfields by examining different theoretical positions, methods, and types of data; 3) learn to apply the knowledge and skills gained in previous courses to their future, professional careers. Final senior exit projects will be presented orally to Anthropology faculty members.

**ANTHRO 4316 Senior Research Project: 3 semester hours**

Prerequisites: Senior standing and consent of the instructor. For undergraduates who have excelled in their coursework and wish to conduct original research. Students will work with a faculty member with expertise relevant to the research topic. This course offers students the opportunity to build upon strong research, analytic and writing skills. Completion of this course will result in the writing of a thesis, publication of an article, presentation at a professional meeting, or other work that exemplifies high achievement.

**ANTHRO 4325 Internship in Cultural Anthropology: 1-3 semester hours**

Prerequisite: Recommendation of major advisor. Students will be assigned an internship on recommendation of their advisor. Internships will consist of a period of study, observation, and training in an appropriate public or private institution, business, or government office. Cultural Anthropology internships are aimed at providing students with opportunities to learn to apply their knowledge of social and cultural process and diversity to practical situations in the market place of ideas, goods, and services. Specific placements will be selected to match student's interests and career goals.

**ANTHRO 4326 Internship in Archaeology: 1-6 semester hours**

Prerequisite: Recommendation of major advisor. Students will be assigned an internship on recommendation of their advisor. Internships will consist of a period of study, observation, and training in an appropriate public or private institution, business, or government office. Archaeology internships are aimed at providing students with opportunities to work with professional archaeologists in public and private research environments including laboratories and curation centers. Specific placements will be selected to match student's interests and career goals.

**ANTHRO 4328 Internship in Museum Studies: 1-3 semester hours**

Prerequisite: Recommendation of major advisor. Students will be assigned an internship on recommendation of their advisor. Internships will consist of a period of study, observation, and training in an appropriate museum or other exhibition oriented institution. Museum internships are aimed at providing students with opportunities to work with professional museologists to learn skills relating to areas such as exhibition, curation, public programming, research, and publication. Specific placements will be selected to match student's interests and career goals.

**ANTHRO 4329 Internship in Biological Anthropology: 1-3 semester hours**

Prerequisite: Recommendation of major advisor. This course is an internship that consists of a period of study, observation and training in an appropriate institution, lab, or research setting related to forensics, primate behavior and biology, human genetics, population, environmental policy, and other domains related to biological anthropology. Students will be assigned an internship on recommendation of their advisor. This course may be repeated for a maximum of 6 credit hours.

**ANTHRO 4350 Special Study: 1-3 semester hours**

Prerequisite: Consent of instructor. Independent study through readings, reports, or field research. No student may take more than a cumulative total of 6 hours of Special Study.

**ANTHRO 5440 Sociocultural Aspects of Aging: 3 semester hours**

Same as GERON 5440. Prerequisites: Graduate status or consent of the instructor or program director. Focuses on the variety of solutions encountered in different sociocultural contexts for dealing with the problems, challenges and opportunities of growing old. It is organized around topics that are of concern to both anthropology and social gerontology: the status of the aged, intergenerational relations, aging in modernizing societies, ethnic dimensions of aging in complex societies, health in later life, death and dying. Both in-depth case studies and cross-cultural comparisons are examined in an effort to arrive at a culturally informed assessment of factors affecting aging and the aged in the United States.

**ANTHRO 5592 The History of the Visual Arts in American Museums: 3 semester hours**

Same as HIST 5592 and ART HS 5592. Prerequisites: Graduate standing and consent of instructor. This course is an introduction to selected topics in the history of museology, focusing on art and anthropology museums as sites for the interpretations of art and culture, and as contested meeting grounds for various views of history and culture.

**ANTHRO 6138 Museum Studies Master's Project: 5 semester hours**

Same as ART HS 6038 and HIST 6138. Prerequisites: Consent of Director of Museum Studies Program. Research and writing/exhibit development on a selected topic.

## Applied Music

### Courses

**AP MUS 1430 Secondary Applied Music: Jazz Studies: 1 semester hour**

Prerequisite: By audition and consent of department. Individual instruction in jazz performance and literature on the designated instrument. Not applicable to the applied music requirement for music major or music minor degrees. May be repeated for credit.

**AP MUS 1440 Bassoon: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1441 Clarinet: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1442 Classical Guitar: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1443 Euphonium: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1444 Flute: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1445 French Horn: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1446 Harp: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1447 Oboe: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1448 Organ: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1449 Percussion: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1450 Piano: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1451 Saxophone: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1452 Trombone: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1453 Trumpet: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1454 Tuba: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1455 Violin: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1456 Viola: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1457 Violoncello: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1458 String Bass: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1459 Voice: 1 semester hour**

Prerequisite: By audition and consent of department. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 1460.

**AP MUS 1460 Seminar in Pedagogy and Literature: 0 semester hours**

Prerequisites: Concurrent registration with parallel Applied Music course is required. Seminars in pedagogy and literature are offered for all areas of Applied Music. May be taken on a satisfactory/unsatisfactory grading basis.

**AP MUS 3440 Bassoon: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3441 Clarinet: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3442 Classical Guitar: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3443 Euphonium: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3444 Flute: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3445 French Horn: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3446 Harp: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3447 Oboe: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3448 Organ: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3449 Percussion: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3450 Piano: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3451 Saxophone: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3452 Trombone: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3453 Trumpet: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3454 Tuba: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3455 Violin: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3456 Viola: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3457 Violoncello: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3458 String Bass: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3459 Voice: 1 semester hour**

Prerequisites: Completion of the Junior Standing. Exam in major applied area. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 3460.

**AP MUS 3460 Seminar in Pedagogy and Literature: 0 semester hours**

Prerequisites: Concurrent registration with a parallel Applied Music course is required. Seminars in pedagogy and literature are offered for all areas of Applied Music. May be taken on a satisfactory/unsatisfactory basis.

**AP MUS 3500 Junior Recital: 0 semester hours**

Prerequisites: Consent of instructor; concurrent registration in a 4000-level AP MUS course. Preparation and presentation of a Junior Recital. The student's preparation will be evaluated by means of a pre-recital hearing at least 5 weeks before the recital.

**AP MUS 3510 Senior Recital: 0 semester hours**

Prerequisites: Consent of instructor; concurrent registration in a 3000-level AP MUS course (for non-performance majors) or a 4000-level AP MUS course (for Music Performance majors). Preparation and presentation of a Senior Recital. The student's preparation will be evaluated by means of a pre-recital hearing at least 5 weeks before the recital.

**AP MUS 4440 Bassoon: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4441 Clarinet: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4442 Classical Guitar: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4443 Euphonium: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4444 Flute: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4445 French Horn: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4446 Harp: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4447 Oboe: 2 semester hours**

Prerequisites: Completion of Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4448 Organ: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4449 Percussion: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4450 Piano: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4451 Saxophone: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4452 Trombone: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4453 Trumpet: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4454 Tuba: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4455 Violin: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4456 Viola: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4457 Violoncello: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4458 String Bass: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.



**AP MUS 4459 Voice: 2 semester hours**

Prerequisites: Completion of the Junior Standing. Exam in major applied area and admission to Performance Degree Program. May be repeated up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar AP MUS 4460.

**AP MUS 4460 Seminar in Pedagogy and Literature: 0 semester hours**

Prerequisite: Concurrent registration with parallel Applied Music course is required. This course is a seminar in pedagogy and literature and is offered for all areas of Applied Music. It may be taken on a satisfactory/unsatisfactory grading basis.

**AP MUS 5001 Graduate Performers Certificate Recital I: 1 semester hour**

Prerequisites: Consent of department; concurrent registration in AP MUS 5440 is required. Preparation and presentation of a public recital at UMSL. Repertoire will be chosen with the approval of the applied instructor, and should include music from varying styles and eras. Recital should be 70-90 minutes in length.

**AP MUS 5002 Graduate Performers Certificate Recital II: 1 semester hour**

Prerequisites: AP MUS 5001; concurrent registration in AP MUS 5440 is required. Preparation and presentation of a public recital at UMSL. Repertoire will be chosen with the approval of the applied instructor, and should include music from varying styles and eras. Recital should be 70-90 minutes in length. Building on the skills gained through completion of AP MUS 5001, AP MUS 5002 should demonstrate a higher level of musical accomplishment.

**AP MUS 5003 Graduate Performers Certificate Lecture Recital: 1 semester hour**

Prerequisites: Concurrent registration in AP MUS 5440 is required. Preparation and presentation of a public lecture recital at UMSL. The presentation should consist of a balance between verbal and musical content, and convey a high quality of both intellectual understanding and musical performance. Designed in consultation with the applied instructor, the lecture recital should focus in detail on one work, topic, or genre, and last approximately 60 minutes, with a brief intermission.

**AP MUS 5430 Special Applied Studies: 1 semester hour**

Prerequisites: Graduate standing in music and consent of department. Individual instruction in the performance and literature of an applied area other than the student's primary performance study. No jury examination is required. May be repeated for credit.

**AP MUS 5440 Graduate Applied Music: 1 semester hour**

Prerequisites: Graduate standing in music and consent of department. Concurrent registration in EN PER 5490 is required for students enrolled in the Graduate Certificate in Music Performance. Instruction is offered in the following areas: bassoon, clarinet, classical guitar, euphonium, flute, French horn, harp oboe, organ, percussion, piano, saxophone, trombone, trumpet, tuba, violin, viola, violoncello, string bass and voice. May be repeated for credit.

## Arabic

### Courses

**ARABIC 1001 Arabic I: 5 semester hours**

Emphasis is placed upon the understanding, speaking, reading and writing of Arabic and upon the acquisition of the fundamentals of grammar and syntax.

**ARABIC 1002 Arabic II: 5 semester hours**

Prerequisites: ARABIC 1001 or equivalent. Emphasis is placed upon the understanding, speaking, reading and writing of Arabic. Continuation of acquisition of the fundamentals of grammar and syntax.

**ARABIC 2101 Intermediate Arabic I: 5 semester hours**

Prerequisites: ARABIC 1002 or equivalent. Students will advance their understanding of Arabic culture through discussions, readings and written work. Language skills will be further developed through meaningful communicative interaction.

**ARABIC 2190 Special Readings: 1-3 semester hours**

Prerequisites: ARABIC 2102 or consent of the department. Independent study through readings, reports and conferences.

## Art Education

### Courses

**ART ED 2179 Visual Art Activities for Elementary School: 3 semester hours**

Students will explore the purpose of visual arts in school settings and will encounter various media and materials through hands-on art experiences. Discussion of social, cultural, and historical influences on creative works will be encountered. Course content highlights the integration of visual art in teaching elementary subjects and emphasizes the role of art-making and imaginative experiences in child development. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ART ED 3328 Art Education: Theory to Practice: 3 semester hours**

Prerequisites: Completion of Level I requirements and Foundation Art Program; concurrent enrollment in ART ED 4260 is required. Development and application of concepts related to comprehensive art education and standards-based curriculum in art education, with an examination of current theories, trends, publications, and on-line resources in the field.

**ART ED 4260 Art Museum as Teaching Resource: 3 semester hours**

Prerequisites: Completion of Level I requirements, 9 hours of ART HS, and completion of Foundation Art Program; concurrent enrollment in ART ED 3328 is required. Students will learn how to strengthen K-12 Art Education by utilizing the collections and resources of the St. Louis Art Museum. A variety of teaching approaches and learning activities for galleries and classrooms will be employed, focusing on art from around the world and throughout history.

**ART ED 4273 Curriculum and Methods of Teaching Art: 3 semester hours**

Prerequisites: ART ED 3328 and completion of, or concurrent enrollment in, ED PSY 3312, SPEC ED 3318, or TCH ED 4391. A study of the scope and sequence of art education in the school curriculum, with emphasis on the preparation, selection, organization and application of materials and methods of instruction and assessment. Attention is also given to learning the research tools of the scholar in the field of art education. Not available for graduate credit.

**ART ED 4290 Special Study in Art Education: 1-6 semester hours**

Prerequisites: Junior, senior, or graduate standing and consent of instructor. Independent study through readings, reports, field research, or special projects. May be repeated for credit, up to a maximum of 6 credit hours.

**ART ED 5228 Foundation and Classroom Application of Art Education: 2 semester hours**

Prerequisites: Graduate standing, admission to the Teacher Education Program, a passing score on the Missouri Content Exam (MoCA) in Art on file, and consent of instructor; concurrent enrollment in ART ED 5260 is required. Development, application, and research of concepts related to comprehensive art education and standards-based curriculum in art education, with an in-depth examination of current theories, trends, publications, and on-line resources in the field.

**ART ED 5260 Museum Collections in the K-12 Curriculum: 2 semester hours**

Prerequisites: Graduate standing. Students will research the value and application of utilizing the collections and resources of the St. Louis Art Museum to strengthen K-12 education. A variety of research-based teaching strategies and learning activities for galleries and classrooms will be employed; a broad cultural perspective and historical understanding of art will be used.

**ART ED 5273 Advanced Methods and Curriculum Development of Teaching Art: 2 semester hours**

Prerequisites: ART ED 5260 and ART ED 5228. An in-depth study of the scope and sequence of art education in the school curriculum, highlighting the preparation, selection, organization and application of materials and methods of instruction and assessment. Emphasis is placed on learning the research tools of the scholar in the field of art education and the role of the teacher as researcher on curriculum development.

**ART ED 5334 Topics in Contemporary Art Education: 3 semester hours**

Prerequisites: Graduate standing or permission of instructor. Intensive study for advanced students and art teachers, emphasizing specialized techniques and innovative concepts. Topics to be announced. May be repeated for credit, up to a maximum of 12 credit hours.

**ART ED 5588 Museum Education and Visitor Research: 3 semester hours**

Prerequisites: Consent of Director of Museum Studies Program. Development and operation of museum educational programs: learning theory; program design; relationships with exhibit development programming for children and adults. Visitor research: theoretical foundations; research design; impact on programming and strategic planning.

**ART ED 5590 Special Study in Art Education: 1-6 semester hours**

Prerequisite: Graduate standing and consent of instructor. Independent study through readings, reports, field research, or special projects. May be repeated for credit.

## Art History

### Courses

**ART HS 1100 Introduction to Western Art (MOTR ARTS 100): 3 semester hours**

An introduction to major historical movements in Western art.

**ART HS 1120 Global Art and Visual Culture (MOTR ARTS 101): 3 semester hours**

This course explores transcultural perspectives in Art History. Students will be introduced to creative visual traditions from across the globe. The course examines themes such as death and the afterlife, religious practice, visual persuasion, and design aesthetic in historical Europe, Africa, Asia, the Indigenous Americas and Oceania. This course satisfies the Cultural Diversity requirement.

**ART HS 1140 Indigenous Arts of the Americas: 3 semester hours**

This course surveys the indigenous arts of the Americas from precontact through the present. Cultures to be covered may include Iroquois and Ojibway of the Northeast; Navajo and Pueblo of the Southwest; Kwagwath and Gitksan of the Northwest Coast; and Inuit from the Arctic. The relationship of art to religion, philosophy, politics, and social life will be explored. This course satisfies the Cultural Diversity requirement.

**ART HS 1150 Introduction to the Art and Visual Cultures of Africa: 3 semester hours**

This course surveys major art forms of Africa and the African Diaspora. It addresses traditional media, such as architecture, masquerade, regalia, sculpture, metalwork, ceramics, and textiles, as well as contemporary sculpture, painting, photography, and performance. This course satisfies the Cultural Diversity requirement.

**ART HS 1160 Introduction to the Art and Visual Cultures of Asia: 3 semester hours**

This course surveys major achievements in architecture, sculpture, and painting of India, China, Japan, and Southeast Asia, with an emphasis on religious, historical, and social context of the arts. This course satisfies the Cultural Diversity requirement.

**ART HS 1190 Ideas in the History of Art and Visual Culture: 3 semester hours**

Prerequisites: ART HS 1100 or consent of instructor. This course studies selected works of art, with attention to the social and cultural factors surrounding their creation.

**ART HS 2211 Art and Archaeology of The Ancient World: 3 semester hours**

Prerequisite: ART HS 1100. A survey of art in Egypt, the ancient Near East, Greece, and Rome, beginning in the Neolithic era (8000-4000 BC) and ending with the Barbarian invasions of Italy in the fifth century A.D. The major highlights of architecture and city planning, sculpture, painting, pottery, and the minor arts will be covered.

**ART HS 2212 Greek Art and Archaeology: 3 semester hours**

General survey of material culture in the Aegean basin, beginning with the Bronze Age (Third Millennium B.C.) and terminating in the late Hellenistic period (Second Century B.C.). For the Hellenistic period the course will trace Greek developments and influences outside of the Aegean, for example in Italy and in Egypt.

**ART HS 2225 Medieval Art: 3 semester hours**

A survey of the art and architecture of the Mediterranean World and northern Europe from late antiquity to the late Gothic period (300-1300 A.D.). Focus on new styles and subject matter in painting, sculpture and architecture.

**ART HS 2235 Renaissance and Baroque Art: 3 semester hours**

Prerequisites: ART HS 1100 or consent of instructor. This course is an introduction to art and architecture in Europe from the fifteenth through the seventeenth centuries.

**ART HS 2250 Rococo to Realism: 3 semester hours**

Prerequisites: ART HS 1100 or consent of the instructor. This course is an introduction to selected European artists and artworks from c. 1720 to 1860.

**ART HS 2261 History of Graphic Design: 3 semester hours**

This course examines the rapport of word, image, artist, client, and viewer that is unique to the genres of book arts and graphic design as studied in their historical and contemporary contexts.

**ART HS 2265 History of Photography: 3 semester hours**

Prerequisite: ART HS 1100 or consent of instructor. A study of photography: its historical development, an examination of it as an art medium, and its influence on the development of modern art.

**ART HS 2270 Art of the United States: 3 semester hours**

Prerequisites: ART HS 1100 or consent of instructor. This course is an overview of art and architecture in the United States from the colonial era through the twentieth century.

**ART HS 2275 History of Illustration: 3 semester hours**

Prerequisites: ART HS 1100 or consent of instructor. This course will analyze the work of artists who specialized in illustration for prints, books, newspapers, magazines, and advertisements, emphasizing the 19th and 20th centuries in the United States. The course will cover topics such as idealizations of the American West and changing roles of women in society, as well as iconic characters and images that continue to inspire artists today.

**ART HS 2280 Modern to Contemporary Art: 3 semester hours**

Prerequisite: ART HS 1100 or consent of the instructor. This course presents an overview of avant-garde modern art in Europe and the United States from the mid-nineteenth century to the contemporary era. It explores traditional media such as painting and sculpture as well as newer forms such as performance and installation art in the context of changing ideas about art's traditions, social functions, and philosophical concerns.

**ART HS 2291 Issues and Ideas in the History of Art and Visual Culture: 3 semester hours**

Prerequisites: ART HS 1100 or permission of instructor. This course is an intensive studies of a few selected works from various eras and cultures, with special attention to the particular social and cultural factors surrounding their creation. This course may be repeated for credit with the permission of an advisor as long as the topic different.

**ART HS 3350 Studies in Design: 3 semester hours**

Prerequisites: Minimum of one 2000-level course in Art History and ENGL 3100, or consent of instructor. The course examines selected topics in the history of design, and may include genres such as architecture, material culture, or graphic design. May be repeated for credit with a different topic, for a maximum of 6 credit hours.

**ART HS 3387 Professional Internship: 1-6 semester hours**

Prerequisites: Minimum of two 2000-level courses in art history and ENGL 3100 and consent of instructor. The internship provides experience in museums, historical societies, galleries, design firms, or visual resource collections. Students will assist in the diverse duties associated with the day-to-day functions of the institution, under the joint direction of a faculty advisor and a supervisor at the institution. Course requirements may include readings, research assignments, and/or a paper. This course may be counted for art history or studio art credit with the department's consent.

**ART HS 3389 Visual Resources Management: 1-3 semester hours**

Prerequisites: Minimum of two 2000-level courses in Art History, ENGL 3100, and consent of instructor. A hands-on course in the Department of Art and Art History's media center that will cover collection development and management as well as technical and theoretical issues in the visual resources profession.

**ART HS 3390 Special Study: 1-4 semester hours**

Prerequisite: Junior or senior standing. Consent of instructor and Art History advisor. Independent study through readings, reports or field research. May be repeated one time with consent of Art History advisor. May not be used for internship credit.

**ART HS 3395 Selected Themes in the History of Art and Visual Culture: 3 semester hours**

Prerequisites: Two 2000-level ART HS courses or consent of instructor. This course is a study of a selected topic in visual culture. It may be repeated for credit with a different topic.

**ART HS 4400 Topics in the History of Art and Visual Culture: 3 semester hours**

Prerequisites: One 3000-level ART HS course or consent of instructor. This course is the study of a selected topic in the history of art and visual culture. It may be repeated for credit with a different topic.

**ART HS 4455 Topics in Modern Art: 3 semester hours**

Prerequisites: ART HS 2280 and ENGL 3100, or one 3000-level course in Art History, or consent of instructor. Intensive study of selected topics in art of the nineteenth and/or twentieth centuries. May be repeated for credit with permission of instructor and advisor.

**ART HS 4490 Special Study: 1-4 semester hours**

Prerequisite: Junior or senior standing, consent of instructor and Art History advisor. Independent study through readings, reports, or field research. May be repeated one time with consent of Art History advisor. May not be used for internship credit.

**ART HS 4495 Senior Seminar: Methods of Art History: 3 semester hours**

Prerequisite: ART HS 3395, ENGL 3100 and senior standing in Art History or consent of instructor. An advanced class in the methods of art historical analysis. Theoretical perspectives will include connoisseurship, style, iconography, social history, and others.

**ART HS 5590 Special Study in Art History: 1-6 semester hours**

Prerequisites: Graduate standing and consent of instructor. Independent study through readings, reports, discussions, and/or special projects. May be repeated for credit with consent of instructor.

**ART HS 5592 The History of The Visual Arts in American Museums: 3 semester hours**

Same as ANTHRO 5592 and HIST 5592. Prerequisites: Graduate standing and consent of instructor. This course is an introduction to selected topics in the history of museology, focusing on art and anthropology museums as sites for the interpretations of art and culture, and as contested meeting grounds for various views of history and culture.

**ART HS 5593 Museum Management and Curatorial Practice: 3 semester hours**

Prerequisites: Consent of the instructor and graduate standing. Museum Management and Curatorial Practice is designed to give students overlapping theoretical and practical experience that will be useful after entry into the museum profession. While exhibitions are at the core of the museum mission, it takes a broad range of skills from different team members to bring shows to fruition. The course provides students with grounded knowledge on how to curate an exhibition for their museum and understand all the elements that serve the mission-driven goals for that institution, and the obligation to uphold best practices as established by the American Alliance of Museums [AAM] and the Association of Art Museum Directors [AAMD] that provide guidance for the field. Students will become familiar with the different types of roles and functions that make museums run (although staffing levels will vary based on the size and budget of the organization), including: executive management, advancement, marketing, curatorial, collections management, education, and others (e.g., archivist, librarian, security, maintenance, groundskeeping, restaurant staff, parking).



**ART HS 6038 Museum Studies Master's Project: 5 semester hours**  
Same as ANTHRO 6138 and HIST 6138. Prerequisites: Consent of Director of Museum Studies Program. Research and writing/exhibit development on a selected topic.

## Astronomy

### Courses

**ASTRON 1001 Cosmic Evolution Introductory Astronomy (MOTR ASTR 100): 3 semester hours**

This course presents an overview of astronomy from the planets to the Big Bang. Topics include the celestial motions, planets and the formation of the solar system, stars and stellar evolution, galaxies, and cosmology. Students will be introduced to the latest discoveries and how they affect our understanding of the universe.

**ASTRON 1001A Cosmic Evolution/Introduction Astronomy (MOTR ASTR 100): 3 semester hours**

Overview of astronomy, from the planets to the Big Bang. Topics include the celestial motions, planets and the formation of the solar system, stars and stellar evolution, galaxies, and cosmology. Students will be introduced to the latest discoveries and how they affect our understanding of the universe. Three classroom hours per week. Same as ASTRON 1001 without the laboratory.

**ASTRON 1001L Introductory Astronomy Laboratory: 1 semester hour**

Prerequisite: ASTRON 1001 (may be taken concurrently). An introductory Astronomy laboratory to accompany ASTRON 1001. The format is a 2-hour laboratory session per week to enhance lecture material.

**ASTRON 1011 Planets and Life in the Universe: 3 semester hours**

Man's concept of the solar system from Stonehenge to Einstein; geology and meteorology of the planets of our solar system, with particular attention to results from the space program; exobiology--study of the possibilities of life on other worlds and the best method of communicating with it. Three lecture hours per week.

**ASTRON 1012 The Violent Universe and the New Astronomy: 3 semester hours**

A nontechnical course focusing on recent results which larger telescopes and the space program have made available. Pulsars, x-ray stars, and black holes; radio astronomy, our galaxy, and interstellar molecules; exploding galaxies and quasars; origin of the expanding universe. Three lecture hours and one observing session per week.

**ASTRON 1050 Introduction to Astronomy I (MOTR ASTR 100): 3 semester hours**

Prerequisites: MATH 1030 and MATH 1035. A survey of the history of astronomy from the ancient times to present. Theories for the formation and evolution of the solar system and the general features of the solar system and planetary motions are discussed. The physical concept of gravity is presented. The detailed properties of the planets, comets, and asteroids are reviewed, concentrating on recent results from space missions.

**ASTRON 1051 Introduction to Astronomy II: 3 semester hours**

Prerequisites: MATH 1030 and MATH 1035. A survey of astronomy beyond the solar system. Topics include stars and stellar evolution, neutron stars, and black holes. The physical concept of light and the design of telescopes is discussed in detail. The structure of the Milky Way Galaxy and the large scale structure of the universe are explored. Dark matter, quasars, and active galactic nuclei are discussed in the context of theories for the formation and evolution of the universe. Course does not need to be taken in sequence with ASTRON 1050.

**ASTRON 4301 Astrophysics: 3 semester hours**

Prerequisite: PHYSICS 3231 or consent of instructor. A moderately technical introduction to astrophysics. Topics will include: physics of stellar interiors and atmospheres; interpretation of stellar spectra; stellar evolution; radio astronomy; and cosmology.

**ASTRON 4322 Observational Astronomy: 4 semester hours**

Prerequisite: ASTRON 1050, ASTRON 1051 and PHYSICS 3231. Tools of the astronomer: telescopes, spectroscopy, photoelectric photometry. Students will work on a number of projects which will enable them to develop expertise in obtaining, reducing, and analyzing astronomical observations. Student night observing will be an important part of the course. This course is primarily for persons who are astronomy or physics majors or who have some equivalent background.

**ASTRON 5322 Intermediate Observational Astronomy: 4 semester hours**

Prerequisites: ASTRON 1050, ASTRON 1051, and PHYSICS 3231; or graduate standing. This course covers the tools of the astronomer: telescopes, spectroscopy, photoelectric photometry. Students will work on a number of intermediate projects, which will enable them to develop expertise in obtaining, reducing, and analyzing astronomical observations. Student night observing will be an important part of this course. This course is primarily for astronomy or physics majors. Students may not receive credit for both ASTRON 4322 and ASTRON 5322.

## Atmospheric Science

### Courses

**ATM SCI 1001 Elementary Meteorology: 3 semester hours**

Prerequisites: MATH 1020 or equivalent. This course covers atmospheric phenomena, weather, and climate. Topics include temperature, pressure, and moisture distributions in the atmosphere and dynamical effects such as radiation, stability, storms, and general circulation.

**ATM SCI 1001L Elementary Meteorology Laboratory: 1 semester hour**

Prerequisite: Must be concurrently enrolled in ATM SCI 1001. An introductory meteorology laboratory to accompany ATM SCI 1001. The lab exercises consist of current weather studies to enhance the material in ATM SCI 1001.

**ATM SCI 1002 Earth Climate Studies: 3 semester hours**

Prerequisite: MATH 1020 or equivalent. This course covers the physical foundations of the Earth's climate system, scientific evidence for climate change and its causes, and the effects of climate change on the ecosystem of the Earth. This course satisfies the information literacy general education requirement.

## Biology

### Courses

**BIOL 1010 Introduction to Student Research: 1-3 semester hours**

Prerequisites: Minimum of four semesters of high school science and math courses and consent of the instructor. This course provides high school students an opportunity to develop individual research projects under faculty mentorship. It includes interdisciplinary lectures, demonstrations, seminars, and project guidance. Evaluation will be based on written and oral presentation of the research project and student portfolio.



**BIOL 1012 General Biology (MOTR BIOL 100): 3 semester hours**

Emphasis on fundamental principles of biology. BIOL 1012 can be applied toward fulfillment of the general education requirement in science. BIOL 1012 does not satisfy the prerequisite requirements in other courses in biology at the 2000 level or above. Students who plan to pursue a career in medicine or one of the medical-oriented professions should enroll in BIOL 1831 rather than BIOL 1012.

**BIOL 1013 General Biology Laboratory: 1 semester hour**

Prerequisite: BIOL 1012 (may be taken concurrently). This Laboratory course accompanies BIOL 1012. BIOL 1013 can be used to fulfill the general education requirements in a laboratory science. BIOL 1013 does not meet the prerequisite requirements for other courses in biology. Two and one-half hours of laboratory per week.

**BIOL 1102 Human Biology (MOTR LIFS 150): 3 semester hours**

Lectures and readings concerned with the reproduction, development, genetics, functional anatomy, behavior, ecology, and evolution of the human species. Three hours lecture per week. Fulfills Science/Math requirement.

**BIOL 1110 Nutrition in Health: 3 semester hours**

This course studies dietary nutrients essential for health, proper selection of foods to provide them and current issues affecting them.

**BIOL 1131 Human Physiology and Anatomy I: 4 semester hours**

Prerequisites: BIOL 1012 or equivalent or consent of instructor. This course covers the basic aspects of the structure of the healthy human body and how it functions. Special emphasis is on how the human body adapts itself to its environment and how changes affect physiological activities. Three hours lecture and two hours laboratory per week.

**BIOL 1141 Human Physiology and Anatomy II: 4 semester hours**

Prerequisite: BIOL 1131. A continuation of BIOL 1131. A study of the basic aspects of human physiology and anatomy. Three hours lecture and two hours laboratory per week.

**BIOL 1162 General Microbiology: 3 semester hours**

Prerequisite: BIOL 1012 or its equivalent. A survey of microbiology structure, genetics, and physiology. Special emphasis will be placed on the transmission and control of such organisms as it relates to the maintenance of human health. Three hours of lecture per week.

**BIOL 1202 Environmental Biology: 3 semester hours**

An examination of the biological basis of current environmental problems, with emphasis upon resources, energy, pollution and conservation. Three hours lecture per week. Fulfills Science/Math requirement.

**BIOL 1212 Applied Environmental Sciences: 4 semester hours**

In a combined lecture/laboratory setting, students will get hands-on experience collecting and testing environmental samples for abiotic factors such as contaminants, and experimentally assessing the impact of those contaminants on the biological communities contained within the samples. Important approaches include global positioning and information technologies, microscopy, microbiological techniques, genomics, and quantitative analytical measures for assessing the physical, biological and chemical properties of collected samples.

**BIOL 1800 Introduction to the Biology Major: 1 semester hour**

Prerequisites: Biology major or consent of the instructor. This course is an orientation to the field of biology for majors and for students who are considering declaring the major. This course introduces students to concepts, skills, and practices that are essential for success as a Biology major and must be completed by all freshman and transfer Biology majors during their first semester of study at UMSL.

**BIOL 1821 Introductory Biology: Organisms and the Environment (MOTR BIOL 150L): 5 semester hours**

Prerequisites: A minimum of high school chemistry, ENGL 1100 or equivalent (may be taken concurrently), and placement into college algebra or higher. Required for students intending to major in biology or take specified biology courses at the 2000 level or above. This course presents an introduction to some of the principles of biology and scientific methodology applied to the organism and supraorganism levels of biology. Topics to be covered include: ecology, evolution, diversity, and population biology. Three hours of lecture and one hour of discussion per week.

**BIOL 1831 Introductory Biology: From Molecules to Organisms (MOTR BIOL 150L): 5 semester hours**

Prerequisites: A minimum of high school chemistry and MATH 1030; ENGL 1100 or equivalent (may be taken concurrently). Required for students intending to major in biology or take specified biology courses at the 2000 level or above. This course presents an introduction to some of the principles of biology and scientific methodology applied to the molecular/ cellular through organ system levels of organization. Topics include: cell structure, metabolism, reproduction, heredity and major physiological processes regulated by organ systems. Three hours of lecture, three and one half hours of lab, and one hour of discussion per week.

**BIOL 1920 Introductory Topics in Biology: 1-5 semester hours**

Prerequisites: Consent of Instructor. The topics will vary each semester. See online course schedule for topics. Credit arranged. May be taken more than once for credit if topics are different. The applicability toward a Biology degree is dependent on the topic.

**BIOL 1999 Evolution for Everyone: 3 semester hours**

Evolution for Everyone explores the development of our current understanding by examining modern and ancient controversies, and by studying major processes by which change occurs. Lectures will present overviews and many examples on topics in history, mechanisms, and outcome of evolutionary change, and students will participate in classroom and online discussions based on readings, computer exercises, and data collection and analysis. Course may not be applied towards major in Biology. Not eligible for credit with BIOL 3302 (Introduction to Evolution) required for Biology majors.

**BIOL 2010 Introduction to Inquiry Approaches to STEM Education (STEP I): 1 semester hour**

Same as CHEM 2010, PHYSICS 2010, MATH 2010, and SEC ED 2010. Prerequisites: Concurrent enrollment BIOL 1821, BIOL 1831, CHEM 1111, CHEM 1121, PHYSICS 2111, PHYSICS 2112, MATH 1800, or MATH 1900 or have a declared STEM major. Students who want to explore teaching careers become familiar with lesson plan development by writing, teaching and observing lessons in a local school class. Students build and practice inquiry-based lesson design skills and become familiar with and practice classroom management in the school setting. As a result of the STEP I experiences students should be able to decide whether to continue to explore teaching as a career and ultimately finishing the remainder of the WE TEACH MO curriculum leading to teacher certification. The classroom observations and teaching represent a major field component and requires at least one two hour block of free time during the school day once a week.

**BIOL 2011 Designing Inquiry-Based STEM Experiences (STEP II): 1 semester hour**

Same as CHEM 2011, PHYSICS 2011, MATH 2011, and SEC ED 2011. Prerequisites: BIOL 2010, CHEM 2010, PHYSICS 2010, MATH 2010, or SEC ED 2010. Students explore teaching careers, become familiar with STEM school setting through observing and discussing the school environment and by developing and teaching inquiry-based lessons.

**BIOL 2012 Genetics: 3 semester hours**

Prerequisites: BIOL 1831 (majors must also take BIOL 1821) MATH 1030, and CHEM 1111 or (CHEM 1081 plus CHEM 1091). Fundamental principles of inheritance, including classical genetic theory as well as recent advances in the molecular basis of heredity. Three hours of lecture per week. Fulfills Science/Math requirement.

**BIOL 2013 Genetics Laboratory: 2 semester hours**

Prerequisites: Concurrent registration in BIOL 2012, or consent of instructor. Laboratory to accompany BIOL 2012. Three and one-half hours of organized laboratory time per week. Students may need to return to the laboratory at unscheduled times to complete some exercises.

**BIOL 2102 Ecology: 3 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831. This course examines the relationships between living organisms and their environment.

**BIOL 2103 Ecology Laboratory: 2 semester hours**

Prerequisites: BIOL 2102 (may be taken concurrently); a general statistics course is strongly recommended. This laboratory course analyzes environmental factors influencing the abundance and distribution of living organisms. Some classes will be held at field sites in and around St. Louis.

**BIOL 2402 Vertebrate Anatomy: 3 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831. Development, structure, function, interrelationships, and zoogeography of vertebrate animals with particular attention to phylogenetic aspects. Three hours of lecture per week. Fulfills Science/Math requirement.

**BIOL 2403 Vertebrate Anatomy Laboratory: 2 semester hours**

Prerequisite: BIOL 2402 (may be taken concurrently). Laboratory to accompany BIOL 2402. Morphological analysis and systematic survey of major vertebrate groups. Overview of the vertebrate life forms and their adaptations to habitats and resources. Three and one-half hours of laboratory per week.

**BIOL 2482 Microbiology: 3 semester hours**

Prerequisites: BIOL 1831 (majors must also take BIOL 1821), MATH 1030, and CHEM 1111. Study of microorganisms, their metabolism, genetics, and their interaction with other forms of life. Three hours of lecture per week.

**BIOL 2483 Microbiology Laboratory: 2 semester hours**

Prerequisite: BIOL 2482 (may be taken concurrently). Experimental studies and procedures of microbiological techniques. Three and one-half hours of organized laboratory time per week. Students will need to return to the laboratory at unscheduled times to complete some exercises.

**BIOL 2501 Biology of Plants: 5 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831. A general discussion of the plant groups from algae through angiosperms. Plant morphology, physiology, reproduction and ecology will be discussed in lecture (three hours per week). The laboratory (three and one half hours per week) involves examination of representatives of the plant kingdom and experimentation in plant physiology and genetics. Fulfills both a lecture and laboratory requirement.

**BIOL 2920 Contemporary Topics in Biology: 1-5 semester hours**

Prerequisites: Consent of instructor. The topics will vary each semester. See course schedule online for topics. Credit arranged. May be taken more than once for credit if topics are different.

**BIOL 3001 Experiential Practicum in Biosciences: 1 semester hour**

Prerequisites: Consent of Biology Curriculum Committee. Credit for off-campus bioscience projects providing extraordinary student experience and service to a community in need.

**BIOL 3102 Animal Behavior: 3 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831. The study of invertebrate and vertebrate behavior, including neurophysiological, hormonal, developmental, genetic, ecological and evolutionary aspects of behavior; behavior interactions within and between populations. Three hours of lecture per week.

**BIOL 3103 Animal Behavior Laboratory: 2 semester hours**

Prerequisites: BIOL 3102 (may be taken concurrently). Observational and experimental studies of animal behavior in the field and laboratory. Three and one-half hours of formal laboratory time per week, but additional time may be required for independent projects. Some activities involve field trips or trips to the St. Louis Zoo.

**BIOL 3202 Conservation Biology: 3 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831. Introduction to the principles and theories of conservation biology. Course topics include biodiversity, extinctions, population modeling, habitat fragmentation, conservation area management, restoration ecology, and social science elements of conservation strategies. Class sessions will include lectures, discussions, and simulation exercises. Three hours of lecture per week.

**BIOL 3203 Conservation Biology Laboratory: 2 semester hours**

Prerequisite: BIOL 3202 (recommended to be taken concurrently). Laboratory to accompany BIOL 3202. Laboratory will include computer simulations of conservation problems using existing software, 2-3 field trips to local conservation projects, and field interviews with governmental and nongovernmental agencies. Three and one-half hours of laboratory per week.

**BIOL 3302 Evolution: 3 semester hours**

Prerequisites: BIOL 1821, BIOL 1831, BIOL 2012, and MATH 1030. This course covers the theory, events, and processes of organic evolution.

**BIOL 3622 Cell Biology: 3 semester hours**

Prerequisites: BIOL 1831, BIOL 2012, CHEM 1121, and MATH 1030. This course examines the organization and basic processes of cells including tissues, organelles, glycolysis, respiration, photosynthesis, trafficking, cytoskeleton, signal transduction, and cell division.

**BIOL 3631 Histology and Microtechniques: 5 semester hours**

Prerequisites: BIOL 1831 (majors must also take BIOL 1821), BIOL 3622 recommended. The basic principles of histology. A survey of basic tissues and organ systems. Techniques associated with preparation of animal tissues for light microscopic studies. Three hours of lecture and 3 1/2 hours of laboratory per week. (Additional lab hours arranged). Fulfills both a lecture and a laboratory requirement.

**BIOL 3699 Undergraduate Internship in Biotechnology: 1-4 semester hours**

Prerequisites: BIOL 1821, BIOL 1831, and CHEM 1111 and CHEM 1121 and consent of instructor. Concurrent enrollment in CHEM 2612 or higher is strongly encouraged. A 2.5 GPA and enrollment in the undergraduate Biotechnology Certificate Program is required. Internship will consist of a period of observation, experimentation and on-the-job training in a biotechnology laboratory. The laboratory may be industrial or academic. Credit will be determined by the number of hours a student works each week and in consultation between the intern's supervisor and instructor. Internship assignments will be commensurate with the education and experience of the student. Two credits may be used to fulfill the lab requirement.

**BIOL 3802 Vertebrate Physiology: 3 semester hours**

Prerequisites: BIOL 1821 and BIOL 1831 and CHEM 1111 or CHEM 1081 plus CHEM 1091. Basic functional aspects of organ systems in relation to the physiochemical properties of protoplasm. Three hours lecture per week. Fulfills Science/Math requirement.

**BIOL 3803 Vertebrate Physiology Lab: 2 semester hours**

Prerequisite: BIOL 3802 (may be taken concurrently). Instrumental and experimental studies in physiology. Three and one-half hours laboratory per week.

**BIOL 3920 Special Topics in Biology: 1-5 semester hours**

Prerequisites: Consent of instructor. The topics will vary each semester. See course schedule online for topics. Credit arranged. May be taken more than once for credit if topics are different.

**BIOL 4102 Behavioral Ecology: 3 semester hours**

Prerequisite: BIOL 3102 (BIOL 3302 recommended). The evolution and ecology of animal behavior. Topics include the theoretical framework for making predictions, foraging, decision making, sensory ecology, sexual selection, mating systems, sociality and groups, cooperation, signal use and communication. Three hours of lecture per week. Students may not receive credit for both BIOL 4102 and BIOL 6102.

**BIOL 4122 Biometry: 3 semester hours**

Prerequisites: MATH 1030 and a minimum of 15 hours in biology. Reviews descriptive, analytical, and experimental methods useful for the statistical study of biological phenomena. Students will develop the skills needed to better appreciate and evaluate the published literature, as well as the ability to design their own research programs. Topics include: the collection and summarization of biological observations; development, design, and testing of hypothesis; analysis and presentation of data. Three hours of lecture per week. Fulfills the statistics requirement for the B.A. or B.S. degree in biology.

**BIOL 4182 Population Biology: 3 semester hours**

Prerequisite: BIOL 2102 and BIOL 2012 (BIOL 3302 recommended). Introduces concepts and mathematical models of population ecology and population genetics. By integrating the ecology and genetics of populations, the course goal is to understand the processes that contribute to microevolution of populations. Topics include: demography, metapopulation biology, natural selection, migration, gene flow, and genetic drift. Three hours of lecture per week. Students may not receive credit for both BIOL 4182 and BIOL 6182.

**BIOL 4192 Applications of Geographic Information Systems: 5 semester hours**

Prerequisites: BIOL 2102, BIOL 4122 or equivalent, and consent of instructor. Geographic Information Systems (GIS) are sophisticated computer-based systems for analysis, capture, presentation, and maintenance of geographically referenced data. This course provides a foundation in using GIS for spatial analysis. Although biological examples are primarily used, examples from a range of disciplines are employed to emphasize the use of GIS as a tool to support analysis and decision-making. Students will have hands-on use of GIS software during each session. An independent research project applying the spatial analysis tools learned in GIS to biological research will be required. Five hours of combined lecture and computer operations, plus 2-3 hours of open lab per week. Fulfills both a lecture and a laboratory requirement. Students may not receive credit for both BIOL 4192 and BIOL 6192.

**BIOL 4222 Tropical Ecology and Conservation: 3 semester hours**

Prerequisite: BIOL 2102, BIOL 4182, BIOL 5192, or equivalent. This course will cover research areas in tropical population, community and ecosystem ecology, with emphasis on inter-species and environment-organism interactions, population control factors, and genetic structure of populations. Topics include the current status and causes of tropical habitat destruction, ongoing attempts to manage those habitats, and development of strategies leading to sustained use of non-renewable resources. Three hours of lecture per week. Students may not receive credit for both BIOL 4222 and BIOL 6222.

**BIOL 4245 Field Biology: 3 semester hours**

Prerequisite: Three biology courses and consent of instructor. Intensive study of the flora and fauna of selected natural areas of North America, including an extended field trip. Details of the field trip and course schedule will be posted in the Biology department preceding registration for the term in which the course will be offered. Students will be required to pay costs of travel and of the field trip. This is a laboratory course appropriate for advanced undergraduates and non-thesis Master of Science students.

**BIOL 4270 Global Climate Change: 3 semester hours**

Prerequisites: BIOL 3302 or consent of instructor. Topics included are fundamental physical, meteorological, and biological circumstances of global climate change, as well as predictions of its future effects on biological diversity, including humans, and how those estimates are made. In addition, basic environmental economics and politics of climate change at local and global levels will be included. The course will be taught as a series of lectures and discussions led by guest experts in each of the subdisciplines covered. Students may not receive credit for both BIOL 4270 and BIOL 6270.

**BIOL 4299 Practicum in Conservation: 2 semester hours**

Prerequisites: BIOL 3202 and consent of instructor. This course is generally restricted to students officially enrolled in the Certificate Program in Conservation Biology. The course provides practical experience with conservation or environmental agencies. Specific placement will be selected according to student's interests and career goals as well as availability of agency openings. Course requirements include practical experience and final report on practicum experience.

**BIOL 4402 Ornithology: 3 semester hours**

Prerequisites: BIOL 2102 and junior standing. Introduction to avian biology and ecology. Material to be covered will include basic adaptations of anatomy, physiology, and behavior of birds. There will be a strong emphasis on avian ecology and conservation. Specific topics will include flight, reproductive behavior, migration, foraging behavior, community structure, and current conservation concerns. The diversity of birds will be emphasized through comparisons between temperate and tropical regions. Three hours of lecture per week.

**BIOL 4403 Ornithology Laboratory: 2 semester hours**

Prerequisites: BIOL 4402 (may be taken concurrently), or consent of instructor. This course will introduce students to methods of identifying and studying birds. Labs will almost entirely be comprised of field trips to local areas and will emphasize diversity of birds, adaptations shown by different groups, and means of identification, particularly of birds found in Missouri. Field projects will focus on techniques for censusing birds, sampling foraging behavior, and studying habitat selection. Indoor periods will cover internal and external anatomy of birds. Slides and field trips to the St Louis Zoo will be used to survey the diversity of birds worldwide. Three and one-half hours of laboratory per week. Longer (e.g., Saturday) field trips will be made when appropriate.



**BIOL 4422 Entomology: 3 semester hours**

Prerequisites: BIOL 1821, BIOL 1831, 9 additional hours of biology and upper-division standing. Development, structure, function, behavior and ecology of insects, including a systematic survey of the orders of Insecta. Three hours of lecture per week.

**BIOL 4423 Entomology Laboratory: 2 semester hours**

Prerequisites: BIOL 4422 (may be taken concurrently). Laboratory to accompany BIOL 4422. Studies of the morphology, physiology, and behavior of insects to give a sampling of biological studies of the class Insecta. Formation of a collection of insects, comprising a systematic survey of orders and principal families, will be an integral part of the course and will require additional time beyond the official lab hours. Three and one-half hours of lab per week.

**BIOL 4442 Developmental Biology: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 3622. A study of the basic principles that shape the embryonic and post-embryonic development of animals with an emphasis on the underlying cellular and molecular mechanisms. Specific topics include fertilization, determination of cell fate and differentiation, cell migration, establishment of the body plan, formation of selected organs and organ systems, stem cells, and limb regeneration. Environmental influences on development and the impact of developmental biology on modern medicine are also discussed. Three hours of lecture/discussion per week. Students may not receive credit for both BIOL 4442 and BIOL 6442.

**BIOL 4501 Flowering Plant Families: Phylogeny and Diversification: 5 semester hours**

Prerequisites: BIOL 1821, BIOL 1831 and junior standing or consent of instructor. Focusing on the flowering plant families of North America, the aim of the course is to give an understanding of their phylogeny and diversification. Student will also gain an understanding of plant morphology and anatomy, a basis for further developing their knowledge of plants. Three hours of lecture and three to four hours of laboratory per week. Students may need to return to the laboratory at unscheduled times.

**BIOL 4502 Evolution of Cognition: 3 semester hours**

Prerequisites: BIOL 3102 or consent of instructor; BIOL 3302 and PSYCH 2211 are strongly recommended. The evolutionary ecology of animal cognitive abilities. Topics include learning, memory, perception, navigation, and communication from an evolutionary perspective. The focus is on cognitive abilities as adaptations, which have evolved to solve specific environmental problems. Topics include empirical methods for assessing cognitive ability, experimental design, theoretical approaches for generating predictions, and the parsimonious interpretation of data. Two hours of lecture and one hour of discussion per week.

**BIOL 4550 Bacterial Pathogenesis: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 2482. Examination of the strategies bacterial pathogens use to infect animals. Topics include host immune responses to infection, bacterial virulence factors, regulation of bacterial virulence, and the cellular and molecular approaches used to study host-parasite interactions. Three hours of lecture per week. Students may not receive credit for both BIOL 4550 and BIOL 6550.

**BIOL 4602 Molecular Biology: 3 semester hours**

Prerequisites: BIOL 2012 and CHEM 2612. This course is a survey of the principles of molecular biology, with emphasis on understanding the genetic regulation of DNA, RNA, and protein synthesis and function in eukaryotic cells.

**BIOL 4608 Synthetic Biology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 2482. A study of the molecular biology of microbial cells, in the context of synthetic biological systems. Topics include DNA replication, transcription, translation, gene regulation and protein structure as well as aspects of genetic engineering as they apply to the construction of novel biological systems. Following an introduction to the design of biological parts used in synthetic biology, students read, discuss and present recent journal articles in order to learn about current advances and applications of synthetic biology. Three hours of lecture per week. Students may not receive credit for BIOL 4608 and BIOL 6608.

**BIOL 4614 Biotechnology Laboratory I: 4 semester hours**

Prerequisites: BIOL 2012 or consent of instructor. An introduction to the fundamental concepts that underlie the field of biotechnology. Both the basic principles of molecular biology and hand-on experience with the techniques of the field will be addressed through lectures, discussions, and a series of laboratory exercises. Two hours of lecture and four hours of laboratory per week. Fulfills a laboratory requirement only; may not be used to fulfill the higher level (4000-5000) lecture course requirement for the B.A. or B.S. degree in biology. Students may not receive credit for BIOL 4614 and a comparable biotechnology course from another institution.

**BIOL 4615 Biotechnology Laboratory II: 4 semester hours**

Prerequisites: BIOL 4614 and either BIOL 4602 or BIOL 4612, or consent of instructor. An in-depth look at theory and practice of biotechnology. Lectures and discussion will examine the underlying principles, and laboratory exercises will present hands-on experience with current techniques. One hour of lecture and six hours of laboratory per week. Fulfills a laboratory requirement only; may not be used to fulfill the higher level (4000-5000) lecture course requirement for the B.A. or B.S. degree in biology. Students may not receive credit for BIOL 4615 and BIOL 6615.

**BIOL 4622 Cellular Basis of Disease: 3 semester hours**

Prerequisites: BIOL 3622. A study of the structural organization and processes of eukaryotic cells, focusing on how defects in cellular function lead to genetic diseases and cancer. Topics of discussion may include membrane dynamics, intracellular trafficking, signal transduction, and the cell cycle. Three hours of lecture per week. Students may not receive credit for both BIOL 4622 and BIOL 6622.

**BIOL 4632 Nucleic Acid Structure and Function: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 4712 or equivalent, or consent of instructor. A comprehensive view of the structural properties of DNA and RNA that promote molecular interactions and biological function. Topics will include the physical properties of nucleic acids, the formation and biological importance of higher order structures, RNA enzymatic activities, nucleic acid-protein interactions, and RNA metabolism. Three hours of lecture per week. Students may not receive credit for both BIOL 4632 and BIOL 6632.

**BIOL 4642 Plant Molecular Biology and Biotechnology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 3622. This course will introduce molecular biology principles that govern plant growth, development, and responses to stress. This course integrates the experimental approaches of genetics, molecular biology, and biochemistry, with a specific focus on biotechnology techniques and applications. Students may not receive credit for both BIOL 4642 and BIOL 6642.



**BIOL 4652 Virology: 3 semester hours**

Prerequisite: BIOL 2012 and BIOL 3622. This first half of the course entails a comparative study of the structure, replication, and molecular biology of viruses. The second half of the course focuses on the pathogenesis, control, and evolution of animal viruses. Three hours of lecture per week. Students may not receive credit for both BIOL 4652 and BIOL 6652.

**BIOL 4662 Human Pathology: 3 semester hours**

Prerequisites: BIOL 3622 or consent of the instructor. A study of disease processes as they affect the human body. The course will examine both the proximate causes and underlying mechanisms of disease. Specific conditions will be used to illustrate application of clinical approaches in determining the origin, development, and effects of a disease.

**BIOL 4712 Biochemistry: 3 semester hours**

Same as: CHEM 4712. Prerequisites: CHEM 2612 and either BIOL 1831 or CHEM 2622. Examines the chemistry and function of cell constituents, and the interaction and conversions of intracellular substances. Students may not receive credit for both BIOL 4712 and CHEM 4712.

**BIOL 4713 Techniques in Biochemistry: 2 semester hours**

Prerequisites: BIOL 4712 or CHEM 4712 (may be taken concurrently). Laboratory activities introducing fundamental qualitative and quantitative biochemical techniques. Student evaluation will be based on laboratory participation, student laboratory reports, and written examinations. Three and one-half hours of organized laboratory time per week. Students may need to return to the laboratory at unscheduled times to complete some experiments.

**BIOL 4797 Biochemistry and Biotechnology Seminar: 1 semester hour**

Same as CHEM 4797. Prerequisites: Senior standing in the Biochemistry and Biotechnology program and consent of faculty advisor. This course will focus on selected publications related to biochemistry and biotechnology from both refereed journals and news sources. Students are expected to participate in discussions and to prepare oral and written presentations. Completion of the Major Field Achievement Test in Biochemistry & Biotechnology is a course requirement. May not be taken for graduate credit.

**BIOL 4822 Introduction to Neuroscience: 3 semester hours**

Prerequisite: BIOL 3802 or consent of instructor. The study of nervous systems, featuring the cellular bases of initiation and conduction for the impulse, synaptic transmission, and the network integrative function of invertebrate and vertebrate nervous systems. This course emphasizes the multidisciplinary nature of the neurosciences, including anatomical, physiological and molecular approaches to understanding neural function. Three hours of lecture per week.

**BIOL 4842 Immunobiology: 3 semester hours**

Prerequisite: BIOL 3622 and CHEM 2612. The fundamental principles and concepts of immunology and immunochemistry. Emphasis on the relation of immunological phenomena to biological phenomena and biological problems. Three hours lecture per week.

**BIOL 4889 Senior Seminar: 2 semester hours**

Prerequisites: BIOL 1821, BIOL 1831, BIOL 2012, and BIOL 3302, with a total of at least 30 credits in Biology and the consent of your assigned Biology Advisor. Oral and written presentation by students of selected scientific papers or articles. Students are expected to participate in discussions of oral presentations by other students. May not be taken for graduate credit.

**BIOL 4905 Research: 1-3 semester hours**

Prerequisites: Consent of faculty research advisor. Research in an area selected by the student in consultation with and under the direct supervision of an UMSL biology faculty research adviser. Research opportunities are subject to availability and must be approved in advance of beginning research. The project may include the reading of pertinent literature, laboratory or field experience, including keeping of a logbook, and a summary paper and a presentation, all based on an average 8 hours per week per credit during a 15 week semester at the discretion of the instructor. Credit arranged. Course may be repeated for a total of up to 5 credit hours. A maximum of one lab requirement may be satisfied using any two BIOL 4905 credits. Additional credits may be applied toward the total biology hours required for the biology BA or BS. May not be taken for graduate credit.

**BIOL 4915 Biology Internship: 1-3 semester hours**

Prerequisites: Consent of faculty research advisor; generally restricted to junior and senior standing. Research in an area selected by the student to be conducted off-campus in a lab of a professional researcher or faculty person (the internship mentor) other than those in UMSL Biology. Research opportunities are subject to availability and must be approved in advance of beginning research by an UMSL biology faculty liaison and the internship mentor. The project normally includes the reading of pertinent literature, laboratory or field experience, including keeping of a logbook, and a summary paper and a presentation, all based on an average 8 hours per week per credit during a 15 week semester. Credit arranged. This course and BIOL 4905 may be repeated in any combination for a total of up to 5 credit hours. A maximum of one lab requirement may be satisfied using any two BIOL 4905 and/or BIOL 4915 credits. Additional credits may be applied toward the total biology hours required for the biology BA or BS.

**BIOL 4920 Selected Topics in Biology: 3 semester hours**

Prerequisites: Junior standing and consent of instructor. The topic for this course will vary each semester. Topics offered for the following semester will be posted in the departmental office. This course may be repeated once if the topic is different.

**BIOL 5012 Advanced Genetics: 3 semester hours**

Prerequisites: BIOL 2012 or consent of instructor. This course explores advanced topics in the study of genetics, including advanced principles of inheritance, classical genetic theory, advances in understanding the nature of genetic material, and the molecular basis of heredity. Variation between individuals and populations will be considered to emphasize the effects of genetics on both medical and evolutionary questions. A particular focus will be placed on identifying, analyzing, and communicating findings from recent primary literature.

**BIOL 5059 Topics in Ecology, Evolution, and Systematics: 1 semester hour**

Prerequisites: Graduate Standing. Presentation and discussion of faculty and student current research projects in behavior, ecology, evolution, and systematics. May be repeated.

**BIOL 5069 Topics in Cellular and Molecular Biology: 1 semester hour**

Prerequisite: Graduate standing or consent of instructor. Presentation and discussion of student and faculty research projects and/or current research articles in molecular, cellular and developmental biology. May be repeated. Course graded on a satisfactory/unsatisfactory basis.

**BIOL 5079 Topics in Floristic Taxonomy: 1 semester hour**

Prerequisite: BIOL 2501 or equivalent, and graduate standing. Seminar course in systematics of higher plants, arranged in the Cronquist sequence of families, covering morphology, anatomy, palynology, biogeography, chemosystematics, cytology, and other aspects of plant classification and phylogenetics. Given at the Missouri Botanical Garden. One hour per week.

**BIOL 5089 Topics in Animal Behavior: 1 semester hour**

Prerequisites: Graduate standing. Presentation and discussion of current research articles and/or student and faculty research projects in animal behavior, including ecology, evolution, genetics, and mechanisms of behavior. May be repeated.

**BIOL 5099 Biology Colloquium: 1 semester hour**

Prerequisites: Graduate standing. Attendance is required for the Biology weekly seminar series, consisting of research presentations by department faculty and invited speakers. Class sessions will include discussion of scientific research and presentation practices.

**BIOL 5123 Advanced Tropical Resource Ecology Field Studies: 2 semester hours**

Prerequisites: BIOL 5122 (may be taken concurrently). The field component to the lecture and seminar course. Examines the patterns of use and exploitation of resources in the tropics by humans in the context of the theories of behavioral ecology. Two weeks of intensive field research and lectures in Guyana, South America during the second and third weeks of Summer Session I (trip costs to be borne by the student). Students may not receive credit for both BIOL 3123 and BIOL 5123. Offered in odd numbered years.

**BIOL 5177 Graduate Research Writing Workshop in Biology: 1 semester hour**

Prerequisites: Graduate standing. This hands-on course is designed to give Biology graduate students practical assistance and advice on writing, including grant proposal content and organization, writing succinctly but clearly, and editing. The course format will include both informational lectures with discussions and working sessions focused on writing and critiquing drafts. Students are recommended to begin the class ready to write at least one aim of a grant or thesis proposal. Course is graded on a satisfactory/unsatisfactory basis.

**BIOL 5178 Introduction to Graduate Research in Biology: 1 semester hour**

Prerequisites: Graduate standing or consent of instructor. A discussion-based class to introduce new PhD and thesis MS students to the Biology department, graduate school, and best research practices.

**BIOL 5179 Ethical Issues in Biology: 1 semester hour**

Prerequisites: Graduate Standing. Using readings and discussions, students will explore ethical issues in Biology in both professional and social realms. Professional topics include authorship, grants accounting, and academic misconduct; social topics include ethical foundations of basic and applied science, government regulation of science, environmental and individual protection, and current issues. Course graded on a satisfactory/unsatisfactory basis.

**BIOL 5192 Community Ecology: 3 semester hours**

Prerequisites: Graduate standing and either BIOL 2102 and BIOL 4182 or an equivalent course. Studies of structure and organization of natural communities stressing the abundance and distribution of species, the regulation of species diversity, and the evolution of demographic parameters in populations.

**BIOL 5302 Advanced Evolution: 3 semester hours**

Prerequisites: BIOL 3302 or graduate standing. Explores advanced topics in the study of adaptation and the origin of species. Covers phenomena both within populations (e.g. natural selection, sexual selection, and molecular evolution) and between populations (e.g. speciation, coevolution, competition, gene flow, biogeography, and comparative phylogenetics), with a particular focus on recent primary literature.

**BIOL 5312 Theory of Systematics: 3 semester hours**

Prerequisites: BIOL 1821, BIOL 1831 and at least one course beyond the introductory level dealing with animal, plant, or microbial diversity (such as BIOL 2482, BIOL 2501, BIOL 2402, BIOL 4482, BIOL 4501, BIOL 4402, BIOL 4422) or consent of instructor. Course investigates the theory of classification, phylogenetic analysis, systematic biology, and their relation to systematic practice. Will cover goals and schools of systematics, characters and homology, analysis of molecular and morphological data and underlying assumptions, species concepts, classification, naming, and the connections between evolutionary biology and systematics. The course is appropriate for upper level undergraduates & graduate students in all disciplines, animal, plant, and microbial, as an introduction to systematic methods. Three hours of lecture per week.

**BIOL 5436 Applied Bioinformatics: 3 semester hours**

Prerequisites: BIOL 4712 or BIOL 4602 or consent of instructor. This course provides a survey of the various computational approaches that can be used to solve biological problems. Specific attention will be focused on biological databases and methods for using and interpreting database information, sequence alignments, functional genomics, structure prediction, high-throughput analyses, and proteomics. Three hours of lecture per week.

**BIOL 5798 Practicum in Science in Business: 1-2 semester hours**

Same As CHEM 5798. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis in Chemistry, Biochemistry & Biotechnology, or Biology. Students will integrate and apply their scientific expertise to a practical, business-related problem. The course will emphasize interdisciplinary team-work as well as both written and oral communication skills.

**BIOL 5799 Internship in Sciences in Business: 1-2 semester hours**

Same As CHEM 5799. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis area in Chemistry, Biochemistry & Biotechnology, or Biology. The internship will consist of a period of on-the-job training at a local company. Credit hours will be determined by the number of hours the student works each week and in consultation between the intern's supervisor and the course instructor. Internship assignments will be commensurate with the education and experience of the student, with an emphasis on work at the interface between the scientific and business components of the company. A written report describing the internship project is required.

**BIOL 6102 Advanced Topics in Behavioral Ecology: 3 semester hours**

Prerequisite: BIOL 3102 (BIOL 3302 is recommended). The evolution and ecology of animal behavior. Topics include the theoretical framework for making predictions, foraging, decision making, sensory ecology, sexual selection, mating systems, sociality and groups, cooperation, and signal use and communication. Three hours of lecture per week. Assignments will include a heavy emphasis on theory and modelling approaches to behavioral ecology. Students may not receive credit for both BIOL 4102 and BIOL 6102.

**BIOL 6182 Advanced Population Biology: 3 semester hours**

Prerequisites: BIOL 2012 (BIOL 3302 recommended). Introduces concepts and mathematical models of population ecology and population genetics. By integrating the ecology and genetics of population, the course goal is to understand the processes that contribute to microevolution of populations. Topics include: demography, metapopulation biology, natural selection, migration, gene flow, and genetic drift. A discussion section will focus on mathematical elements of population biology models. Three hours of discussion per week. Students may not receive credit for both BIOL 4182 and BIOL 6182.

**BIOL 6192 Applications of Geographic Information Systems: 5 semester hours**

Prerequisites: BIOL 2102, BIOL 4122 or equivalent, and consent of instructor. Geographic Information Systems (GIS) are sophisticated computer-based systems for analysis, capture, presentation, and maintenance of geographically referenced data. This course provides a foundation in using GIS for spatial analysis. Although biological examples are primarily used, examples from a range of disciplines are employed to emphasize the use of GIS as a tool to support analysis and decision-making. Students will have hands-on use of GIS software using Windows 2000/NT based workstations during each session. An independent research project applying the spatial analysis tools learned in GIS to biological research will be required. Five hours of combined lecture and computer operations, plus 2-3 hours of open lab per week.

**BIOL 6222 Advanced Tropical Ecology and Conservation: 3 semester hours**

Prerequisite: BIOL 2102, BIOL 4182, or BIOL 5192, or their equivalent. This course will cover research areas in tropical population, community and ecosystem ecology, with emphasis on inter-species and environment-organism interactions, population control factors, and genetic structure of populations. Topics include the current status and causes of tropical habitat destruction, ongoing attempts to manage those habitats, and development of strategies leading to sustained use of non-renewable resources. A research proposal designed to investigate a current topic in tropical ecology will be required. Students may not receive credit for BIOL 4222 and BIOL 6222. Three hours of lecture per week.

**BIOL 6250 Public Policy of Conservation and Sustainable Development: 3 semester hours**

Same as POL SCI 6452. Prerequisite: Graduate standing in Biology or Political Science and consent of instructor. Prior course in ecology recommended. This course will introduce the student to concepts and techniques for formulating, implementing, and analyzing public policy with an emphasis on environmental concerns, conservation, and sustainable development. The course will be team taught by a political scientist and a biologist. Course materials will include case studies that demonstrate the special problems of environmental policymaking in developing and developed economies.

**BIOL 6270 Advanced Global Climate Change: 3 semester hours**

Prerequisites: Graduate Standing or permission of the instructor. We will cover the fundamental physical, meteorological, and biological circumstances of global climate change, as well as predictions of its future effects on biological diversity, including humans, and how those estimates are made. We will also cover basic environmental economics and politics of climate change at local and global levels. The course will be taught as a series of lectures and discussions led by guest experts in each of the subdisciplines covered. Students may not receive credit for both BIOL 4270 and BIOL 6270.

**BIOL 6299 Internship in Conservation Biology: 1-4 semester hours**

Prerequisite: BIOL 6250 or BIOL 6212 and consent of the director of graduate studies in biology. Internships will consist of a period of study, observation and on-the-job training at a conservation or environmental agency. Specific placements will be selected according to student's interests and career goals. Internships may vary from 2 weeks to 4 months in duration.

**BIOL 6442 Advanced Developmental Biology: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 3622. A study of the basic principles that shape the embryonic and post-embryonic development of animals with an emphasis on the underlying cellular and molecular mechanisms. Specific topics include fertilization, determination of cell fate and differentiation, cell migration, establishment of the body plan, formation of selected organs and organ systems, stem cells, and limb regeneration. Environmental influences on development and the impact of developmental biology on modern medicine are also discussed. Three hours of lecture/discussion per week. Students may not receive credit for both BIOL 4442 and BIOL 6442.

**BIOL 6502 Advanced Evolution of Cognition: 3 semester hours**

Prerequisites: BIOL 3102 and BIOL 3302, or consent of instructor; PSYCH 2211 strongly recommended. The evolutionary ecology of animal cognitive abilities. Topics include learning, memory, perception, navigation, and communication from an evolutionary perspective. The focus is on cognitive abilities as adaptations, which have evolved to solve specific environmental problems. Topics include empirical methods for assessing cognitive ability, experimental design, theoretical approaches for generating predictions, and the parsimonious interpretation of data. Two hours of lecture and one hour of discussion per week. Students may not receive credit for both BIOL 4502 and BIOL 6502.

**BIOL 6550 Advanced Bacterial Pathogenesis: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 2482. Examination of the strategies bacterial pathogens use to infect animals. Topics include host immune responses to infection, bacterial virulence factors, regulation of bacterial virulence, and the cellular and molecular approaches used to study host-parasite interactions. Students may not receive credit for both BIOL 6550 and BIOL 4550. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Three hours of lecture per week.

**BIOL 6602 Advanced Molecular Biology: 3 semester hours**

Prerequisites: BIOL 2012 and CHEM 2612, or consent of instructor. This course covers advanced principles of molecular biology, with an emphasis on primary literature. Students may be required to give an oral presentation and/or write papers on a topic relevant to the course. Students may not receive graduate credit for both BIOL 4602 and BIOL 6602.

**BIOL 6608 Advanced Synthetic Biology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 2482. A study of the molecular biology of microbial cells, in the context of synthetic biological systems. Topics include DNA replication, transcription, translation, gene regulation and protein structure as well as aspects of genetic engineering as they apply to the construction of novel biological systems. Following an introduction to the design of biological parts used in synthetic biology, students read, discuss and present recent journal articles in order to learn about current advances and applications of synthetic biology. Three hours of lecture per week. Students may not receive credit for both BIOL 4608 and BIOL 6608.



**BIOL 6615 Advanced Biotechnology Laboratory II: 4 semester hours**

Prerequisites: BIOL 4614 and either BIOL 4602 or BIOL 4612, or consent of instructor. An in-depth look at the theory and practice of biotechnology. Lectures and discussion will examine the underlying principles, and laboratory exercises will present hands-on experience with current techniques. One hour of lecture and six hours of laboratory per week. Students will be required to give an oral presentation and/or write an extra paper on a topic relevant to the course. Students may not receive credit for both BIOL 6615 and BIOL 4615 or any course previously called Techniques in Molecular Biology or Advanced Techniques in Molecular Biology.

**BIOL 6618 Practical Next-Generation Sequencing: 3 semester hours**

Prerequisites: Consent of instructor. This is a laboratory course in practical next-generation sequencing. Roughly one-half of the course will focus on bench-top methods for generating sequencing libraries from total RNA as well as the use of next-generation sequencing instruments. The second half of the course will focus on computational methods for analyzing sequencing data, including data visualization and coding.

**BIOL 6622 Advanced Cellular Basis of Disease: 3 semester hours**

Prerequisites: BIOL 3622, or consent of instructor. A study of the structural organization and processes of eukaryotic cells, focusing on how defects in cellular function lead to genetic diseases and cancer. Topics of discussion may include membrane dynamics, intracellular trafficking, signal transduction, and the cell cycle. Three hours of lecture per week. Students may not receive credit for both BIOL 6622 and BIOL 4622.

**BIOL 6632 Advanced Nucleic Acid Structure and Function: 3 semester hours**

Prerequisites: BIOL 2012 and BIOL 4712 or equivalent, or consent of instructor. A comprehensive view of the structural properties of DNA and RNA that promote molecular interactions & biological function. Topics will include the physical properties of nucleic acids, the formation and biological importance of higher order structures, RNA enzymatic activities, nucleic acid-protein interactions, and RNA metabolism. Three hours of lecture and one hour of discussion per week. Students may not receive credit for both BIOL 4632 and BIOL 6632.

**BIOL 6642 Advanced Plant Biology and Biotechnology: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce molecular biology principles that govern plant growth, development, and responses to stress. This course integrates the experimental approaches of genetics, molecular biology, and biochemistry, with a specific focus on biotechnology techniques and applications. Student may not receive credit for both BIOL 4642 and BIOL 6642.

**BIOL 6652 Advanced Virology: 3 semester hours**

Prerequisites: BIOL 2012, BIOL 3622, and graduate standing. This first half of the course entails a comparative study of the structure, replication, and molecular biology of viruses. The second half of the course focuses on the pathogenesis, control, and evolution of animal viruses. Three hours of lecture, one hour of discussion or seminar per week. Students may not receive credit for both BIOL 4652 and BIOL 6652.

**BIOL 6699 Graduate Internship in Biotechnology: 1-4 semester hours**

Prerequisites: Graduate standing and enrollment in graduate Biotechnology Certificate Program. 6 credit hours maximum (maximum of 8 combined credit hours of BIOL 6905 and internship) Internship will consist of period of observation, experimentation and on-the-job training in biotechnology laboratory. The laboratory may be industrial or academic. Credit will be determined by the number of hours the student works each week and in consultation between the intern's supervisor and the instructor. Internship assignments will be commensurate with the education and experience of the student.

**BIOL 6889 Graduate Seminar: 2 semester hours**

Presentation and discussion of various research problems in biology. Graduate student exposure to the seminar process.

**BIOL 6905 Graduate Research in Biology: 1-10 semester hours**

Research in area selected by student in consultation with faculty members.

**BIOL 6915 Graduate Research Practicum: 1-2 semester hours**

Prerequisite: Consent of instructor. This course is designed for graduate students wishing to pursue research experience in an area outside their dissertation topic. The project can be techniques-oriented or focused on a specific research question. The credit hours will depend on the time commitment to the project as decided by the supervisory faculty member.

**BIOL 6920 Advanced Topics in Biology: 1-5 semester hours**

Prerequisites: Graduate standing. In-depth studies of selected topics in contemporary biology. May be repeated.

## Business Administration

### Courses

**BUS AD 1000 Introduction to Business: 3 semester hours**

Overview of the functional business disciplines, including, but not limited to principles of Accounting, Finance, Information Systems, Law, Logistics and Operations Management, Management, and Marketing.

**BUS AD 1900 Introduction to Personal Law: 3 semester hours**

This course introduces students to the American legal system and the basic issues every individual must deal with in our society. The course will be of interest to anyone seeking a job, leasing an apartment, buying a car or house, borrowing money, buying insurance, getting married or divorced, entering contracts, filing a law suit, writing a will, or accumulating wealth. May not be used for credit in any undergraduate business program.

**BUS AD 2000 Topics in Business Administration: 1-3 semester hours**

Prerequisites: Vary with topic; contact the School of Business Administration. Study of selected special problems in business and administration. May be repeated for credit with different topics.

**BUS AD 2900 Legal Environment of Business: 3 semester hours**

Prerequisites: Sophomore standing. An introduction to the nature and meaning of law, sources of law, legal process and institutions. The legal environment of business is defined as: the attitude of the government toward business, the historical development of this attitude; current trends of public control in taxation, regulation of commerce and competition; freedom of contract, antitrust legislation and its relationship to marketing, mergers and acquisitions; and labor management relations.



**BUS AD 3090 Internship in Business Administration: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0; one must have completed and/or be currently enrolled in at least 6 hours of Business Administration electives, have consent of supervising instructor and Associate Dean, and a College of Business GPA of at least 2.5. Students are employed in the field of Business Administration where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience are the primary goals. A Business Administration faculty member will monitor the student's program with the student providing a formal written report at the end of the project. BUS AD 3090 may not be counted toward the minimum credit hours for any emphasis area.

**BUS AD 3099 Independent Study In Business Administration: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0 and approval by the supervising professor and the Associate Dean. Special individual study in business under the supervision of a full-time faculty member.

**BUS AD 3990 Internship in Business Law: 1-3 semester hours**

Prerequisites: BUS AD 2900, 3 credit hours of Business Law electives, and a Business College 2.5 GPA. Must have completed and/or be currently enrolled in at least 3 credit hour of Business Law electives and have consent of supervising instructor and Area Coordinator. Students are employed in the field of Business Law where the knowledge and skills learned in the classroom are applied. Professional development and obtaining specialized work experience are primary goals. A Business Law faculty member will monitor the student's program with the student providing a formal written report at the end of the project.

**BUS AD 4001 Accelerate Capstone: 3 semester hours**

Same as ENT 4001. Prerequisites: ENT 1001, and either EDUC 2002 or ENT 3040, or consent of instructor. This course provides students with a capstone experience taking an idea from planning to 'launch.' This should be the last course taken in the certificate sequence and may involve elements of an instructional seminar and a practicum. May be taken in conjunction with other courses within the certificate, but it is highly suggested as the final course in the sequence.

**BUS AD 4198 Business Administration Senior Seminar: 1-10 semester hours**

Prerequisites: To be determined each time the course is offered and to include minimum 2.0 campus GPA. An intensive study of a specific area of business administration, of some specific business or economic phenomenon, or a specific problem or theory. Several different courses may be offered under this course number. May be repeated for credit as long as the topic differs.

**BUS AD 4325 Environmental Sustainability in Business Operations: 3 semester hours**

Same as SCMA 4325. Prerequisites: SCMA 3301 or consent of instructor. This course studies the environmental impacts of business operations, and it focuses especially on the principles and methods of 'lean and green' operations, i.e., ways in which organizations can reduce their costs and increase profits, while reducing their environmental impacts. Specific topics include energy efficiency, resource reduction, waste reduction, design for the environment, externalities and internal pricing mechanisms, environmental technologies, life-cycle assessment, recycling, re-use, and re-manufacturing, as well as national and global environmental issues.

**BUS AD 5000 Economics for Managers: 3 semester hours**

Prerequisite: Graduate standing. The concepts and tools of economic analysis are applied to the production and distribution functions of organizations. The last portion is devoted to the macroeconomic influence of capital markets, the influence of interest rates, inflation, and the business cycle.

**BUS AD 5001 Managerial Economic Analysis: 3 semester hours**

Prerequisites: BUS AD 5000 or ECON 1001 and ECON 1002. Microeconomic analysis of consumers, firms, and government. The concepts and mathematical tools of economic analysis are applied to the production and distribution functions of organizations.

**BUS AD 5002 Analysis Of National Economic Environment: 3 semester hours**

Prerequisites: BUS AD 5000 or ECON 1001 and ECON 1002. The character and functioning of the national economic system; analyzing and forecasting fluctuations in national income and product, employment, and prices; the influence of monetary and fiscal policies. Emphasis is on the acquisition of knowledge concerning forces affecting all business firms.

**BUS AD 5100 Managerial Communication: 3 semester hours**

An analysis of business writing and speaking, and the communication conventions common in organizations. Emphasis is placed on developing skills critical to career advancement and necessary for effective organizational functioning. A second goal is to prepare students for assignments in other business courses. This course must be taken within the first 12 credit hours of study, preferably in the student's first semester.

**BUS AD 5198 Seminar in Business Administration: 3 semester hours**

An intensive study of a specific area of business administration of some specific business or economic phenomenon, or a specific problem or theory. Several different courses may be offered under this course number.

**BUS AD 5299 Individual Research: 1-3 semester hours**

Prerequisite: Consent of instructor and graduate director. Special individual research topics under the guidance of a specific professor.

**BUS AD 5325 Environmental Analysis and Sustainability in Business Operations: 3 semester hours**

Same as SCMA 5325. Prerequisites: SCMA 5310 or consent of instructor. This course analyzes the environmental impacts of business operations, and it focuses especially on the principles and methods of 'lean and green' operations, i.e., ways in which organizations can reduce their costs and increase profit, while reducing their environmental impacts. Specific topics include energy efficiency, resource reduction, waste reduction, design for the environment, externalities and internal pricing mechanisms, environmental technologies, life-cycle assessment, recycling, re-use, and re-manufacturing, as well as national and global environmental issues.

**BUS AD 5450 Governmental Budgeting and Financial Control: 3 semester hours**

Prerequisite: ACCTNG 5400. A study of municipal and federal financial control and budgeting procedures with emphasis on public policy. The impact of financial control on top management decisions and the effect of budget strategies on the allocations of public funds.

**BUS AD 5900 Law, Ethics and Business: 3 semester hours**

Analysis of the relationship between law and business with emphasis on the ability of, and extent to which, governments regulate business activities. Topics covered include the employer-employee relationship, protection of consumers, antitrust regulation, and securities law. Also discussed are ethical issues confronting management of the modern business enterprises.

***BUS AD 6990 Strategy Formulation and Implementation: 3 semester hours***

Prerequisites: FINANCE 6500, MGMT 5600, MKTG 5700, SCMA 5320 and special consent. Graduate program capstone course examining concepts and methods that integrate functional areas of business. The perspective is that of general management charged with directing the total enterprise. Interactions between the environment, organization, strategy, policies and the implementation of plans are explored. Special emphasis is given to globalization of business and ethical perspectives. This course should be taken during the semester prior to graduation. In no case may it be taken sooner than two semesters prior to graduation.

***BUS AD 6991 Graduate Business Assessment Testing: 0 semester hours***

Prerequisites: Concurrent enrollment in BUS AD 6990 (or INTL BUS 5289 or MGMT 4614 if taken in lieu of BUS AD 6990). A one-time lab during which a major field exam in business is administered. Course graded on a satisfactory/ unsatisfactory basis. Satisfactory grade required for graduation.

***BUS AD 7001 Doctoral Research: 1-12 semester hours***

Prerequisite: Must have PhD Program Director or Area Coordinator approval. Investigation of an advanced nature culminating in preparation for comprehensive examinations and/or development of dissertation proposal. The course may be repeated for credit.

***BUS AD 7002 Dissertation Research: 1-12 semester hours***

Prerequisites: Must have Ph.D. Program Director or Area Coordinator approval. Investigation of an advanced nature culminating preparation of a doctoral dissertation. The course may be repeated.

***BUS AD 7100 Scientific Inquiry in Business: 1-3 semester hours***

Prerequisites: Consent of DBA program director and graduate standing. This course provides an overview of research methods for studying business problems including extraction of information from secondary sources, and primary data collection with surveys, interviews, participant observation, action research, field experiments, controlled experiments, case studies, design sciences and simulations. The course covers foundations of business research (substantive theories, formal theories, and frameworks). Students will learn the types of variables used to test theories and develop the skills required for reviewing the literature and conceptualizing research questions that are important for practice. Ethical issues related to conducting and publishing research will be discussed. Students will become nationally certified in protecting human research participants and in responsible research conduct.

***BUS AD 7101 Quantitative Research Methods I in Business******Administration: 3 semester hours***

Prerequisites: Consent of DBA program director. This course provides an understanding of the application of quantitative analytical techniques to problems in the planning and management of business enterprises and service operations. The course provides experience in structuring analytical models and drawing inferences from their results. Topics include techniques for descriptive, predictive and diagnostic analytics, and may cover general linear statistical models, logistical regression, techniques for extrapolating time series, and statistical methods for testing conceptual models.

***BUS AD 7102 Qualitative Research Methods I in Business******Administration: 3 semester hours***

Prerequisites: Consent of DBA program director and graduate standing. Working in groups, students will design and execute a qualitative research project using interviews or direct observations. During the course, students will prepare a qualitative research proposal that includes well-formed research questions, clearly positions the research as a contribution to knowledge, critically reviews the academic literature relevant to the student's topic, develops qualitative research instruments (such as an interview guide), executes the research, analyzes the data and writes up the report. Students will learn how to abstract their findings into lessons for scholars and/or practitioners. One important output of this seminar is a completed research paper suitable for publication in a respected practitioner or academic outlet.

***BUS AD 7103 Quantitative Research Methods II in Business******Administration: 3 semester hours***

Prerequisites: Consent of DBA program director and graduate standing. This course provides an advanced understanding of quantitative research with special attention to prescriptive analytics. Emulating work in prior published studies, students identify and frame research questions, determine appropriate metrics, develop hypotheses, build and test quantitative models, and discuss the advantages and shortcomings of alternative quantitative approaches. One important output of this course is a completed research paper.

***BUS AD 7104 Qualitative Research Methods II in Business******Administration: 3 semester hours***

Prerequisites: Consent of DBA program director and graduate standing. Working in groups, students design and execute a qualitative research study using a case study method or action research. Students prepare a qualitative research proposal that includes well-formed research questions, clearly positions the research as a contribution to knowledge, and critically reviews the academic literature relevant to the topic. Students develop qualitative research instruments (or design an experimental intervention), execute the research, analyze the data and produce a report that presents lessons for scholars and/or practitioners. An important product of this seminar is a completed research paper suitable for publication in a respected practitioner or academic outlet.

***BUS AD 7105 Special Topics in Business Administration: 2 semester hours***

Prerequisites: Consent of DBA program director. Special topics examined from the business administration perspective. Topics may vary by semester.

***BUS AD 7106 Strategic Business Analysis: 2 semester hours***

Prerequisites: Consent of DBA program director. The objective of this capstone course is to synthesize theoretical and empirical research from the different business disciplines (and other non-management sciences and disciplines) to give new insight for public policy or managerial practice. Course projects may address contemporary challenges in the global economy, regulatory processes, taxation, management of innovation, management of risk and disruptive events, consequences of international agreements, environmental issues, sustainability of business practices and business alliances, corporate governance, cultural challenges in international business relations, and other contemporary problems specific to students' places of employment.

***BUS AD 7107 Capstone Project Research in Business******Administration: 6 semester hours***

Prerequisites: Consent of DBA program director. Students develop a formal proposal for their capstone research projects that includes a draft of all parts of the project that precede the data collection. This proposal includes research questions or hypotheses based on prior research, and the methodology to be employed for addressing the research questions or corroborating the hypotheses. This course will be coordinated by the Academic Director of the DBA Program, and attended by interested faculty, especially those serving as Chairs. By the conclusion of this course, each capstone project proposal is approved by a capstone project committee (consisting of the Chair of the capstone project committee and two other members).

***BUS AD 7109 Doctoral Foundations Seminar: 1-3 semester hours***

Prerequisites: Consent of DBA program director. This course will cover the foundation necessary to succeed in the DBA Program. This seminar will also provide the doctoral students with an understanding of the culture of research.

***BUS AD 7300 Management of Supply Chains: 2 semester hours***

Prerequisites: Consent of Program Director. This course provides a comprehensive overview of supply chain management, including procurement, sourcing, operations, production and logistics, with special attention to international issues. Topics include designing and operating multinational logistics systems; managerial issues and strategies for sourcing, transportation, and inventory management; legal and financial issues in import and export; risk identification and management; and the relationship of supply chain management to other activities. The course also provides students with an understanding of quantitative techniques used in the design and management of global supply chains.

***BUS AD 7301 Statistical Modeling: 1-3 semester hours***

Prerequisites: SCMA 5300; consent of DBA program director. Study of multivariate analytical techniques and their application to the analysis of business systems. Topics include the construction and adaptation of statistical models and extrapolative techniques to accommodate factor interactions, nonlinearities, and periodic effects. Methodologies include multiple regression, ANOVA, and general linear model, MANOVA, structural equation modeling, and time series modeling.

***BUS AD 7400 The Role of Accounting Information in Firms and Markets: 2 semester hours***

Prerequisites: Consent of DBA program director. This course provides insights into various accounting theories and practices, including financial analysis to identify opportunities, archival and behavioral inquiry in accounting, the role of accounting information in valuation, the role of accounting information in firm contracting, structural cost management, executional cost management, and governance and controls.

***BUS AD 7500 Finance Theory and Applications Seminar: 2 semester hours***

Prerequisites: Consent of DBA program director. This two-unit finance course addresses contemporary issues in corporate finance, investment, financial institutions and financial markets. Extensive reviews of the literature in different finance fields are conducted. Modigliani-Miller theorem, agency theory, capital asset pricing theory, and option pricing theory are discussed and applied in research analysis.

***BUS AD 7600 Managing Talent for Strategic Advantage: 2 semester hours***

Prerequisites: Consent of DBA program director. This course provides insight into research on topics that explore how organizational behavior and human resource management practices contribute to developing and sustaining effective and satisfying workplaces. Topics such as conflict management, change management, motivation, cultural intelligence, compensation strategies, selection and promotion decisions, performance management and legal issues in employment decision making, will be discussed.

***BUS AD 7700 Contemporary Marketing Intelligence and Decision Making: 2 semester hours***

Prerequisites: Consent of DBA program director. This course examines how firms generate valuable marketing intelligence for critical decisions in pursuit of marketing objectives. Marketing strategies and consumer behavior are studied through literature reviews and examination of case studies. Students challenge assumptions, frameworks, and findings and they discuss how marketing strategy is adapted in practice for various products and services. They also learn how data mining techniques are used in the development and execution of marketing strategies.

***BUS AD 7800 Management of Sustaining and Disruptive Information Technologies: 2 semester hours***

Prerequisites: Consent of DBA program director. This course provides insights into contemporary sustaining and disruptive information technologies and their strategic and supporting roles in organizations and society. This course provides the student with an understanding of the processes through which information systems are adopted and used by organizations, including their sourcing, design, development, implementation, and strategic management. The course will also examine best practices for managing new information technologies, such as social media, business intelligence, and the Internet of Things. Strategic opportunities, threats and processes for achieving cyber security will be considered as students discuss the impacts such technologies have on organizations, individuals, and society.

## Center International Studies

### Courses

***C I ST 3200 Study Abroad, Non UM-St. Louis Program: 1-24 semester hours***

***C I ST 5200 Study Abroad Non UM-St Louis Program Grad: 1-15 semester hours***

## Chemistry

### Courses

***CHEM 1000 Chemistry: The Central Science: 1 semester hour***

This course introduces chemistry majors to the broad nature of the chemical enterprise, including career areas for chemists, trends in chemistry related opportunities in research and industry, and provides an overview of the relevance of chemistry as a discipline. The course reviews the chemistry curriculum and the role of chemistry as a central science and includes presentations from selected current faculty and departmental alumni about research opportunities and other resources within the department. The course is required of all chemistry majors, and is to be taken no later than their second semester of enrollment as a chemistry major at UMSL.

**CHEM 1011 Chemistry in the Environment: 3 semester hours**

This course examines the role of chemistry in the environment and the application of chemistry to our understanding of society. The focus of the course will be the relationship between chemistry and the world around us including topics such as the chemistry of air, global climate change, water and energy. The course is designed for non-science, non-engineering and non-allied health majors and can be used to fulfill a general education requirement for undergraduate degrees. The course consists of two hours of lecture per week and, on alternate weeks, one hour of discussion or two hours of laboratory.

**CHEM 1021 Beer Brewing: Chemical and Biochemical Principles: 3 semester hours**

This course examines the process of beer brewing as it relates to general topics of chemistry, biochemistry and biology. Each aspect of the brewing process will be examined in detail and the underlying scientific principles identified and discussed. The course is designed for non-science, non-engineering and non-allied health majors and can be used to fulfill a general education requirement for undergraduate degrees. The course consists of two hours of lecture and three hours of lab per week.

**CHEM 1022 Principles of Fermentation Science: 3 semester hours**

Prerequisites: CHEM 1021 or a 3 credit-hour 1000 level science course or consent of instructor. This course is designed primarily for students that want to gain insight into the fermentation process from the initial ingredients to the final product. Students will be engaged in analysis of ingredients, impact on the process and evaluation of various styles of beer. Laboratory evaluation will include analysis of water, hops, carbohydrates, alcohol content and sensory science. The course consists of two hours of lecture and three hours of lab per week.

**CHEM 1052 Chemistry for the Health Professions (MOTR CHEM 100): 4 semester hours**

An introduction to general, nuclear, structural organic, organic reactions and biochemistry. This course is designed primarily for students in nursing and related health professions, and should not be taken by students majoring in the physical or biological sciences. Chemistry majors may include neither CHEM 1052 or CHEM 1062 in the 120 hours required for graduation. Four hours of lecture per week.

**CHEM 1062 Organic and Biochem for the Health Professions: 2 semester hours**

Prerequisites: Any college Chemistry course. An introduction to organic reactions and biochemistry. CHEM 1062 is offered during the second half of the semester. Four hours of lecture per week.

**CHEM 1081 Introductory Chemistry I-A (MOTR CHEM 100): 3 semester hours**

Prerequisites: MATH 1030 (or a score of 26 or higher on either the Math ACT or the Math Placement Test). This course is designed for students who want to have an in depth understanding of introductory concepts in Chemistry. CHEM 1081 covers the topics taught in the first half of CHEM 1111 but at a slower pace, thus allowing students time to fully integrate the concepts and thereby build a stronger foundation for their subsequent Chemistry courses. CHEM 1081 consists of the first half of CHEM 1111 (excluding laboratory experiments), whereas CHEM 1091 covers all the laboratory experiments and second half of lecture part of CHEM 1111. Three hours of lecture or workshop per week.

**CHEM 1091 Introductory Chemistry I-B (MOTR CHEM 150L): 3 semester hours**

Prerequisites: CHEM 1081. CHEM 1091 is the completion of CHEM 1111 for students who have completed CHEM 1081. The laboratory portion of this course will start at the beginning of the semester. The lecture part of the course starts in mid-semester and students join an ongoing CHEM 1111 class. Students who completed CHEM 1081 must complete CHEM 1091 to be considered as having completed the equivalent of CHEM 1111. Three hours of lecture and one and one half hours of workshop during the second half of the semester, and three hours of laboratory per week during the entire semester.

**CHEM 1111 Introductory Chemistry I (MOTR CHEM 150L): 5 semester hours**

Prerequisite: MATH 1030 (or a score of 26 or higher on either the Math ACT or the Missouri Math Placement Test) and MATH 1035 (MATH 1035 may be taken concurrently). Presents an introduction to the fundamental laws and theories of chemistry. Laboratory experiments are designed to demonstrate some aspects of qualitative and quantitative analysis and to develop skills in laboratory procedures. Chemistry majors may not include both CHEM 1011 and CHEM 1111 in the 120 hours required for graduation. Three hours of lecture, one and one-half hours of workshop, and three hours of laboratory per week.

**CHEM 1111A CHEM 1111A-Introductory Chemistry 1 - Modular Format: 1 semester hour**

Prerequisites: MATH 1030 (or a score equivalent to completion of MATH 1030 on the UMSL mathematics placement assessment). These courses (1111A-1111L) are identical in content to CHEM 1111 but are offered in a modular format. Each credit hour deals with the lecture or laboratory material covered in CHEM 1111. Completion of all five modules with a grade in each of C- or above is equivalent to completion of CHEM 1111. CHEM 1111A covers the first quarter of lecture material covered in CHEM 1111.

**CHEM 1111B CHEM 1111B-Introductory Chemistry 1 - Modular Format: 1 semester hour**

Prerequisites: CHEM 1111A. Concurrent registration with CHEM 1111A is permitted. CHEM 1111B covers the second quarter of lecture material covered in CHEM 1111.

**CHEM 1111C CHEM 1111C-Introductory Chemistry 1 - Modular Format: 1 semester hour**

Prerequisites: CHEM 1111B. Concurrent registration with CHEM 1111B is permitted. CHEM 1111C covers the third quarter of lecture material covered in CHEM 1111.

**CHEM 1111D CHEM 1111D-Introductory Chemistry 1 - Modular Format: 1 semester hour**

Prerequisites: CHEM 1111C. Concurrent registration with CHEM 1111C is permitted. CHEM 1111D covers the final quarter of lecture material covered in CHEM 1111.

**CHEM 1111L CHEM 1111L-Introductory Chemistry 1 - Modular Format: 1 semester hour**

Prerequisites: CHEM 1111D. Concurrent registration with CHEM 1111D is permitted. CHEM 1111L covers laboratory portion of CHEM 1111.

**CHEM 1121 Introductory Chemistry II: 5 semester hours**

Prerequisite: CHEM 1111 or advanced placement. Lecture and laboratory are a continuation of CHEM 1111. Three hours of lecture, one and one-half hours of workshop and three hours laboratory per week.



**CHEM 1134 Special Topics in Introductory Chemistry: 1-5 semester hours**

Prerequisite: Consent of instructor. A lecture and/or laboratory course to assist transfer students to complete the equivalent of CHEM 1111 and CHEM 1121. Students enrolling in this course should contact the instructor prior to the first day of class for guidelines on course requirements, to choose a lab or workshop section, and to request enrollment in the course website.

**CHEM 2010 Introduction to Inquiry Approaches to STEM Education (STEP I): 1 semester hour**

Same as BIOL 2010, PHYSICS 2010, MATH 2010, and SEC ED 2010. Prerequisites: Concurrent enrollment BIOL 1821, BIOL 1831, CHEM 1111, CHEM 1121, PHYSICS 2111, PHYSICS 2112, MATH 1800, or MATH 1900 or have a declared STEM major. Students who want to explore teaching careers become familiar with lesson plan development by writing, teaching and observing lessons in a local school class. Students build and practice inquiry-based lesson design skills and become familiar with and practice classroom management in the school setting. As a result of the STEP I experiences students should be able to decide whether to continue to explore teaching as a career and ultimately finishing the remainder of the WE TEACH MO curriculum leading to teacher certification. The classroom observations and teaching represent a major field component and requires at least one two hour block of free time during the school day once a week.

**CHEM 2011 Designing Inquiry-Based STEM Experiences (STEP II): 1 semester hour**

Same as BIOL 2011, PHYSICS 2011, MATH 2011, and SEC ED 2011. Prerequisites: BIOL 2010, CHEM 2010, PHYSICS 2010, MATH 2010, or SEC ED 2010. Students explore teaching careers, become familiar with STEM school setting through observing and discussing the school environment and by developing and teaching inquiry-based lessons.

**CHEM 2223 Quantitative Analysis in Chemistry: 3 semester hours**

Prerequisites: CHEM 1121. This course covers basic analytical chemistry theory and techniques, principles of experimental error analysis, and the application of statistics to data treatment. A significant proportion of the laboratory experiments emphasize quantification of unknown samples.

**CHEM 2612 Organic Chemistry I: 3 semester hours**

Prerequisite: CHEM 1121 (may be taken concurrently). An introduction to the structure, properties, synthesis, and reactions of aliphatic and aromatic carbon compounds. Three hours of lecture per week.

**CHEM 2622 Organic Chemistry II: 3 semester hours**

Prerequisite: CHEM 2612. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours of lecture per week.

**CHEM 2633 Organic Chemistry Laboratory: 2 semester hours**

Prerequisite: CHEM 2612. An introduction to laboratory techniques and procedures of synthetic organic chemistry including analysis of organic compounds. One hour of lecture and four and one-half hours of laboratory per week.

**CHEM 3022 Introduction to Chemical Literature: 1 semester hour**

Prerequisites: CHEM 2622 (CHEM 2622 may be taken concurrently). This course will familiarize the student with the literature of chemistry and its use. One hour of lecture per week.

**CHEM 3302 Physical Chemistry for The Life Sciences: 3 semester hours**

Prerequisites: CHEM 2612 and MATH 1800 or MATH 1100, and PHYSICS 1012. Principles and applications of physical chemistry appropriate to students pursuing degree programs in the life sciences. Topics will include thermodynamics, equilibria, kinetics, and spectroscopy. This course is intended for undergraduates seeking the B.S. degree in Biochemistry and Biotechnology and does not fulfill the physical chemistry required for other Chemistry B.A. and B.S. degree programs.

**CHEM 3312 Physical Chemistry I: Thermodynamics and Kinetics: 3 semester hours**

Prerequisites: CHEM 1121 and MATH 2000 (MATH 2000 may be taken concurrently), and PHYSICS 2111. This course discusses the principles of physical chemistry, focusing on thermodynamics, theory of gases, phase equilibria, solution behavior, and kinetics.

**CHEM 3322 Physical Chemistry II: Quantum Chemistry and Spectroscopy: 3 semester hours**

Prerequisites: CHEM 1121, MATH 2000 and PHYSICS 2111. This course discusses the principles of physical chemistry, focusing on atomic and molecular structure, spectroscopy, and quantum mechanics.

**CHEM 3333 Physical Chemistry Laboratory I: 2 semester hours**

Prerequisites: CHEM 2223 and CHEM 3312 (CHEM 3312 may be taken concurrently). This course involves experiments designed to illustrate principles introduced in CHEM 3312.

**CHEM 3412 Basic Inorganic Chemistry: 3 semester hours**

Prerequisite: CHEM 1121. This course reviews the principles of atomic structure and studies covalent and ionic bonding. Topics include properties of the elements and synthesis, reactions and bonding aspects of important main group and transition metal compounds. Two hours lecture per week.

**CHEM 3643 Advanced Organic Chemistry Laboratory: 2 semester hours**

Prerequisites: CHEM 2223, CHEM 2622, CHEM 2633, and CHEM 3022 (may be taken concurrently). Identification of organic compounds by classical and spectroscopic methods; advanced techniques in synthesis and separation of organic compounds. One hour of lecture and four and one-half hours of laboratory per week. Not for graduate credit.

**CHEM 3905 Chemical Research: 1-10 semester hours**

Prerequisite: Consent of instructor. Independent laboratory and library study, in conjunction with faculty member, of fundamental problems in chemistry. A written report describing the research is required.

**CHEM 4212 Instrumental Analysis: 3 semester hours**

Prerequisites: CHEM 3312 and CHEM 3322. This course studies the principles and applications of modern methods of instrumental analysis for analytical chemistry measurements. Topics may be selected from the areas of electrochemistry, absorption and emission spectroscopy, chromatography, mass spectrometry, surface analysis, and nuclear magnetic resonance.

**CHEM 4233 Laboratory in Instrumental Analysis: 2 semester hours**

Prerequisites: CHEM 4212, CHEM 3333. Experiments designed to illustrate the principles and practices of instrumental analysis, involving the use of modern instrumentation in analytical chemistry applications. One hour of discussion and four and one-half hours of laboratory per week.

**CHEM 4302 Survey of Physical Chemistry with Applications to the Life Sciences: 3 semester hours**

Prerequisites: CHEM 2612 and MATH 1800 or MATH 1100, and PHYSICS 1012. This course covers the principles of physical chemistry with applications to the life sciences. Topics will include thermodynamics, equilibria, kinetics, and spectroscopy. This course will be taught simultaneously with CHEM 3302, but students in CHEM 4302 will have additional assignments or projects. No student may receive credit for both CHEM 3302 and CHEM 4302. No student may receive credit for both 4302 and 5302.

**CHEM 4343 Physical Chemistry Laboratory II: 2 semester hours**

Prerequisites: CHEM 2223 and CHEM 3322 (CHEM 3322 may be taken concurrently). This course involves experiments designed to illustrate principles introduced in CHEM 3322.

**CHEM 4412 Advanced Inorganic Chemistry: 3 semester hours**

Prerequisites: CHEM 3322 (may be taken concurrently), CHEM 3412, and CHEM 2622. This course introduces the chemistry of the elements, including atomic and molecular structure, acids and bases, the chemistry of the solid state, and main group and transition metal chemistry. Three hours of lecture per week. Students may not receive credit for both CHEM 4412 and CHEM 5412.

**CHEM 4433 Inorganic Chemistry Laboratory: 2 semester hours**

Prerequisites: CHEM 3333, CHEM 3643, and CHEM 4412 (CHEM 3643 may be taken concurrently). The more sophisticated techniques of physical and analytical chemistry will be used to study inorganic compounds and their reactions. One hour of lecture and four and one half hours of laboratory per week. Not for graduate credit.

**CHEM 4612 Introduction to Macromolecular, Supramolecular, and Nanoscale Chemistry: 1 semester hour**

Prerequisites: CHEM 2622, CHEM 3412, and CHEM 3312. This course introduces students to macromolecular, supramolecular, and nanoscale chemistry. Structure, synthesis and/or preparation, characterization, and physical properties of these systems will be introduced. May not be taken for graduate credit.

**CHEM 4712 Biochemistry: 3 semester hours**

Same as BIOL 4712. Prerequisites: CHEM 2612 and either BIOL 1831 or CHEM 2622. Examines the chemistry and function of cell constituents, and the interaction and conversions of intracellular substances. Students may not receive credit for both BIOL 4712 and CHEM 4712.

**CHEM 4722 Advanced Biochemistry: 3 semester hours**

Prerequisite: CHEM 4712. This course covers selected advanced topics in the chemistry of life processes. Students may not receive credit for both CHEM 4722 and CHEM 5722.

**CHEM 4733 Biochemistry Laboratory: 2 semester hours**

Prerequisites: CHEM 4712 (may be taken concurrently), and CHEM 2223. Laboratory study of biochemical processes in cellular and subcellular systems with emphasis on the isolation and purification of proteins (enzymes) and the characterization of catalytic properties. One hour of lecture and four and one-half hours of laboratory per week.

**CHEM 4772 Physical Biochemistry: 3 semester hours**

Prerequisites: CHEM 3312 or CHEM 4712 or BIOL 4712. This course is designed to acquaint students with concepts and methods in biophysical chemistry. Topics that will be discussed include protein and DNA structures, forces involved in protein folding and conformational stability, protein-DNA interactions, methods for characterization and separation of macromolecules, and biological spectroscopy. Students may not receive credit for both CHEM 4772 and CHEM 5772.

**CHEM 4774 Introduction to Bioinformatics: 3 semester hours**

Prerequisites: CHEM 4712 or equivalent. This course introduces modern approaches in bioinformatics and computational biochemistry. Topics covered include a survey of biological databases, predictions from protein and DNA sequences, sequence alignment and sequence database searches, building phylogenetic trees, three-dimensional protein structure prediction, molecular modeling and simulation, and computational genomics. Students may not receive credit for both CHEM 4774 and CHEM 5774.

**CHEM 4797 Biochemistry and Biotechnology Seminar: 1 semester hour**

Same as CHEM 4797. Prerequisites: Senior standing in the Biochemistry and Biotechnology program and consent of faculty advisor. This course will focus on selected publications related to biochemistry and biotechnology from both refereed journals and news sources. Students are expected to participate in discussions and to prepare oral and written presentations. Completion of the Major Field Achievement Test in Biochemistry & Biotechnology is a course requirement. May not be taken for graduate credit.

**CHEM 4814 Special Topics in Chemistry: 1-10 semester hours**

A reading and seminar course in selected advanced topics.

**CHEM 4897 Seminar in Chemistry: 2 semester hours**

Prerequisites: CHEM 3022 and senior standing. This course will provide students with the opportunity to listen to talks presented by students, faculty, and invited speakers. Students must complete a comprehensive examination before the end of the course. Chemistry majors should enroll during the semester in which they intend to graduate, or during their next-to-last semester before graduation.

**CHEM 5302 Foundations of Physical Chemistry: 3 semester hours**

Prerequisites: Consent of Instructor. A survey of fundamental and advanced topics in physical chemistry including thermodynamics, kinetics, quantum chemistry, and spectroscopy. Three hours of lecture per week. Additional independent study work is required. Students may not receive credit for both CHEM 4302 and CHEM 5302.

**CHEM 5394 Special Topics in Physical Chemistry: 1-3 semester hours**

Prerequisite: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.

**CHEM 5396 Directed Readings in Physical Chemistry: 1-3 semester hours**

Prerequisites: Consent of Physical Chemistry Faculty. A series of readings of monographs, review papers, and/or research publications for a particular student directed at providing that student with appropriate background preparation for experimental or theoretical Ph.D.-level research in an area of physical chemistry. The particular readings will be selected by the physical chemistry staff. Potential topics include but are not limited to advances in Electrochemistry, Surface Chemistry, Thermodynamics, Molecular Spectroscopy, Quantitative Absorption Spectroscopy using new Methodologies, Applications of Group Theory in Spectroscopy, and Computational Chemistry. Assessment may be in various forms including by assignments and seminars. Students may take this course more than once for credit through the particular topic must be different in each case.

**CHEM 5412 Advanced Graduate Inorganic Chemistry: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. An introduction to the chemistry of the elements, including atomic and molecular structure, acids and bases, the chemistry of the solid state, and main group and transition metal chemistry. Additional independent study work is required. Three hours of lecture per week. Students may not receive credit for both CHEM 4412 and CHEM 5412.

**CHEM 5422 Coordination Chemistry: 3 semester hours**

Prerequisite: CHEM 4412 or an equivalent course. Chemistry of the coordination compounds of the transition metals including such topics as kinetics and mechanisms of reaction, stereochemistry, ligand field theory, stability and electronic spectra. Three hours of lecture per week.

**CHEM 5462 Organometallic Chemistry of the Transition Elements: 3 semester hours**

Prerequisites: CHEM 4412 or an equivalent course. A study of transition metal compounds containing metal-carbon bonds and related metal-element bonds, including their synthesis, structure and bonding, and reactions. Applications in organic synthesis and catalysis will also be presented. Three hours of lecture per week.

**CHEM 5494 Special Topics in Inorganic Chemistry: 1-3 semester hours**

Prerequisite: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.

**CHEM 5602 Advanced Organic Chemistry I - Physical Organic: 3 semester hours**

Prerequisites: CHEM 2622 and CHEM 3322. Mechanism and theory of organic chemistry. Topics to include kinetics, transition state theory, reaction intermediates, and stereochemical analysis. Three hours of lecture per week.

**CHEM 5612 Advanced Organic Chemistry II - Reactions And Synthesis: 3 semester hours**

Prerequisite: CHEM 2622. This course will examine a variety of organic transformations typically utilized in organic synthesis. Topics will include carbon-carbon bond formation, pericyclic reactions, oxidation, reduction, and functional group interconversions. Mechanism and stereochemistry will be emphasized. Three hours of lecture per week.

**CHEM 5652 Spectroscopic Identification of Organic Compounds: 3 semester hours**

Prerequisites: Graduate standing or CHEM 3643. An applied approach to the use of spectroscopic techniques in organic chemistry. Topics to include integrated applications of infrared and Raman spectroscopy,  $^{13}\text{C}$  and  $^1\text{H}$  nuclear magnetic resonance spectroscopy and mass spectroscopy for the purpose of elucidating the structure and dynamics of organic compounds. Three hours of lecture per week.

**CHEM 5694 Special Topics in Organic Chemistry: 1-3 semester hours**

Prerequisite: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.

**CHEM 5722 Advanced Graduate Biochemistry: 3 semester hours**

Prerequisites: CHEM 4712 or BIOL 4712. Selected advanced topics in the chemistry of life processes. Three hours of lecture per week. Students may not receive credit for both CHEM 4722 and CHEM 5722.

**CHEM 5772 Advanced Physical Biochemistry: 3 semester hours**

Prerequisites: CHEM 3312 or CHEM 4712 or BIOL 4712. Designed to acquaint students with concepts and methods in biophysical chemistry. Topics that will be discussed include protein and DNA structures, forces involved in protein folding and conformational stability, protein-DNA interactions, methods for characterization and separation of macromolecules, and biological spectroscopy. Three hours of lecture per week. Students may not receive credit for both CHEM 4772 and CHEM 5772.

**CHEM 5774 Bioinformatics: 3 semester hours**

Prerequisites: CHEM 4712 or equivalent. This course introduces modern approaches in bioinformatics and computational biochemistry. Topics to be covered include a survey of biological databases, predictions from protein and DNA sequences, sequence alignment and sequence database searches, building phylogenetic trees, three-dimensional protein structure prediction, molecular modeling and simulation, and computational genomics. Additional independent study work is required. Students may not receive credit for both CHEM 4774 and CHEM 5774.

**CHEM 5794 Special Topics in Biochemistry: 1-3 semester hours**

Prerequisites: Consent of instructor. The topic for this course may change from semester to semester, and more than one course or topic can be offered in a given semester. The course may be taken more than once for credit provided that the topic is different in each case. The course can have more than one instructor.

**CHEM 5798 Practicum in Science in Business: 1-2 semester hours**

Same as: BIOL 5798. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis in Chemistry, Biochemistry & Biotechnology, or Biology. Students will integrate and apply their scientific expertise to a practical, business-related problem. The course will emphasize interdisciplinary team-work as well as both written and oral communication skills.

**CHEM 5799 Internship in Science in Business: 1-2 semester hours**

Same as: BIOL 5799. Prerequisites: Graduate standing and enrollment in a Professional Science emphasis area in Chemistry, Biochemistry & Biotechnology, or Biology. The internship will consist of period of on-the-job training at a local company. Credit hours will be determined by the number of hours the student works each week and in consultation between the intern's supervisor and the course instructor. Internship assignments will be commensurate with the education and experience of the student, with an emphasis on work at the interface between the scientific and business components of the company. A written report describing the internship project is required.

**CHEM 6487 Problem Seminar in Inorganic Chemistry: 1 semester hour**

Prerequisite: Consent of the inorganic chemistry staff. Problems from the current literature, presentations and discussions by faculty, students and visiting scientists. Ph.D. students may take more than once for credit. Up to three credits may be applied to the M.S. degree program.

**CHEM 6687 Problem Seminar in Organic Chemistry: 1-3 semester hours**

Prerequisite: Consent of the organic chemistry staff. Problems from the current literature, presentations and discussions by faculty, students and visiting scientists. Ph.D. Students may take more than once for credit. Up to three credits may be applied to the M.S. degree programs.

**CHEM 6787 Problem Seminar in Biochemistry: 1 semester hour**

Prerequisite: Consent of the biochemistry staff. Problems from the current literature, presentations and discussions by faculty, students and visiting scientists. Ph.D. students may take more than once for credit. Up to three credits may be applied to the M.S. degree program.



**CHEM 6812 Introduction to Graduate Study in Chemistry: 1 semester hour**

Prerequisite: Consent of Graduate Advisor. Topics to be covered include: techniques of teaching of chemistry in colleges and universities, methods of instruction and evaluation; role and responsibilities of the Graduate Teaching Assistant in laboratory instruction; safety in the undergraduate laboratory, safety practices, emergency procedures; selection of a research project and thesis advisor.

**CHEM 6822 Introduction to Graduate Research in Chemistry: 1 semester hour**

Prerequisite: Consent of instructor. Topics to include: safety in the research laboratory, safety practices, emergency procedures, hazardous materials, waste disposal, radiation safety; research ethics, chemistry information retrieval, computer assisted information retrieval, types of databases, searching bibliographic data bases.

**CHEM 6832 Strategies for Independent Research Proposal Development: 1 semester hour**

Prerequisites: CHEM 6822 and Consent of Graduate Advisor. Topics include: strategies for identification of research topics in chemistry and biochemistry, techniques for database literature search, critical analysis of existing research knowledge, introduction to standard grant proposal formats, technical aspects in preparation of a research plan and accompanying sections, use of bibliographical software, and overview and practice of the peer review process.

**CHEM 6887 Graduate Student Seminar in Chemistry: 1 semester hour**

Prerequisites: Graduate standing. Scientific presentations by students. One hour per week.

**CHEM 6897 Chemistry Colloquium: 1 semester hour**

Presentation of papers by students, faculty and invited speakers. One hour per week.

**CHEM 6905 Graduate Research in Chemistry: 1-10 semester hours**

## Child Advocacy Studies

### Courses

**CAST 1000 Introduction to Child Advocacy Studies: 3 semester hours**

This survey course explores how child-serving systems have evolved, the functions they serve, and the roles they play in the lives of children and families. Key legislation, concepts, theories, and historical and contemporary approaches will be examined to highlight the types of advocacy relevant to children and the career paths associated with them. Students will examine skills needed for success as a child advocate, including collaboration and secondary traumatic stress prevention.

**CAST 2200 Policy and Global Issues in Child Advocacy: 3 semester hours**

Prerequisites: CAST 1000. This course reviews the history and implications of key national and international policies related to child advocacy. Students will explore the components of policy-making and strategies for effective policy advocacy. Students will also engage in advocacy efforts with policy-makers on behalf of children.

**CAST 2300 Ethics and Values in Child Advocacy: 3 semester hours**

Prerequisites: CAST 1000. This course explores the ethical, legal and professional issues related to child advocacy. Students will study the codes of ethics from a range of multidisciplinary perspectives and apply ethical decision making processes to case studies. The values inherent in a variety of child-serving sectors will be considered, as well as the conflict resolution practices aimed at resolving tensions between professionals.

**CAST 3290 Traumatic Stress in Childhood and Adolescence: 3 semester hours**

Same as PSYCH 3290. Prerequisites: PSYCH 2270 (majors) or PSYCH 2268 or ED PSY 2212 or approval from the instructor. This course is an exploration of the biopsychosocial impact of community, family, and individual trauma and stressors experienced during infancy, childhood, and adolescence. It introduces students to relevant theoretical frameworks, cultural considerations, and advocacy strategies.

**CAST 4398 Child Maltreatment: A Multidisciplinary Approach: 3 semester hours**

Same as PSYCH 4398 and SOC WK 4398. Prerequisites: CAST 3290 or PSYCH 3290 (may be taken concurrently), or consent of instructor. This course, with its interdisciplinary emphasis, focuses on the systemic response to the primary domains of child maltreatment by multidisciplinary teams and child advocacy centers. Risk factors, cultural considerations, and mandated reporting of child abuse and neglect are emphasized. Students will begin to develop professional skills pertaining to child maltreatment, using a variety of experiential learning modalities.

**CAST 4498 Forensic Investigation of Child Abuse: 3 semester hours**

Prerequisites: CAST 4398 or PSYCH 4398 or SOC WK 4398. This course is designed for students across multiple disciplines where knowledge of child abuse investigation and advocacy is necessary. It focuses on the investigative and prosecutorial responses of multidisciplinary team professionals involved with child abuse cases to expand the student's knowledge and skills about the most effective response to child abuse investigations. The course also includes critical thinking and competency-based skills training, such as conducting a cursory interview, participating in peer review, making case presentations, and producing investigative documentation.

**CAST 4598 Child Abuse Assessment and Intervention: 3 semester hours**

Prerequisites: CAST 4398 or PSYCH 4398 or SOC WK 4398. This course provides students from a variety of disciplines with knowledge and skills to intervene effectively and empathically with families who may experience child abuse and neglect. It uses experiential learning to develop critical thinking and skills in trauma-focused screening, assessment, and crisis intervention for vulnerable children and their families who are involved with child serving systems, such as law enforcement, child protective services, prosecution, and physical and mental health.

**CAST 4698 Internship in Child Advocacy Studies: 3 semester hours**

Prerequisites: CAST 4398 or PSYCH 4398 or SOC WK 4398, CAST 4498 (may be taken concurrently), CAST 4598 (may be taken concurrently), and approval of the CAST director. This course involves an internship in child or youth-serving setting and requires approval from the CAST director prior to enrolling. It must be taken concurrently with the CAST field education seminar (CAST 4700).

**CAST 4700 Field Education Seminar in Child Advocacy Studies: 1 semester hour**

Prerequisites: Consent of CAST director and concurrent enrollment in an approved CAST field education course. In this course, students will synthesize their learning from the Child Advocacy Studies (CAST) certificate courses with their field experiences.



# Chinese

## Courses

### **CHINESE 1001 Chinese I: 5 semester hours**

Emphasis is placed upon the understanding, speaking, reading, and writing of Mandarin Chinese and upon the acquisition of the fundamentals of grammar and syntax.

### **CHINESE 1002 Chinese II: 5 semester hours**

Prerequisites: Chinese I or equivalent. Emphasis is placed upon the understanding, speaking, reading, and writing of Mandarin Chinese. Continuation of the acquisition of the fundamentals of grammar and syntax.

### **CHINESE 1005 Chinese Calligraphy and Writing in East Asia: 1 semester hour**

Same as JAPAN 1005. This course is an introduction to the art of Chinese calligraphy and the history and basic features of the writing systems in East Asia (Chinese, Japanese, Korean, Mongolian, Tibetan, etc.). Emphasis is placed on the Chinese script and writing Chinese characters correctly with a calligraphy brush and ink. Students practice writing basic strokes and characters and creating their own calligraphic works.

### **CHINESE 2101 Intermediate Chinese I: 5 semester hours**

Prerequisites: CHINESE 1002 or equivalent. Grammar review and continued development of language skills.

### **CHINESE 2190 Special Readings: 1-6 semester hours**

Prerequisites: CHINESE 2102 or consent of the department. Independent study through readings, reports, and conferences.

### **CHINESE 2199 Special Topics: Language Immersion: Chinese: 1 semester hour**

Prerequisites: CHINESE 2101 or concurrent enrollment in CHINESE 2101. Faculty-led experience designed specifically to enhance acquisition of the target language and culture. This course may be repeated for credit if the topics vary.

# Communication

## Courses

### **COMM 1000 Effective Communication for College: 3 semester hours**

A communication by objective approach is used to introduce students to effective communication in a college environment. Emphasis is placed on preparing and delivering effective messages whether written or spoken, formal or informal, digital or hardcopy.

### **COMM 1030 Interpersonal Communication I (MOTR COMM 120): 3 semester hours**

Introduction to the theories of interpersonal communication. Emphasis on basic principles involved in one-to-one interactions.

### **COMM 1040 Introduction to Public Speaking (MOTR COMM 110): 3 semester hours**

Theories and techniques of organization, argumentation, persuasion and delivery in public speaking.

### **COMM 1041 Presentational Speaking: 3 semester hours**

Theories and techniques of presenting information in various contexts, formats, and settings. Emphasis is placed on strategic coordination for message effectiveness in a team-based environment.

### **COMM 1042 Reacting to the Past: Communication: 3 semester hours**

This course consists of a series of historical simulations built around key moments and texts from the past. In each simulation, students are assigned a role and develop that character. It offers students a rigorous academic experience in which they conduct historical research and speak extensively. Because this course requires extensive public speaking, it fulfills the core general education requirement for Communication Proficiency.

### **COMM 1050 Introduction to Mass Communication: 3 semester hours**

Introduction to oral, print, and electronic media of communication, including emerging digital formats. The course covers the major theories of mass communication effects as well as the social, organizational, economic, political, and technological factors that shape the creation and reception of mass media messages.

### **COMM 1150 Introduction to Public Relations: 3 semester hours**

This course provides an introduction to contemporary persuasive social science principles, processes, and issues involved in the management of communications between an organization and its publics. An emphasis on ethics, law, and professional standards is highlighted.

### **COMM 1369 Introduction to Health Communication: 3 semester hours**

This course introduces the concept of health communication through interpersonal, organizational, and mass media health contexts. Topics may include patient-provider communication, issues of diversity and culture, social support, health entertainment, marketing, HR and PR in health, and careers in health communication.

### **COMM 1950 Finding an Internship in Communication and Media Fields: 1 semester hour**

This course equips Communication majors with the necessary skills to secure an internship or practicum that aligns with their long-term, post-graduation goals. Students will identify internships relevant to their coursework and career goals, create resumes, write cover letters, develop interviewing skills, and more. The concepts of this course prepare students to secure an internship or practicum for the following semester.

### **COMM 2230 Small Group Communication (MOTR COMM 125): 3 semester hours**

Development of communication skills needed in small group decision-making. Application of these skills in contemporary problems.

### **COMM 2231 Communication in the Organization: 3 semester hours**

Course integrates communication theories applicable to the structure and function of organizations. The effect of communication variables on departmental interface, member satisfaction and motivation, leadership and subordinate styles, and perception of the organization by the external environment.

### **COMM 2235 Professional Communication: 3 semester hours**

This course seeks to prepare students to develop and apply the practical communication and self-development skills needed to excel in academic and workplace settings. Topics may include self- and relationship management, communicating effectively in professional settings, and career planning. Students will also become familiar with specific careers in the field of communication and media.

### **COMM 2240 Persuasive Communication: 3 semester hours**

A study of persuasive communication including theories, techniques, forms, functions, applications, potential and limitations for individual and organizations. Insights from both classical rhetoric and contemporary communication theory.

**COMM 2332 Intercultural Communication: 3 semester hours**

This course examines culture as a variable in both interpersonal and collective communicative situations. There is emphasis placed upon opportunities and problems arising from similarities or differences in communication patterns, processes, and codes among various cultural groups.

**COMM 3130 Communication in Family, Dating, and Marriage: 3 semester hours**

Prerequisite: COMM 1030. This course examines dating, courtship, and marriage relationships. It focuses on exploring the history and contemporary issues associated with intimate relationships.

**COMM 3150 Crisis, Disaster, and Risk Communication: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. Course will focus on three specialized areas within public relations: communication methods and infrastructure in relation to large-scale disaster management; organizational crisis communication; and public communication regarding environmental, chemical and other public risk issues.

**COMM 3330 Research Methods in Communication I: 3 semester hours**

Introduction to the fundamental tools of quantitative research in communication. Focus of the course is on reading and comprehending communication research reports rather than conducting quantitative research.

**COMM 3337 Male/Female Communication: 3 semester hours**

Prerequisite: Junior standing or consent of instructor. This course explores the influence of gender upon contemporary American communication behavior. Topics include semantic and syntactic variations in male and female speech, gender-role development as process and product of communication, analysis of communication patterns and barriers within gender groups. Mass, public, interpersonal, and dyadic communication contexts are considered.

**COMM 3355 Dangerous Messages: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course examines how communication can be used to promote as well as inhibit societal and individual well-being. Topics include alcohol and tobacco, drugs, sexual behavior, and others pertaining to health and risky behaviors. Stereotyping, diversity in media ownership and content, hate speech, and other topics with implications for the health of citizens individually and as a people may also be covered.

**COMM 3368 Advanced Health Communication: 3 semester hours**

Prerequisites: COMM 1369 or consent of instructor. This course focuses on how to use communication to promote health across interpersonal, organizational, and mass media contexts. Topics may include crisis communication, health interventions and campaigns, and social marketing among others.

**COMM 3370 Social Media in Public Relations: 3 semester hours**

Prerequisites: COMM 1150 or MEDIA ST 1100 or consent of instructor. The course presents an overview of how to use social media and blogging in contemporary public relations. Students will also learn how to evaluate and create a social media plan.

**COMM 3395 Special Topics in Communication: 3 semester hours**

In-depth study of topics pertaining to current research in the department. May be repeated up to six credit hours if topic is different.

**COMM 4100 Communication Campaigns: 3 semester hours**

Prerequisites: COMM 1150, COMM 2180 and junior standing, or consent of instructor. This course focuses on the design, analysis, and implementation of mass communication-based information campaigns by integrating research and theory from interpersonal communication, mass communication, and public relations. It provides an advanced study of an organization's public relations needs and includes researching the situation, analyzing audiences, and preparing strategic plans for approved clients.

**COMM 4199 Applied Strategic Communication: 3-6 semester hours**

Prerequisites: Senior standing and consent of instructor; enrollment limited to PR certificate students. This course allows students to gain advanced, practical work experience emphasizing strategic communication skills within a discipline-relevant organization. Work must be done under supervision of a working professional in the field and in consultation with a faculty member. Proposed sites must be approved by the department. This course may be repeated for a maximum of 6 credit hours.

**COMM 4360 Applied Health Communication: 3 semester hours**

Prerequisites: Senior standing with at least 12 hours of course work in Communication, consent of instructor; enrollment limited to health communication certificate students. Advanced practical work experience emphasizing communication skills within a health organization. Experiences may include organizational and promotional activities, mass communication, public relations, research and writing, strategic communication, or training and development, all with a health communication focus. Internships are off-campus and proposed sites must be approved by the department. Work must be done under supervision of a working professional in the field, and in consultation with a faculty member.

**COMM 4500 Seminar in Fundamental Communication Theory: 3 semester hours**

Prerequisites: Senior standing. This course introduces students to the theoretical, methodological, and philosophy of science issues in the discipline of communication. It includes general, micro, contextual, and interdisciplinary (sybiotic) communication theories.

**COMM 4600 Seminar in Fundamental Organizational Communication Theory: 3 semester hours**

Prerequisites: COMM 2231 and senior standing. This course examines the function of communication in the workplace. Students will learn to evaluate, adapt, and apply various research-supported frameworks for understanding organizational communication and communication processes in organizations. Interpersonal sensitivity, communication skills, and ethical values within organizations are also examined.

**COMM 4650 Seminar in Fundamental Interpersonal Communication Theory: 3 semester hours**

Prerequisites: COMM 1030 and one 3000-level course from the Interpersonal Communication Emphasis Area. This course examines the theories and research pertaining to interpersonal communication. It introduces students to fundamental theoretical writings and current research literature in the field. They will evaluate, adapt, and apply research findings on several interpersonal communication topics, including information management in interpersonal contexts, relational uncertainty in interpersonal communication, deception detection, new technologies, and dating.

**COMM 4700 Seminar in Fundamental Mass Communication Theory: 3 semester hours**

Prerequisites: COMM 1050 and at least three credit hours of 3000-level courses from the Mass Communication Emphasis Area. This course examines the theories and research pertaining to media industries, content, and users. It introduces students to the fundamental theoretical writings and current research literature in the field. Students will evaluate, adapt, and apply research finding in mass communication topics such as the impact of technology on media content and usage patterns, media effects on society and on individuals, media representation patterns, and the reasons users select particular types of content.

**COMM 4900 Directed Readings: 3 semester hours**

Prerequisite: Consent of instructor. Supervised independent study focused on discipline-relevant content that expands on concepts and theories presented in communication courses. May be repeated for credit.

**COMM 4905 Directed Readings in Health Communication: 3 semester hours**

Prerequisites: Consent of instructor. Supervised independent study focused on discipline-relevant content in health communication that expands on concepts and theories presented in health communication courses. May be repeated once for credit.

**COMM 4910 Supervised Research: 1-3 semester hours**

Prerequisites: Consent of instructor. Supervised field, laboratory, or survey research experience that includes activities such as data collection, literature searches, qualitative or quantitative data analysis, survey or experiment administration, and other research related activities. May be repeated with consent of department.

**COMM 4915 Supervised Research in Health Communication: 1-3 semester hours**

Prerequisites: Consent of instructor. Supervised field, laboratory, or survey research experience in the area of health communication. Includes activities such as data collection, literature searches, qualitative or quantitative data analysis, survey or experiment administration, and other research related activities. May be repeated for up to 6 credit hours total with consent of department.

**COMM 4920 Practicum in Applied Communication: 1-3 semester hours**

Prerequisite: Junior standing, at least 12 hours of course work in Communication, and consent of instructor; open to Communication majors/minors. Practicum work experience with any discipline-relevant unit at UMSL including, but not limited to: the offices of students affairs, public relations, and research administration; the school newspaper or radio station; and intra-departmental activities. Work must be done on campus, under supervision of a working professional in the field, and in consultation with a faculty member. Repeatable, but no more than six hours total credit may be earned in practicum courses toward the 36-hour minimum required for the degree.

**COMM 4950 Internship in Applied Communication: 3-6 semester hours**

Prerequisites: Senior standing with at least 12 hours of course work in Communication, consent of instructor; open to communication majors only. Advanced practical work experience emphasizing communication skills with any discipline-relevant entity. Experiences may include organizational and promotional activities, mass communication, public relations, research and writing, strategic communication, or training and development. Internships are off-campus and proposed sites must be approved by the department. Work must be done under supervision of a working professional in the field, and in consultation with a faculty member. Repeatable, but not more than six hours total credit may be earned in internship courses toward the 35-hour minimum required for the degree.

**COMM 5000 ACP - Elements of Public Speaking: 3 semester hours**

Prerequisites: Graduate standing, special consent. This course focuses on the delivery of theory and research based public speaking content for teachers seeking certification to teach communication courses for the Advanced Credit Program.

**COMM 5010 ACP: Elements of Debate: 3 semester hours**

Prerequisites: Graduate standing, special consent. This course focuses on developing a comprehensive understanding of the theory and research typically taught in college level forensics and debate courses. Designed for teachers seeking certification to teach communication courses for the Advanced Credit Program.

**COMM 5020 ACP - Persuasion and Influence: 3 semester hours**

Prerequisites: Graduate standing, special consent. This course focuses on developing a strong background in the research and theory that underlies attempts to persuade and influence others through the use of effective communication. Designed for teachers seeking certification to teach communication courses for the Advanced Credit Programs.

**COMM 5050 ACP - Special Topics: 3-6 semester hours**

Prerequisites: COMM 5000, COMM 5010, and COMM 5020, special consent. This rotating topic course focuses on developing knowledge of communication theory and research applicable to the context of teaching public speaking and debate. Topics may include such issues as nonverbal communication, conflict communication, and argumentation, among others. Designed for teachers seeking certification to teach in the Advanced Credit Program. May be repeated for a maximum of 6 credit hours.

**COMM 5099 ACP - Observation and Implementation: 3 semester hours**

Prerequisites: COMM 5000, COMM 5010, COMM 5020 and COMM 5050, special consent. Provides a capstone experience for teachers seeking to teach communication courses in the advanced credit program. While enrolled, participants will implement an ACP course in their school under the supervision of the Communication Department's advanced Credit Program Liaison.

**COMM 6500 Seminar in Communication Theory: 3 semester hours**

Prerequisite: Graduate standing. Examination of the theoretical, methodological, and philosophy of science issues in the discipline of communication. Examines general, micro, contextual, and interdisciplinary (symbiotic) communication theories. Required of all graduate communication students.

**COMM 6510 Advanced Communication Research Methods I: 3 semester hours**

Prerequisites: Graduate standing. Concerns the logic and forms of communication inquiry including an examination of various communication research and evaluation methods and their theoretical frameworks. Topics include communication research strategy and methodology, scientific process, derivation and test of hypotheses, methods of research design. Provides and orientation to graduate research including proposal development for thesis, internship and paper requirements, and includes a theory-based research project of the student's choice. Required of all graduate communication students.

**COMM 6600 Seminar in Strategic Communication in Organizations: 3 semester hours**

Prerequisite: Graduate standing. Examines the function of communication in the workplace. Students will study various frameworks for understanding organizational communication, implications of major organizational theories, and strategic communication processes in organizations. Interpersonal sensitivity, communication skills, and ethical values within organizations are also examined.

**COMM 6630 Seminar in Interpersonal Communication: 3 semester hours**

Prerequisites: Graduate standing. This course examines the theories and research pertaining to interpersonal communication. Students will evaluate, adapt, apply, and formulate theory and research findings to several interpersonal communication topics, including information management in interpersonal contexts, relational uncertainty in interpersonal communication, deception detection, new technologies, and dating.

**COMM 6700 Seminar in Mass Communication: 3 semester hours**

Prerequisites: Graduate Standing. Examines the theories and research pertaining to media industries, content, and users. Topics include the impact of technology on media content and usage patterns, media effects on society and on individuals, media representation patterns, and the reasons users select particular types of content.

**COMM 6800 Seminar in Health Communication: 3 semester hours**

Prerequisites: Graduate Standing. Examines the theories that researchers use to investigate health communication phenomena, as well as the application of those theories to understanding and enhancing health. Course topics include health campaigns and interventions, patient-provider communication, and cultural perceptions of health.

**COMM 6830 Seminar in Special Topics in Communication: 3 semester hours**

Prerequisite: Graduate standing. Selected topics in the study of communication. Review of the communication theory and methods appropriate to the topic. The course includes a research project. May be repeated if the topic is different.

**COMM 6900 Directed Readings in Communication: 1-6 semester hours**

Prerequisite: Graduate standing and consent of instructor. Independent study of published research and reports relating to a specific topic in communication. May be repeated for credit with permission of advisor.

**COMM 6910 Supervised Research in Communication: 1-3 semester hours**

Prerequisites: Graduate standing and consent of instructor. Primary research on specific topics in communication. May involve collaborative research with a faculty member on a topic of mutual interest or data collection/analysis for a project developed by the student under the guidance of a faculty member. May be repeated for credit with permission of advisor.

**COMM 6920 Practicum in Computer-Mediated Communication: 1-3 semester hours**

Prerequisites: Graduate standing and consent of program director. Applied practice or research in collaboration with a faculty member.

**COMM 6950 Graduate Internship: 3-6 semester hours**

Prerequisites: Graduate standing and approval of graduate coordinator. Individual on-site internship in organizational or mass communication. May be repeated.

**COMM 6960 Thesis Research and Preparation: 1-10 semester hours**

Prerequisites: Graduate standing and consent of instructor. Individual research for and preparation of the graduate thesis.

## Computer Science

### Courses

**CMP SCI 1000 Computer Science Experiences: 1 semester hour**

This course is for recently declared undergraduate students majoring in Computer Science or Computing Technology. Topics may include resources that are available on campus and in the department, career opportunities, choosing the right degree, and exploration of concepts, skills and practices that are essential for successful careers. This course should be taken by freshmen and transfers within the first two semesters of declaring the major.

**CMP SCI 1011 Introduction to the Internet and World Wide Web: 3 semester hours**

Intended for any student wishing to utilize the Internet and World Wide Web more effectively. Topics include networking basics, the Internet and World Wide Web, browsers, search engines, Web Services, utilities, tools, online privacy and security. Students will learn to develop a personal web page using skills acquired in the course.

**CMP SCI 1012 Learning to Program Using Virtual Worlds: 3 semester hours**

Introduces modern programming principles without requiring the knowledge of a traditional programming language. Instead, this course utilizes a novel graphical approach that enables the student to create, populate, and manipulate virtual 3-dimensional worlds which resemble video games. The development of these worlds allows students to gain direct experience and skills in using computers to solve problems. Students will create worlds of varying complexity.

**CMP SCI 1250 Introduction to Computing: 3 semester hours**

Prerequisites: MATH 1030 with a B- or better, or MATH 1045 with B- or better, or MATH 1100 (can be taken concurrently), or MATH 1800 (can be taken concurrently), or a 70% on the proctored UMSL Math Placement obtained at most one year prior to enrollment in this course. This course provides an introduction to the concepts of computation, problem solving, and computer systems. It covers topics such as, fundamental programming constructs, basic data types, and modularization using a modern high level language. Problem solving skills are developed through a progression of programming projects.

**CMP SCI 2250 Programming and Data Structures: 3 semester hours**

Prerequisite: CMP SCI 1250. Continuation of CMP SCI 1250. Discusses properties and implementation of abstract data types such as lists, trees, stacks and queues. Introduces procedural and class abstraction, basic program architecture, use of interfaces, modular programming, and file processing.



**CMP SCI 2261 Object-Oriented Programming: 3 semester hours**

Prerequisite: CMP SCI 2250. Introduces object-oriented concepts, terminology, and notation (UML) using Java. Covers encapsulation, classes, objects, inheritance, and the use of class libraries. Additional topics may include graphical user interfaces, applets, and related tools and technologies.

**CMP SCI 2700 Computer Organization and Architecture: 3 semester hours**

Prerequisites: CMP SCI 2250 (can be taken concurrently). This course introduces details of computer systems from architectural and organizational points of view. It covers data representation, basic digital logic circuits, memory types and hierarchies, I/O and storage devices, CPU architectures such as RISC, CISC, parallel, and multi-core.

**CMP SCI 2750 System Programming and Tools: 3 semester hours**

Prerequisites: CMP SCI 2250 and CMP SCI 2700 (CMP SCI 2700 can be taken concurrently). This course covers systems programming, scripting, libraries, utilities, and development tools. Additional programming topics include piping, binary files, exception handling, command-line arguments and symbolic debugging. This course also explores tools available in the Unix/Linux environments.

**CMP SCI 3010 Web Programming: 3 semester hours**

Prerequisites: CMP SCI 2261 (can be taken concurrently) or INFSYS 3806. This course provides a comprehensive overview of website development using prevalent LAMP stack architecture. Students will create well-structured, easily maintained, standards-compliant, accessible client-side code (HTML, CSS, JavaScript) in addition to server-side code (PHP and Python). Client-server computing projects are a course requirement. Students leave the course knowing how client-side code, server-side code, web servers, and databases function together.

**CMP SCI 3130 Design and Analysis of Algorithms: 3 semester hours**

Prerequisites: CMP SCI 2250, MATH 1320, and MATH 3000. This course addresses the design and analysis of fundamental algorithms in computer science. Studies basic sorting algorithms, priority queues, order statistics, search trees, and hash tables. Analysis techniques may involve time and space complexity analysis of both iterative and recursive algorithms, analysis of algorithm correctness, and amortized complexity analysis. Additional topics may include data compression, string manipulation, greedy algorithms, dynamic programming, and graph traversal.

**CMP SCI 3200 .NET Framework: 3 semester hours**

Prerequisites: CMP SCI 3010. This course introduces the .NET framework and related languages and technologies. Topics will include Visual Studio and C# for OOP and web applications. Additional topics may include ASP.NET with MVC, data access, and windows communication.

**CMP SCI 3410 Video Game Design and Development: 3 semester hours**

Prerequisites: CMP SCI 2261. This course covers major aspects of the design and development of video games, including world/level design, game UI design, game character design, game engine programming, 2D/3D modeling and rendering, game physics and animation. This is a project-based course in which students learn to apply acquired knowledge and skills to building a video game in a team environment.

**CMP SCI 3702 Introduction to Cyber Threats and Defense: 3 semester hours**

Prerequisites: CMP SCI 2250. This course introduces the importance of cybersecurity and covers its various components. Topics may include different types of malware, phishing, password attacks, spoofing, efficient encryption algorithms, firewalls, intrusion prevention/detection systems, and honeypots. Credit cannot be granted for both CMP SCI 3702 and CMP SCI 5702.

**CMP SCI 3780 Software Security: 3 semester hours**

Prerequisites: CMP SCI 2261, CMP SCI 2750, and CMP SCI 3010. This course introduces the basic software security principles and pitfalls, including topics such as buffer, integer and string problems, runtime errors, SQL and command injection. Additional topics may include data protection, secure file access, password and network security.

**CMP SCI 3990 Undergraduate Internship: 1-3 semester hours**

Prerequisites: Consent of instructor. This course is a computer science internship that provides a student field experience in an organization related to the profession. To be enrolled, students must be employed in an internship or co-op program and find an instructor to supervise the experience. Internship activities may vary by site, but will often require end-of-semester reporting. Typically 1 credit can be earned for about 100 work hours. A maximum of 3 credit hours of CMP SCI 3990 can be counted as major electives and a maximum of 6 credit hours of CMP SCI 3990 and CMP SCI 4880 combined can be counted as major electives.

**CMP SCI 4010 Advanced Web Development with Java: 3 semester hours**

Prerequisites: CMP SCI 3010 and either CMP SCI 2261 or INFSYS 3806; or graduate standing. This course covers more advanced Java topics, along with related concepts and technologies for Web development. Topics may include database connectivity, multi threading, security, networking, MVC pattern, testing and source control for Java applications, and server-side topics such as servlets and web servers.

**CMP SCI 4011 Web Development with Advanced JavaScript: 3 semester hours**

Prerequisites: CMP SCI 3010. This course provides a comprehensive overview of website development using the modern MEAN (MongoDB, Express.js, Angular, Node.js) stack architecture. Students will create web applications that make use of today's modern JavaScript engine. Other topics may include React, Sass (Syntactically awesome style sheets), and Pug template engine.

**CMP SCI 4012 Introduction to Enterprise Web Development: 3 semester hours**

Prerequisites: CMP SCI 4010. This course covers design and implementation issues for enterprise web development, and some popular advanced technologies. Topics include MVC and persistence frameworks, such as Spring and Hibernate. Other topics may include Java Web services, EJB, messaging standards such as JMS, and Java EE design patterns. Students will develop enterprise-level web application projects. Credit cannot be earned for both CMP SCI 4012 and CMP SCI 5012.

**CMP SCI 4020 Introduction to Android Apps: Android Fundamentals: 3 semester hours**

Prerequisite: CMP SCI 2261. This course covers the fundamental programming principles, software architecture, and user experience considerations underlying handheld software applications and their development environments. The course involves in-depth, hands-on examples that are implemented on the Android Platform, along with discussions of security. Credit can not be granted for both CMP SCI 4020 and CMP SCI 5020.

**CMP SCI 4030 Introduction to Intelligent Web: 3 semester hours**

Prerequisites: CMP SCI 3010 and CMP SCI 3130. This course covers the application of artificial intelligence and other modern techniques to help construct, navigate, and experience the Web. Topics may include retrieval models, classification, mining, association, topology, and indexing algorithms such as PageRank and HITS. Credit cannot be earned for both CMP SCI 4030 and CMP SCI 5030.

***CMP SCI 4200 Python for Scientific Computing and Data Science: 3 semester hours***

Prerequisites: CMP SCI 1250 and (MATH 1100 or MATH 1800) and (ANTHRO/SOC 3220 or BIOL 4122 or CRIMIN 2220 or ECON 3100 or MATH 1320 or POL SCI 3000 or PSYCH 2201). This course covers programming using the Python language and related libraries. The course explores problem solving using Python's support of procedural, object-oriented, and functional approaches to programming. Topics may include NumPy arrays, visualization, Pandas DataFrames, and selected functions from statistical and scientific packages.

***CMP SCI 4220 Introduction to iOS Programming and Apps: 3 semester hours***

Prerequisites: CMP SCI 2261 or INFSYS 3806 or graduate standing. This course will use Swift for building iOS apps. It also introduces Xcode, Interface Builder, basic design patterns like MVC and delegation, and core libraries for Swift and iOS. Additional topics may include network communication, data persistence, basic animation, and mapping. This is a project-oriented class that will require significant use of a Mac with Xcode installed.

***CMP SCI 4222 iOS Apps: 3 semester hours***

Prerequisites: CMP SCI 4220 or consent of the instructor. This course focuses on building more sophisticated iOS apps. May include networking such as web services, Bluetooth and wifi connectivity, graphics and animation in 2-d and 3-d, autolayouts, OpenGL, advanced data sources such as plist and core data, source control and unit testing. May also discuss security topics. Credit not granted for both CMP SCI 4222 and CMP SCI 5222.

***CMP SCI 4250 Programming Languages: 3 semester hours***

Prerequisites: CMP SCI 2261 and CMP SCI 3010, or graduate standing. This course studies the principles, approaches, and trade-offs in modern programming languages, including a comparative study of syntax, semantics, and pragmatics. It also examines major programming paradigms: object-oriented, imperative, functional and logic.

***CMP SCI 4280 Program Translation Project: 3 semester hours***

Prerequisites: CMP SCI 2700, CMP SCI 2750, CMP SCI 3130, and CMP SCI 4250, or graduate standing. This course uses program translation as an example of a complex task, and focuses on managing and developing solutions for such complex programming tasks using modular incremental development and testing while applying proper standards. Translation topics may include finite automata, BNF, language semantics, and various translation models.

***CMP SCI 4300 Introduction to Artificial Intelligence: 3 semester hours***

Prerequisites: CMP SCI 3130. This course provides an introduction to artificial intelligence. The list of topics may include search, planning, knowledge-based reasoning, probabilistic inference, machine learning, natural language processing, and practical applications. Credit cannot be granted for both CMP SCI 4300 and CMP SCI 5300.

***CMP SCI 4320 Introduction to Evolutionary Computation: 3 semester hours***

Prerequisites: CMP SCI 2261, CMP SCI 2750 and CMP SCI 3130. This course introduces the concepts of nature-inspired problem solving with artificial evolution using selection, crossover, mutation and inheritance. It discusses applications of evolutionary algorithms, overviews the existing models and instances, and analyzes specific instances such as genetic algorithms, evolutionary programming, evolution strategies, and genetic programming. Credit not granted for both CMP SCI 4320 and CMP SCI 5320.

***CMP SCI 4340 Introduction to Machine Learning: 3 semester hours***

Prerequisites: CMP SCI 4342, or CMP SCI 2261 and CMP SCI 3130, or consent of instructor. This course provides an introduction to machine learning principles, algorithms and applications. Topics may include computational learning theory, VC Dimension, generalization, classification, regression, regularization, validation, and reinforcement learning. Credit cannot be granted for both CMP SCI 4340 and CMP SCI 5340.

***CMP SCI 4342 Introduction to Data Mining: 3 semester hours***

Prerequisites: CMP SCI 4200, or CMP SCI 2261 and CMP SCI 3130. This course provides an introduction to data mining principles, algorithms, and applications. Topics may include data preprocessing, data transformation, similarity and dissimilarity measures, data representation, classification techniques, association analysis, cluster analysis, and anomaly detection. Credit cannot be granted for both CMP SCI 4342 and CMP SCI 5342.

***CMP SCI 4370 Introduction to Biological Data Science: 3 semester hours***

Prerequisites: CMP SCI 3130 or consent of instructor. This course provides an introduction into several key areas of biological data science, with a focus upon genetic data. Relevant background topics in genetics, current issues, and a variety of available resources will be explored. Upon successful completion of this course, the student will be able to evaluate algorithms for analyzing genetic data, including assessments of sources of errors and analysis of time and space complexity; address shortcomings in existing approaches; and implement efficient and effective software for exposing information hidden in genetic data. Credit cannot be granted for both CMP SCI 4370 and CMP SCI 5370.

***CMP SCI 4390 Introduction to Deep Learning: 3 semester hours***

Prerequisites: CMP SCI 3130 or consent of instructor. This course introduces mathematical foundations for deep learning, and follows with practical applications using selected domains such as image classification or protein predictions. It also covers dense neural networks, convolutional neural networks, recurrent neural networks, and other state-of-the-art networks. Credit cannot be granted for both CMP SCI 4390 and CMP SCI 5390.

***CMP SCI 4410 Introduction to Computer Graphics: 3 semester hours***

Prerequisites: CMP SCI 2250 and MATH 2450. This course covers the theoretical foundation and algorithms for computer graphics. Students learn the basics of graphics programming for modeling, rendering, and animation of 2D and 3D objects, using standard graphics API. A brief discussion of special graphics hardware, such as GPU, may be included. Credit cannot be granted for both CMP SCI 4410 and CMP SCI 5410.

***CMP SCI 4420 Introduction to Digital Image Processing and Computer Vision: 3 semester hours***

Prerequisites: MATH 1900, MATH 2450, CMP SCI 2750, and CMP SCI 3130. This course focuses on image analysis and visual perception. Students learn data structures and algorithms for image processing, region and texture analysis, image filtering, edge detection, contour following, and image enhancement in both spatial and frequency domain. Other topics may include color processing, coding for storage, retrieval, transmission, and image restoration. Credit cannot be granted for both CMP SCI 4420 and CMP SCI 5420.

***CMP SCI 4500 Introduction to the Software Profession: 3 semester hours***

Prerequisites: CMP SCI 2261, CMP SCI 3010, and MATH 3000. This course focuses on software development and on the skills required for success in the software profession. Topics related to software development may include software process, models and views, software architectures, documentation, and testing strategies. Topics related to the profession may include ethics, licensing, copyright, trademarks, and professional conduct. Individual and group projects, research, and presentations may be required in this capstone course.

***CMP SCI 4520 Introduction to Object-Oriented Analysis and Design: 3 semester hours***

Prerequisites: CMP SCI 2261 and CMP SCI 3130. This course covers object-oriented development, using UML and following an agile process. It discusses elements of analysis, requirements, design, implementation and deployment, such as use cases, static and dynamic models, patterns, and frameworks. This course includes a semester long project. Credit not granted for both CMP SCI 4520 and CMP SCI 5520.

***CMP SCI 4610 Database Management Systems: 3 semester hours***

Prerequisites: CMP SCI 3010 and MATH 3000; or graduate standing. This course focuses on database theory and applications, with emphasis on the relational model. Topics include database design, modeling, file systems, indexing, integrity constraints, relational algebra, normalization, transaction processing, and concurrency control. Students are exposed to emerging DBMS technologies and applications. Several programming projects will be required using a popular SQL server.

***CMP SCI 4700 Computer Forensics: 3 semester hours***

Prerequisites: CMP SCI 2750 and CMP SCI 3010; or graduate standing. This course explores topics and methodologies for examining digital evidence, along with some principles of the investigative process. Includes memory, file system, operating system, network, and mobile device forensics. This course addresses both theory and hands-on aspects for conducting digital forensic examinations.

***CMP SCI 4730 Computer Networks and Communications: 3 semester hours***

Prerequisites: CMP SCI 2750 and MATH 1320, or graduate standing. The course provides an understanding of computer network fundamentals, design, management and security through the layered Internet architecture and the TCP/IP protocol stack. The topics may include common networking techniques and protocols, as well as more advanced concepts like cloud computing, software-defined networks, and virtual network functions.

***CMP SCI 4732 Introduction to Cryptography for Computer Security: 3 semester hours***

Prerequisites: MATH 1100 or MATH 1800 or consent of instructor. This course provides an introduction to cryptography as it applies to computer security. It describes modern cryptographic systems and potential attacks on against these systems. Topics may include both symmetric and asymmetric encryption algorithms, authentication, key exchange protocols, onion networks and blockchain technology, as well as potential attacks on these systems. Credit cannot be granted for more than one of CMP SCI 4732, CMP SCI 4780, and CMP SCI 5732.

***CMP SCI 4740 Introduction to High Performance Computing: 3 semester hours***

Prerequisites: CMP SCI 2750 and CMP SCI 3130. This course introduces algorithms for multiprocessor and multi-core architectures. Students learn the models of modern parallel computation and techniques to take advantage of parallel architectures for distributed and shared memory multi-processor architectures. Credit not granted for both CMP SCI 4740 and CMP SCI 5740.

***CMP SCI 4750 Introduction to Cloud Computing: 3 semester hours***

Prerequisites: CMP SCI 2750. This course provides an introduction to development and deployment of applications in the cloud space. Touches on different aspects of cloud computing such as IaaS, PaaS, and SaaS. Includes significant discussion on legal and security aspects of clouds in the marketplace. May also include public, private, and hybrid clouds, and Internet of Things. Credit not granted for both CMP SCI 4750 and CMP SCI 5750.

***CMP SCI 4760 Operating Systems: 3 semester hours***

Prerequisites: CMP SCI 2750 and CMP SCI 3130; or graduate standing. This course covers the structure of a generic operating system, considering in detail the algorithms for interprocess communication, process scheduling, resource management, memory management, file systems, and device management. It presents examples from contemporary operating systems and requires practical projects implemented within a modern operating system or simulator environment.

***CMP SCI 4780 Computer and Network Security: 3 semester hours***

Prerequisites: CMP SCI 4730 or graduate standing. This course provides a broad overview of computer and network security technologies and concerns from multiple perspectives, such as cryptography, Public Key Infrastructures (PKI), hashes and message digests, computer viruses and malware, email security, TCP/IP security, IPSec, Secure Socket Layer (SSL), Transport Layer Security (TLS), Virtual Private Networks (VPN), Firewall, AAA (Authentication, Authorization, Accounting), wireless and mobile systems security, secure identifications (IDs), cloud security, privacy and integrity, network attacks, system monitoring, and Intrusion Detection System (IDS). Management and human factors related to security will also be discussed.

***CMP SCI 4782 Information Security: 3 semester hours***

Prerequisites: CMP SCI 2750 and, CMP SCI 3702 or INFSYS 3848, or consent of instructor. This course provides an overview of the cybersecurity profession and the various domains associated with it. Students will be introduced to various information risk management concepts and how it is interconnected to cybersecurity. A broad range of cybersecurity domains will be discussed along with practical applications of information risk management. Additional topics may include labs in select cybersecurity domains. Credit can not be granted for both CMP SCI 4782 and CMP SCI 5782.

***CMP SCI 4792 Introduction to Mobile Computing, Networking, and Security: 3 semester hours***

Prerequisites: CMP SCI 2750 and, CMP SCI 3702 OR INFSYS 3848, or consent of instructor. This course introduces fundamental concepts of mobile wireless networks, mobile edge computing, and security measures at the edge. It discusses challenges related to mobile edge computing systems in general and may include topics such as crowdsourcing/crowdsensing systems, Quality of Experience (QoE) in real-time mobile services, Internet of Things, scalability, secure and verifiable computing, and vehicular and autonomous driving networks. Credit not granted for both CMP SCI 4792 and CMP SCI 5792.



**CMP SCI 4794 Introduction to Security of IoT Systems: 3 semester hours**

Prerequisites: CMP SCI 4730 or consent of instructor. This course covers the cutting-edge techniques on the emerging edge cloud and wireless/mobile Internet of Things (IoT) systems. It covers the IoT reference architecture, integrated IoT security architecture, major threats and vulnerabilities with the IoT devices and edge cloud, and defense mechanisms. It includes hands-on labs on both the vulnerabilities and defense of the systems. Credit cannot be granted for both CMP SCI 4794 and CMP SCI 5794.

**CMP SCI 4880 Individual Studies in Computer Science: 1-3 semester hours**

Prerequisites: Consent of instructor. This course allows a student to pursue individual studies under the supervision of a faculty member. Topics may include learning new technology, software development, or participation in research activities. Students must arrangements for an instructor to supervise their work. A maximum of 6 credit hours of CMP SCI 3990 and CMP SCI 4880 combined can be counted as major electives.

**CMP SCI 4890 Topics in Computer Science: 3 semester hours**

Prerequisites: Consent of the Instructor. This course covers a special topic in computer science to be determined by recent developments in the field and the interests of the instructor. This course may be taken for credit more than once so long as the topic discussed in each semester is different.

**CMP SCI 5012 Enterprise Web Development: 3 semester hours**

Prerequisites: CMP SCI 4010 or consent of instructor. Covers design and implementation issues for enterprise web development, and some popular advanced technologies. Topics include MVC and persistence frameworks, such as Spring and Hibernate. Other topics may include Java Web services, EJB, messaging standards such as JMS, and Java EE design patterns. Students will develop enterprise-level web application projects. Credit cannot be earned for both CMP SCI 4012 and CMP SCI 5012.

**CMP SCI 5020 Android Apps: Android Fundamentals: 3 semester hours**

Prerequisite: Graduate standing. This course covers fundamental programming principles, including software architecture and user experience considerations, which underlie handheld software applications and their development environments. The course involves in-depth, hands-on examples that are implemented on the Android Platform, along with discussions of security. Credit is not granted for both CMP SCI 4020 and CMP SCI 5020.

**CMP SCI 5030 Intelligent Web: 3 semester hours**

Prerequisite: Graduate standing. This course covers the application of artificial intelligence and other modern techniques to help construct, navigate, and experience the Web. Topics may include retrieval models, classification, mining, association, topology, and indexing algorithms such as PageRank and HITS. Credit cannot be earned for both CMP SCI 4030 and CMP SCI 5030.

**CMP SCI 5130 Advanced Data Structures and Algorithms: 3 semester hours**

Prerequisites: Graduate standing in Computer Science. This course covers the design of efficient data structures and algorithms, as well as an advanced analysis of the time and space complexities of iterative and recursive algorithms. Student will learn a variety of techniques including dynamic programming, greedy algorithms, various graph algorithms, and NP-completeness and approximation algorithms.

**CMP SCI 5222 Advanced iOS Apps: 3 semester hours**

Prerequisites: CMP SCI 4220 or consent of instructor. Focuses on building sophisticated apps using iOS. Will cover recent developments in networking such as web services, Bluetooth and wifi connectivity, graphics and animation in 2-d and 3-d, autolayouts, OpenGL, advanced data sources such as plist and core data, source control and unit testing. May also discuss security topics. Credit not granted for both CMP SCI 4222 and CMP SCI 5222.

**CMP SCI 5300 Artificial Intelligence: 3 semester hours**

Prerequisites: Graduate standing. This course provides an introduction to artificial intelligence. The list of topics may include search, planning, knowledge-based reasoning, probabilistic inference, machine learning, natural language processing, and practical applications. Credit cannot be granted for both CMP SCI 4300 and CMP SCI 5300.

**CMP SCI 5320 Evolutionary Computation: 3 semester hours**

Prerequisites: Graduate standing in Computer Science. This course introduces the concepts of nature-inspired problem solving with artificial evolution using selection, crossover, mutation and inheritance. It discusses applications of evolutionary algorithms, overviews the existing models and instances, and analyzes specific instances such as genetic algorithms, evolutionary programming, evolution strategies, and genetic programming. Credit not granted for both CMP SCI 4320 and CMP SCI 5320.

**CMP SCI 5340 Machine Learning: 3 semester hours**

Prerequisites: Graduate standing in Computer Science/Cybersecurity (Computer Science option) or CMP SCI 4342 or CMP SCI 5342 or consent of the instructor. This course provides an introduction to machine learning principles, algorithms and applications. Topics may include computational learning theory, VC dimensions, generalization, classification, regression, regularization, validation, and reinforcement learning. Credit cannot be granted for both CMP SCI 4340 and CMP SCI 5340.

**CMP SCI 5342 Data Mining: 3 semester hours**

Prerequisites: Graduate standing in Computer Science/Cybersecurity (Computer Science option) or consent of the instructor. This course provides an introduction to data-mining principles, algorithms, and applications. Topics may include data preprocessing, data transformation, similarity and dissimilarity measures, data representation, classification techniques, association analysis, cluster analysis, and anomaly detection. Credit cannot be granted for both CMP SCI 4342 and CMP SCI 5342.

**CMP SCI 5370 Biological Data Science: 3 semester hours**

Prerequisites: Graduate standing in Computer Science or consent of instructor. This course provides an introduction into several key areas of biological data science, with a focus upon genetic data. Relevant background topics in genetics, current issues, and a variety of available resources will be explored. Upon successful completion of this course, the student will be able to evaluate algorithms for analyzing genetic data, including assessments of sources of errors and analysis of time and space complexity; address shortcomings in existing approaches; and implement efficient and effective software for exposing information hidden in genetic data. Credit cannot be granted for both CMP SCI 4370 and CMP SCI 5370.

**CMP SCI 5390 Deep Learning: 3 semester hours**

Prerequisites: Graduate standing in Computer Science. This course reviews a typical machine learning recipe, mathematical foundations for deep learning, and provides an introduction to deep learning. Topics include dense neural networks, convolutional neural networks, and recurrent neural networks. The course will cover building, training, and using deep neural networks for solving various machine learning problems like image classification and protein contact prediction. Credit cannot be granted for both CMP SCI 4390 and CMP SCI 5390.



**CMP SCI 5410 Computer Graphics: 3 semester hours**

Prerequisites: Graduate standing in Computer Science. This course covers the theoretical foundation and algorithms of computer graphics. Students learn the basics of graphics programming for modeling, rendering, and animation of 2D and 3D objects, using standard graphics API. A brief discussion of special graphics hardware, such as GPU, may be included. Credit cannot be granted for both CMP SCI 4410 and CMP SCI 5410.

**CMP SCI 5420 Digital Image Processing and Computer Vision: 3 semester hours**

Prerequisites: Graduate standing in Computer Science. This course focuses on image analysis and visual perception. Students will learn data structures and algorithms for image processing, region and texture analysis, image filtering, edge detection, contour following, and image enhancement in both spatial and frequency domain. Other topics may include color processing, coding for storage, retrieval, transmission, and image restoration. Credit cannot be granted for both CMP SCI 4420 and CMP SCI 5420.

**CMP SCI 5500 Software Engineering: 3 semester hours**

Prerequisite: Graduate standing. Introduces software engineering as a discipline, discusses stages of the software life cycle, compares development models such as waterfall, prototyping and incremental/iterative, covers requirements analysis, effort and cost estimation, compares structured and object-oriented analysis and design methods. Discusses verification/validation, quality assurance, software reliability, testing methods, maintenance, documentation, project management and team structure, metrics, and available tools.

**CMP SCI 5520 Object Oriented Analysis and Design: 3 semester hours**

Prerequisite: Graduate Standing in Computer Science. This course covers object-oriented development, illustrated with a visual modeling language and following an agile process. Discusses elements of analysis, requirements, design, implementation, and deployment such as use cases, static and dynamic diagrams, patterns, and frameworks. This course includes a semester long project starting with requirements and culminating with deployment. Credit not granted for both CMP SCI 4520 and CMP SCI 5520.

**CMP SCI 5620 Intelligent Information Retrieval: 3 semester hours**

Prerequisites: CMP SCI 4300 or CMP SCI 5300. This course studies techniques for analysis of information by statistical, syntactical, and logical methods. Topics related to multimedia information are also discussed.

**CMP SCI 5700 Computer Systems: 3 semester hours**

Prerequisite: Graduate standing in Computer Science. This course focuses on parallel computing architectures, including RISC, pipelining, vector processing, SIMD, MIMD, and array processing. It introduces different memory and I/O subsystems, hardware description languages, and it demonstrates performance enhancement using different architectures studied.

**CMP SCI 5702 Cyber Threats and Defense: 3 semester hours**

Prerequisites: Graduate standing. This course introduces the importance of cybersecurity and covers its various components. Topics may include different types of malware, phishing, password attacks, spoofing, efficient encryption algorithms, firewalls, intrusion prevention/detection systems, and honeypots. Credit cannot be granted for both CMP SCI 3702 and CMP SCI 5702.

**CMP SCI 5732 Cryptography for Computer Security: 3 semester hours**

Prerequisites: Graduate standing. This course provides an introduction to cryptography as it applies to computer security. It describes cryptographic code-making and code-breaking, and how they are integrated within larger security systems. Topics include symmetric encryption algorithms like AES, asymmetric encryption using prime number factorization and elliptic curves, message authentication codes, key exchange protocols and attacks on all these systems. Additional topics may include onion networks and blockchain technology, as well as possible attacks on those systems. Credit cannot be grant for more than one of CMP SCI 4732, CMP SCI 4780, and CMP SCI 5732.

**CMP SCI 5740 High Performance Computing: 3 semester hours**

Prerequisite: Graduate Standing in Computer Science. This course introduces algorithms for multiprocessor and multi-core architectures. Students learn the models of modern parallel computation and techniques to take advantage of parallel architectures for distributed and shared memory multi-processor architectures. Credit not granted for both CMP SCI 4740 and CMP SCI 5740.

**CMP SCI 5750 Cloud Computing: 3 semester hours**

Prerequisites: Graduate standing. Provides an introduction to development and deployment of applications in the cloud space. Touches on different aspects of cloud computing such as IaaS, PaaS, and SaaS. Includes significant discussion on legal and security aspects of clouds in the marketplace. May also include public, private, and hybrid clouds, and Internet of Things. Credit not granted for both CMP SCI 4750 and CMP SCI 5750.

**CMP SCI 5782 Advanced Information Security: 3 semester hours**

Prerequisites: CMP SCI 5702 or INFSYS 6828 or consent of instructor. This course provides an overview of the cybersecurity profession and the various domains associated with it. Students will be introduced to various information risk management concepts and how they are interconnected to cybersecurity. A broad range of cybersecurity domains will be discussed along with their practical applications in information risk management. Additional topics may include labs in select cybersecurity domains to further the learning process. Credit cannot be granted for both CMP SCI 4782 and CMP SCI 5782.

**CMP SCI 5792 Mobile Computing, Networking, and Security: 3 semester hours**

Prerequisites: CMP SCI 5702 or INFSYS 6828 or consent of instructor. This course introduces fundamental concepts of mobile wireless networks, mobile edge computing, and security measures at the edge. It discusses challenges related to mobile edge computing systems in general and may include topics such as crowdsourcing/crowdsensing systems, Quality of Experience (QoE) in real-time mobile services, Internet of Things, scalability, secure and verifiable computing, and vehicular and autonomous driving networks. Credit not granted for both CMP SCI 4792 and CMP SCI 5792.

**CMP SCI 5794 Security of IoT Systems: 3 semester hours**

Prerequisites: CMP SCI 4730 or consent of the department. This course covers the cutting-edge techniques on the emerging edge cloud and wireless/mobile Internet of Things (IoT) systems. It covers the IoT reference architecture, integrated IoT security architecture, major threats and vulnerabilities with the IoT devices and edge cloud, and defense mechanisms. It includes hands-on labs on both the vulnerabilities and defense of the systems. Credit cannot be granted for both CMP SCI 4794 and CMP SCI 5794.

***CMP SCI 5870 Computer Science Seminar: 1-3 semester hours***

Prerequisites: Graduate standing. This is a seminar on various topics. Substantial student reading and participation is expected. It may be taken more than once for credit with the consent of the department.

***CMP SCI 5880 Computer Science Independent Project: 1-3 semester hours***

Prerequisites: Graduate standing and consent of instructor. This course offers the student an opportunity to work on a supervised project, individually or in a group. A maximum of 6 hours can be counted toward the M.S. in Computer Science program from a combination of CMP SCI 5880, CMP SCI 5900, and CMP SCI 6900.

***CMP SCI 5888 Cybersecurity Capstone: 3 semester hours***

Prerequisites: INFSYS 6828 and one of either INFSYS 6858 or CMP SCI 5782. This course provides students an opportunity to participate in the full cybersecurity lifecycle in an applied setting using a project-based approach. Students from technical and non-technical backgrounds will work together in teams. Major tasks may include creating an information security management plan, conducting risk assessments, implementing technical and administrative controls to mitigate information security risks, and managing security operations with a focus on incident detection and response. Students may work on projects through an actual organization and demonstrate application of knowledge gained through all prior courses in the degree program. This course must be taken the last semester prior to graduation. Cannot receive credit for CMP SCI 5888 and INFSYS 6888.

***CMP SCI 5890 Topics in Computer Science: 1-3 semester hours***

Prerequisites: Graduate standing. This course offers various topics not offered on a regular basis. This course may be taken for credit more than once so long as the topic discussed in each semester is different.

***CMP SCI 5900 Graduate Internship in Computer Science: 1-3 semester hours***

Prerequisites: Consent of instructor. This course is an internship that provides a student field experience in an organization related to the profession. To be enrolled, students must be employed in an internship or co-op program. If an instructor is not named, the student must find an instructor to supervise the internship. Internship activities may vary by site, but will require some reporting. Typically 1 credit can be earned for about 100 work hours. Only up to 3 hours total can be counted toward the M.S. in Computer Science program, and at most 6 hours can be counted from a combination of CMP SCI 5880, CMP SCI 5900, and CMP SCI 6900.

***CMP SCI 6320 Advances in Evolutionary Computation: 3 semester hours***

Prerequisites: CMP SCI 5320. This course focuses on some advanced topics in genetic and evolutionary computation (both theory and applications). Topics may include genetic algorithm variants, intelligent metaheuristics, evolutionary machine learning, differential evolution, swarm intelligence, learning classifier systems, and Markov models. A substantial part of the course will be based on selected topics from recent literature. This is a project-based course, with the project typically involving literature search and conducting and reporting research. Projects may involve developing specific applications or implementing a specific model.

***CMP SCI 6340 Genetic Programming: 3 semester hours***

Prerequisites: CMP SCI 5320. This course provides an in-depth exploration of Genetic programming, including advanced concepts such as scalability, evolution of modularity and regularity, and constrained evolution with CGP, STGP, or CFG-based GP. It may be reading, research, or application oriented.

***CMP SCI 6410 Topics in Computer Graphics: 3 semester hours***

Prerequisites: CMP SCI 4410 or CMP SCI 5410. This course covers various aspects of advanced graphics techniques, such as geometric modeling, rendering, shading, texturing, and computer animation. The course provides an in-depth study of recent advanced topics in computer graphics.

***CMP SCI 6420 Topics In Image Processing and Computer Vision: 3 semester hours***

Prerequisites: CMP SCI 5420. This course covers new developments in digital image processing, computer vision, and multimedia. Topics to be covered may include image databases, object tracking, and large-scale data visualization.

***CMP SCI 6900 Thesis in Computer Science: 1-6 semester hours***

Prerequisites: Completion of at least 12 graduate credits and approval of research topic by thesis advisor. This course is designed for students intending to pursue a thesis as part of their M.S. in Computer Science program. A maximum of 6 hours can be counted toward the program from a combination of CMP SCI 5880, CMP SCI 5900, and CMP SCI 6900.

***CMP SCI 7990 Ph.D. Dissertation Research in Computer Science: 1-9 semester hours***

Prerequisites: Completion of comprehensive examinations. This course is used to pursue research work for a Ph.D. dissertation under the supervision of a faculty advisor. This course is available only to the students pursuing a Ph.D. under the Computer Science option.

## Counselor Education

### Courses

***CNS ED 1400 Making a Career Choice: 3 semester hours***

Introduces students to career development theories and the career decision-making process. Students receive an overview of career development theory and learn how these theories pertain to the formulation of individual career plans. Self-knowledge of career interests, values, beliefs, aptitudes, and other factors are explored. Self-assessment and decision-making techniques learned in this class can be revisited throughout the life span. The seminar format allows for small group discussion of career-related issues and personal application of career development principles.

***CNS ED 3200 Interpersonal Skills in Helping Relationships: 3 semester hours***

This course will enhance the student's ability to communicate clearly, build healthy relationships with others, resolve conflicts, advocate appropriately, and promote a positive and inclusive learning environment among individuals and groups and to be prepared to work well with diverse populations.

***CNS ED 3220 Counseling Individuals with Special Needs: 3 semester hours***

Prerequisite: TCH ED 3313 or equivalent, or consent of instructor. A course emphasizing counseling skills for individuals who plan to work with people with disabilities. Emphasis is placed on using counseling strategies with school-age children with disabilities.

***CNS ED 6000 Personal and Professional Development in Counseling: 3 semester hours***

Prerequisites: Provisional Acceptance to the Counseling Program or consent of instructor. This course provides an in-depth view of the professional counseling field. Attention is focused on the development of the helping relationship, including a review of research on factors which influence helping processes and rapport building, a development of skills used in the counseling process, and increased awareness of how students' values, beliefs, and behaviors are related to counselor effectiveness.

***CNS ED 6010 Theories of Counseling: 3 semester hours***

Prerequisites: Admission to the MEd program in counseling, or graduate standing and consent of instructor. This course explores the philosophical foundations of counseling theory. The major constructs of contemporary counseling approaches are included and the practical applications of these theories are analyzed.

***CNS ED 6020 Ethical and Professional Issues in Counseling: 3 semester hours***

Prerequisites: Admission to the MEd program in Counseling, or graduate standing and consent of instructor. This course explores ethical, legal, and professional issues related to counseling. Ethical dilemmas in the provision of counseling services to individuals, couples, families, and groups are defined. Specific ethical codes of professional organizations are examined.

***CNS ED 6030 Foundations for Multicultural Counseling: 3 semester hours***

Prerequisites: CNS ED 6010 and CNS ED 6020, or graduate standing and consent of instructor. This course focuses on (1) reviewing knowledge and research in the area of multicultural counseling, (2) developing and/or enhancing skills useful in counseling with individuals from minority populations, and (3) developing levels of personal awareness about stereotypes, and learning how feelings and attitudes about these may impact counseling with individuals from minority populations.

***CNS ED 6040 Group Procedures in Counseling: 3 semester hours***

Prerequisites: CNS ED 6010 and CNS ED 6020, or graduate standing and consent of instructor. This course examines the process dynamics of groups, including group development, leadership, norms and therapeutic factors. Group counseling theories and approaches used for other group work including skills, personal growth, support, vocational, and developmental guidance groups are explored. Knowledge and skills of how to facilitate therapeutic groups are included. Students are required to be participant-observers or facilitators of a group outside of class time.

***CNS ED 6050 Individual Inventory: 3 semester hours***

Prerequisites: ED REM 6710. This course develops counselors' abilities in assisting clients toward self-awareness through the use of test and non-test data and educational and psychological appraisal techniques. Ethical practices in the use of tests and the maintenance of personnel records are stressed.

***CNS ED 6060 Helping-Relationship Skills: 3 semester hours***

Prerequisites: CNS ED 6010 and CNS ED 6020, or graduate standing and consent of instructor. This course includes the knowledge and application of counseling techniques and helping skills with an emphasis on experiential learning. Attention is focused on the development of the helping relationship, including helping processes and rapport building, skills used in the counseling process, and increased awareness of how students' values, beliefs, and behaviors are related to counselor effectiveness.

***CNS ED 6070 Psychopathology and Diagnosis: 3 semester hours***

Prerequisites: Graduate standing. This course examines the etiology, assessment, and diagnosis of mental disorders using contemporary diagnostic systems. Course topics and assignments address the dynamics of adjustment and treatment implications for counselors, school psychologists, and other professionals.

***CNS ED 6200 Foundations of School Counseling: 3 semester hours***

Prerequisites: Admission to the MEd program in counseling, or graduate standing and consent of instructor. This course gives students a foundation for understanding the history, philosophy, and development of school counseling programs. The course examines the role functions of the school counselor within a developmental, comprehensive program, along with communication skills necessary for consultation with students, parents, school support staff, and resource people in the community.

***CNS ED 6220 Counseling Individuals with Disabilities: 3 semester hours***

Prerequisite: Graduate standing. This course provides instruction and practice in the basic communication, de-escalation, and evidence-based counseling skills and techniques used to support children, adolescents, and young adults with disabilities. The social-emotional needs of this population and impact on the family system will be discussed.

***CNS ED 6270 School Counseling Practicum: 3 semester hours***

Prerequisites: CNS ED 6200, CNS ED 6020, and either CNS ED 6000 or CNS ED 6060. This course requires 100 clock hours of supervised practice in counseling. It provides opportunity for students to pragmatically integrate and process materials, theories, techniques, and methodologies as they are applied in the counseling profession with emphasis on school counseling.

***CNS ED 6280 School Counseling Field Experience: 1-6 semester hours***

Prerequisites: CNS ED 6040 and CNS ED 6270, or graduate standing and consent of instructor. This course requires 100 clock hours of field experience for each semester credit hour of enrollment. Students are closely supervised under the direction of a graduate faculty member. Students must demonstrate counseling competencies and skillful ethical practice. Students receive a minimum of 1.5 contact hours of group supervision weekly by a graduate faculty member and 1 contact hour of individual supervision weekly by a field experience site supervisor during terms of enrollment. Course may be repeated for a maximum of 6 semester credit hours.

***CNS ED 6300 Foundations of Clinical Mental Health Counseling: 3 semester hours***

Prerequisites: Admission to the MEd Counseling program, or graduate standing and consent of instructor. This course is a survey of counseling in a variety of mental health settings and introduces the basic philosophical, historical, and psychological foundations of clinical mental health counseling. The course is designed to acquaint the student with the foundations and roles of the professional counselor in various community and agency settings.

***CNS ED 6370 Clinical Mental Health Counseling Practicum I: 3 semester hours***

Prerequisites: CNS ED 6060 with a grade of B- or better. This course is one hundred clock-hours of supervised practice in counseling to provide the opportunity for students to pragmatically integrate and process materials, theories, techniques, and methodologies as they are applied in the counseling profession, focusing on clinical mental health counseling. This course may be repeated for a maximum of 6 credit hours.

**CNS ED 6375 Clinical Mental Health Counseling Practicum II: 3 semester hours**

Prerequisites: CNS ED 6370 with a grade of S, or graduate standing and consent of instructor. This course is one hundred clock-hours of supervised advanced practice in counseling to provide the opportunity for students to continue to integrate and process theories, techniques, and methods as they are applied to the professional practice of counseling, with an emphasis on clinical mental health counseling.

**CNS ED 6380 Clinical Mental Health Counseling Field Experience: 1-6 semester hours**

Prerequisites: CNS ED 6370 with a grade of S, or graduate standing and consent of instructor. This course is one hundred clock-hours of field experience for each semester-credit-hour of enrollment. Students will be closely supervised under the direction of a graduate faculty member. Students must demonstrate counseling competencies and skillful ethical practice. Students will receive 1.5 contact hours of group supervision weekly by a graduate faculty member and 1 contact hour of individual supervision weekly by a field experience site supervisor during terms of enrollment. This course may be repeated for a maximum of 6 credit hours.

**CNS ED 6400 Career Information and Development: 3 semester hours**

Prerequisites: Admission to the Counseling program, or graduate standing and consent of instructor. This course emphasizes the nature of the changing labor market and the impact on personal, social, economic, career, and educational aspects of individuals and society. The use of occupational and educational information systems and resources to assist with career decisions are examined. Techniques and methods of career counseling and the needs of culturally diverse populations are discussed. Various theories of career development and career choice are examined.

**CNS ED 6404 Seminar: 1-10 semester hours**

Prerequisite: Graduate standing.

**CNS ED 6410 Advanced Career Development: 3 semester hours**

Prerequisites: CNS ED 6400 or consent of instructor. Emphasis is on current theories of career development, career choice, and techniques and methods of career counseling. Issues concerning education and training, work, leisure, the family, life roles, and culturally diverse populations are studied. The role of career theory in planning, development, and delivery of a career development program is explored.

**CNS ED 6420 Career Assessment in Counseling and Rehabilitation: 3 semester hours**

Prerequisites: CNS ED 6050 and CNS ED 6400 or consent of instructor. This course provides an in-depth and specialized look at the educational and psychological assessment techniques used in career counseling, especially the assessment of career interests, work values, work environment, work skills, work samples, career development stages, career maturity, career decision making, and career beliefs. Issues of using computers in the delivery of career development services will be discussed.

**CNS ED 6497 Problems: 1-10 semester hours****CNS ED 6500 Introduction to Systems Theory for Couples and Family Counseling: 3 semester hours**

Prerequisite: CNS ED 6010 or consent of instructor. This course is an introduction to relationship theory as applied to couples and family counseling. General systems theory, and social constructivism theory are reviewed. Students learn relationship interventions and beginning couple and family counseling techniques. Ethical, professional, and legal issues related to couples and family counseling are addressed.

**CNS ED 6510 Marriage Counseling and Enrichment: 3 semester hours**

Prerequisite: CNS ED 6500 or consent of instructor. This course focuses on the theory and techniques of marital or couples counseling and enrichment. Models and methods for prevention and treatment of relationship dysfunction are explored. Relationship developmental issues are addressed. Students are challenged to develop the critical skills necessary to be effective marriage counselors and marital-life educators.

**CNS ED 6520 Family Counseling: 3 semester hours**

Prerequisite: CNS ED 6500 and CNS ED 6270, or CNS ED 6370, or consent of instructor. This course offers an in-depth analysis of strategic, structural, experiential, communications, behavioral, and psychodynamic approaches to systems change and family counseling. The range of techniques and applied practices evolving from each orientation are explored as are normal and dysfunctional family processes. Various counseling modalities, such as individual, concurrent, collaborative, conjoint, group, intergenerational, and networking are also considered.

**CNS ED 6600 Theories and Techniques of Counseling Children and Adolescents: 3 semester hours**

Prerequisites: CNS ED 6010, or graduate standing and consent of instructor. This course focuses on counseling theories and their applicability to the developmental special concerns of children and adolescents including child at-risk issues such as abuse, suicide, divorce, and death and dying. Individual, group, and family intervention techniques and consultation skills are emphasized, as well as ethical, legal and multicultural considerations for counselors. Strategies presented can be utilized in a variety of settings.

**CNS ED 6610 Introduction to Play Therapy: 3 semester hours**

Prerequisites: CNS ED 6060 and ED PSY 6210. This course provides students with a foundation for understanding the history, theories, and application of play therapy. Discussion focuses on working with children in both agency and school settings, as well as how play therapy skills can be incorporated into the student's developing theoretical framework. This course can count toward the Registered Play Therapist credential.

**CNS ED 6620 Advanced Play Therapy: 3-4 semester hours**

Prerequisites: CNS ED 6040 and CNS ED 6615. This course helps students further develop their play therapy skills, especially in the area of client-centered play therapy. The course examines the use of play therapy with traumatized children and aggressive children in both school and agency settings. Group play therapy and sand tray therapy as additional modalities are explored. Ethical and legal issues, as well as supervision in play therapy, are emphasized. This course can count towards the Registered Play Therapist credential.

**CNS ED 6630 Career Development in K-12 Schools: 3 semester hours**

Prerequisites: CNS ED 6200 or consent of instructor. This course emphasizes knowledge and skills for addressing the career development needs and decision making of K-12 students. The course addresses the creation, implementation, and evaluation of sequential and developmentally appropriate career curricula and interventions, as well as contextual influences on career development. The course is intended for school counseling graduate students, and those interested in college and career preparation and advising.



**CNS ED 6680 School Counseling in the Classroom: 3 semester hours**

Prerequisites: CNS ED 6200. This course covers curriculum design and delivery and classroom management for school counselors who are teaching classroom lessons focused on academic, career, and social/emotional content areas. The course emphasizes student-centered pedagogies, methods of conducting needs assessments and evaluations of student learning, and differentiation strategies to meet the needs of diverse learners.

**CNS ED 6700 Introduction to Addictive Behaviors and Addiction Counseling: 3 semester hours**

Prerequisites: CNS ED 6010 or consent of instructor. Exploration of the theoretical foundations of contemporary approaches to such addictive behaviors as alcohol and drug abuse, smoking, compulsive gambling, and sexual addiction. The nature, etiology, prevention, and treatment of addictions are discussed and analyzed from a variety of theoretical perspectives. The applications of these specific theoretical models to various treatment settings are examined. Multicultural considerations are also addressed.

**CNS ED 6710 Advanced Strategies in Addictions Counseling: 3 semester hours**

Prerequisites: CNS ED 6700 or consent of instructor. Study of advanced, empirically supported counseling approaches and techniques for the treatment of addictive behaviors. An emphasis is placed on screening and assessment procedures and on matching interventions to individual client and community needs.

**CNS ED 6720 Counseling Individuals with Co-Occurring Disorders: 3 semester hours**

Prerequisites: CNS ED 6700 or consent of instructor. This course introduces the student to the special needs, concerns, and problems encountered when counseling clients who have co-occurring substance use and mental health problems. Subject areas include an overview of screening and assessment, evidence-based practices, counseling approaches and psychopharmacology for co-occurring disorders.

**CNS ED 6730 Counseling for Loss, Crisis, and Trauma: 3 semester hours**

Prerequisites: CNS ED 6060, and ED PSY 6210 or ED PSY 6222. This course introduces students to theory and practice in counseling response to loss, crisis, and trauma experiences. Topics include models of grief counseling, the impact of crises, disasters, other trauma-causing events, and counseling skills and therapeutic interventions appropriate for individuals, families, and groups experiencing loss, crisis, and trauma.

**CNS ED 6810 Integrating Religion and Spirituality in Counseling: 3 semester hours**

Prerequisites: CNS ED 6010, or graduate standing and consent of instructor. This course examines the methods to integrate religion and spirituality in counseling. It also addresses counseling strategies for persons of various religious backgrounds, the link between health and religion, and ethics involved in the assessment and integration of religion and spirituality in practice.

**CNS ED 6820 Counseling Women Toward Empowerment: 3 semester hours**

Prerequisites: CNS ED 6010 and either CNS ED 6270 or CNS ED 6370, or graduate standing and consent of instructor. This course is an introduction to women's issues in counseling. Relational theory, healthy development, and an overview of clinical issues most common to women are examined.

**CNS ED 6830 Counseling African American Clients: 3 semester hours**

Prerequisites: CNS ED 6010, or graduate standing and consent of instructor. This course promotes an increased awareness and understanding of the psychological development and mental health needs of African American clients. This course examines research-based theoretical strategies for counseling this diverse population.

**CNS ED 6840 Counseling Sexual and Gender Minorities: 3 semester hours**

Prerequisites: CNS ED 6010, or graduate standing and consent of instructor. This course focuses on affirmative perspectives regarding lesbian, gay, bisexual, and transgender (LGBT) issues and populations. Students will learn current perspectives in the fields of counseling and psychology on LGBT issues necessary for adequate practice or research in this area.

**CNS ED 6850 Social Class and Poverty Issues in Counseling: 3 semester hours**

Prerequisites: CNS ED 6010, or graduate standing and consent of the instructor. This course focuses on social class and poverty in the United States. Specifically, the course examines the circumstances of poverty, the consequences of living in poverty (on behaviors, aspirations, relationships, education, and health including mental health), and the impact of poverty on the helping relationship. Personal, social, and cultural aspects of poverty are examined in both rural and urban settings. Included in this endeavor are specific attitudes and techniques designed to maximize the quality of a counselor's work with clients experiencing poverty.

**CNS ED 6860 Human Sexuality in Counseling: 3 semester hours**

Prerequisites: CNS ED 6010, or graduate standing and consent of instructor. This course focuses on integrating issues of human sexuality into the counseling process. The psycho-sexual development of the individual from birth throughout the lifespan is discussed and compared to other developmental tasks at each age. Themes related to influences from family, culture, environment, socioeconomic, ethnic, and religious perceptions of sexuality are integrated. The physiology of human sexual function is addressed, including variations in sexual orientation and gender identity.

**CNS ED 6870 Counseling and Cultural Competence in a Global Society: 3 semester hours**

Prerequisites: CNS ED 6030 or consent of instructor. Through a mixed methods approach of cultural immersion, readings, class activities, and forums with cultural and educational leaders, counselor candidates will acquire strategies to collaborate with culturally diverse families and develop systemic approaches to equalize the experiences for every child/adolescent/adult client. Counselor candidates will broaden their world view and global perspective, and identify and develop culturally sensitive interventions for a range of counseling issues and settings. Candidates will also examine the impact of contemporary socio-cultural viewpoints.

**CNS ED 7000 Advanced Theories and Practice of Counseling: 3 semester hours**

Prerequisites: Doctoral standing or instructor consent. An integrated seminar and practicum focused on traditional, contemporary, and emergent theories as applied to practice with diverse clients. May be repeated up to three times.

**CNS ED 7010 Advanced Multicultural Counseling: 3 semester hours**

Prerequisites: CNS ED 6030 and doctoral standing or consent of instructor. This advanced course addresses theories and research in multicultural counseling.

**CNS ED 7020 Seminar in Counseling Research: 3 semester hours**

Prerequisites: ED REM 6710, doctoral standing or consent of instructor. The purpose of this course is to review and analyze current counseling research literature. Ethical issues will be addressed.

**CNS ED 7025 Advanced Counseling Research: 3 semester hours**

Prerequisites: CNS ED 7020 or consent of instructor. Engages students in the conduct of an empirical research project. Building from the research proposal developed in CNS ED 7020, students will obtain IRB approval, collect data, analyze the data, and write a manuscript reporting the results in journal article format.

**CNS ED 7030 Counselor Education and Supervision of Individuals and Groups: 3 semester hours**

Prerequisites: CNS ED 7000, or graduate standing and consent of instructor. This course examines theories, models, and research in supervision (individual and group). Students will supervise master's level students in practicum, group, and field experience courses in counseling.

**CNS ED 7035 Counselor Education and Supervision Practicum: 3 semester hours**

Prerequisites: CNS ED 7030, or graduate standing and consent of instructor. This course offers advanced training in counseling supervision. Students will supervise master's level students in practicum and internship courses in counseling. Students will be expected to maintain an assigned caseload of supervisees and attend three hours of weekly doctoral-level supervision.

**CNS ED 7040 Advanced Group Procedures in Counseling: 3 semester hours**

Prerequisite: CNS ED 6040. Examines advanced group leadership theory, development, and facilitation. Knowledge and skills of how to facilitate therapeutic groups within ethical and legal guidelines are included. Specific attention will be paid to developing effective group work skills and interventions in career, clinical mental health, and school counseling settings. Students will be required to conceptualize, develop and facilitate a group outside of class time.

**CNS ED 7075 Teaching, Learning, and Technology in Counselor Education: 3 semester hours**

Prerequisites: CNS ED 7000, or graduate standing and consent of instructor. This course examines the pedagogy and epistemology of counselor education. Philosophies of teaching, instructional design, instructional methods, assessment of learning, and the impact and use of technology in teaching will be explored within the framework of the eight core courses as defined by the Council for Accreditation of Counseling & Related Educational Programs (CACREP). Students will both learn and apply classroom teaching knowledge and skills.

**CNS ED 7400 Advanced Topics in School Counseling Leadership: 3 semester hours**

Prerequisite: Admission to the Counseling Option in the Ed.D. Program. Focuses on leadership roles and advanced skills for professional school counselors, school counseling supervisors, and evaluation strategies, and training and supervision strategies will be addressed, with a special emphasis on preventative and culturally sound interventions.

**CNS ED 7770 Doctoral Practicum: 3 semester hours**

Prerequisite: Doctoral standing. One hundred clock hours of on-campus doctoral-level supervised counseling practice. Students will counsel clients and will be introduced to teaching and supervising beginning counseling trainees in a clinical context. As a prerequisite to the Doctoral Internship, students will be expected to demonstrate competence in skills required of counselor educators and clinical supervisors. Students will receive 1.5 hours of group and 1 hour of individual supervision by a graduate faculty member.

**CNS ED 7780 Doctoral Internship: 1-6 semester hours**

Prerequisite: CNS ED 7000. This course is a one hundred clock-hour field experience for each semester-credit hour of enrollment under the direction of a graduate faculty member. Students provide counseling services to clients at field sites, teach and supervise beginning counseling trainees, conduct research projects, and engage in leadership and advocacy. This course may be repeated for a maximum of 9 credit hours.

**CNS ED 7806 Practicum in Group Counseling: 3 semester hours**

Prerequisites: CNS ED 7804 and doctoral standing or consent of instructor. Students will lead or co-lead a supervised counseling group in the community.

## Criminology & Criminal Justice

### Courses

**CRIMIN 1100 Introduction to Criminology and Criminal Justice: 3 semester hours**

Introduction to the basic concepts and approaches in the study of criminology and criminal justice. The major components of the criminal justice system are examined.

**CRIMIN 1101 Crime and Criminal Justice Today: 1-2 semester hours**

This course provides students insight into crime and the criminal justice system in contemporary America. All students, whether enrolled for one or two hours, will complete the same core course requirements. Those students enrolled for two hours will complete additional course work as outlined in the course syllabus.

**CRIMIN 1110 Theories of Crime: 3 semester hours**

This course provides an introduction to major theoretical approaches to the study of crime and justice.

**CRIMIN 1120 Criminal Law: 3 semester hours**

This course provides an analysis of substantive criminal law, evidence, and judicial procedure.

**CRIMIN 1150 Violence in America: 3 semester hours**

Prerequisites: CRIMIN 1100 or consent of instructor. Overview of patterns and correlates of violence in America. Emphasis on the variety of forms of violent crimes, such as murder, assault, robbery, rape, and gang violence. Includes an examination of violence as a response to lawbreaking.

**CRIMIN 1200 Foundations of Law: An Introduction to Legal Studies: 3 semester hours**

Same as POL SCI 1200. As a broad liberal-arts approach to the study of law, this course is designed to familiarize students with legal ideas, legal reasoning, and legal processes. It also provides comparative and historical perspectives on law that will help explain legal diversity and legal change. Finally, it offers opportunities to explore some of the persistent issues in law and legal theory: for example, issues about the sources of law, the responsibilities of the legal profession, or the relative merits of the adversary system.

**CRIMIN 2130 Criminal Justice Policy: 3 semester hours**

This course provides an introduction to criminal justice policy making, planning, and implementation.

**CRIMIN 2180 Alcohol, Drugs and Society: 3 semester hours**

Same as SOC 2180. Prerequisite: SOC 1010 or PSYCH 1003. This course examines the medical, legal and social aspects of alcohol and drug use. Medical aspects considered include treatment approaches and the role of Physicians in controlling such behavior. In the legal realm, past and present alcohol and drug laws are explored. Cultural and social influences on alcohol and drug use are discussed.

**CRIMIN 2210 Research Methods in Criminology and Criminal Justice: 3 semester hours**

This course provides an examination of basic methods of research design, measurement, and data collection in criminology and criminal justice.

**CRIMIN 2220 Statistical Analysis in Criminology and Criminal Justice: 4 semester hours**

Prerequisites: CRIMIN 2210 (may be taken concurrently) and the university math proficiency requirement. This course is an introduction to techniques of quantitative data analysis. Both descriptive and inferential statistics are applied to problems in criminology and criminal justice. Includes a one hour lab.

**CRIMIN 2240 Policing: 3 semester hours**

This course provides an overview of current and historical perspectives on the function of American policing. There is emphasis on the management of police organizations and relationships with the community.

**CRIMIN 2250 Courts: 3 semester hours**

This course provides an overview of current and historical perspectives on the function of the American courts. There is emphasis on the dynamics of courthouse justice, with special attention placed on the roles of the prosecutors, judges, defense attorneys, defendants, victims, and jurors regarding the decisions that impact the adjudication process.

**CRIMIN 2251 Youth Gangs: 3 semester hours**

This course provides an overview of research and policy concerning youth gangs. Definitional and methodological issues are examined, along with both qualitative and quantitative research. Topics may include the causes of gangs and gang involvement with focus on variations by race, gender, time period, and geography.

**CRIMIN 2252 Crime and Punishment: 3 semester hours**

Same as PHIL 2252. This course will address fundamental conceptual, ethical, and moral issues that arise in the context of the legal system. Topics may include punishment, pre-trial detention, the death penalty, acquittal of persons who are legally guilty, plea bargaining, moral obligation to obey the law, and laws restricting civil liberties.

**CRIMIN 2260 Corrections: 3 semester hours**

This course provides an examination of correctional philosophies and practices. There is emphasis on the history of corrections, the formal and informal organization of correctional facilities, inmate rights, and correctional alternatives.

**CRIMIN 3043 History of Crime and Justice: 3 semester hours**

Same as HIST 3043. Prerequisites: Junior standing or consent of instructor. The analysis development, and change in philosophies and responses to crime. Emphasis on major forms and definitions of crime, the emergence of modern policing, the birth of the prison and the juvenile court.

**CRIMIN 3209 Forensic Anthropology: 4 semester hours**

Same as ANTHRO 3209. Prerequisites: ANTHRO 1005 or BIOL 1102 or consent of instructor. Students learn basic human dental and skeletal anatomy and the methods used by biological anthropologists and archaeologists to collect and analyze human skeletal remains, including how to age and sex skeletal remains, identify ethnic markers, determine stature and handedness, and identify the presence of trauma and/or pathology. Also covers the role of the forensic anthropologist in crime scene investigations and human rights issues. In the weekly lab section students will have an opportunity for hands-on application of techniques to skeletal remains.

**CRIMIN 3230 Crime Prevention: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an examination of situational, social, and legislative approaches to the prevention of crime and delinquency. There is emphasis on theories, implementation, and consequences of these approaches.

**CRIMIN 3270 Juvenile Justice and Delinquency: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an examination of formal and informal responses to juvenile delinquency. There is emphasis on theories of delinquency and the decision-making processes of police, court and probation officials.

**CRIMIN 3280 Internship in Criminology and Criminal Justice: 3 semester hours**

Prerequisites: Junior standing. This course consists of an internship in a criminal justice setting under faculty supervision. It may be repeated for a maximum of six credit hours.

**CRIMIN 3290 Special Readings: 1-6 semester hours**

Prerequisite: Consent of instructor. Individualized study, under regular faculty supervision, designed to meet particular educational needs of selected students.

**CRIMIN 3305 Crime and Justice in a Globalized World: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course will provide an analysis of crime and criminal justice systems in selected cultures around the world. It will emphasize the ways in which various cultures define and respond to criminal behavior. It fulfills the CRIMIN diversity requirement.

**CRIMIN 3310 Computers in Criminal Justice: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course will critically examine computer crime, cyber-criminology, and the ways in which technology and the Internet facilitate criminal and deviant behavior. Discussion will focus on the types of crime using computer technology, theories addressing digital criminals, and an overview of the criminal justice response to these issues.

**CRIMIN 3320 The Death Penalty: 3 semester hours**

Prerequisite: CRIMIN 1100. An examination of the history, application, and attitudes toward the death penalty.

**CRIMIN 3330 Corporate, Organizational, and White Collar Crime: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course will critically examine how technological innovations have changed both the mechanisms of crime commission as well as opportunities for computer crime. New techniques, new offenders, and new victims of computer crime will be explored. The mechanisms of computer crime prevention and control utilized in the criminal justice system by the police, the courts, and corrections will be addressed. Discussions will focus on how technology creates new ways of thinking about crime, criminals, and criminality.

**CRIMIN 3345 Constitutional Law and the Criminal Justice System: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of the objectives of criminal law regarding the United States Constitution. It emphasizes the rights of persons suspected or convicted of crime within the institutional settings of the police, courts, and corrections.

**CRIMIN 4300 Communities and Crime: 3 semester hours**

Same as SOC 4300. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of the sources, consequences, and control of crime within communities. There is emphasis on social and ecological theories of crime, and on population instability, family structure, and the concentration of poverty as causes of crime.

**CRIMIN 4320 Forms of Criminal Behavior: 3 semester hours**

Same as SOC 4320. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an examination of major types of criminal behavior including violent, property, public order, and organizational offenses. There is emphasis on theories of and responses to these crimes.

**CRIMIN 4325 Gender, Crime, and Justice: 3 semester hours**

Same as SOC 4325 and GS 4325. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of the role of gender in crime and in the justice system. There is emphasis on gender differences in crime commission, criminal processing, and the employment of women in criminal justice agencies. Fulfills CRIMIN diversity requirement.

**CRIMIN 4330 Violence Against Women: 3 semester hours**

Same as GS 4330. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course examines the nature, extent, causes, and consequences of various types of violence against women, including rape, sexual assault, stalking, and intimate partner violence. Criminal justice policy and practice regarding violence against women are also examined.

**CRIMIN 4335 Probation and Parole: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of alternatives to incarceration and postincarceration supervision. There is emphasis on diversion, restitution, and community reintegration.

**CRIMIN 4340 Race, Crime, and Justice: 3 semester hours**

Same as SOC 4340. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of the involvement of racial minorities in crime and the criminal justice system. There is emphasis on group differences in offending, processing, victimization, and employment in criminal justice agencies. Fulfills CRIMIN diversity requirement.

**CRIMIN 4345 War Crimes, Genocide, and Justice in the 20th and 21st Centuries: 3 semester hours**

Same as SOC 4345, POL SCI 4345, MVS 4345. Prerequisite: ENGL 3100. This course provides advanced undergraduate and Master's level students a comprehensive overview of the subject of war crimes, crimes against humanity, genocide and legal responses to these crimes in the modern era. The goal of this course is to engage students in sustained, critical thought about these issues and to foster a deeper understanding of both the causes and consequences-legal, social and human-of these egregious crimes.

**CRIMIN 4350 Victimology: 3 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of major perspectives on victimization. There is emphasis on patterns of victimization, the role of victims in the generation of crime, and the experience of the victim in the criminal justice system.

**CRIMIN 4360 Sociology of Law: 3 semester hours**

Same as SOC 4362. Prerequisites: CRIMIN 1120, CRIMIN 2130, CRIMIN 2210, CRIMIN 2220, and ENGL 3100, or consent of instructor. The interaction of legal, political and social forces in the US is explored. Course examines historical developments in law and politics in the US, including law and economics, crime policy, socioeconomic inequality, race relations, and state sanctioned punishment. The course considers how America's federalist structure shapes law, politics and social relations. Examines how legal and political institutions establish and shape power relations between social groups.

**CRIMIN 4370 Crime, Justice, and the Media: 3 semester hours**

Prerequisites: ENGL 3100. This course provides a fresh take on issues of crime and justice through the exploration of media, such as *The Wire*, and its role in shaping the public's perception of crime and justice. Students will learn to synthesize ideas and perspectives about crime and justice as well as critically assess popular media images of crime.

**CRIMIN 4380 Special Topics in Criminology and Criminal Justice: 3 semester hours**

Prerequisites: ENGL 3100, which may be taken concurrently, or consent of instructor. This course provides an in-depth study of a selected topic in criminology and criminal justice. This course may be repeated for credit if the topic differs.

**CRIMIN 4390 Seminar in Criminology and Criminal Justice: 3 semester hours**

Prerequisites: CRIMIN 2210, CRIMIN 2220, and ENGL 3100, or consent of instructor. In this capstone course, students demonstrate the ability to work independently, integrating theory and research in criminology and criminal justice in a major paper supervised by the instructor.

**CRIMIN 4487 Philosophy of Law: 3 semester hours**

Same as PHIL 4487. Prerequisites: CRIMIN 1100 and 3 hours of philosophy and/or consent of instructor. An intensive study of recent philosophical debate about such issues as the authority of law, legal equality and justice, legal responsibility, self-determination and privacy, and legal punishment.

**CRIMIN 5415 Foundations of Criminological Theory: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. Examination of the history of criminological thought incorporating the major works of such theorists as Bentham, Beccaria, Marx, Durkheim, Lombroso, Sutherland and Merton.

**CRIMIN 5533 Philosophy of Law: 3 semester hours**

Same as PHIL 5533. Prerequisite: Graduate standing or consent of instructor. Examination of origins of law and the basis for legal obligation. Specific consideration of the justification of punishment, morality and law, and legal reasoning.

**CRIMIN 6400 Proseminar: 3 semester hours**

Prerequisite: Graduate standing. (Must be taken in the first Semester). A critical examination of theoretical, methodological and policy issues in criminology and criminal justice. Focus is on the nature of crime, policing, pretrial processes, adjudication and corrections.

**CRIMIN 6405 Methods: 3 semester hours**

Prerequisite: Graduate standing and consent of instructor. Examination of basic methods for research design and data collection. Topics include participant observation and interviewing, survey research, aggregate data analysis, and experimental design.



**CRIMIN 6410 Statistical Applications in Criminology and Criminal Justice: 3 semester hours**

Prerequisite: CRIMIN 6405. Examination of elementary principles of quantitative analysis and their application to crime and justice problems. Topics include univariate, bivariate and multivariate procedures for discrete and continuous data, and a comprehensive introduction to ordinary least squares regression.

**CRIMIN 6420 Contemporary Criminal Theories: 3 semester hours**

Prerequisite: CRIMIN 5415. Examination of contemporary explanations of crime and criminal justice. Theories covered include strain, control, cultural, labeling, conflict, as well as more recent attempts at theoretical integration and multidisciplinary integration.

**CRIMIN 6422 Law Courts, and Public Policy: 3 semester hours**

Same as POL SCI 6422. Prerequisite: Graduate Standing. An analysis of the role of courts as policymaking institutions and the law as policy. We will explore the role of judges as policymakers, consider the attributes of courts, (both trial and appellate), that make them appropriate yet limited targets for advocates of reform, and the implementation and impact of court decisions. We will consider recent examples of judicial involvement in state and national policymaking. In addition, we will examine the role of lawyers and interest groups in selecting litigation rather than alternative political processes for policy change.

**CRIMIN 6430 Law and Social Control: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. Examination of the relationship between law and other social institutions, the values and interests that are expressed in law and shaped by legal structures and processes, and law as an instrument of public policy, social control and social change. Same as Sociology 5461.

**CRIMIN 6436 Comparative Criminology: 3 semester hours**

Prerequisite: Graduate Standing. Examination of crime and criminal justice systems in world perspective.

**CRIMIN 6440 Nature of Crime: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of patterns and correlates of crime at the individual, situational, and aggregate levels. Topics include definitions of crime, offending topologies, and criminal careers.

**CRIMIN 6441 Juvenile Delinquency: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of youth crime and juvenile offenders. Topics include definitions of juvenile crime, and theories of juvenile crime causation in the U.S.

**CRIMIN 6442 Communities and Crime: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of the trends and sources of crime and social disorder across communities. The course emphasizes relationships among crime, neighborhood change, neighborhood responses to crime, and public policies.

**CRIMIN 6443 Violent Crime: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of the sources and patterns of violent offending across time and space. Topics include conceptions and typologies of violent crimes and offenders, victim-offender relationships, and efforts to predict and control violent offending.

**CRIMIN 6448 Victimization: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of the risks and consequences of crime for its victims. Issues considered include victim-offender relationships, characteristics of victims, the nature of the injuries they experience and criminal justice procedures that involve them.

**CRIMIN 6450 Criminal Justice Process and Policy: 3 semester hours**

Prerequisite: Graduate standing. An analysis of criminal justice as a network of decisions and complex organizations. Topics include sources of criminal justice policy, policy agendas, implementation and evaluation.

**CRIMIN 6452 The Police: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Historical, social and political analysis of policing in America. Examination of federal, state, county and municipal agencies.

**CRIMIN 6454 Corrections: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Examination of the history, forms, and functions of correctional philosophies, institutions, programs and policies. Topics include the structure and functions of prisons and jails, community corrections, intermediate sanctions, and the growth of correctional control in modern society.

**CRIMIN 6465 Qualitative Research Design: 3 semester hours**

Prerequisites: CRIMIN 6405. Examination of participant observation and informant and respondent interviewing. Topics include gaining access, sampling, data collection and analysis, and legal and ethical concerns.

**CRIMIN 6470 Quantitative Research Design: 3 semester hours**

Prerequisites: CRIMIN 6405, CRIMIN 6410, and CRIMIN 6480. Examination of experimental, longitudinal, and cross-sectional designs. Sources of data, sampling procedures, operational definitions, and issues of reliability are also discussed.

**CRIMIN 6471 Evaluating Criminal Justice Interventions: 3 semester hours**

Prerequisites: CRIMIN 6405 and CRIMIN 6410. This course examines a broad range of interventions designed to prevent crime or improve some aspect of the criminal justice system. The validity reliability, and feasibility of differing intervention designs are addressed. Several major criminal justice evaluations are discussed.

**CRIMIN 6480 Multivariate Statistics in Criminology: 3 semester hours**

Prerequisites: CRIMIN 6405 and CRIMIN 6410. Introduction to the general linear model with applications to multivariate problems in criminal justice and criminology. Topics include advanced ordinary least squares, causal modeling, time series analysis, simultaneous equations, and analysis of limited dependent variables.

**CRIMIN 6485 Directed Readings/Research in Criminology and Criminal Justice: 1-6 semester hours**

Prerequisite: Consent of instructor. Directed reading and research, under faculty supervision, designed to meet particular educational needs of selected students.

**CRIMIN 6495 Internship in Criminology and Criminal Justice: 3 semester hours**

Prerequisite: Graduate standing or consent of instructor. Supervised placements with criminal justice agencies. Designed primarily for students with limited field experience.

**CRIMIN 6498 M A Thesis Research: 1-6 semester hours**

Prerequisite: Graduate standing and consent of instructor.

**CRIMIN 6550 Seminar in Criminology and Criminal Justice: 3 semester hours**

Prerequisites: Graduate standing and CRIMIN 5415, CRIMIN 6400, and CRIMIN 6405 or consent of the instructor. Research and policy approaches to the study of criminology and criminal justice. Class may be repeated for credit when the subject matter is different.

**CRIMIN 7499 Ph.D. Dissertation Research: 1-6 semester hours**

To be arranged.

# Early Childhood Education

## Courses

### ***ECH ED 3300 Introduction to Early Childhood Education: 3 semester hours***

Prerequisites: Completion of Level I requirements. Students will use theoretical bases as well as on site observations to develop an awareness of teaching learning strategies appropriate for the developmental needs of children from birth through age eight. Scheduling, classroom arrangement, and child management practices will be considered. Students will develop their own philosophy of early childhood education.

### ***ECH ED 3301 Early Childhood Special Education Processes and Trends: 3 semester hours***

Prerequisites: Completion of Level I requirements. Focus on the history and federal laws related to the early childhood special education process. Examination of child development theories and assessment to determine if developmental delays exist. Emphasis on the importance of collaboration between teachers and therapists for service delivery, designing effective transition plans and integrating intervention services into a developmentally appropriate curriculum.

### ***ECH ED 3302 Introduction to Inclusive Early Childhood Education: 3 semester hours***

Prerequisites: Completion of Level I requirements; current and clear background check; current and clear TB screening. This course serves as an introduction to the field of early childhood education including historical, social and psychological foundation, child development, recommended and evidence based-practice appropriate to address developmental needs of children from birth through age 8. Program administration, management, environmental arrangement, and consultation/collaboration are emphasized. The family-centered practice, diversity, early intervention, early childhood special education, ethical and legal issues are addressed to enhance students' knowledge of inclusive education. Additional Field Experience may be required.

### ***ECH ED 3303 Curriculum and Practice Laboratory: Infant/Toddler: 1 semester hour***

Prerequisites: Completion of Level II requirements; admission to the teacher education program; current and clear background check; current and clear TB screening. Classroom experience in infant/toddler inclusive classrooms under directions of University personnel. Must be taken concurrently with ECH ED 3313.

### ***ECH ED 3304 Curriculum and Practice Laboratory: Preschool: 1 semester hour***

Prerequisites: Completion of Level II requirements; admission to the teacher education program; current and clear background check; current and clear TB screening. Classroom experience in inclusive preschool classrooms under direction of university personnel. Must be taken concurrently with ECH ED 3314.

### ***ECH ED 3313 Curriculum and Practice: Infant/Toddler: 2 semester hours***

Prerequisites: Completion of Level II requirements; admission to the teacher education program. This course addresses how to design and implement integrated, inclusive curriculum for children from birth to 3 years of age. Must be taken concurrently with ECH ED 3303.

### ***ECH ED 3314 Curriculum and Practice: Preschool Education: 2 semester hours***

Prerequisites: Completion of Level II requirements; admission to the teacher education program. This course addresses how to design and implement integrated, developmentally appropriate curriculum for the inclusive preschool classroom with emphasis on science, social studies, creative activities and technology. Must be taken concurrently with ECH ED 3304.

### ***ECH ED 3332 Literacy, Learning and Instruction for the Young Child: 3 semester hours***

Prerequisites: Completion of Level I requirements, current and clear background check, and current and clear TB screening required. Attention on the language acquisition and environments (home, school, community) of young children as they construct knowledge of print from birth to age eight. Critical examination of the range of opportunities for early literacy learning available to all children including the use of assistive technology and augmentative communication approaches to support their literacy development. Emphasis on meaningful, culturally, and developmentally appropriate activities for fostering beginning reading and writing. Focus on strategies for involving families and capitalizing on community resources in promoting language and literacy learning for young children. Field experience required.

### ***ECH ED 3350 Family and Professional Partnerships within School/Community: 3 semester hours***

Prerequisites: Completion of Level I requirements. This course is designed to provide students with the knowledge and skills needed to work successfully with diverse families of young children including those who have children with special needs. The focus is on using a family-systems perspective and family centered approach to strengthen family-professional relationships. Building collaborative partnerships with families and community agencies is emphasized.

### ***ECH ED 4317 Implementation, Evaluation, and Assessment in Early Childhood Education: 3 semester hours***

Prerequisites: Completion of Level II requirements, admission to the teacher education program, current and clear background check, and current and clear TB screening required. This course is designed to provide students with techniques for observing children and using assessment instruments to collect information and plan and implement individual program plans and curriculum in inclusive early childhood settings. Field experience required.

### ***ECH ED 4348 The Acquisition of Mathematical and Science Concepts: 3 semester hours***

Prerequisites: MATH 1150 and MATH 2510, completion of Level II requirements, current and clear background check, current and clear TB screening, and admission to the Teacher Education Program. Applications of the major theorists to mathematics reasoning and scientific inquiry. Content is appropriate for pre-K to third grade learners. Research and its implications for practice in the areas of logical thinking, pre-number ideas, geometry, topology, arithmetical operations, problem solving, observation, inquiry and documentation are considered. Field experience required.

***ECH ED 4989 Practicum I: Early Childhood Education/Early Childhood Special Education Site Based Experience: 3 semester hours***

Prerequisites: Completion of Level II requirements; current and clear background check; current and clear TB screening. This course is a two-day per week intensive, collaborative professional experience in diverse K-12 settings with students, emphasizing improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Course includes mandatory on-site and on-campus seminars, which could be scheduled outside of normal class time. Concurrent Level III methods course assignments will be completed in Practicum I. Taking the Missouri Content Exam (MOCA) is required during Practicum I. Not available for graduate credit.

***ECH ED 4990 Practicum II: Early Childhood Education/Early Childhood Special Education Site Based Experience: 12 semester hours***

Prerequisites: Grade of B or higher in ECH ED 4989, completion of Level III requirements, and taking the Missouri Content Exam. This course is a four-day per week intensive, collaborative professional experience in diverse K-12 settings with students, emphasizing improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Course includes mandatory on-site and on-campus seminars, which could be scheduled outside of normal class time. Certification requirements are successful completion of the Missouri Content Exam (MOCA) and the Missouri Preservice Teacher Assessment (MOPTA).

***ECH ED 5989 Practicum I: Early Childhood/Early Childhood Special Education Site Based Experience: 2 semester hours***

Prerequisites: Completion of Level I and Level II requirements. Activities on site include partnering with the classroom teacher in all areas of instruction, assessment, classroom management. Particular emphasis will be given to impacting students' achievement for diverse populations and differentiated instruction. Level III methods courses assignments may be completed during the practicum day at school sites and Practicum I experiences inform Level III coursework. Activities to acquire research skills are included. Practicum I is taken in the semester immediately preceding Practicum II.

***ECH ED 5990 Practicum II: Early Childhood/Early Childhood Special Education Site Based Experience: 8 semester hours***

Prerequisites: Grade of B- or higher in ECH ED 5989 and admission to Teacher Education Program. Clinical teaching experiences, 4 days per week where placements occur with two different age levels (infant/toddler; pre-k; or k-3) within preschool and elementary schools. These sites offer settings where classrooms implement inclusion (combined general education and special education) and/or have pull-out resources room setting and may also have self-contained settings where students with complex disabilities are educated exclusively. Teacher candidates collect data for a research project.

***ECH ED 6321 Parent and Community Resources in Early Childhood Education: 3 semester hours***

Prerequisite: Graduate standing. Competencies for working with parents and community agencies will be developed through a study of community and community resources. Procedures for parent participation and use of service agencies in the education of all young children, including those with special needs, will be examined.

***ECH ED 6348 Understanding and Supporting Children's Math and Science Inquiry: 2-3 semester hours***

Prerequisites: ED PSY 6215, ECH ED 6412. Advanced study of current cognitive theory to support the development of children's inquiry skills. Curriculum development and implications for practice in the areas of logical thinking, pre-number ideas, geometry, topology, arithmetical operations, problem solving, observation, inquiry and documentation are considered. National and state standards in math and science will provide a framework for teaching strategies.

***ECH ED 6412 Foundations of Early Childhood Education: 3 semester hours***

Prerequisite: A course in child psychology or equivalent. A study of the various types of early childhood programs and the philosophy upon which they are based. Attention will also be directed to the implementation of such programs, problems of parent involvement and the social environment of the children.

***ECH ED 6412A Foundations of Early Childhood Education: History, Philosophy and Current Trends: 1 semester hour***

Prerequisites: Admission to Teach For America or Alternative Certification Program and must be practicing teacher with Bachelor Degree. A study of the various types of early childhood programs and the philosophy upon which they are based. Attention is directed to the history and philosophy of a variety of early childhood programs, current trends and issues in the early childhood education field, and parental involvement.

***ECH ED 6412B Foundations of Early Childhood Education: Practice and Application: 1 semester hour***

Prerequisites: Admission to Teach For America or Alternative Certification Program and must be practicing teacher with Bachelor Degree. A study of the various types of early childhood programs and the philosophy upon which they are based. Students analyze appropriate practice and program implementation. Students conduct an action research project pertaining to a relevant early childhood issue.

***ECH ED 6413 Educational Role of Play: 3 semester hours***

Prerequisites: ECH ED 3300 or equivalent. Emphasizes play as a constructive process with application to cognitive and social development. Special attention to facilitating play in early childhood classrooms.

***ECH ED 6415 Organization and Development of Early Childhood Programs: 3 semester hours***

Prerequisites: ECH ED 3300 or equivalent. Strategies for the effective organization and development of programs for children from diverse cultures, ages birth through age eight years, will be studied. Research and theory in funding and budgeting, staffing and professional development, and selection, development, and assessment of program curriculum will be emphasized. Long-range planning for program stability and involvement in advocacy issues will be covered.

***ECH ED 6490 Internship: 1-10 semester hours***

Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation and related professional activities.

***ECH ED 6497 Problems: 1-10 semester hours***

Prerequisite: Graduate standing. Individual study on topics pertaining to early childhood education.



***ECH ED 6535 Assessment, Curriculum, and Research-Based Practice: Birth-Grade 3: 2-4 semester hours***

Prerequisites: ED PSY 6030, ECH ED 6412. Advanced studies in curriculum design, assessment, and research-based practice for children from birth through eight years, with primary emphasis on birth through 5 years. Students will learn to develop curriculum based upon observation of children and their interests; child development theory and research and the diverse needs of children by considering culture, context, and family relationships. Must be taken concurrently with ECH ED 6536 if obtaining certification.

***ECH ED 6536 Early Childhood Pre-Primary Practicum: 2 semester hours***

Prerequisites: ED PSY 6215, TCH ED 5310A, ECH ED 6412. The focus of this practicum is observation of and participation in classrooms of children birth through five years. Concurrent registration in ECH ED 6535 required.

## Economics

### Courses

***ECON 1000 Economics in Everyday Life (MOTR ECON 100): 3 semester hours***

This course is an introduction to economic concepts, analysis, and issues for non-majors. ECON 1000 does not substitute for ECON 1001 or ECON 1002. Students who have already completed ECON 1001 or ECON 1002 may not take ECON 1000 for credit.

***ECON 1001 Principles of Microeconomics (MOTR ECON 102): 3 semester hours***

Prerequisite: MATH 1030. Introduction to the determinants of household demand, production and cost, and market prices. Applies the principles of individual decision-making behavior to understanding goods, services and resource markets.

***ECON 1002 Principles of Macroeconomics (MOTR ECON 101): 3 semester hours***

Prerequisite: MATH 1030 and ECON 1001. Introduction to the determination of levels of and changes in aggregate income, output, employment and prices. Applies economic principles of choice to the formulation and achievement of public policies that affect national employment, income distribution, and economic growth.

***ECON 1005 Family Economics and Household Development: 3 semester hours***

Provides social service professionals that work with low income individuals and families with an understanding of the principles of personal financial management. Case studies are used to apply course content and to develop training strategies for clients to improve household financial management. The role of financial institutions and government policies as well as their impact on low income families is also examined. Resources to use with clients will be identified. ECON 1005 does not count toward a major or minor in Economics.

***ECON 1052 Microeconomics for the School Curriculum: 3 semester hours***

Analysis of market forces, with emphasis on business firms, households, and productive-factor markets, price determination and resource allocation. Special reference to topics included in elementary and secondary school social science curricula. ECON 1052 may not be used by Economics majors to meet degree requirements.

***ECON 1900 Introductory Topics in Economics: 3 semester hours***

This course provides an analysis of an introductory economic topic. May be repeated for credit when topic varies.

***ECON 2010 The Business Firm: History, Theory, and Policy: 3 semester hours***

Prerequisites: ECON 1000 or ECON 1001 or consent of instructor. This course presents a history of the development of modern business firms and examines the evolution of the economic theory of the firm. Special attention is paid to the role that firms play in fostering social and economic development. The ultimate objective of the course will be to provide students with a deeper understanding of firms so they can make better policy decisions as firm owners, managers, lawmakers, regulators, and voters.

***ECON 2800 History of American Economic Development: 3 semester hours***

Same as HIST 2800. Prerequisites: ECON 1000 or ECON 1001 or consent of instructor. Uses economic concepts to explain historical developments in the American economy, beginning with the hunter-gatherers who crossed the Bering land bridge around 12,000 BC. Main topics include the Native American economies, European exploration and conquest, the colonial economies, indentured servitude, the American Revolution, the US Constitution, westward expansion, transportation, the Industrial Revolution, state banking and free banking, slavery, the Civil War, post-bellum agriculture, the rise of big business and anti trust, banking panics, the Federal Reserve Act, the First and Second World Wars, the New Deal, and the growth of government in the postwar economy.

***ECON 3001 Intermediate Microeconomics: 3 semester hours***

Prerequisite: MATH 1030 and ECON 1001. Analysis of prices in terms of equilibrium of the business firm and consumer demand in markets of varying degrees of competition.

***ECON 3002 Intermediate Macroeconomics: 3 semester hours***

Prerequisites: MATH 1030, ECON 1001, and ECON 1002. This course examines national income and expenditure and the forces determining the level of economic activity. Special emphasis is placed on the theory of income determination and its application to public policy.

***ECON 3003 Game Theory and Strategic Decision Making: 3 semester hours***

Prerequisites: ECON 1001. When the best course of action depends on the decisions made by others, strategy becomes important. Game theory provides the tools for analyzing such strategic decision making. Strategic behavior is analyzed in the context of business, logistics, biology, war, government, politics, and everyday life. A wide variety of in-class experiments are used to illustrate key concepts.

***ECON 3100 Economic Data and Statistics: 3 semester hours***

Prerequisite: MATH 1030, ECON 1001, and ECON 1002. This course is an introduction to economic data sources, data interpretation, and statistical inference as used in economic analysis. It emphasizes the testing of economic hypotheses and the development and estimation of economic models. Students will be introduced to statistical software used in economics.

***ECON 3200 Money, Banking and Monetary Theory: 3 semester hours***

Prerequisites: ECON 1001 and ECON 1002. Factors influencing bank reserves and the money supply. Ability of the Federal Reserve System and the Treasury to control these factors. Introduction to monetary theory: integration of monetary phenomena with national income theory. Analysis of current policy issues.



**ECON 3300 International Economic Analysis: 3 semester hours**

Prerequisite: ECON 1001. Introduction to the theories of international trade and factor movements including determinants of trade, the effects of trade on sectors and on overall economic performance, trade restrictions, and balance of payments and exchange rates. Discussion of current institutions and economic developments in the global economy.

**ECON 3400 Labor Economics: 3 semester hours**

Prerequisites: ECON 1001. Examines the labor market in the economy, considers the theories of labor supply, labor demand, and market determination of wages. Other topics include noncompetitive markets, international labor markets, the theory of human capital, compensating wage differentials, labor market discrimination, unions and collective bargaining, unemployment, and poverty and the distribution of income.

**ECON 3500 The Economics of Government Spending and Taxation: 3 semester hours**

Prerequisites: MATH 1030 and ECON 1001. Analysis of the role of government expenditures and taxation. Topics include: (1) analysis of public goods and externalities, models of collective choice, elements of benefit-cost analysis the theory of bureaucracy, governments as agents in markets; and (2) analysis of the economic role of governments, subsidies and taxes in the federal system, criteria for tax evaluation, the nature of tax legislation, private decision making under different tax institutions, and government borrowing.

**ECON 3600 Market Structure, Strategy, and Pricing: 3 semester hours**

Prerequisite: ECON 1001. A theoretical and empirical analysis of the actions of firms under alternative forms of market organization. The role of economies of scale, product differentiation, mergers, and advertising in affecting industry structure and the impact of the resulting industry structure on pricing, output, promotion, and technology decisions of firms.

**ECON 3610 Economics of Sports, Gaming, and Gambling: 3 semester hours**

Prerequisite: ECON 1001. This course focuses on applications of fundamental economic principles to the world of sports, gaming, and gambling. It analyzes incentives present in sports and the rise of e-sports. Legal and illegal gambling are analyzed in regard to their effect on the local economy and impact of legalized gambling on sports. In addition to professional sports, NCAA, Olympic, and sports popular around the world are explored.

**ECON 3900 Selected Topics in Economics: 3 semester hours**

Prerequisites: ECON 1001 and ECON 1002. Analysis of a selected economic topic. The topic selected will vary from semester to semester. This course may be taken for credit more than once so long as the topic discussed in each semester is different.

**ECON 4030 Managerial Economics: 3 semester hours**

Prerequisites: ECON 3001; MATH 1800 or MATH 1100 recommended. Application of microeconomic theory to decision-making process in the business firm. Topics include pricing and profit strategy, cost analysis, decision making under uncertainty, technology, innovation, and productivity growth, and the structure and organization of firms. Problem-solving and case-study approach used.

**ECON 4040 Booms and Busts in the Economy: Data and Theory: 3 semester hours**

Prerequisites: ECON 3002 and ECON 3100. This course focuses on the empirical regularities in macroeconomics commonly referred to as the business cycle. Students explore the variability and co-movements of aggregate economic variables and consider alternative theoretical explanations of these phenomena.

**ECON 4100 Introduction to Econometrics: 4 semester hours**

Prerequisites: ECON 1001 and ECON 1002; ECON 3100 or MATH 1320 or SCMA 3300; MATH 1800 or MATH 1100. An introduction to quantitative analysis of economic behavior. The ordinary least squares technique and the assumptions underlying it are developed. Methods designed to detect and correct for the violations of these assumptions are examined. Special emphasis is given to the practical application of the procedures discussed through the use of computer exercises.

**ECON 4110 Applied Econometrics: 4 semester hours**

Prerequisites: ECON 4100 or equivalent. Concepts, techniques, & advanced applications of econometrics. Emphasis on developing a critical understanding of the appropriateness and limitations of a variety of state-of-the-art techniques used to model economic or political processes. Topics will include joint tests of hypotheses, estimation of lagged effects, models of qualitative choice, simultaneous systems, and outlier diagnostics. This course includes laboratory work in quantitative economic analysis.

**ECON 4120 Time Series Econometrics for Economics and Finance: 4 semester hours**

Prerequisites: ECON 4100 or equivalent and a solid foundation in statistics. Introduction to application of econometric methods to timeseries data. Emphasis on model specification as it appears to macroeconomic or financial data. Topics include: Stationary and non-stationary time-series, seasonality, random walks, unit roots, Dickey-Fuller tests, cointegration, ARCH/GARCH models, and general to specific modeling (ADLs). Specific applications to macro-economics, international economics and/or financial markets.

**ECON 4130 Business and Economic Forecasting: 4 semester hours**

Prerequisites: ECON 4100 or equivalent. Alternative forecasting methodologies for economic time series will be analyzed and discussed. The focus of the course will be: (1) the development of time-series (ARIMA) models and their application to forecasting; (2) the use of standard econometric models for forecasting; and (3) evaluation and comparison of these methods and the conditions under which each is the appropriate methodology. This course includes laboratory work in quantitative economic analysis.

**ECON 4150 Mathematical Economics: 3 semester hours**

Prerequisites: MATH 1800 or MATH 1100, ECON 3001. This course uses calculus and other mathematical tools to analyze economic phenomena. In addition to exploring techniques used to solve unconstrained and constrained optimization problems, the course also examines how matrix algebra is used in economic modeling. This course allows students to mathematically analyze economic models which receive graphical treatment in lower level courses. Students may not receive credit for both ECON 4150 and ECON 5150.

**ECON 4160 Geospatial Analysis in the Social Sciences: 3 semester hours**

Prerequisites: Junior standing. ECON 1001 or consent of instructor. Analysis of geospatial data relating to a variety of social phenomena using geographic information systems (GIS) software. Students will learn how geospatial analysis can be integrated into research projects and presentations (e.g., creating maps to present and analyze social, political, and economic data). Students will also learn how criminal activity, economic activity, voting patterns and other social behavior are spatially correlated with demographic data. As a culminating project, students will learn how to apply GIS techniques, including but not limited to sophisticated spatial modeling of social behavior.

**ECON 4170 Fundamentals of Cost-Benefit Analysis: 3 semester hours**

Prerequisites: ECON 3001 or equivalent. The purpose of this course is to provide a systemic and rigorous way of thinking about the measurement of benefits and costs when evaluating public projects, programs or regulations. Cost-benefit analysis has wide application, including: environmental resource use, highway construction projects, safety regulations, taxation of cigarettes, and investment in higher education. Given the prevalence of cost-benefit analysis in government budgetary processes, this course will develop critical appraisal skills to evaluate the appropriateness of these analyses.

**ECON 4210 Financial Markets And Institutions: 3 semester hours**

Prerequisite: ECON 3200. Demand, supply and flow of funds in the macrofinancial system, including money, capital, futures and foreign exchange markets. Examines types and historical development of domestic and international financial intermediaries operations within these markets, decision-making within individual intermediaries, their regulatory environment, and how their portfolio decisions affect flows of funds in the financial system.

**ECON 4550 Natural Resource Economics: 3 semester hours**

Prerequisites: ECON 1001 or consent of instructor; junior standing. The relationship between human activity and the world's natural resources requires choices. This course uses an economics perspective to study these choices. This perspective uses the view of the environment as an asset for its starting point. Issues concerning the optimal and sustainable use of natural resources are examined in this context. Special emphasis is given to potential policy responses to environmental problems.

**ECON 4900 Advanced Topics in Economic Analysis: 3 semester hours**

Prerequisite: ECON 3001 or ECON 3002 or consent of instructor. Study of a specific topic in Economics that may vary from semester to semester. May be taken for credit more than once if the topics are different.

**ECON 4980 Special Readings: 1-6 semester hours**

Prerequisite: Consent of instructor; grade point of 3.0 or higher in Economics. Unscheduled, independent directed readings on topics mutually acceptable to student and instructor. Maximum credit limited to six hours.

**ECON 4990 Internship in Applied Economics: 2-6 semester hours**

Prerequisites: ECON 3001, junior standing and consent of instructor. Independent study involving work with an appropriate private firm or public agency. A maximum of six hours may be earned, only three of which may be applied to the Economics major.

**ECON 4995 Internship in Actuarial Science: 1-3 semester hours**

Same as MATH 4995. Prerequisites: Junior standing and consent of program director. Supervised off-campus training in a private or public sector position in which the student applies the knowledge and skills learned in their actuarial science coursework. The internship is monitored by a faculty member and the student must provide a written report at the end of the project. This course may be repeated for a maximum of 6 credit hours.

**ECON 5001 Microeconomic Analysis: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001; ECON 3002 or BUS AD 5002; ECON 4150. Survey of Microeconomic comparative statistics. Detailed examination of demand and supply, product and factor markets. Partial equilibrium in competitive, imperfectly competitive and monopolistic markets.

**ECON 5002 Macroeconomic Analysis: 3 semester hours**

Prerequisites: ECON 3200; ECON 3001 or BUS AD 5001; ECON 3002 or BUS AD 5002; and ECON 4150. Aggregate economic theory, including analysis of the determinants of income, output, employment, and prices. Employment and price-level effects of consumer and investment demand, the money supply and interest rates, and government policies.

**ECON 5052 Microeconomics for the School Curriculum: 1-3 semester hours**

Prerequisites: Bachelor's degree from an accredited institution or consent of instructor. Analysis of market forces, with emphasis on business firms, households, productive factor markets, price determination and resource allocation. Special reference to topics included in the elementary and secondary school social science curricula.

**ECON 5055 Economic Issues for School Curriculum: 1-3 semester hours**

Prerequisite: Junior standing and consent of instructor. An analysis of selected economic issues appropriate to instruction in secondary and elementary schools. May be taken more than once for credit provided the topic of the course is different each time. May not normally be used by economics majors to meet degree requirements.

**ECON 5100 Econometric Theory and Methods: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001; ECON 3002 or BUS AD 5002; ECON 4100; ECON 4150 or equivalent. A rigorous review of statistical models and methods relevant to the estimation and testing of economic relationships. Emphasis on the theoretical underpinnings of techniques commonly used for multivariate regression analysis and hypothesis testing. Topics include ordinary least squares, generalized least squares, and instrumental variables estimation.

**ECON 5110 Topics in Applied Econometrics: 3 semester hours**

Prerequisites: ECON 4100, or ECON 5100 or SCMA 5300. Concepts and application of advanced econometric techniques. Students will develop a thorough understanding of the appropriateness and application of a variety of state-of-the art techniques. Topics will include specification tests, polynomial distributed lags, discrete choice, pooled time-series cross-section, simultaneous equations and outlier detection.

**ECON 5120 Advanced Topics in Time Series Econometrics: 3 semester hours**

Prerequisites: ECON 4100 or equivalent and a solid foundation in statistics. Application of econometric methods to time-series data. Emphasis on model specification as it applies to macroeconomic or financial data. Advanced topics include: Stationary and nonstationary time-series, seasonality, random walks, unit roots, Dickey-Fuller tests, cointegration, ARCH/GARCH models, and general to specific modeling (ADLs). Specific applications to macro-economics, international economics and/or financial markets.

**ECON 5130 Advanced Topics in Business and Economic Forecasting: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001; ECON 3002 or BUS AD 5002; ECON 4150; ECON 4100 or SCMA 5300. This course develops the alternative techniques which are used to forecast economic time series. Each forecasting technique will be evaluated in terms of its theoretical soundness and predictive track record. Students will also learn to use these techniques to differentiate among competing economic models.

**ECON 5150 Mathematical Methods for Economics: 3 semester hours**

Prerequisites: MATH 1100 or MATH 1800, ECON 3001. This course presents the mathematics used in economics at an advanced level. Subjects covered include multivariate calculus, linear algebra, comparative statics, and unconstrained and constrained optimization. Emphasis is placed on the interpretation of mathematical results in economic terms. Students may not receive credit for both ECON 4150 and ECON 5150. This course may not be used by Economics students to meet M.A. degree requirements.

**ECON 5200 Monetary Theory and Policy: 3 semester hours**

Prerequisites: ECON 3200; ECON 3001 or BUS AD 5001; ECON 3002 or BUS AD 5002; and ECON 4150. An examination of how monetary policy has affected the economy in the past and how it can improve economic performance in the future. Topics include: the origins of money, money supply, money demand, the determinants of real and nominal interest rates, the term structure of interest rates, the impact of discretionary monetary policy on the domestic economy and foreign exchange markets, and the domestic economy and foreign exchange markets, and the relationship between monetary policy and federal government deficits.

**ECON 5210 Financial Markets: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001; ECON 3002, and ECON 3200. Demand, supply, and flow of funds in allocating credit and distributing risk in the macrofinancial system. The saving investment process, the rationale for financial markets, and the role of financial intermediaries are studied within the framework of the flow of funds accounts. Special attention is given to the operation of money, capital, futures, and foreign financial markets and the impact of public policy on the structure and performance of financial markets.

**ECON 5300 International Trade: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001. Survey of the modern theories of international trade and their applications including factor endowments and other, trade restrictions, foreign investment, trade and economic development, and balance of payments and exchange rates. Discussion of current institutions and economic developments in the global economy.

**ECON 5301 International Monetary Analysis: 3 semester hours**

Prerequisites: ECON 3200 and ECON 3002 or BUS AD 5002. Application of macroeconomic theory to the international monetary system. Topics include the balance of payments, exchange rates, international linkages, world inflation, capital flows, and the gold standard.

**ECON 5400 Labor Economics: Theory and Public Policy: 3 semester hours**

Prerequisites: ECON 3001 or BUS AD 5001. This course examines labor supply, labor demand, and market determination of wages. Topics covered include the effect of technological change on employment, trends in labor force participation, the impact of government taxes and transfers on labor supply, poverty, and its economic consequences, the human capital model and its implications for investment in education and on-the-job training, and theories of economic discrimination and empirical measurement issues. Throughout the course, current public policy debates are examined using the theoretical models developed.

**ECON 5550 Economics for Public Policy Analysis: 3 semester hours**

Prerequisite: Graduate standing. This course focuses on the role of the government in the economy, with particular attention paid to the way government affects the allocation of resources and the distribution of income. This course covers microeconomic principles and key economic concepts used in public policy analysis. Practical application of theoretical concepts is emphasized. This course may not be used by Economics students to meet M.A. degree requirements.

**ECON 5900 Advanced Topics in Economic Analysis: 3 semester hours**

Prerequisite: Consent of the instructor. Study of a specific economics topic, which may vary from semester to semester. May be taken more than once if the topic is different.

**ECON 5980 Directed Readings: 1-6 semester hours**

Prerequisite: Consent of the instructor. Independent study through readings, reports, research projects, and conferences.

## Education

### Courses

**EDUC 2002 Social Entrepreneurship: 3 semester hours**

This course examines the mindsets, skills, and approaches that social entrepreneurs use to solve problems in society. Students explore the role of social entrepreneurs with an emphasis on how social entrepreneurs create change in people's lives and their impact on local to global scales. Students identify sustainable models for social innovation and formulate social entrepreneurship action plans. Previous experience as a social entrepreneur or the desire to become a social entrepreneur in the future is not required.

**EDUC 2204 Special Topics in Education: 1-3 semester hours**

Prerequisite: Completion of 75 hours and consent of instructor. Examination of a special area or topic within the field of education. Topics to be considered will be announced prior to registration and may vary. For elective credit only. This course may be repeated for different topics. Not to exceed a total of six hours credit.

**EDUC 2222 Interpretation: Connecting Audiences and Meaning: 3 semester hours**

Interpretation is a process for forming intellectual and emotional connections between the interests of an audience and the inherent meanings within a resource. This class covers interpretive methods for development and delivery of thematic, non-formal, presentations to various audiences. The class also introduces informal exhibit design, customer service and social media as they relate to interpretation.

**EDUC 2297 Independent Study: 1-3 semester hours**

Prerequisite: Completion of 75 hours and consent of instructor. Independent study through readings, research, reports and conferences designed to provide depth in areas of study previously introduced in education courses. For elective credit only. May be repeated. Not to exceed a total of three hours credit.

**EDUC 3170 Grant Proposal Writing for Educators: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent and junior standing. An introduction to grant proposal writing for educators and other professionals in community agencies, cultural institutions, and childcare centers. Students will practice writing the customary parts of a grant proposal as they learn essential concepts in fundraising, nonprofit management, and social entrepreneurship. Writing assignments include cover letters, problem statements, organizational profiles, project descriptions, budget narratives, and evaluation plans. Collaboration and peer review are required. Emphasis is on clarity, conciseness, format, style, tone, persuasiveness, and evidence basis.



**EDUC 4000 International Education Field Experience: 2-4 semester hours**

Prerequisites: ED PSY 2212, consent of instructor, minimum GPA of 2.5, current and clear background check, and current and clear TB screening. This field experience will be supervised by university faculty. Students will travel to a country to explore the culture and educational system. Prior to the field experience students will receive training that includes familiarization with the culture and educational system of the host country. Students will complete approximately 50 hours per credit hour in travel and cultural exploration as well as designed educational experiences. Course may not be repeated for more than 6 credit hours. This course will satisfy the cultural diversity requirement if the country is appropriate.

**EDUC 4989 Internship I: 3 semester hours**

Prerequisites: Junior standing, admission to the Bachelor of Educational Studies program, or consent of instructor. Supervised field experience in educational settings to prepare for planning, research, evaluation, and other professional activities in the student's emphasis area of concentration that will be carried out in EDUC 4990 and EDUC 4991.

**EDUC 4990 Internship II: 6 semester hours**

Prerequisites: B- or better in EDUC 4989, senior standing, or consent of instructor. Supervised field experience in an approved setting.

**EDUC 4991 Internship III: 6 semester hours**

Prerequisites: B- or better in EDUC 4990 (may be taken concurrently) or consent of instructor. Supervised field experience in an approved setting.

**EDUC 5006 Graduate Workshop: 1-10 semester hours**

Prerequisite: Consent of instructor.

**EDUC 5612 Intrapreneurial Leadership: 3 semester hours**

Prerequisite: Graduate standing. This course helps graduate students bring people and resources together to create value within existing organizations. Intrapreneurial leadership focuses on identifying and leveraging opportunities to enhance organizational responsiveness, growth, and vitality.

**EDUC 5616 Accelerate Intrapreneurial Experience: 3 semester hours**

Prerequisites: Graduate standing. This course equips graduate students to apply theories of leadership, entrepreneurship, innovation, and systems thinking within real-world organizational or business contexts. Students propose and implement a new program, product, or service model that builds organizational capacity and financial sustainability.

**EDUC 6142 The History and Practice of Community Education: 3 semester hours**

Prerequisites: Graduate standing. Students will explore the history of community-based education initiatives cultivating the insights, capacities and skill sets required to lead educational innovation, use information, media and technology effectively, strengthen cultural literacies, and engage in leadership and community development.

**EDUC 6308 Graduate Institute: 1-10 semester hours**

Prerequisite: Consent of instructor.

**EDUC 6404 Seminar: 1-10 semester hours**

Seminar on an educational topic or special issue not normally included in the regular curriculum.

**EDUC 6408 Graduate Seminar: 1-10 semester hours**

Prerequisites: Consent of instructor. Intensive study of selected issues in education.

**EDUC 6442 Leadership in Community Education: 3 semester hours**

Prerequisites: Graduate standing. Students will explore the leadership skills and capacities required for effective community-development efforts, including social innovation and entrepreneurship, adaptive management, cultural competence, and how to work with community collaborators to plan and implement inclusive projects.

**EDUC 6491 Staff Development and Professional Growth: 1-10 semester hours**

Designed in conjunction with an individual school district or educational agency and related to problems of education confronting that specific district or agency.

**EDUC 6998 Thesis Research: 1-10 semester hours**

Prerequisite: Consent of instructor.

**EDUC 7050 The Research Process I: Framing Research Questions in Education Research: 3 semester hours**

Prerequisites: Admission to the EdD or PhD in Education. This course is an overview of the essential elements of writing a research proposal including, identifying a problem statement and conceptualizing critical research questions. The course emphasizes exploring the research literature, framing research questions, and justifying them based on the literature.

**EDUC 7200 English Academic Support: 1-3 semester hours**

This course addresses the language needs of international doctoral students as they perform scholarly analysis and write at the doctoral level. The course contributes to the development of skills necessary for the successful completion of the dissertation. This course may be repeated for a maximum of 27 credit hours.

**EDUC 7205 Action Research for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D cohort or consent of instructor. Study of small-scale simulations that introduce students to the fundamentals of framing relevant questions, working in community, writing field notes, interviewing, technologies to support and help analyze data, and storytelling. Particular attention will be given to representing perspectives of various stakeholders including students, parents, administrators, and colleagues.

**EDUC 7210 Survey Design for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Application of relevant theories, research, and pedagogical practices in designing surveys for educational settings. Focus on instrument development and design, forming questions and scales, and sampling methods as well as analysis of results and presentation for various target audiences in educational organizations and settings.

**EDUC 7215 Data Analysis for Educational Practitioners: 3 semester hours**

Prerequisites: Admission to an EdD cohort or consent of instructor. This course provides an overview of the quantitative skills needed for research including using software for statistical data analysis. The course facilitates an understanding and application of statistical techniques used for survey research.

**EDUC 7220 Designing Research for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Guided workshop, applying the principles of research design, to design a study of the research issues selected by the learning community. Course covers how to develop research questions, choose among quantitative and qualitative methods, and consider the best, ethical practices.



**EDUC 7225 Ethnography for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. The study of ethnography as a methodology to engage in field research and provide the conceptual, theoretical, and empirical knowledge base for action research.

**EDUC 7230 Interviewing for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Provides opportunities for developing skills in interviewing individuals and groups to identify, describe, assess and compare educational programs, practices and policies. Emphasis on interviewing experts in the field and research participants in educational research field studies.

**EDUC 7295 Inquiry Seminar for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Seminar on a specified approach to inquiry in order to obtain or analyze information of interest to scholar-practitioners leading educational programs through continuous improvement cycles.

**EDUC 7305 Representing Data for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. learning community or permission of instructor. Methods for presenting and displaying various types of data to a range of target audiences. Means of assuring accurate representation and the advantages and disadvantages of various methods are reviewed. Displays include tables, graphs, and charts. Current software programs to aid representation are reviewed.

**EDUC 7310 Integrating Technology in Learning for Educational: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Appropriate technology tools for carrying out individual or group research and assessment projects will be identified and integrated. The appropriate tools will be learned and applied to present, analyze and complete projects.

**EDUC 7315 Project Management for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to the Ed.D. program or consent of instructor. Tools for and approaches to managing complex projects in educational organizations, including establishing goals, subdivision of work, formation of work groups, planning and scheduling, establishing and tracking time lines, deployment of resources to complete a project, and addressing constraints. Use of current software for charting and reporting projects.

**EDUC 7320 Financial and Budgeting Skills for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Examines budgeting and finance systems of educational institutions, both from the perspective of theory, research and policy development, and from the perspective of actual budgeting and practice. There will also be an emphasis on the impact of federal and state policy regarding the finance of educational institutions, as well as the processes by which budgets are developed and resources allocated.

**EDUC 7325 Grant Writing for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to an Ed.D. cohort or consent of instructor. Provides hands-on help for current and would-be grant writers. Examines search tools to locate likely request for proposals, explores text and sub-text issues, develops a timeline for grant development and submission, provides practice on how a peer review system works, considers issues related to revision and follows the real processes engaged in by successful grant recipients.

**EDUC 7330 Human Relations Skills for Educational Practitioners: 1 semester hour**

Prerequisites: Admission to Ed.D. program or consent of instructor. Exposure for educational practitioners in a variety of leadership roles to basic human relations skills, effective interventions which can be made with the individual worker, and assessment skills to enable the leader to determine if referral to a mental health professional is warranted. Effective ways of confronting employees because of impaired job performance, giving performance evaluations, providing career development and planning information, identifying work transitions in their employees, and identifying stress and stressors in the work environment, along with identifying substance abusing workers and deciding what to do about them.

**EDUC 7415 Topics in Education: 3 semester hours**

Prerequisite: Admission to the doctoral program. Intensive study of a topic in education.

**EDUC 7490 Directed Readings in the Education Research Literature: 1-6 semester hours**

Prerequisite: Doctoral standing. Independent study of the education research literature in an area defined in consultation with an advisor.

**EDUC 7495 Doctoral Research Tools: 1-6 semester hours**

Prerequisites: ED REM 6710. A structured individual or small group instructional or supervised investigative experience in and with a specific research skill and/or procedure that will be needed in the production of a doctoral dissertation. This course may not substitute for any existing graduate courses that cover the same research tool skills.

**EDUC 7600 Learning Community of Practice I: 1-6 semester hours**

Prerequisites: Admission to an EdD cohort. This course requires students in the Ed.D. learning communities to apply the scholarship of teaching and learning through asset mapping, inquiry formation, and selected readings. Students develop professional connections, explore their interests and beliefs, and reflect on a problem of practice.

**EDUC 7605 Scholarship of Teaching and Learning in Educational Practice: 2 semester hours**

Prerequisites: Admission to an Ed.D. cohort. Exploration of learning through practice and reflection within a community of scholars committed to situated best practice in education.

**EDUC 7610 Learning Community of Practice II: 1-6 semester hours**

Prerequisites: EDUC 7600. This course requires students to identify and examine research problems by developing skills of inquiry, integrating prior knowledge, and evaluating extant research.

**EDUC 7615 Evaluation of Educational Programs: 2 semester hours**

Prerequisites: Admission to an Ed.D. cohort. Assessment of programs for continuous improvement cycles within educational settings.

**EDUC 7620 Learning Community of Practice III: 1-6 semester hours**

Prerequisites: EDUC 7610. This course assists students in the selection and definition of a problem of practice addressed through research by the learning community members. This includes building relationships within and outside the learning community and designing structure to support inquiry into a problem of practice.

**EDUC 7625 Building Socially Just and Ethical Educational Communities: 3 semester hours**

Prerequisites: Admission to the EdD program. This course examines the role of culture, analyzes social justice components, and considers ethical and legal issues for learning communities.

**EDUC 7640 Learning Community of Practice V: 1-6 semester hours**

Prerequisites: EDUC 7630. This course requires students to prepare a dissertation proposal. This involves selection of research tools, establishment of study procedures at research sites, and adherence to high ethical standards for conducting research.

**EDUC 7642 Sociocultural Perspectives in Education: 3 semester hours**

Prerequisite: Doctoral standing and consent of instructor. Investigation of sociocultural theory with a focus on educational applications. Topics include the social formation of mind, language as cultural tool, methodological issues in social science research, and dialogic inquiry as pedagogy.

**EDUC 7650 Learning Community of Practice VI: 1-6 semester hours**

Prerequisites: EDUC 7640. This course is a continuation of EDUC 7640, which requires preparation of a dissertation proposal, selection of research tools, establishment of study procedures at research sites, and adherence to high ethical standards in research.

**EDUC 7660 Learning Community of Practice VII: 1-6 semester hours**

Prerequisites: EDUC 7650. This course requires preparation of a dissertation proposal, selection of research tools, establishment of study procedures at research sites, and adherence to high ethical standards in research.

**EDUC 7670 Learning Community of Practice VIII: 1-6 semester hours**

Prerequisites: EDUC 7660. This course requires students to prepare the final chapters of the dissertation, understand and perform data analysis, interpret the results for a problem of practice, provide recommendations for future research, and disseminate the results to applicable audiences.

**EDUC 7680 Learning Community of Practice IX: 1-6 semester hours**

Prerequisites: EDUC 7670. This course assists students to prepare the final chapters of the dissertation, understand and perform data analysis, interpret the results for a problem of practice, provide recommendations for future research, and disseminate the results to applicable audiences.

**EDUC 7690 Learning Community of Practice X: 1-6 semester hours**

Prerequisites: EDUC 7680. This course prepares students to defend the dissertation. This includes assistance with the dissertation manuscript and the oral defense.

**EDUC 7710 Research Methods and Design for Educational Practitioners: 3 semester hours**

Prerequisites: Students must be admitted to the EdD program in order to enroll in this course. This course prepares educational practitioners to identify and understand research questions and develop appropriate research designs to answer them. Students learn how to critically evaluate research reports.

**EDUC 7880 Research Internship I: 3 semester hours**

Prerequisites: Nine hours of research methods or statistics and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

**EDUC 7881 Research Internship II: 3 semester hours**

Prerequisites: EDUC 7880 and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

**EDUC 7882 Research Internship III: 3 semester hours**

Prerequisites: EDUC 7881 and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

**EDUC 7889 Laboratory of Practice: 1-6 semester hours**

Prerequisites: Admission to an Ed.D. cohort. Field experience that bridges theory and practice in solving complex, situated problems of practice.

**EDUC 7950 Preparation for Writing the Dissertation Proposal: 1 semester hour**

Prerequisites: Completion of research methods course requirements. This course provides an in-depth examination of the essential elements of a dissertation proposal. Particular emphasis is placed on examining the validity and reliability or the trustworthiness of the design of proposed research. Tools for identifying strengths and weaknesses are applied to proposals. Critique of proposals is employed. Also reviewed is the process of presenting and defending a proposal.

**EDUC 7998 Dissertation in Practice Research: 1-8 semester hours**

Prerequisite: Admission to pre-candidacy in the EdD program.

**EDUC 7999 Dissertation Research: 1-12 semester hours**

Prerequisite: Admission to pre-candidacy in the PhD in Education program.

## Educational Administration

### Courses

**ED ADM 6000 Seminar: 1-10 semester hours****ED ADM 6201 Knowledge Contexts of Education Administration and Policy: 3 semester hours**

Prerequisites: Admission to master, doctoral, and/or certification programs in Education Administration or consent of instructor. This course is a survey of the various views of knowledge that have influenced the nature of the organizational structures and policies of American educational institutions. The course is framed both by the purposes of American education and the 'scientific management' movement of the first quarter of the 20th Century.

**ED ADM 6202 Race and Culture in Educational Reform and Policy: 3 semester hours**

Prerequisite: Graduate standing. Schools have played a pivotal role in mediating social tensions in the broader society over race and culture. However, many of the discussions in educational reform and policy fail to acknowledge how deeply that race and culture shape our thinking and influence our actions with regard to educational policy and reform. This course highlights how these factors have historically shaped and continue to shape the rhetoric and the reality of school reform and educational policies. In this course, students are encouraged to explore and examine the underlying assumptions about the purposes of schooling, the beliefs that underpin educational reform historically, and in contemporary society, and the actions by educational leaders and policymakers to change schools.

**ED ADM 6204 Economic Contexts of Education: 3 semester hours**

Prerequisites: ED ADM 6201 (may be taken concurrently), or consent of instructor. This course is a critical examination of those aspects of local, state, and national economic structures which influence the nature of education policies and their concomitant practices.

**ED ADM 6205 Legal Contexts of Education: 3 semester hours**

Prerequisites: ED ADM 6201 (may be taken concurrently), or consent of instructor. This course is a critical examination of both (1) local, state, and federal laws and (2) Western notions of justice within which education policies are constituted and their concomitant practices implemented.

**ED ADM 6301 Education Policy Analysis: 3 semester hours**

Prerequisite: Graduate standing. This graduate level course provides an introduction to education policy issues. Additionally, the course provides an overview of the tools and skills necessary to conduct policy analysis and research. The focus of the course is on PK-Post Secondary education policy in the United States. This course is cross-listed as P P ADM 6301 and POL SCI 6301.

**ED ADM 6302 Elementary School Administration: 3 semester hours**

Prerequisites: Completion of at least fifteen credit hours of the M.Ed. in Education Administration or consent of instructor. This course is a comprehensive, systematic study of the elementary school principalship. Emphasis is placed on relating theories of learning, teaching, and organization to effective administration of elementary schools.

**ED ADM 6304 Secondary School Administration: 3 semester hours**

Prerequisites: Completion of at least fifteen credit hours of the M.Ed. in Education Administration or consent of instructor. This course is a comprehensive, systematic study of the secondary school principalship. Emphasis is placed on relating theories of learning, teaching, and organization to effective administration of secondary schools.

**ED ADM 6305 School District Administration: 3 semester hours**

Prerequisite: Enrollment in Advanced Certification Program and/ or consent of instructor. Course focuses on current research about school district administration; also deals with major central office issues including: board/superintendent relations, central office organization, the function and authority of assistant superintendents and program directors, and the administrative team approach to school district administration.

**ED ADM 6306 Special Education Administration: 3 semester hours**

Prerequisites: Completion of graduate degree in Special Education, Education Administration or consent of instructor. A study of organizational issues in special education and implications for practices and procedures. Specific attention will be given to special education delivery systems, compliance standards, funding sources, and regulatory standards.

**ED ADM 6307 Integrated Curriculum for Special Education****Administrators: 3 semester hours**

Prerequisites: Graduate standing. Development of skills to understand, supervise and evaluate the integration and differentiation of curriculum. Intended for special education administrators.

**ED ADM 6401 School Staff Development and Supervision: 3 semester hours**

Prerequisites: ED ADM 6201 (may be taken concurrently), or consent of instructor. This course provides an examination of the conceptual bases and practical applications of staff development and supervision in educational settings. It explores relevant conceptual models presented as heuristic devices to consider a variety of administrative techniques to assess needs, plan, deliver, and evaluate staff development and supervision programs in schooling.

**ED ADM 6402 School Personnel Administration: 3 semester hours**

Prerequisites: Advanced standing and/or consent of instructor. This course is a comprehensive, systematic study of problems in planning, recruitment, selection, induction, and retention relative to school personnel.

**ED ADM 6403 Problems in School Public Relations: 3 semester hours**

Prerequisites: Advanced standing and/or consent of instructor. This course is an examination of a range both traditional and critical perspectives relevant to home-school-community relations.

**ED ADM 6497 Problems: 1-10 semester hours****ED ADM 6501 Principles of Public School Finance in Missouri: 3 semester hours**

Prerequisites: Advanced graduate standing and/or consent of instructor. Course is designed to analyze and study critical areas of public school finance at the local and state levels, highlighting the role of such factors as legislative procedures, principles of local and state support, budgeting and accounting procedures, assessment of property, etc.

**ED ADM 6502 School Buildings and Sites: 3 semester hours**

Prerequisites: Advanced graduate standing and/or consent of instructor. This course deals with methods and procedures for (1) projecting the future building and facility needs of a public school district, (2) supervising actual planning and construction of educational facilities, (3) optimizing the use of current facilities, and (4) maintenance of buildings, grounds, and equipment.

**ED ADM 6601 Administration of Adult and Community Education: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. A course designed to familiarize the student with the structure, purpose, and processes of community education with particular emphasis being placed on the administrative theories and functions of adult education.

**ED ADM 6602 Programming in Community and Adult Education: 3 semester hours**

Prerequisites: ED ADM 6601 and/or consent of instructor. Study and analysis of basic situations in which community and adult educational programming take place. Within this framework, application will be made of a fundamental series of steps essential to sound educational programming.

**ED ADM 6701 Leadership for Equity: 3 semester hours**

Prerequisites: Graduate standing. Exploration of the concepts of leadership. Instructional activities include creating a personal philosophy of leadership and education and examining leadership in different contexts such as learning organizations, volunteer groups, crisis-response, hierarchical vs. democratic as well as education organizations.

**ED ADM 6702 Supervision in Education Organizations: 3 semester hours**

Prerequisites: Graduate standing. This course explores the transition challenges in implementation of the Missouri Learning Standards. It emphasizes effective supervision of observed instruction in multiple subject areas along with actionable methods of improvement. Also explored are the techniques used to conduct difficult conversations regarding practice.

**ED ADM 6704 Data-Driven Instruction and Team Leadership I: 3 semester hours**

Prerequisites: B- or better in ED ADM 6701. Preparation to use data as an asset in building high performance in schools, as an analytic tool, and a means of continuous measurement. Significant emphasis upon team building techniques and the use of data. Taken concurrently with ED ADM 6705.



**ED ADM 6705 School Culture I: 3 semester hours**

Prerequisites: B- or better in ED ADM 6701. Exploration of students' personal philosophy of education and underlying belief structure. Race and class issues are discussed, the causes of the Achievement Gap, issues building community support and practice engaging in 'courageous' conversations. Taken concurrently with ED ADM 6704.

**ED ADM 6708 School Culture II: Equity and Cultural Competence: 2 semester hours**

Prerequisite: B- or better in ED ADM 6701. Acquisition and application of strategies for effectively supporting student social and emotional learning, increasing student voice, and engaging families, as well as systems and structures for creating equitable opportunities for students.

**ED ADM 6711 Data-Driven Instruction and Team Leadership II: 3 semester hours**

Prerequisites: B- or better in ED ADM 6708. Study of a cycle of data collection strategies, analysis and interpretation, all leading to actionable steps supporting teachers in the use of data as a professional tool to improve learning. Uses data from the residency site.

**ED ADM 6712 Management of Organizational Systems: 3 semester hours**

Prerequisites: B- or better in ED ADM 6708. Reviews the operational systems that provide for the effective management of school operations. Includes study and analysis of safety, budgeting and staffing issues. Taken concurrently with ED ADM 6711.

**ED ADM 6713 Residency II: 2 semester hours**

Prerequisites: B- or better in ED ADM 6710. Continuation of ED ADM 6710 Residency I. See ED ADM 6710 for the course description. ED ADM 6713 is taken in conjunction with ED ADM 6711 and ED ADM 6712.

**ED ADM 6714 K-12 School Administration: 3 semester hours**

Prerequisites: Admission to the MEd in education administration program or graduate standing. This course is a comprehensive, systematic study of the elementary, middle, and secondary school principalship. Emphasis is placed on relating theories of learning, teaching, and organization to effective administration of elementary and secondary schools.

**ED ADM 6900 Internship: 1-10 semester hours**

Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

**ED ADM 6901 Elementary School Principal Field Experience: 3 semester hours**

Prerequisites: Completion of 15 credit hours in either the MEd or EdS in Education Administration programs or consent of the instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

**ED ADM 6902 Secondary School Principal Field Experience: 3 semester hours**

Prerequisites: Completion of 15 credit hours in either the MEd or EdS in Education Administration programs or consent of the instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

**ED ADM 6903 Superintendent Field Experience: 3 semester hours**

Prerequisites: Completion of 15 credit hours in the EdS in Education Administration program or consent of the instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

**ED ADM 6904 Special Education Director Field Experience: 3 semester hours**

Prerequisites: Completion of 15 credit hours in either the MEd or EdS in Education Administration programs or consent of the instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

**ED ADM 6905 Private School Leadership Field Experience: 3 semester hours**

Prerequisites: Completion of 15 credit hours in either the MEd or EdS in Education Administration programs or consent of the instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities. This section is recommended for individuals who do not plan to seek certification as a public school principal.

**ED ADM 7800 Educational Administration Doctoral Seminar: 1-6 semester hours**

Prerequisites: Admission to doctoral program and consent of instructor. Intensive directed study of selected issues related to the administration of educational institutions.

## Educational Foundations

### Courses

**ED FND 3251 Black Americans in Education: 3 semester hours**

An examination and analysis of conditions affecting the education of black Americans and their schools, with emphasis on relationships between schools and the black community, and needed changes in education.

**ED FND 4330 History of American Education through the Lens of Social Justice: 3 semester hours**

Prerequisite: A course in American History or consent of instructor. An overview of the evolutionary development of American educational theory and practice from the early colonial period to the present. Attention is also given to selected issues in professional education. This course will examine the history in light of contemporary concerns over social justice.

**ED FND 6200 Demographic Contexts of Education: 3 semester hours**

Prerequisites: Graduate standing. This course is a critical examination of the impact of population changes on schools. Students will have the opportunity to investigate the social and economic dimensions of demographic shifts that affect demand for and organization of education services.

**ED FND 6203 Political Contexts of Education: 3 semester hours**

Prerequisites: Graduate standing. This course is a critical examination of those aspects of local, state, and federal politics which significantly influence the political contexts within which education policies are constituted and their concomitant practices implemented.



**ED FND 6422 Analysis of Cultural Literacies: 3 semester hours**

Prerequisites: Graduate standing. Students will conduct a critical study of community relations, examining strategies that strengthen diversity, relevance and inclusion, tap into community funds of knowledge, promote civil discourse and respectful dialogue, foster healing and resilience, and transform community education contexts.

**ED FND 6430 Ecological Context of Urban Education: 3 semester hours**

Prerequisites: Graduate standing. The issues facing urban education in the 21st century are not limited to what occurs within schools and school districts, but also emanate from the larger socio-historical, political, and economic forces in U.S. society. With its emphasis on the ecology of urban education, this course examines urban schools in relation to the communities they serve, and how other institutions such as businesses and faith-based institutions shape the dynamics of schools and communities. Students will explore critical social, cultural, and policy issues in urban education by taking a macro and an interdisciplinary approach. We will explore the historical, political, and economic factors that have shaped urban education.

**ED FND 6431 History of African American Education: 3 semester hours**

Prerequisites: Graduate standing. Exploration of the history of education for African Americans. Among the topics investigated will be provision of schooling by the community and/or state; curriculum debates (i.e., vocational vs. classical), and official policies (and informal practices) surrounding segregation, desegregation, and resegregation. Also explores contested interpretations and the myriad ways that memories and meanings intersect through individuals and communities over education and its value.

**ED FND 6497 Problems: 1-10 semester hours**

## Educational Psychology

### Courses

**ED PSY 2212 Child and Adolescent Development: 3 semester hours**

Studies physical, emotional, social, and cognitive factors of growth and development of children from birth through adolescence. Major theories of learning and development are examined. Additional attention is given to understanding individual differences and the important influences of family and culture on development.

**ED PSY 3312 Psychology of Learning, Instruction, and Assessment: 3 semester hours**

Prerequisite: ED PSY 2212 or consent of instructor. Application of educational psychology theories and research to learning, instruction, and assessment. Highlights the importance of motivation, memory and cognition, and critical thinking skills in the instructional process and how to develop and monitor effective assessments to improve student learning.

**ED PSY 6030 Instruction, Learning, and Assessment: 3 semester hours**

Prerequisites: Graduate standing. This course uses behavioral and achievement assessment data (formative, diagnostic, and summative) to assess a learner's progress and to plan ongoing instruction. Students will learn about the design and use of differentiated high-quality assessments monitors learner performance. Instruction engages learners in their own growth, to monitor learner progress, to assess the development of learners' global competence, and guide decision making.

**ED PSY 6030A Instruction, Learning and Assessment: A: 1 semester hour**

Prerequisites: Graduate standing. Covers the study of cognitive and sociocultural theories of learning, knowledge versus understanding, designing for transfer, distinctions between experts and novices within a knowledge domain, and the backward design approach to instructional planning.

**ED PSY 6030B Instruction, Learning and Assessment: B: 1 semester hour**

Prerequisites: ED PSY 6030A or consent of instructor. Builds upon the backward design approach to instructional planning via study of subject matter domains to identify big ideas, essential questions, and facets of understanding. The relationships among domain concepts and development of valid and reliable assessments of student learning are highlighted.

**ED PSY 6030C Instruction, Learning and Assessment: C: 1 semester hour**

Prerequisites: ED PSY 6030B or consent of instructor. Examines the perspectives and intersection of cognitive and sociocultural learning environments, including the appropriate use of technology, application of instructional design principles, and techniques for teaching with high quality curricular materials.

**ED PSY 6109 Learning and Development in Secondary School Settings: 4 semester hours**

Prerequisites: Graduate standing and admission to the secondary teacher education program. Investigation of teaching and learning theories and research on the developmental needs of pre-adolescent and adolescent students. Issues of cognition, moral and social development, motivation, and assessment will be analyzed and debated. Emphasis will be on theoretical and practical approaches to constructing and analyzing a learning system. Includes field experiences.

**ED PSY 6111 Educational Psychology: 3 semester hours**

Prerequisite: Graduate standing. This course examines current theories of learning, cognition, and memory and the corresponding implications for curriculum development and instructional practices. The impact of biological and social factors on learning and behavior also are considered.

**ED PSY 6115 Personality and Social Development: 3 semester hours**

Prerequisites: Graduate standing. A foundational course integrating major theoretical perspectives on personality and social development. Emphasis is on the dynamic interplay of sociocultural influences on personality and identity development, including the impact of social contexts such as the school on development.

**ED PSY 6210 Life-Span: Individual and Family Development: 3 semester hours**

Prerequisites: Graduate standing. Critical analyses of theories of human development including readings from empirical research and cross-cultural comparisons focusing on strategies to enhance developmental outcomes through relationship and environmental opportunity.

**ED PSY 6215 Psychology of Early Childhood Development: 3 semester hours**

Prerequisites: ED PSY 6111 or consent of instructor. A survey of the theories, concepts and research which inform the field of early childhood development and help caregivers and teachers understand the cognitive, social, and emotional changes that take place from birth through the primary years of schooling.

**ED PSY 6217 Foundations of Citizenship Education: 3 semester hours**

Prerequisites: Graduate standing. Introduction to citizenship education providing a range of knowledge of civic participation, concepts of democracy, the democratic purposes of education, and the developmental of civic identity and political thinking, attitudes, and engagement. Comparison of historical and contemporary approaches to democratic citizenship education in the United States.

**ED PSY 6220 Development of School-Age Students: 2 semester hours**

Prerequisite: Graduate standing. Examines theories and concepts regarding the physical, cognitive, social-emotional, and moral development of school-age students. Particular attention is given to the influences of individual and cultural diversity on development.

**ED PSY 6222 Advanced Studies in Child and Adolescent Development: 3 semester hours**

Prerequisites: Graduate standing. Investigates current psychological theories and research regarding the physical, cognitive, and social-emotional development of children and adolescents.

**ED PSY 6225 The Psychology of Adolescence: 3 semester hours**

Prerequisites: ED PSY 6111 or consent of instructor. Current research on the psychological changes which occur during adolescence. Attention is paid to the family, school, peer groups, and contemporary settings that practitioners must understand to help young people meet the psychosocial challenges of adolescence.

**ED PSY 6226 Mental Health and Development of Children and Youth: 3 semester hours**

Prerequisites: A graduate or undergraduate developmental psychology course and graduate standing or consent of instructor. This course examines the psychological impact of common developmental challenges affecting the mental health of children, adolescents, and young adults. It reviews research-based options for prevention and early intervention at the individual, family, and cultural levels.

**ED PSY 6310 Psychology of Learning Processes: 3 semester hours**

Prerequisites: ED PSY 6111. Advanced study of learning and instructional theories. The historical and theoretical bases of instructional practice are examined.

**ED PSY 6404 Seminar: 1-10 semester hours****ED PSY 6417 Current Perspectives on Citizenship Education: 3 semester hours**

Prerequisite: ED PSY 6217. Seminar extends students' understanding of theory and research in citizenship education by applying it to practical programs in the US and abroad. Analysis of assumptions underlying methods of citizenship education and its goals. Exploration of research on methods that promote, facilitate, or inhibit civic participation and citizenship competence.

**ED PSY 6444 Cognition and Technology: 3 semester hours**

Same as ED TECH 6444. Prerequisites: ED PSY 6111 or consent of instructor. Examines cognitive theories and computer-based tools for learning. Students will gain a critical understanding of the relationship between the design of technological tools, the use of those tools in educational settings, and their implications for learning.

**ED PSY 6445 Character Education and Development: 3 semester hours**

Prerequisites: ED PSY 6111 and ED PSY 6220 or ED PSY 6225. Critical survey of theories of character development and models for character education in childhood and adolescence. Includes empirical and conceptual study of the nature of moral character how it develops, and how it can be fostered in schools.

**ED PSY 6450 Advanced Methods in Character Education: 3 semester hours**

Prerequisites: ED PSY 6445. Advanced exploration of methods for promoting character development in schools: class meetings, democratic processes, cross-age learning and character curriculum development. Methods will be critically examined for their empirical and theoretical justifications.

**ED PSY 6497 Problems: 1-10 semester hours****ED PSY 6530 Foundations of School Psychology: 3 semester hours**

Prerequisites: Admission to the School Psychology Program or consent of instructor. Examines the professional roles, responsibilities, and functions of psychologists in schools. Focuses on educational foundations of school psychology including the history of the profession, organization and operation of schools, and diversity among students and their families.

**ED PSY 6532 Psychoeducational Differences: 3 semester hours**

Prerequisites: Graduate standing. Examination of classification systems used with children and adolescents in the diagnosis and treatment of educational and physical disabilities, mental disorders, and other developmental challenges.

**ED PSY 6536 Biological Bases of Behavior: 3 semester hours**

Prerequisites: Graduate standing. Examination of biological factors affecting human behavior. Includes an overview of neuroscience, developmental psychophysiology, and basic psychopharmacology. Implications for psychological and educational interventions are considered.

**ED PSY 6540 Psychoeducational Interventions: 3 semester hours**

Prerequisites: Grades of B- or better in ED PSY 6545 and ED REM 6718; or consent of instructor. Examines academic and instructional interventions, both preventive and remedial, that are delivered in schools and related settings with children and adolescents. Emphasizes linking assessment and intervention via use of direct and indirect service delivery.

**ED PSY 6542 Social-Emotional and Behavior Interventions: 3 semester hours**

Prerequisites: Grades of B- or better in SPEC ED 6325 and ED PSY 6545 or consent of instructor. Provides instruction and practice in the use of the problem-solving model to address common social-emotional and behavior problems found in schools. Special emphasis is given to research-based, early intervention and targeted intervention techniques that improve student behavior. Concurrent placement in a school or related setting is necessary to complete course assignments.

**ED PSY 6545 Consultation in Schools and Related Settings: 3 semester hours**

Prerequisites: Admission to the School Psychology or Special Education Program, or consent of instructor. Examines the theories, research, and legal/ethical issues related to consultation in schools and related settings. Emphasis on understanding the process of consultation using a problem-solving approach. Includes instruction in interviewing, observation, and development and evaluation of interventions.

**ED PSY 6550 Professional Issues in School Psychology: 3 semester hours**

Prerequisites: Grade of B- or better in ED PSY 6530 or consent of instructor. Advanced examination of professional issues - specifically the legal, ethical, and cultural factors - that influence the practice of school psychology.

**ED PSY 6590 School Psychology Practicum I: 3 semester hours**

Prerequisites: Grades of B- or better in ED PSY 6550 and ED REM 6718. Introductory supervised experience in psychoeducational assessment and interventions for academic and behavior problems in schools and related settings. Settings and responsibilities determined in consultation with program faculty and site supervisor.

**ED PSY 6591 School Psychology Practicum II: 3 semester hours**

Prerequisites: Grade of B- or better in ED PSY 6590. Advanced supervised experience in consultation, problem solving, psychoeducational assessment and interventions for academic and behavior problems in schools and related settings. Settings and responsibilities determined in consultation with program faculty and site supervisor.

**ED PSY 6598 School Psychology Internship I: 3 semester hours**

Prerequisites: Grade of B- or better in ED PSY 6591. Supervised field-based placement in an approved school or educational setting under the supervision of an appropriately credentialed school psychologist. Course is eligible for graduate equivalency credit.

**ED PSY 6599 School Psychology Internship II: 3 semester hours**

Prerequisites: Grade of B- or better in ED PSY 6598. Advanced supervised field-based placement in an approved school or educational setting under the supervision of an appropriately credentialed school psychologist. Course is eligible for graduate equivalency credit.

**ED PSY 6990 Internship: 1-10 semester hours**

Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

## Educational Research And Evaluation Method

### Courses

**ED REM 3721 Psychoeducational Assessment and Evaluation: 3 semester hours**

Review of measurement concepts and use of psychoeducational assessment data gathered via interview, observation, norm-referenced, and curriculum-based assessment methods. Special emphasis on progress monitoring and data-based decision making.

**ED REM 4730 Program Assessment and Evaluation: 3 semester hours**

Prerequisites: EDUC 3170 or consent of instructor. This course reviews the theories and methods of program-level assessment and evaluation used to improve the effectiveness and efficiency of programs. Special attention is given to the various types of evaluations, data collection methods, evaluation strategies and methodology, and applications.

**ED REM 6497 Problems: 1-10 semester hours**

Prerequisite: At least one previous ED REM course and consent of course supervisor. Individual study on topics pertaining to educational measurement, evaluation, statistics and research design.

**ED REM 6707 Classroom Measurement and Evaluation: 3 semester hours**

Prerequisites: Graduate admission or consent of instructor. An introductory graduate course to classroom testing and evaluation. Topic areas include comparison of criterion-and norm-referenced theory and technique; classical test theory, reliability, validity, and associated descriptive statistics; derived and transformed scores; preparation of instructional objectives for use in developing the classroom test, performance evaluations, and portfolio rubrics; use of evaluation to assess student achievement and instructional effectiveness.

**ED REM 6710 Educational Research Methods and Design: 3 semester hours**

Prerequisites: An introductory statistics course or an introductory research design course; or consent of instructor. Covers educational research methodology: comparison of various types of qualitative and quantitative educational research, threats to internal/external validity, sampling methods, data analyses, and components of research reports.

**ED REM 6716 Academic Assessment and Intervention: 3 semester hours**

Prerequisites: Graduate standing. Provides instruction in measurement concepts, interpretation of cognitive ability tests, and use of norm-referenced and curriculum-based assessment techniques in developing academic interventions. Special attention is given to data-based decision making and the links among instruction, assessment, and intervention.

**ED REM 6718 Psychoeducational Assessment and Intervention: 3 semester hours**

Prerequisites: Grade of B- or better in ED PSY 6530 or CNS ED 6050, or consent of instructor. Reviews measurement concepts and covers administration, scoring, interpretation, and reporting of individually administered tests of academic and cognitive abilities. Special attention is given to the link between assessment and intervention.

**ED REM 6719 Advanced Psychoeducational Assessment and Intervention: 3 semester hours**

Prerequisites: Grade of B- or better in ED REM 6718 or consent of instructor. Instruction is provided in advanced and specialized assessment, diagnostic, and intervention techniques for individuals with intellectual disabilities, emotional or behavior disorders, and other low incidence disabilities experienced by children and youth.

**ED REM 6730 Educational Program Development and Evaluation: 3 semester hours**

Prerequisites: ED REM 6710 or ED REM 6750; or consent of instructor. This course covers principles and procedures for developing programs based on needs assessment, logic models, and research design. It includes assessing the quality and effectiveness of planned interventions and system change in educational settings.

**ED REM 6732 Advanced Educational Program Development and Evaluation: 3 semester hours**

Prerequisites: ED REM 6730 or consent of instructor. This course extends the principles, attributes, and practice of program evaluation to contemporary problems and settings. It focuses on grant writing, practical application of evaluation procedures, and data analysis as well as on adherence to the Program Evaluation Standards endorsed by leading professional research and evaluation associations.

**ED REM 6735 Statistical Analysis for Education Research: 3 semester hours**

Prerequisites: Graduate standing. Provides students with a fundamental intermediate understanding of quantitative methods and their relationship to social science research in education. This course is designed to provide statistical background to students who will pursue advanced degrees in education. Students will conduct lab data analysis based on the topics covered in the class and learn how to generate specific research questions and conduct basic statistical analysis.

**ED REM 6750 Advanced Research Design in Education: 3 semester hours**

Prerequisites: ED REM 6735 or consent of instructor. Course is designed to provide students with a thorough background in the fundamental principles of research design in education, and the knowledge and skills necessary to design and carry out studies appropriate to a wide variety of research problems. It focuses on tailoring the research design and methodology to most effectively address the problem or issue of concern, including qualitative, quantitative, and mixed-method designs. This is an experiential course designed around active discussion by students each week, and requires each student to develop a detailed research proposal for conducting a study to examine an appropriate educational research problem.

**ED REM 6990 Internship: 1-10 semester hours**

Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

**ED REM 7771 Quantitative Research Methods I: 3 semester hours**

Prerequisites: ED REM 6735 and ED REM 6750 or consent of instructor. A second course in advanced Educational research methods sequence, with focus on multiple regression analysis and its applications to educational and psychological research.

**ED REM 7772 Quantitative Research Methods II: 3 semester hours**

Prerequisites: ED REM 7771 or consent of instructor. An advanced educational research methods course: multivariate analysis of variance, canonical correlation, discriminant function analysis, factor analysis, cluster analysis, advanced topics in multiple linear regression; and associated research design issues.

**ED REM 7781 Qualitative Methods in Educational Research I: 3 semester hours**

Prerequisites: ED REM 6750 or consent of instructor. An introductory qualitative research methods course in education to develop skill in forming research questions, writing field notes, and collecting, organizing, and analyzing a variety of data. The design issues of triangulation subjectivity, and trustworthiness are explored. Ethics and ethical issues in qualitative research are presented.

**ED REM 7782 Qualitative Methods in Educational Research II: 3 semester hours**

Prerequisites: ED REM 7781 or consent of instructor. An advanced qualitative educational research methods course to address the issues of sampling strategies, observational and interview techniques, questionnaire construction, and data analysis. Requires access to a field setting to conduct a qualitative research study.

## Educational Technology

### Courses

**ED TECH 2230 Information Literacy: 3 semester hours**

Students will analyze and evaluate multiple sources of information using modern technology to research, retrieve, synthesize, construct and present information for academic disciplines. The course will assist students in the development of educational technology skills that allow for specialization in their chosen major.

**ED TECH 3135 Technology for Educators: 1 semester hour**

This course will instruct teacher candidates in the use of digital tools in education. Candidates will develop strategies for incorporating current technology developments and social media in educational practice.

**ED TECH 3420 Computer Programming and Pedagogy: 1-3 semester hours**

This course examines the emerging field of computational thinking and learning theories relevant to teaching computer programming to students from kindergarten to university. Students will teach one another and learn to critique themselves and peers on pedagogical effectiveness. Students will learn a new programming language while learning how to teach others using that same language. Educational uses of student computer programming will be examined.

**ED TECH 4302 Educational Technology Instruction in Educational Agencies: 3 semester hours**

The course focuses on how computers and the internet have changed teaching and learning; how educators can facilitate inquiry-based learning, and on the design and implementation of technology-rich activities and projects. Practices to be explored include making presentations; searching for information and educational resources; organizing, writing, and displaying information and data. Students may not receive credit for both ED TECH 4302 and ED TECH 5301.

**ED TECH 4436 Computer-Mediated Teaching and Learning in Education: 3 semester hours**

Explores the theory, research, and practice of using computer-mediated communication and computer-supported collaborative learning in education. Education could be formal or informal, in an institutional setting or not. Students will get experience with several different technologies during the semester.

**ED TECH 4558 Computer Ethics for Educators: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. Examination of ethical issues concerning the use of computers generally, their use in education, and the engineering of particular computer technologies. Aims at developing awareness of these issues and skills for ethical decision-making regarding them through careful, analytical methods. Typical issues include privacy, intellectual property, computer fraud, the possibility of artificial agents, and others. Available for graduate credit.

**ED TECH 5301 Introduction to Computers and the Internet in Education: 3 semester hours**

The course focuses on how computers and the internet have changed teaching and learning; how teachers can facilitate learning in inquiry-based, technology-rich classrooms; and on the design and implementation of technology-rich activities and projects. Introduces students to the networked computer as an instructional tool. Course participants will be introduced to how teachers and their students can use computer tools in appropriate ways for different content areas and educational levels. Practices to be explored include making presentations; searching for information and educational resources; organizing writing, and displaying information and data.



**ED TECH 5340 Selection and Utilization of Educational Multimedia: 3 semester hours**

Prerequisites: ED TECH 5301 or consent of instructor. Prepares students for selecting and utilizing multimedia technologies for learning. Students will conduct projects involving educational multimedia programs available on computers or over telecommunications networks. The projects will incorporate graphics, sound, and video. The goal of working on these projects is to prepare students to facilitate others' use of multimedia in classrooms and other educational contexts.

**ED TECH 5420 Advanced Computer Programming and Pedagogy: 1-3 semester hours**

Prerequisites: Graduate standing. This course examines the emerging field of computational thinking and learning theories relevant to teaching computer programming to students from kindergarten to university. Students will teach one another and learn to critique themselves and peers on pedagogical effectiveness. Students will learn a new programming language while learning how to teach others using that same language. Educational uses of student computer programming will be examined.

**ED TECH 6135 Technology for Preparing Inquiry-Based Teaching: 1 semester hour**

Prerequisites: Graduate standing. This course instructs teacher candidates in the use of digital tools in their teaching practice. Candidates develop strategies for incorporating current technology developments and social media in educational practice. Technology for educators challenges the candidates to think about the underlying principles, terms, and concepts of educational technology. Students are introduced to the different methods teachers can use to integrate technology into classroom instruction for varying grade levels and content areas. Activities undertaken in this course include learning about educational technology tools and applying some of them to create the academic instructional materials through interactive collaboration.

**ED TECH 6404 Seminar: 1-10 semester hours**

Prerequisites: ED TECH 5340 or consent of instructor. Seminar in educational technology addressing special issues and topics not normally included in the regular educational technology courses.

**ED TECH 6416 Teaching and Learning with Technology: Graphical Representational Tools: 3 semester hours**

Prerequisites: ED TECH 5340 or consent of instructor. Examines how graphical representation tools can be used to enhance teaching and learning. Students will learn about techniques for visualizing and organizing information and data in science, math, the social sciences, and humanities, and will become familiar with research and practice pertaining to their use in a variety of learning activities and projects.

**ED TECH 6434 Technology and Privilege: 3 semester hours**

Prerequisites: Graduate standing. Covers issues relating to the digital divide in schools and the society. The focus will be on technology in education with an emphasis on the ways that policies and practices perpetuate the divide. To examine this phenomenon, Critical Race Theory (CRT) will be one lens to examine the inequality.

**ED TECH 6435 Instructional Technology and Education Reform: 3 semester hours**

Prerequisites: ED TECH 5340 or consent of instructor. Students will learn how to foster changes in uses of technology for learning in schools, based on a historical understanding of previous technology reforms, and a critical assessment of recent reforms. Questions addressed included: What did stakeholders predict and hope for with earlier educational technologies, early uses of the computer and networking, and present technological innovations? What actually happened? Why? How can teachers and other educators help foster and spread effective use of technology for learning?.

**ED TECH 6436 Computer-Mediated Communication in Education: 3 semester hours**

Prerequisites: ED TECH 5340 or consent of instructor. Explores the theory, research, and practice of using computer-mediated communication and computer-supported collaborative learning in education. Learning environments including elementary, secondary, higher, and adult education will be considered.

**ED TECH 6437 Distance Learning via Networks and Telecommunications: 3 semester hours**

Prerequisites: Graduate standing. The course is an investigation in the ways that learning and teaching across the barriers of time and distance are similar to and different from face to face learning and teaching. Students will study the influence of interactive media: videoconferencing, asynchronous discussions and other commonly used methods.

**ED TECH 6444 Cognition and Technology: 3 semester hours**

Same as ED PSY 6444. Prerequisites: ED PSY 6111 or consent of instructor. Examines cognitive theories and computer-based tools for learning. Students will gain a critical understanding of the relationship between the design of technological tools, the use of those tools in educational settings, and their implications for learning.

**ED TECH 6448 Technology-Supported Inquiry Learning: 3 semester hours**

Prerequisites: ED TECH 5340 and ED PSY 6310 or consent of instructor. Educational technology such as networked computers and software can play a supportive role in inquiry-based learning. Students will explore the theoretical background, design issues, and pragmatic realities of technology-supported inquiry learning environments. Such learning environments are best understood as systems involving social, cultural, material and psychological aspects. Consideration will be given to the important properties of settings, activities and technologies, as well as the role of instructors.

**ED TECH 6452 Educational Multimedia Design: 3 semester hours**

Prerequisite: ED TECH 5340 or consent of instructor. Examines principles and techniques for the design of visually and functionally effective multimedia educational resources. Emphasis will be placed on techniques for the computer-based production of materials incorporating text, graphics, and video. Rapid prototyping and evaluation techniques will be incorporated.

**ED TECH 6454 Instructional Video Production: 3 semester hours**

Prerequisites: ED TECH 5340 or consent of instructor. Elements of digital video production will be studied and used to produce video for a variety of formats. Students will develop the skill to produce and stream programs for school news programs, video annuals, documentaries and staff development programs.

**ED TECH 6490 Internship: 1-10 semester hours**

Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

**ED TECH 6497 Problems: 1-10 semester hours**

Prerequisite: ED TECH 5340 or consent of instructor. Individual study on topics pertaining to educational technology.

**ED TECH 7070 Higher Education and Technology: Theory and Practice: 3 semester hours**

Prerequisites: Doctoral standing or consent of instructor. Students explore recent research of classical learning theories and pedagogy in order to incorporate advanced technology. Students apply both theory and practice to develop and present lesson modules that explore research in this area, and illustrate the use of technology in teaching. Detailed constructive criticism is used with the presentations.

## Elementary Education

### Courses

**ELE ED 3338 Teaching Elementary Literacy in Inclusive Settings: Literacy Assessment and Learning: 3 semester hours**

Prerequisites: Completion of Level I requirements. This course explores literacy achievement and assessment to guide developmentally appropriate instruction, including consideration of elementary students' cultural and linguistic backgrounds as well as special education services received. Assessment practices explored include running records, informal reading inventories, orthographic inventories, and analytic writing assessment. Teacher candidates will utilize assessment findings, children's literature, and global technologies to create purposeful, targeted literacy instruction for students.

**ELE ED 3339 Teaching Elementary Literacy in Inclusive Settings: Literacy Instruction and Learning: 4 semester hours**

Prerequisites: Completion of Level II requirements and ELE ED 3338. This course continues to explore developmentally appropriate literacy instruction for elementary students through deep exploration of methods of teaching reading and writing, including reading and writing workshops, guided reading, and word work / phonics. Particular attention will be paid to how these instructional methods might be adapted based upon students' cultural and linguistic backgrounds as well as special education services received. Teacher candidates will utilize a variety of assessments, children's literature, and global technologies to create a series of purposeful, targeted literacy lessons that reflect students evolving abilities over time.

**ELE ED 4246 Teaching Elementary Mathematics in Inclusive Settings I: 3 semester hours**

Prerequisites: Completion of mathematics requirements in General Education. This course explores pedagogical techniques and best practices for the creation and delivery of elementary mathematics curriculum to all students, including consideration of elementary students' cultural and linguistic backgrounds as well as special education services received. The mathematical content includes number and operations in base ten, fractions, decimals, percents, and proportional reasoning. Additional field experience may be required.

**ELE ED 4253 Teaching Elementary Social Studies in Inclusive Settings: 3 semester hours**

Prerequisites: Admission to Teacher Education Program and completion of social science requirements in general education. This course explores the teaching of current social studies curricular content in elementary settings. Topics include US history, geography, civics and government, economics, culture, and technology, and the appropriate teaching methods and development of related instructional materials. Particular attention will be paid to how these topics and strategies might be adapted based upon students' cultural and linguistic backgrounds as well as special education services received. Ten (10) clinical hours required to complete course assignments.

**ELE ED 4341 Teaching Science in Inclusive Elementary Schools: 3 semester hours**

Prerequisite: Admission into Teacher Education Program required. An analysis of teaching science to K-6 students with emphasis on current science education trends, science curricular materials, and strategies of instruction.

**ELE ED 4342 Teaching Elementary Mathematics in Inclusive Settings II: 3 semester hours**

Prerequisite: ELE ED 4246. This course explores pedagogical techniques and best practices for the creation and delivery of elementary mathematics curriculum to all students, including consideration of elementary students' cultural and linguistic backgrounds as well as special education services received. The mathematical content of this course includes geometry, measurement, probability, statistics, and data analysis. Additional field experience may be required.

**ELE ED 4989 Practicum I: Elementary/Special Education Site-Based Experience: 3 semester hours**

Prerequisites: Completion of Level II requirements and successful practicum application. This course is a two-day per week intensive, collaborative professional experience in diverse school settings with students, emphasizing improving K-12 student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Course includes mandatory on-site and on-campus seminars, which could be scheduled outside of normal class time. Concurrent Level III methods course assignments will be completed in Practicum I. Taking the Missouri Content Exam (MOCA) is required during Practicum I. Not available for graduate credit.

**ELE ED 4990 Practicum II: Elementary/Special Education Site Based Experience: 12 semester hours**

Prerequisites: Grade of B or higher in ELE ED 4989, completion of Level III requirements, and taking the Missouri Content Exam (MOCA). This course is a four-day per week intensive, collaborative professional experience in diverse school settings with students, emphasizing improving K-12 student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Course includes mandatory on-site and on-campus seminars, which could be scheduled outside of normal class time. Certification requirements include passing scores on the Missouri Content Exam (MOCA) and the Missouri Preservice Teacher Assessment (MOPTA). Not available for graduate credit.

**ELE ED 4992 Practicum I: Elementary/Special Education/TESOL Site-Based Experience: 3 semester hours**

Prerequisites: Accepted Practicum I application. This course is a two-day per week intensive, collaborative professional experience in inclusive K-12 settings with emphasis in elementary classrooms. This course emphasizes improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Particular emphasis will be given to differentiated instruction and impacting student achievement for diverse populations. Practicum I includes mandatory on-site and on-campus seminars which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum I.

***ELE ED 4993 Practicum II: Elementary/Special Education/TESOL Site-Based Experience: 12 semester hours***

Prerequisites: Successful completion of Practicum I requirements. This course is a four-day per week intensive, collaborative professional experience in inclusive K-12 settings with emphasis in elementary classrooms. This course emphasizes improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Particular emphasis will be given to differentiated instruction and impacting student achievement for diverse populations. Practicum II includes mandatory on-site and on-campus seminars which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum II.

***ELE ED 4994 Practicum I: Elementary/TESOL Site-Based Experience: 3 semester hours***

Prerequisites: Accepted Practicum application. This course is a two-day per week intensive, collaborative professional experience in inclusive K-12 settings with emphasis in elementary classrooms. This course emphasizes improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Particular emphasis will be given to differentiated instruction and impacting student achievement for diverse populations. Practicum I includes mandatory on-site and on-campus seminars which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum I.

***ELE ED 4995 Practicum II: Elementary/TESOL Site-Based Experience: 12 semester hours***

Prerequisites: Successful completion of Practicum I requirements. This course is a four-day per week intensive, collaborative professional experience in inclusive K-12 settings with emphasis in elementary classrooms. This course emphasizes improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Particular emphasis will be given to differentiated instruction and impacting student achievement for diverse populations. Practicum II includes mandatory on-site and on-campus seminars which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum II.

***ELE ED 5989 Practicum I: Elementary/Special Education Site-Based Experience: 2-3 semester hours***

Prerequisites: Graduate standing and completion of Level I and Level II requirements. This course is a two-day per week intensive, collaborative professional experience in diverse K-12 settings with students. There is an emphasis on improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. The course includes mandatory on-site and on-campus seminars, which could be scheduled outside of normal class time. Concurrent Level III methods course assignments may be completed in Practicum I.

***ELE ED 5990 Practicum II: Elementary/Special Education Site Based Experience: 8 semester hours***

Prerequisites: Grade of B- or higher in ELE ED 5989 and admission to Teacher Education Program. Clinical teaching experiences, 4 days per week where placements occur in K-12 school settings. These sites offer settings where classrooms implement inclusion (combined general education and special education) and/or have pull-out resource room settings and may also have self-contained settings where students with complex disabilities are education exclusively. Teacher candidates collect data for a research project.

***ELE ED 5992 Practicum I: Elementary/Special Education/TESOL Site Based Experience: 2 semester hours***

Prerequisites: Completion of Level I and Level II requirements. An intensive professional development experience (2 days per week) working in K-12 settings with students. Activities on site include partnering with the classroom teacher in all areas of instruction, assessment, and classroom management. Particular emphasis will be given to differentiated instruction and impacting student achievement for diverse populations. Level III methods course assignments will be completed during the practicum day at school sites and Practicum I experiences inform Level III coursework. Activities to acquire research skills are included. Practicum I is taken in the semester immediately preceding Practicum II.

***ELE ED 5993 Practicum II: Elementary/Special Education/TESOL Site Based Experience: 8 semester hours***

Prerequisites: Grade of B- or higher in Practicum I and admission to the Teacher Education Program. Clinical teaching experiences, 4 days per week where placements occur in K-12 school settings. These sites offer settings where classrooms have ESOL and implement inclusion (combined general education and special education), and/or have pull-out resource room settings and may also have self-contained settings where students with complex disabilities are education exclusively. Teacher candidates collect data for a research project.

***ELE ED 5994 Practicum I: Elementary/TESOL Site Based Experience: 2 semester hours***

Prerequisites: Completion of Level I and Level II requirements. An intensive professional development experience (2 days per week) working in K-12 settings with students. Activities on site include partnering with the classroom teacher in all areas of instruction, assessment, and classroom management. Particular emphasis will be given to differentiated instruction and impacting student achievement for diverse populations. Level III methods course assignments will be completed during the practicum day at school sites and Practicum I experiences inform Level III coursework. Activities to acquire research skills are included. Practicum I is taken in the semester immediately preceding Practicum II.

***ELE ED 5995 Practicum II: Elementary/TESOL Site Based Experience: 8 semester hours***

Prerequisites: Grade of B- or higher in Practicum I and admission to the Teacher Education Program. Clinical teaching experiences, 4 days per week where placements occur in K-12 school settings. These sites offer settings where classrooms include ESOL. Teacher candidates collect data for a research project.

***ELE ED 6241 Science Content, Inquiry-Based Instruction, and Assessment: STEM-Integrated Pedagogy: 2-3 semester hours***

Prerequisites: Graduate standing. The course is designed to provide teacher candidates with research-based theories and practices focused upon the teaching and learning of science. Candidates will acquire skills to plan and implement lessons to facilitate each learner's ability to conceptualize science concepts. The course will integrate related disciplines, such as technology, engineering and mathematics, in order to provide prospective teachers with a context for understanding the content of science, how science knowledge is acquired and understood, and how the sciences are connected across disciplines. Through course experiences and scholarly readings, prospective teachers will realize that to become an effective teacher one must acquire a positive attitude toward learning science, technology, engineering and mathematics; know how to acquire scientific information; and know how to facilitate learners' construction of scientific understandings.

***ELE ED 6246 Math Content Pedagogy, Inquiry-Based Instruction, and Assessment: 3 semester hours***

Prerequisites: Graduate standing, and a passing score on the designated Missouri Content Examination or an approved program of study. This course provides the teacher candidate with math content and math pedagogical techniques to lead them to prepare and deliver best practices of teaching that are aligned with the elementary math learning standards and research-based practices. The students are encouraged to adopt interdisciplinary resources including multicultural children's literature and coping strategies for diverse students in the classroom settings. The students will develop lessons that entail using inquiry-based instructional materials, and reflective practice with assessment data.

***ELE ED 6253 Teaching Social Studies through Reading, Writing, and English Language Learners: 3 semester hours***

Prerequisites: Graduate standing, and a passing score on the designated Missouri Content Examination or an approved program of study. Examines the teaching of social studies through reading elementary children's literature about U.S. history and examines writing instruction as a complex and dynamic process. The course integrates a standards-based, backward-planning approach; authentic literacy instruction through the lens of social studies; attention to the linguistic and cultural demands of social studies; and differentiation in instruction so that each student has access to meaningful and challenging learning opportunities using Sheltered Instruction Observation Protocol (SIOP). It focuses on essential attributes of effective literacy and content teachers, including the ability to draw upon students' cultural and linguistic backgrounds, help students make connections between new information and previous knowledge and skills that are research-based, and support students to transfer new information to real-life contexts and environments using critical thinking skills.

***ELE ED 6253A Teaching Social Studies through Reading, Writing, and English Language Learning: A: 1 semester hour***

Prerequisites: Admission to Teach For America or Alternative Certification Program; must be practicing teacher with Bachelor Degree. Examines the teaching of social studies through reading elementary children's literature about U.S. history and examines writing instruction as a complex and dynamic process. The course integrates a standards-based, backward-planning approach; authentic literacy instruction through the lens of social studies; attention to the linguistic and cultural demands of social studies; and differentiation in instruction so that each student has access to meaningful and challenging learning opportunities. There is an emphasis on essential attributes of effective literacy and content teachers, including the ability to draw upon students' cultural and linguistic backgrounds, the ability to help students make connections between new information and previous knowledge, and support students to transfer new information to real-life contexts and environments using critical thinking skills.

***ELE ED 6253B Teaching Social Studies through Reading Writing and English Language Learning: B: 1 semester hour***

Prerequisites: Admission to Teach For America or Alternative Certification Program; must be practicing teacher with Bachelor Degree. Examines the teaching of social studies through reading elementary children's literature about U.S. history and examines writing instruction as a complex and dynamic process. The course integrates a standards-based, backward-planning approach; authentic literacy instruction through the lens of social studies; attention to the linguistic and cultural demands of social studies; and differentiation in instruction so that each student has access to meaningful and challenging learning opportunities. There is an emphasis on essential attributes of effective literacy and content teachers, including the ability to draw upon students' cultural and linguistic backgrounds, the ability to help students make connections between new information and previous knowledge, and support students to transfer new information to real-life contexts and environments using critical thinking skills.

***ELE ED 6253C Teaching Social Studies Through Reading, Writing, and English Language Learning: C: 1 semester hour***

Prerequisites: B- or better in ELE ED 6253B. This course examines the teaching of social studies through reading elementary children's literature about U.S. history and examines writing instruction as a complex and dynamic process. The course integrates a standards-based, backward-planning approach; authentic literacy instruction through the lens of social studies; attention to the linguistic and cultural demands of social studies; and differentiation in instruction so that each student has access to meaningful and challenging learning opportunities. There is an emphasis on essential attributes of effective literacy and content teachers, including the ability to draw upon students' cultural and linguistic backgrounds, help students make connections between new information and previous knowledge, and to support students to transfer new information to real-life contexts and environments using critical thinking skills. Must be practicing teacher with a bachelor's degree.

***ELE ED 6337 Teaching and Learning Literacy in the Elementary Classrooms: Teaching Reading and Writing: 4 semester hours***

Prerequisites: Completion of Level I requirements. Emphasizes literacy development, literacy instruction, and children's literature in the process of teaching reading and writing. Students survey literacy and literacy development as social practices, to focus on methods of teaching reading and writing, and to effectively utilize children's literature within classroom practice. Instructional practices explored will include reading and writing workshops, guided reading, word work, and phonics alongside matching texts (print and digital) and readers. Includes readings of academic research articles and book chapters that promote critical thinking in the design and implementation of literacy instruction. Particular attention will be given to learning to teach literacy within diverse contexts and with linguistically and culturally diverse students.



***ELE ED 6338 Literacy Assessment for Guided Instruction: 3 semester hours***

Prerequisites: ELE ED 6337 and completion of Level I requirements. Addresses assessment issues that include examining the differences and difficulties that may occur in literacy learning processes. Topics covered include the effective use and evaluation of assessment instruments to prevent student literacy difficulties and promote accelerated learning. Students design classroom literacy engagements utilizing a variety of instructional strategies and materials. Includes reading peer-reviewed research articles and book chapters that promote critical thinking in the assessment and evaluation of literacy achievement. Assessment practices explored include running records of oral reading, an observation survey of early literacy behaviors (e.g., phonemic awareness, letter identification), qualitative reading inventories, spelling inventories, and writing assessment. Teacher candidates will learn to assess and create literacy instruction that is multicultural and integrates global technologies.

***ELE ED 6342 Addressing the Mathematical Needs of Students: 3 semester hours***

Prerequisites: Graduate standing and ELE ED 6246. Educators will learn instructional strategies for analyzing and addressing needs of students who have difficulties understanding and becoming proficient in mathematics. Conceptual development and procedural fluency are approached in a diagnostic and prescriptive context. The course will cover research based approaches to help develop assessments and strategies for addressing needs of students who have difficulties understanding and becoming proficient in mathematics.

***ELE ED 6342A Addressing the Mathematical Needs of Students: A: 1 semester hour***

Prerequisites: Graduate standing. Educators will learn instructional strategies for analyzing and addressing needs of students having difficulties understanding and becoming proficient in mathematics. This course will provide an overview of the current landscape of issues in mathematics education around the topic of learners who struggle, as well as introduce research-based approaches to help develop assessments for addressing needs of students having difficulties understanding and becoming proficient in mathematics.

***ELE ED 6342B Addressing the Mathematical Needs of Students: B: 1 semester hour***

Prerequisites: Graduate standing. Educators will learn instructional strategies for analyzing and addressing needs of students having difficulties understanding and becoming proficient in mathematics. This course will help students develop strategies for identifying and addressing student error patterns as well as introduce research based strategies to address the needs of students having difficulties understanding and becoming proficient in mathematics.

***ELE ED 6387 Literacy Acquisition and Learning for Diverse Students: 3 semester hours***

Prerequisite: Graduate standing. Designed to extend teacher understanding of children's literacy acquisition, development, and learning through the elementary grades. Emphasis on development of a teaching philosophy and skills which include maintaining effective literacy learning environments in diverse classrooms, fostering culturally responsive classroom communities, understanding social and environmental issues that affect the literacy learning of diverse learners, using effective methods and materials to develop engaged and literate students, and fostering children's participation in literacy activities.

***ELE ED 6410 Current Research in Early Childhood and Elementary Programs: 3 semester hours***

Prerequisites: Graduate standing. A systematic examination of research related to early childhood and elementary school programs. Student will be expected to become effective consumers of educational research and to utilize appropriate research findings in their decision-making processes when planning instruction.

***ELE ED 6411 Curriculum Leadership Elementary Programs: 3 semester hours***

Prerequisite: ED PSY 6030. Learn strategies for development and implementation of up-to date curriculum. Using current research of innovative programs and new approaches, students will develop skills in analyzing and evaluating content area curriculum according to Common Core and national content standards in order to lead curriculum development in an educational setting.

***ELE ED 6422 Curriculum Design of Elementary Programs: 3 semester hours***

Prerequisites: ED PSY 6030, ELE ED 6411 or consent of instructor. A study of current and classic curricular design models of elementary education. Students will select a grade level or subject area curriculum and develop an integrated or differentiated curriculum based on the Common Core and national content standards. Compare and contrast curriculum design approaches while connecting curriculum and instructional practices to student performance.

***ELE ED 6423 Learning Through Inquiry: 3 semester hours***

Prerequisites: ED PSY 6030 or consent of instructor. Students will learn to improve their instruction through using various inquiry models of teaching which develop the thinking skills required by the Common Core standards. Prior instructional experience is recommended.

***ELE ED 6426 Elementary School Curriculum Reform in the Earth/Space Sciences: 1-4 semester hours***

Prerequisites: Graduate standing. Field-based experiences in improving the district-level elementary school science program, with special attention to the earth/space sciences. Emphasis is given to planning and implementing standards-based inquiry on selected science topics that include connections to other curricular areas. The course is organized into 4 non-overlapping modules. Credit hours are determined based on number of modules completed. To reflect the number of modules selected by the student, this course may be repeated for a maximum of 4 credit hours.

***ELE ED 6428 Elementary School Curriculum Reform in the Life Sciences: 1-4 semester hours***

Prerequisite: Graduate standing. Field-based experiences in improving the district-level elementary school science program, with special attention to the life sciences. Emphasis is given to planning and implementing standards-based inquiry on selected science topics that include connections to other curricular areas. This course is organized into 4 non-overlapping modules. Credit hours are determined based on number of modules completed. The course may be repeated for maximum of 4 credit hours.

***ELE ED 6429 Elementary School Curriculum Reform in the Physical Sciences: 1-4 semester hours***

Prerequisite: Graduate standing. Field-based experiences in improving the district-level elementary school science program, with special attention to the physical sciences. Emphasis is given to planning and implementing standards-based inquiry science activities that include connections to other curricular areas. The course is organized into 4 non-overlapping modules. Credit hours are determined based on number of modules completed. The course may be repeated for a maximum of 4 credit hours.

**ELE ED 6431 STEM Instruction in Elementary Education: 3 semester hours**

Prerequisites: TCH ED 6010, TCH ED 6020; or consent of instructor. This course will integrate related Science, Technology, Engineering and Math (STEM) disciplines through examination, analysis and application of the national science standards (NGSS) and scholarly readings. In the course, students will develop STEM curriculum and instruction that facilitate the learners' construction of scientific understandings.

**ELE ED 6436 Children's Literature I: Survey and Analysis: 3 semester hours**

Prerequisite: ELE ED 3330 or equivalent. A survey of children's literature published in the last ten years. Special emphasis will be placed on the relationship between children's literature and contemporary issues of society. Students will experience the materials themselves rather than reading about books. In addition, students will begin to study the literary elements that make literature interesting and meaningful for children.

**ELE ED 6448 Diagnosis and Remediation of Disabilities in Learning Mathematics: 3 semester hours**

Prerequisite: ELE ED 6445. Causes of mathematical disabilities. Materials and techniques for diagnoses and corrective programs for children and youth.

**ELE ED 6482 Problems and Research in Teaching Elementary School: 3 semester hours**

This is the capstone course for the Master of Elementary Education-Emphasis in Reading. To be taken in the last 9 hours of master's program. The three foci for this course are (1) systematic study of research as it focuses on the problems of teaching reading in the elementary school, (2) innovations in the field, and (3) action research. Each student designs and completes an action research project related to literacy.

**ELE ED 6490 Internship: 1-10 semester hours**

Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

**ELE ED 6493 Reading Specialist Practicum I: 3 semester hours**

Prerequisites: ELE ED 6684, ELE ED 6686, and ED REM 6707, ED REM 6709, or ED REM 6716. Application of reading theory and research in a supervised setting. Emphasis on assessing and analyzing the literacy strengths, needs, and interests of a range of readers with the goal of improving their reading abilities and attitudes. Focus is on establishing reading support for children with the assistance of formal and informal assessments, reading professionals, educators, and children's families.

**ELE ED 6494 Reading Specialist Practicum II: 3 semester hours**

Prerequisite: ELE ED 6493. Application of reading theory and research in a supervised setting. Emphasis on using appropriate materials and providing effective instructional techniques to address children's assessed literacy strengths, needs, and interests with the goal of improving their reading abilities and attitudes. Focus is on sustaining reading support for children with the assistance of other reading professionals, educators, and children's families.

**ELE ED 6497 Problems: 1-10 semester hours**

Selected problems to meet the needs of individual students.

**ELE ED 6684 Instructional Strategies for Teaching Reading: 3 semester hours**

Prerequisites: Graduate standing. Designed to extend teacher knowledge of effective instructional strategies for teaching reading. Emphasis on development of a teaching philosophy which acknowledges children gain considerable knowledge about reading from their families and communities, long before they encounter formal reading instruction. Focus on fostering culturally responsive classrooms using children's prior experiences, their language systems, cross-cultural literature, authentic texts, and other print materials familiar to children's home environments, as well as on teaching effective strategies to promote children's reading success.

**ELE ED 6686 Analysis and Correction of Reading Disabilities: 3 semester hours**

Prerequisites: ED REM 6707, ED REM 6709, or ED REM 6716 and at least one graduate level literacy course. Designed to develop teacher understanding of the roles and responsibilities of the teacher of reading, Reading Specialist, and Literary Coach. Emphasis on the nature of specific reading difficulties, distinguishing reading difficulty/ disability from language difference, becoming familiar with a range of tools for assessing reading skills and strategies, and developing a critical orientation for evaluating the purpose and utility of various literacy assessment tools. Teachers will use informal and formal literacy assessment tools to guide instructional planning for children in the UMSL Reading Center.

## Engineering

### Courses

**ENGR 1010 Introduction to Engineering: 1 semester hour**

This course, required of all new Freshman with an interest in Engineering, is designed to assist students in their transition to the university experience and to UMSL by giving students the knowledge and tools needed to succeed as scholars. Students will learn about faculty expectations, support services, and student life, as well as engineering.

**ENGR 2310 Statics: 3 semester hours**

Prerequisites: MATH 1900 and PHYSICS 2111. Statics of particles and rigid bodies. Equivalent systems of forces. Distributed forces; centroids. Applications to trusses, frames, machines, beams, and cables. Friction. Moments of inertia. Principle of virtual work and applications.

**ENGR 2320 Dynamics: 3 semester hours**

Prerequisites: MATH 2000 and ENGR 2310. Review of vector algebra and calculus. Kinematics of a particle. Newton's laws and the kinetics of a particle. Work and energy. Impulse and momentum. Kinematics of rigid bodies. General theorems for systems of particles. Kinetics of rigid bodies. The inertia tensor.

## English

### Courses

**ENGL 1030 Beginning Creative Writing: 3 semester hours**

This course introduces students to the building blocks of creative writing and the writing workshop classroom. Students will explore how creative writers decide what material is best suited for a story, an essay, or a poem. Pairing creativity with critical thinking, the course offers basic writing practice and familiarizes students with primary concepts and techniques of craft (e.g. narrative, point-of-view, voice and style, character development, setting, imagery, and figurative language).

**ENGL 1100 First-Year Writing (MOTR ENGL 200): 3 semester hours**

Integrates critical reading, writing, and thinking skills and studies actual writing practices. Sequenced reading and writing assignments build cumulatively to more complex assignments. Includes formal and informal writing, drafting and revising, editing for correctness, synthesizing source material, and documenting sources accurately. Fulfills 3 hours of the General Education requirement for Communicating Skills. Does not count toward the major in English.

**ENGL 1110 First-Year Writing for International Students: 3 semester hours**

Prerequisite: Essay proficiency test or a TOFEL score of 500 or above. Designed for any student whose first language is not English. Integrates critical reading, writing, and thinking skills and studies actual writing practices. Sequenced reading and writing assignments build cumulatively to more complex assignments. Includes formal and informal writing, drafting and revising, editing for correctness, synthesizing source material, and documenting sources accurately. Special attention given to verb tenses, idioms, articles, and syntax. Does not count toward the major in English. Substitutes for ENGL 1100 in all university requirements.

**ENGL 1120 Introduction to Literature (MOTR LITR 100): 3 semester hours**

The student is introduced to the various literary types, including poetry, drama, fiction, and the essay.

**ENGL 1170 American Literary Masterpieces: 3 semester hours**

An introduction to major authors, works, and themes in American Literature from the nineteenth century to the present.

**ENGL 1710 Native American Literature: 3 semester hours**

The course surveys the literature of American Indians from its oral tradition of myth, legend, song and oratory through its modern forms. The course satisfies the ethnic literature requirement for Missouri state certification in secondary education and the cultural diversity requirement.

**ENGL 1800 Reading Life: 3 semester hours**

This course teaches college-level reading in the Humanities. The course primarily covers written texts, but may also include various genres in music, television and film, and theater. The course may be counted towards the major or minor in English.

**ENGL 1950 Topics in Literature: 3 semester hours**

This course will introduce the student to selected literary topics and/or genres. Each semester the department will announce topics and course content. Topics such as alienation, justice, and the absurd, and genres such as science fiction and contemporary drama are typical possibilities.

**ENGL 2020 Introduction to Creative Writing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course is a creative writing survey and workshop focusing on the study of three genres—short fiction, poetry, and creative nonfiction. Students learn primary concepts and techniques of craft, including narrative, voice, character, setting, imagery, metaphor, point-of-view. Students will explore literary conventions specific to each genre, as well as universal qualities that make all writing effective for an audience. The course requires three different kinds of writing: brief analytic essays, open-ended exploratory exercises, and carefully-revised original work. This course fulfills the core requirement in Creative Writing and counts toward the Certificate in Writing.

**ENGL 2030 Poetry Writing Jumpstart: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course provides new poets, would-be poets, and curious non-poets with exercises, experiments, and activities to explore two questions: what is a poem, and how does one get written? Students will read published poems and examine their use of imagery, metaphor, form, and other techniques, and experiment with those techniques in their own writing. This course satisfies the English core requirement for the Creative Writing area and counts toward the Certificate in Writing.

**ENGL 2040 Fiction Writing Jumpstart: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course provides exercises, discussions, models, and practice for discovering short stories and the many ways to tell them. Students will read published short stories to learn how other writers have worked with point of view, distance, voice, plot, dialogue, setting, and characterization. Students will also write exercises and stories for workshop critique. Students who have taken ENGL 2060 may not take ENGL 2040 for credit. This course fulfills the English core requirement for the Creative Writing area and counts toward the Certificate in Writing.

**ENGL 2080 Advertising Copywriting: 3 semester hours**

Same as MEDIA ST 2080. To give students a hands-on approach for writing advertising material for print and broadcast against tight deadlines in a professional setting.

**ENGL 2110 Information Literacy: 3 semester hours**

Designed especially for humanities and fine arts majors, this course introduces students to the main components of information literacy, including digital, web, and media literacies as well as library databases. Students work with both digital and print materials to find, evaluate, and synthesize information while applying the critical thinking habits of questioning and reasoning. Frequent writing and multimedia assignments will provide practice in using various technologies to assemble and to share information.

**ENGL 2120 Topics in Writing: 3 semester hours**

Prerequisite: ENGL 1100 or equivalent, or consent of instructor. This course will introduce the student to writing in specific areas. Possible topics are argumentation, reading and writing about public affairs, sports reporting and writing, and writing about science. A student may repeat the course once when topics are different. The course counts toward the Certificate in Writing.

**ENGL 2125 Introduction to Technical Communication (MOTR ENGL 110): 3 semester hours**

This course introduces students to the role of the professional technical communicator in business and industry. Students will explore methods of developing technical documents, including critical analysis, information design, and rhetorical expression.

**ENGL 2160 Introduction to American Studies: 3 semester hours**

Same as HIST 2160. This course introduces students to the multidisciplinary nature of American Studies and is a required course for those who wish to complete the minor in American Studies. It reviews the discipline from its origins in the 1930s, and it introduces students to St Louis' rich resources for American Studies.

**ENGL 2330 Poetry: The Greatest Hits: 3 semester hours**

This course examines a selection of the most important poems written in English. Students will study poems to understand both their literary elements—form, metaphor, theme, and so on—and their cultural/historical context. Through a careful examination of poetry, students will sharpen their ability to read, discuss, and write about literary texts. This course satisfies the core curriculum requirement for the Literature in English area.

**ENGL 2340 Introduction to Drama: 3 semester hours**

A close study of major dramatic works in various modes, to introduce the student to the forms and techniques of dramatic literature.

**ENGL 2360 Hey, Have You Read \_\_\_\_\_?: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent, or consent of instructor. This course introduces students to approaches to reading literature in the 21st century. The course can focus on a specialty area, such as a genre, time period, or nationality, or on a theme transcending several specialty areas. Students will learn to read closely and begin to look at literature through various theoretical or cultural lenses. This course satisfies the English core requirement for the Literature in English area.

**ENGL 2370 Drama: The Greatest Hits: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent, or consent of instructor. This course introduces students to some of history's most famous dramas both as literary forms and as cultural expressions. Plays will therefore be considered for themselves-for their genre, structure, and language-as well as for their social function, in an effort to better understand the complex communal values, settings, and crises which produced them. Students will read and discuss a wide variety of well-known plays from ancient Greece and Rome, the early modern English stage, and modern and contemporary culture. This course satisfies the English core requirement for the Literature in English area.

**ENGL 2400 Rhetorical Ways with Words: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course focuses on the diverse purposes and uses of language and writing, encouraging students to consider these functions beyond solely academic and literary realms. Specifically, students will investigate how language and writing are connected to identity, power, community, and knowledge creation. To accomplish these broad goals, students will read critical scholarship from a variety of related disciplines. They may practice field-specific methods of inquiry and/or investigate local, regional, individual rhetorical and language practices and engage in print and/or multimodal composition. This course satisfies the English core requirement for the Language and Writing Studies area.

**ENGL 2410 Literate Lives: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course raises definitional and exploratory questions: What is literacy? How does it change across time? Who has access to it? How can literacy both empower and marginalize people? To explore these complex questions, students will investigate the ways in which contemporary practices of literacy-reading, writing, listening, speaking, digital composing, and critical thinking-function in the lives of individuals, communities, and cultures. Students will interrogate current definitions of literacy, study scholarship about literacy, explore literacy myths, and reflect on how their own literate lives have been shaped. They may engage in field work and interact with local literacy communities. This course satisfies the core curriculum requirement for the Language and Writing Studies area.

**ENGL 2810 Traditional Grammar: 3 semester hours**

An introduction to the terms and concepts of traditional grammar, beginning with functions of the noun and forms of the verb in simple sentences, moving to more complex structures such as subordinate clauses and verbal phrases, and ending with the application of this material to issues of Standard English.

**ENGL 2830 Introduction to English Language Variety: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course introduces students to the intersections of language and culture, including some of the many dialects of English. Students will learn about the social dimensions of language variation: why people from different cultural groups and regions use different versions of English, how they define themselves based on vocabulary, accent, and phrasing, and how these aspects of language change over time. This course satisfies the English core requirement for the Language and Writing Studies area.

**ENGL 3030 Improving on the Blank Page: Writing Poetry: 3 semester hours**

Prerequisite: ENGL 1100 or the equivalent or consent of instructor. This course digs into questions of form and technique in poetry. Students will study and practice form, prosody, figurative language, and other techniques for (to borrow from Chilean poet Nicanor Parra) improving on the blank page. This course may be repeated once for a total of 6 credit hours. It counts toward the Certificate in Creative Writing.

**ENGL 3040 Lying to Tell a Truth: Writing Fiction: 3 semester hours**

Prerequisite: ENGL 2040 or ENGL 2060 or the equivalent or consent of instructor. This course examines and provides examples of characterization, dialogue, point-of-view, distance, weight, plot, setting, and more. Students will read published short stories, and discuss the idea of writing as discovery and exploration, that writers work out of curiosity and bewilderment and tell lies to arrive at a truth.

**ENGL 3090 Turning the Kaleidoscope: How We Look at Texts: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent and 56 credit hours. This course introduces the use of literary theory in reading and writing about literary texts. Students learn and practice conventions of writing in English studies, basic literary research, and MLA documentation. Strongly recommended for English majors specializing in literature or anticipating graduate study in English. May not be taken on satisfactory/unsatisfactory basis. Counts towards the Certificate in Writing.

**ENGL 3100 Junior-Level Writing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 credit hours) and 56 credit hours. This course enhances analytical, communicative, persuasive, and explanatory capabilities in contemporary American English. It emphasizes academic reading, writing, research, and documentation. It fulfills the university's junior-level writing requirement and counts towards the Writing Certificate.

**ENGL 3110 Junior-Level Writing for International Students: 3 semester hours**

Prerequisites: ENGL 1110 or equivalent (3-6 credit hours) and 56 credit hours. This course, designed for any student whose first language is not English, enhances analytical, communicative, persuasive, and explanatory capabilities in contemporary American English. It emphasizes academic reading, writing, research, and documentation. It fulfills the university's junior-level writing requirement and counts toward the Certificate in Writing.



**ENGL 3120 Business Writing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and 56 credit hours. This course further develops the experienced writer's style and analytical capabilities to the level of sophistication necessary for business and professional settings. Writing assignments may include business correspondence, reports, resumes, proposals, analyses, presentations, marketing, promotional, and multi-modal materials, discussion postings and blogs, articles for in-house publications, and research and documentation. The course fulfills the University's junior-level writing requirement and may not be taken on a satisfactory/unsatisfactory basis.

**ENGL 3130 Technical Writing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and 56 credit hours. This course introduces students to the major elements of industrial technical writing. Writing assignments include technical definitions, abstracts and summaries, mechanism descriptions, instructions, process analyses, technical reports and proposals. The course includes an introduction to research methods and documentation. This course fulfills the University's junior-level writing requirement and may not be taken on the satisfactory/unsatisfactory option.

**ENGL 3150 Feature Writing: 3 semester hours**

Same as MEDIA ST 3150. Prerequisite: ENGL 1100 or equivalent. Study of freelance and staff-written magazine or newspaper feature articles. Emphasis on relationship between types of publication and article content, research methods, and writing style. Frequent short assignments -- journal entries, interviews, library projects, article critiques, and market reports -- lead to production of full-length feature articles. May not be taken on the S/U option. The course counts toward the Certificate in Writing.

**ENGL 3160 Writing in the Sciences: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and 56 credit hours. This course is designed to teach students how to write effectively in the sciences. Writing assignments include short reports, proposals and a major project; projects may include a research or analytical report, a formal proposal or a procedures/instructions manual. The course includes an introduction to research methods and documentation. This course fulfills the University's junior-level writing requirement and may not be taken on the satisfactory/unsatisfactory option.

**ENGL 3200 Composing Disability: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course offers students an understanding of disability as a complex and crucial part of the world and human experience. Students will approach disability as a matter of identity, language, writing, power, education, politics, literature, art, and more. More specifically, they will read disability studies critical theory, literary works, and personal narratives; create accessible multimodal projects; engage in scholarly and/or community-based research; and candidly discuss assumptions about disability. Through this work, students will assess the value and effect of different ways of thinking about disability and understand the core concepts of disability studies and its emergence as a field.

**ENGL 3201 Narratives from the Forever Wars: 3 semester hours**

Same as MEDIA ST 3201 and MVS 3201. This course studies literature and film written by and about those who served in the wars in Iraq and Afghanistan, with particular interest in how veterans as individuals are represented in it.

**ENGL 3280 Public Relations Writing: 3 semester hours**

Prerequisite: ENGL 3100 or equivalent. An introduction to the process of planning, producing, and evaluating written public relations messages. Writing assignments include media releases, letters, memos, position papers, background papers, brochures, and reports and proposals.

**ENGL 3310 English Literature Before 1790: 3 semester hours**

Prerequisite: ENGL 1100 or equivalent. This course examines the development of English literature from the Middle Ages through the eighteenth century. Students will be introduced to major literary movements and themes through the reading and analysis of representative works of selected major authors. This course fulfills the British Literature requirement for the major.

**ENGL 3320 British Literature in the Long 19th Century: 3 semester hours**

Prerequisite: ENGL 1100 or equivalent. This course meets the requirement for one 3000 level course in British literature. It surveys the arc of British literature from about 1790 into the early 20th century: the Romantic, Victorian, and Modernist eras.

**ENGL 3330 Reformers, Revolutionaries, and Romantics in the British Romantic Era: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. Students read poetry and prose by several major writers of the British Romantic period. This course meets the requirement for one 3000 level course in British literature.

**ENGL 3340 Full Speed Ahead! Literature in the Dizzying Victorian Era: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. Students read poetry, essays, and fiction by major writers from the Victorian era of British literature. This course meets the requirement for one 3000 level course in British literature.

**ENGL 3350 Slouching Toward Chaos: the Early 20th Century in British Literature: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. Students read poetry, drama, and fiction by major writers of the Modernist era of British literature. This course meets the requirement for one 3000 level course in British literature.

**ENGL 3500 Special Studies: 1-3 semester hours**

Prerequisite: A course in area of proposed work and consent of instructor. Individual work, with conferences adjusted to needs of the student. May not be used to meet specific English department distribution and language requirements. May be repeated for a maximum total of four hours credit.

**ENGL 3510 World Literature Before 1650: 3 semester hours**

Prerequisite: ENGL 1100. This course surveys World Literature from the earliest times to 1650. Students will examine diverse literary works in a variety of genres and voices. The course will include literary works from diverse traditions throughout the world, excluding literature from the United States and England.

**ENGL 3520 World Literature After 1650: 3 semester hours**

Prerequisites: ENGL 1100. This course surveys World Literature from 1650 to the present. Students will examine diverse literary works in a variety of genres and voices. The course will include literary works from diverse traditions from throughout the world.

**ENGL 3530 Contemporary World Literature: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course covers selected World Literature from the 20th and 21st centuries with emphasis on non-European literatures. This course may include works from Europe, Latin American, the Middle East, Africa, and Asia; it excludes literature from the United States and England.

**ENGL 3710 American Literature Before 1865: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course features representative selections from American authors from the early seventeenth century to the Civil War. This course fulfills the American Literature requirement for the major.

**ENGL 3720 American Literature After 1865: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent. This course examines dramatic upheavals in society that have engendered continuous innovation in American literature since 1865. It will look closely at a variety of individual authors motivated by these artistic, cultural, political, and psychological disturbances; we will also pay close attention to specific literary movements, from Naturalism to Transrealism, energized by these societal changes. This course fulfills the American Literature requirement for the major.

**ENGL 3800 Topics in Women and Literature: 3 semester hours**

An examination of the role of women in literature, either as figures in literary works or as writers. Specific topics to vary from semester to semester. Since the topics of ENGL 3800 may change each semester, the course may be repeated for credit if the topics are substantially different.

**ENGL 4030 Contemporary Critical Theory: 3 semester hours**

This course is to acquaint students with a range of critical methodologies that have gained currency since the 1960's; topics may include formalist, structuralist, post-structuralist, Marxist, reader-response, psychoanalytic, feminist, cognitive, and evolutionary approaches to literature and culture.

**ENGL 4060 Adolescent Literature: 3 semester hours**

The course will expose students to the large variety of quality adolescent literature available for reading and study in middle and high school classes. It will also examine the relevance of a variety of issues to the reading and teaching of adolescent literature, among them: reader response; theory and practice; multi-culturalism; literacy; the relation of adolescent literature to 'classic' literature the role of adolescent literature in interdisciplinary studies; adolescent literature as an incentive to extracurricular reading.

**ENGL 4080 The Truth about Fiction: Biological Reality and Imaginary Lives: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent (may be taken concurrently). This course presupposes that works of literature center on the main phases, motives, and social relationships in the human life cycle, for instance, survival, growing up, establishing an identity, becoming part of a community, mating, parenting and family life, conflicts between communities, imaginative culture (religion, ideology, the arts), growing old, and dying. Readings include literary works along with psychological studies and literary theory and criticism that draw on biologically grounded research on human behavior.

**ENGL 4130 A Machine Made of Words: Writing Your Best Poems: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course examines in more detail the ways in which poets construct machines from words—that is, the way that the words of a poem provide its verbal, emotional, and intellectual energy. Through the examination and discussion of both contemporary published poetry and the work of students in the class, students will consider the question: how do poems use language to make sense of (or to defamiliarize) the world and our experience of it? The course counts toward the Certificate in Writing.

**ENGL 4140 Polishing Your Stories: Producing a Publishable Short Story: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course gives student writers tools and practice in re-thinking and rewriting their stories. It is for students who are serious about writing stories that can be published in litmag, Bellerive, or other journals. Students will produce drafts for workshop critique and will rewrite them producing at least one that is polished enough for publication. The course counts toward the certificate in Writing.

**ENGL 4150 Creative Non-Fiction: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course will examine the aesthetic and technical concerns of the writer of creative non-fiction. Students will read published essays and write their own to submit for workshop. This course counts toward the Certificate in Writing.

**ENGL 4160 Special Topics in Writing: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. Special topics in writing that are not covered in other 4000level English courses. Since the topics of ENGL 4160 may change each semester, the course may be repeated for credit if the topics are substantially different.

**ENGL 4180 Novel Beginnings: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course teaches students to engage the reader when writing a Sci-fi / Fantasy / Thriller / Young Adult / Literary novel. Students will work on getting the balance right, on creating a compelling event, dimensional characters, an engaging plot, a setting that feels real, and a point-of-view strategy. Students learn about key ingredients that make a novel beginning interesting to a reader and present their novel beginnings in a workshop format for revision.

**ENGL 4260 Chaucer: 3 semester hours**

The course concentrates on the poetry of Geoffrey Chaucer, including the Canterbury Tales, early poetic works, and the Troilus and Criseyde. All readings are in the original Middle English.

**ENGL 4270 Medieval English Literature: 3 semester hours**

A survey of old and middle English literature from Beowulf to Malory's Morte d'Arthur, exclusive of Chaucer. All works are read in modern English translations.

**ENGL 4360 Shakespeare's Friends and Rivals: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course studies the professional London stage from the 1580s to the 1620s with particular emphasis on the drama of Shakespeare's contemporaries. Though Shakespeare will not be the focus in this course, connections with his works will be discussed. Students will learn the conventions of dramatic genres and how to situate plays in their historical, cultural, and literary contexts. They will also explore how playwrights responded to the theater market in which they exhibited their dramatic wares and the extent to which they saw one another as rivals or collaborators.

**ENGL 4370 Shakespeare: Tragedies and Romances: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course explores Shakespeare's tragedies and romances, with particular attention to their genre as well as their relation to the cultural issues of Shakespeare's time. Students will learn to see Shakespeare as a dramatic craftsman and explore the question of his contribution to English literature: whether he saw himself as an innovator or inheritor of well-known stories from the classical tradition, Britain's chronicle histories, scripture, and legend. Shakespeare's narrative poems as well as modern film adaptations may also be featured.

**ENGL 4380 Shakespeare: Comedies and Histories: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course explores Shakespeare's comedies and histories, with particular attention to their genre as well as their relation to the cultural issues of Shakespeare's time, above all the place of women and the importance of marriage and male friendship. Students will learn how Shakespeare's plays explore the rights of citizens and perhaps challenge accepted notions of political power. Students will also uncover Shakespeare's debt to ancient and contemporary forms of comedy as well as his innovative contributions to that dramatic form. The sonnets as well as modern film adaptations may also be brought into the discussion of these questions.

**ENGL 4450 The Eighteenth-Century English Novel: 3 semester hours**

The origins and early development of the English novel, from Defoe to Jane Austen.

**ENGL 4540 The Nineteenth-Century English Novel: 3 semester hours**

Novels of the Romantic and Victorian periods, from Austen to George Eliot.

**ENGL 4550 Novels into Films: The Nineteenth Century: 3 semester hours**

Prerequisites: ENGL 3090, ENGL 3320. Novels by Austen, Eliot, Wilde, Hardy, and others read in themselves and as interpreted in film. Comparisons of the representational and aesthetic techniques available to novels and film.

**ENGL 4580 Literature of the Late Nineteenth and Early Twentieth Centuries: 3 semester hours**

Literature of the period between 1870 and the First World War, including works by writers such as Hardy, Conrad, James, Wilde, Stevenson, Shaw, Jefferies, and Wells.

**ENGL 4610 Selected Major American Writers I: 3 semester hours**

American literature of the nineteenth century: Emerson, Thoreau, Hawthorne, Melville, Whitman and others.

**ENGL 4620 Selected Major American Writers II: 3 semester hours**

American literature of the late nineteenth and early twentieth centuries: Dickinson, James, Twain, Cather, Frost, Dreiser and others.

**ENGL 4650 Modern American Fiction: 3 semester hours**

The novel and short story in America since World War I. There may be some attention to British and continental influences.

**ENGL 4740 Poetry Since World War II: 3 semester hours**

Reading and analysis of contemporary poetry.

**ENGL 4750 Modern British Fiction: 3 semester hours**

Critical reading and analysis of British fiction of the twentieth century. There may be some attention to American and continental influences.

**ENGL 4770 Modern Poetry: 3 semester hours**

Critical reading and analysis of poetry of the late nineteenth and early twentieth centuries. Yeats, Eliot, Frost, Williams and others.

**ENGL 4790 Rhetoric and Social Justice: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course introduces students to rhetoric as integral to language, communication, and meaning-making. Students will read rhetorical history and contemporary scholarship and theory; apply theories to various scenarios and artifacts; and become more thoughtful practitioners of rhetoric in their own lives. Specifically, the course introduces rhetoric through the lens of social justice, offering students an opportunity to use rhetorical theories and methods to better understand current social events, activist movements, practices of civic engagement, and corresponding media representations.

**ENGL 4800 Introduction to English Linguistics: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course presents a survey of linguistics with emphasis on what the field reveals about the English language. Topics include the sounds of language, grammar, writing systems, language acquisition, language in society, language history, dialects, and usage.

**ENGL 4810 Descriptive English Grammar: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent; ENGL 2810 or passing grade on English-Education Test of Basic Grammar. This course presents a descriptive study of modern English morphology and syntax (grammar) from the perspectives of traditional, structural, and transformational grammar.

**ENGL 4820 History of the English Language: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. A historical survey of the English language from its IndoEuropean roots through Old and Middle English to the present. Topics include changes in sound, meaning, and grammar, as well as developments in American English, including regional and social dialects.

**ENGL 4830 English Sociolinguistics: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent. This course presents a survey of topics in sociolinguistics, the study of the relation between language and society, with some emphasis on language variation in English. The course offers both quantitative and qualitative approaches to topics such as social dialectology, variationist and third-wave sociolinguistics, ethnography of communication, and language in relation to education, ethnicity, gender, and sexuality.

**ENGL 4850 Topics in the Teaching of Writing: 1-3 semester hours**

Same as TCH ED 5850. Prerequisites: ENGL 3100 or equivalent. Special topics in the practice of and pedagogy of writing designed for in-service teachers. Topics may include writing at specific grade levels, writing/reading workshops, writing in urban settings, writing across the curriculum, action research, new technology, classroom and district-level assessment. May be repeated once for credit if topics differ. Counts toward Certificate in Writing.

**ENGL 4860 Editing and the Production Process: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent; ENGL 2810 or ENGL 4810. This course provides students an opportunity to perform professional-level copyediting and proofreading, navigate several industry-standard publishing style manuals, understand the basic stages of the book production process and editorial roles at various stages during that process, and recognize and question trends in the practice and execution (media, format) of copyediting. This course counts toward the Professional, Creative, and Technical Writing Certificates.

**ENGL 4864 Technical Editing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course covers the principles and practices of technical editing, including usability, audience analysis, contextual editing, the conventions of scientific and technical communication, and the role of the editor in document development and publication. Students will also learn standard practices of copy editing and the use of style guides.

**ENGL 4865 Content Strategy: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course examines the practice of technical communication in content management system (CMS) environments and covers such subjects as single sourcing, topic-based writing, and adaptive content. Students will learn how to perform a content audit, engage in content modeling, create content templates, and use Framemaker or a similar tool to structure content.

**ENGL 4866 Help Authoring: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course addresses the technological and rhetorical skills necessary for creating effective online help systems, including context-sensitive help for computer applications.

**ENGL 4867 Proposal Writing: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course familiarizes students with many aspects of writing proposals for various purposes in academic, professional, and public spheres. It offers students opportunities to write documents to promote their academic, professional, or personal goals or those of their organization(s).



**ENGL 4869 Usability Studies: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course addresses the methods used by technical communicators to evaluate usability. It focuses on methods used to evaluate human interaction with communication tools and students will learn how to make products more suitable for human use.

**ENGL 4870 Advanced Business and Technical Writing: 3 semester hours**

Prerequisites: ENGL 3100 or its equivalent as judged by the instructor. An advanced, project-oriented course to produce substantial, multifaceted business and technical writing projects. These might include reports, manuals, proposals, Web projects, computer documentation, or other advanced written assignments. These projects demonstrate the ability to handle complex assignments requiring initiative, independent work, and professional-level writing skills.

**ENGL 4871 Publishing: Writers, Editors, and Readers: 3 semester hours**

Prerequisites: ENGL 3120, ENGL 3130; or equivalent. Students will explore how the technological revolution has changed the way writers write, editors edit, and readers read. Topics covered will include the social and political implications of these technological advances in book, magazine, and online publishing. We will discuss how the roles of editors and writers have changed. Students will develop a semester writing or editing project that emerges out of this exploration. This course is for writers interested in having their work published and for anyone interested in working in the publishing field. This course counts toward the Professional, Creative, and Technical Writing Certificates.

**ENGL 4872 Technical Presentations: 3 semester hours**

Prerequisites: ENGL 3120, ENGL 3130, or equivalent. Students learn about different kinds of presentations given in professional contexts and the technologies used to produce them. They will learn to create powerful presentations that make memorable presentations. The course is asynchronous and 100% online, and is designed for graduate students preparing papers for conferences, and for technical and business professionals presenting to their bosses, colleagues, and clients. This course counts toward the Professional and Technical Writing Certificate.

**ENGL 4874 International Dimensions of Technical Communication: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course examines complexities of communication of technical information worldwide. It includes topics such as graphics, icons, symbols; user interface design; intercultural communication.

**ENGL 4876 Research Methods in Technical Communication: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course addresses essential research methods in technical communication, including audience analysis, interviewing techniques, working with subject matter experts, and experimental research design.

**ENGL 4877 Writing in Social Media: 3 semester hours**

Prerequisites: ENGL 1100 or equivalent (3-6 hours) and junior standing. This course will address theory and practice of communication through social media. It will emphasize the role of social media in industry.

**ENGL 4880 Writing for Teachers: 3 semester hours**

Same as SEC ED 4880. Prerequisite: ENGL 3090 or junior level English. Writing for Teachers is an English-education course that supports writing across the curriculum for both pre-service English and content area teachers. Teacher candidates learn writing theories and literacy strategies to help their future students construct meaning from their discipline. The course works best for those who are completing level II or beginning level III education courses. The course counts toward the Certificate in Writing.

**ENGL 4890 Writing Internship: 3 semester hours**

Prerequisites: ENGL 3100 or its equivalent as judged by the instructor. Course limited to students who are completing certificates in writing. May be taken concurrently with the final course in the certificate sequence. Students work in a supervised internship to complete professional writing assignments. Special consent form required.

**ENGL 4892 Independent Writing Project: 3 semester hours**

Prerequisites: ENGL 3100 or equivalent as judged by instructor. Course limited to students who are completing their certificates in writing. May be taken concurrently with the final course in the certificate sequence. Students work individually with an instructor to complete an extensive creative writing or critical analysis writing project. This course is available on a limited basis only with the approval of the Coordinator and faculty sponsor. Special consent form is required.

**ENGL 4895 Editing 'Litmag': 3 semester hours**

Prerequisites: ENGL 3100 or equivalent and at least two creative writing courses. Course is primarily for students nearing the end of their certificates in writing. Students in this course create 'Litmag', the UM-St. Louis student literary magazine. Students will call for submissions; they will read and select work to be published; and they will produce the magazine, dealing with issues like format, budget, proofreading, print run, advertising, distribution, and publicity. The course is offered only in the spring and culminates with the publication of 'Litmag' in late April.

**ENGL 4925 The Short Story in World Literature: 3 semester hours**

Students will read a wide variety of short fiction, from very brief pieces to novellas, including stories from all over the world and from several different centuries either in translation or in the original English. The course will also cover short theoretical works on narrative and critical commentaries on some of the fiction.

**ENGL 4932 Female Gothic: 3 semester hours**

Same as GS 4932. The course examines the historical development of the female gothic, a genre which employs narrative strategies for expressing fears and desires associated with female experience. From the late 18th century to the present, we will trace the persistence of the Gothic vision in fiction and film.

**ENGL 4950 Special Topics In Literature: 3 semester hours**

Special topics in literature that are not covered in other 4000-level English courses. Since the topics of ENGL 4950 may change each semester, the course may be repeated for credit if the topics are substantially different.

**ENGL 5000 Introduction to Graduate Study in English: 3 semester hours**

A course designed to prepare students for the professional study of English. The course will both familiarize students with basic bibliographic tools and scholarly methods and introduce them to issues that are of current critical interest to those engaged in the advanced study of literature. These issues include gender, textuality, reader-response, multiculturalism, feminism, psychoanalysis, cultural studies, literary history and the relationship of literature to philosophy, history, and science. Must be taken within the first twelve hours of graduate study.



**ENGL 5100 Graduate Workshop in Poetry: 3 semester hours**

Prerequisites: Open to students in the creative writing program and to others with permission of instructor. Consists of a writing workshop in which the poetry written by the students enrolled in the course is discussed and analyzed by the instructor and members of the class. Students taking this course will be expected to write original poetry throughout the course. May be repeated for maximum graduate credit of fifteen (15) hours.

**ENGL 5110 Graduate Workshop in Fiction: 3 semester hours**

Prerequisites: Open to students in the creative writing program and to others with permission of instructor. Consists of a writing workshop in which the fiction (short stories or chapters of a novel) written by the students enrolled in the course is discussed and analyzed by the instructor and members of the class. Students taking this course will be expected to write original fiction throughout the course. May be repeated for maximum graduate credit of fifteen (15) hours.

**ENGL 5170 Techniques, Methods, and Effects in Fiction Writing: 3 semester hours**

Prerequisite: Open to students in the MFA program and to others with consent of the instructor. This course analyzes the technical choices made by important contemporary fiction writers in the areas of point of view, tone, setting, form, and plot structure, and it examines the effects of those choices. Close consideration is given to fictional techniques that contribute to a story's characterization, tension, interest, reliability, drama, irony, and humor. The course is primarily for creative writers.

**ENGL 5180 Form and Theory of Poetry: 3 semester hours**

Prerequisites: Open to students in the MFA Program and other graduate students with consent of instructor. This course explores various aspects of traditional and contemporary poetry. The student will gain an understanding of formal poetry-rhyme and meter-as well as of traditional types of poetry, for example, the lyric and the narrative. Throughout the course, an emphasis will be maintained on free verse and a greater understanding of its practice. Students will read selectively in the poetry, theory, and critical approaches of various periods, for example, the romantic and the modern, and within various movements, such as the symbolist or confessional.

**ENGL 5190 Literary Journal Editing: 3 semester hours**

Prerequisites: Open to students in the MFA program who have had at least two graduate writing workshops and to others with consent of the instructor. In this course students serve as the first readers of all submissions to the university's literary magazine, *Natural Bridge*. Students will read and evaluate poems, short stories, and essays and recommend a body of work to the editorial board of the magazine. The editorial board will then consider the class consensus in its final selection of material for publication. In addition to this primary task of editorial selection, students will also be involved in the productions of an issue of the magazine. May be repeated for maximum graduate credit of nine hours.

**ENGL 5200 MFA Readings: 3 semester hours**

Prerequisites: Open to students in the MFA program and to others with consent of the instructor. This is an independent reading course. In consultation with an MFA faculty member, students choose works from the MFA Reading List and read them with the goal of broadening and sharpening their technical skills as writers. Students ordinarily choose works in one genre: poetry, the short story, or the novel. Each week the student reads and reports on at least one work. The course may be taken only once.

**ENGL 5250 Studies in Middle English Literature: 3 semester hours**

Special topics in English literature before 1500.

**ENGL 5300 Renaissance Literature: 3 semester hours**

Special topics in English literature from 1500 to 1660.

**ENGL 5400 Eighteenth Century Literature: 3 semester hours**

Studies in Augustan poetry and prose, including drama and fiction, with emphasis on background and major figures.

**ENGL 5500 Nineteenth Century Literature: 3 semester hours**

Special topics in English romanticism, in Victorian life and thought, and in the development of the novel and of poetry between 1797 and 1914.

**ENGL 5600 American Literature Before 1900: 3 semester hours**

Selected American writers or topics from the colonial period to 1900.

**ENGL 5700 Twentieth-Century American Literature: 3 semester hours**

Selected American writers or topics from 1900 to the present.

**ENGL 5750 Twentieth-Century British Literature: 3 semester hours**

Selected British and Commonwealth writers of the twentieth century.

**ENGL 5800 Modern Linguistics: 3 semester hours**

Prerequisite: A study of selected topics in the structure of the English language, combining readings in current linguistics publications with original research.

**ENGL 5840 Theories of Writing: 3 semester hours**

An analysis of major modern theories in composition.

**ENGL 5850 Studies in Composition: 3 semester hours**

The study of special topics in composition. Topics may include history of composition, psychology of writing, reader response theory, etc.

**ENGL 5860 Writing/Reading Theory: 3 semester hours**

This course studies the parallel evolution of reading and writing theory and pedagogy. Topics include the influence of psycholinguistics and reader-response theory and the link between reading and writing theory and instruction.

**ENGL 5880 Writing in the Content Areas: 3 semester hours**

Same as TCH ED 5880. Prerequisites: Graduate standing. This course emphasizes the importance of integrating writing instruction in classrooms across subject areas. Theories of writing and writing instruction will be explored, and students will discuss how to put the theories into practice in their classrooms. Students will learn to explore their own writing process while learning strategies that will help them to teach writing rather than just assign writing. The course examines the tools pre-service and in-service teachers will need to work with diverse learning communities, to utilize best practice in the teaching of writing, and to use writing as a tool for student learning in any content area. Students in this class will be held to professional writing and speaking standards. The course counts toward the Certificate in Writing.

**ENGL 5910 Studies in Poetry: 3 semester hours**

Study of a few selected British and American poets.

**ENGL 5920 Studies in Fiction: 3 semester hours**

Study of a few selected British and American novelists and short story writers.

**ENGL 5940 Seminar in Gender and Literature: 3 semester hours**

Same as GS 5940. Gender studies in literature of different periods, types, and genres; satisfies area requirement (1-6) appropriate to its period, national literature, and genre.

**ENGL 5950 Seminar in Special Topics: 1-3 semester hours**

Special topics which are not covered in other graduate-level English courses.

**ENGL 5970 Independent Reading: 1-3 semester hours**

Directed study in areas of English for which courses are not available.

**ENGL 6000 Thesis: 1-6 semester hours**

Prerequisite: 3.5 graduate GPA. Thesis research and writing on a selected topic in English studies. May be taken over two semesters, three (3) hours each semester.

**ENGL 6880 Gateway Writing Project: 6 semester hours**

Same as TCH ED 6880. Prerequisite: Graduate standing. An intensive course in the writing process and the writing curriculum, designed for experienced teachers. Readings of current theory and research will be related to participants' experience as writers and as teachers. May be repeated for credit, but no more than 6 hours may be applied toward the M.Ed. Counts toward the Graduate Certificate in Teaching Writing.

**ENGL 6890 Seminar in Professional Writing for Teachers: 3 semester hours**

Same as TCH ED 6890. Prerequisites: TCH ED 6880 and consent of instructor. Capstone seminar for the Graduate Certificate in the Teaching of Writing. Participants will pursue the dual role of writer/ writing teacher by designing individual projects with one of these emphases: (1) research writing based on a classroom inquiry into the teaching of writing; (2) expository and creative writing based on an inquiry into the teacher's own evolution as a writer.

## English for Academic Purposes

**EAP 1003X Reading and Writing I: 3 semester hours**

Prerequisites: Minimum TOEFL Score of 500 or placement by examination. In this course International students develop fluency in their reading and writing skills in American English. This course consists of reading a variety of types of written texts, vocabulary building, organization in writing from the paragraph to essay, techniques for generating ideas, grammar use and editing. This course does not count toward a degree. **EAP 1011 Advanced EAP Conversation and Pronunciation: 3 semester hours**

Prerequisites: Placement by examination or permission of instructor. Designed for non-native speakers who need to improve their fluency and pronunciation in American English. Conversation strategies, oral presentations and extensive practice to modify accent are included. This course may count towards elective credit in the Colleges of Business and Arts and Sciences.

**EAP 1012 Language Skills for Academic Success: 3 semester hours**

Prerequisites: Placement by examination or successful completion of EAP 3202. Designed for the student who is a non-native speaker of English to enhance academic language skills needed for the American university. This course includes readings and lectures from various disciplines, strategies for effective listening comprehension and note-taking, vocabulary building exercises, exam preparation, and participation in class discussions. This course may count towards elective credit in the Colleges of Business and Arts and Sciences.

**EAP 1013 Reading and Writing II: 3 semester hours**

Prerequisites: Placement by examination or successful completion of EAP 3203. This course prepares students for ENGL 1100 or ENGL 1110. Activities targeting writing skills include the organization of essays, rhetorical forms and their structural organization, revision of ideas, research techniques, grammar use and editing. To develop reading skills, students read articles and a novel, practice reading strategies and learn how to summarize articles. This course may count towards elective credit in the Colleges of Business and Arts and Sciences.

**EAP 1015 Grammar for Speaking and Writing II: 3 semester hours**

Prerequisites: Placement by examination or successful completion of EAP 3205. This course is for students who are non-native speakers of English who need review and applied practice of English grammar for oral and written work. This course may count towards elective credit in the Colleges of Business and Arts and Sciences.

**EAP 5400 Seminar for International Teaching Assistants: 1-3 semester hours**

Prerequisites: Consent of the department. Focus is on presentation skills, strategies to facilitate communication, and cultural differences in education. Students develop effective teaching skills through class presentations. Not applicable to graduate degree program.

## Ensemble Performance

### Courses

**EN PER 1400 University Chorus (MOTR PERF 102C): 1 semester hour**

Prerequisite: Consent of instructor. Preparation and performance of choral literature.

**EN PER 1410 The University Singers (MOTR PERF 102C): 1 semester hour**

Prerequisite: Consent of instructor. The study and performance of music for vocal chamber ensemble.

**EN PER 1430 Women's Chorale: 1 semester hour**

Prerequisites: Consent of department. Prepare a variety of choral music to be performed publicly during the semester. Singers will learn choral-style SSAA vocal music and principles of music performance. A wide variety of styles, eras, and genres of women's choral music will be performed by the singers, e.g., madrigals, contemporary and traditional classical music, multi-cultural and foreign language repertoire, jazz and popular selections. Members of the chorale may audition for solos, and smaller ensembles from the group may be featured within the concerts.

**EN PER 1500 University Orchestra (MOTR PERF 1020): 1 semester hour**

Prerequisite: Consent of instructor. Study, preparation and performance of orchestral repertoire.

**EN PER 1520 University Symphonic Band (MOTR PERF 102B): 1 semester hour**

Prerequisite: Consent of instructor. Study preparation and performance of music for the winds and percussion.

**EN PER 1530 University Wind Ensemble: 1 semester hour**

Prerequisite: Consent of instructor. Study, preparation, and performance of music for winds and percussion including the preparation and performance of various chamber ensembles for woodwinds and brass.

**EN PER 1532 University Pep Band: 1 semester hour**

Prerequisites: Consent of department/instructor. Study, preparation, and performance of music in diverse contemporary styles. Performances of the University Pep Band are primarily in conjunction with campus activities and athletic events.

**EN PER 1541 Chamber Ensemble Brass: 1 semester hour**

Prerequisite: Consent of department. Study, preparation and performance of music for small ensembles.

**EN PER 1542 Jazz Combo: 1 semester hour**

Prerequisite: Consent of instructor. Study, preparation and performance of music for small ensembles.

**EN PER 1543 Chamber Ensemble Percussion: 1 semester hour**

Prerequisite: Consent of department. Study, preparation and performance of music for small ensembles.

**EN PER 1544 Chamber Ensemble Strings: 1 semester hour**

Prerequisite: Consent of department. Study, preparation and performance of music for small ensembles: a)brass; b)jazz; c)percussion; d)string; e)voice; f)woodwinds.

**EN PER 1545 Chamber Ensemble Voice: 1 semester hour**

Prerequisite: Consent of department. Study, preparation and performance of music for small ensembles.

**EN PER 1546 Chamber Ensemble Woodwinds: 1 semester hour**

Prerequisite: Consent of department. Study, preparation and performance of music for small ensembles.

**EN PER 1547 Chamber Ensemble New Music: 1 semester hour**

The New Music Ensemble is an undergraduate ensemble that promotes and presents a broad range of new and contemporary music. Repertoire will feature solo, chamber, and large ensemble works by living composers or those of the recent past. Part of the mission of this ensemble is to offer an outlet for composition majors to have their music performed.

**EN PER 1550 Jazz Orchestra: 1 semester hour**

Prerequisites: Consent of instructor. This course involves the study, preparation, and performance of jazz music for big band.

**EN PER 1551 Jazz Lab Band: 1 semester hour**

Prerequisites: Consent of instructor. This course involves study, preparation, and performance of jazz music for big band.

**EN PER 1560 Opera Workshop: 1 semester hour**

Prerequisite: Consent of instructor. Instruction in movement, basic stage techniques, technical theater, repertoire and performance techniques and preparation. May be repeated for credit.

**EN PER 1580 Studio Ensemble: 1 semester hour**

Prerequisites: Concurrent applied study AP MUS 14XX, 34XX, or 44XX. This course involves study, preparation, and performance of ensemble music composed for multiples of the same instrument. This course may be repeated for credit.

**EN PER 2700 Seminar in Performance and Outreach: 1 semester hour**

Prerequisites: Acceptance as a music major/minor and two semesters of applied music study or by consent on instructor. Instruction in developing performance repertoire and skills for community and educational outreach programming. Student presentations of these programs in community and educational venues required. Course may be repeated.

**EN PER 4560 Advanced Opera Workshop: 1 semester hour**

Prerequisite: Consent of instructor. Instruction in movement stage technique, technical theater, repertoire and performance based on advanced vocal skills. May be repeated for credit.

**EN PER 5310 Graduate Chamber Ensemble: 1 semester hour**

Prerequisites: Graduate standing in music and consent of department. Study and performance of traditional and nontraditional chamber literature.

**EN PER 5490 Graduate Ensemble: 1 semester hour**

Prerequisites: Graduate standing in music or consent of department. Study, preparation, and performance of ensemble literature from the choral, orchestral, or band/wind ensemble repertoire. May be repeated for a total of four hours of credit.

## Entrepreneurship

### Courses

**ENT 1001 Introduction to Entrepreneurship: 3 semester hours**

This course focuses on the fundamental ideas of entrepreneurship. Students will develop a working knowledge of entrepreneurial concepts, vocabulary, skills, and tools through case studies and practical applications. Students will actively participate in hands-on learning and team building exercises and will prepare a business simulation.

**ENT 2030 Business in the Arts: 3 semester hours**

This course takes an in-depth look at business aspects through the lens of the arts, with an emphasis on cultivating and developing an entrepreneurial perspective.

**ENT 3040 Creativity and Systems for Innovation: 3 semester hours**

Prerequisites: ENT 1001 or permission of the instructor. This course examines systems theory, and its application to entrepreneurship and intrapreneurship. Students will develop the ability to understand and solve problems, and initiate opportunities by thinking in new ways. Students will learn about the entrepreneurial ecosystem, including the economic, social, and political factors acting on it, and how to use it to increase good outcomes.

**ENT 3650 Experiential Entrepreneurship: 3 semester hours**

Students will work in teams mentored by experienced entrepreneurs to generate innovative ideas and transform them into business models for economically viable business ventures. Experiential learning will be used in live customer discovery, prototyping, and market validation.

**ENT 4001 Accelerate Capstone: 3 semester hours**

Same as BUS AD 4001. Prerequisites: ENT 1001, and either EDUC 2002 or ENT 3040, or consent of instructor. This course provides students with a capstone experience taking an idea from planning to "launch." This should be the last course taken in the certificate sequence and may involve elements of an instructional seminar and a practicum. May be taken in conjunction with other courses within the certificate, but it is highly suggested as the final course in the sequence.

**ENT 5614 Entrepreneurship and Innovation: 3 semester hours**

Prerequisites: Graduate standing. This course focuses on students acquiring skills to capitalize on competitive strengths and market opportunities in dynamic entrepreneurial environments. A major focus will be placed on students developing personal and professional competencies aimed at enabling them to launch successful entrepreneurial ventures via innovation, collaboration, disruption, overcoming obstacles, and having a bias toward action.

**ENT 5618 Accelerate Entrepreneurial Experience: 3 semester hours**

Prerequisites: Graduate standing. This course focuses on development of entrepreneurial skills and perspectives that facilitate development and testing of actionable product or service ideas. Customer ethnography, the business model canvas, and the development and execution of prototypes or minimum viable products (MVPs) are used to successfully address real world problems.

**ENT 5650 Advanced Experiential Entrepreneurship: 3 semester hours**

Prerequisites: Graduate standing. Students will work in teams mentored by experienced entrepreneurs to generate innovative ideas and transform them into business models for economically viable entities. Experiential learning will be used in customer discovery, prototyping, and market feasibility analysis. Students will identify potential sources of funding and develop business plan pitch decks.

## Finance

### Courses

**FINANCE 1590 Personal Finance for Nonbusiness Majors: 3 semester hours**

For future professionals who want to learn more about personal finance and how to better manage their resources. The topics include purchasing/leasing cars, home acquisitions, investing in stocks and bonds, mutual funds, retirement planning and health and life insurance. Special emphasis will be on the nontechnical aspects of these issues. Cannot be used for credit in BSBA program.

**FINANCE 3500 Financial Management: 3 semester hours**

Prerequisites: ECON 1002, MATH 1105, ACCTNG 2400, INFSYS 2800, and a minimum overall GPA of 2.0. The study of a firm's need for funds; the institutions, instruments and markets concerned with raising funds; and the techniques of analysis used to determine how effectively these funds, once raised, are invested within the firm.

**FINANCE 3501 Financial Policies: 3 semester hours**

Prerequisite: FINANCE 3500 and a 2.0 overall GPA. The intensification and application of the concepts developed in FINANCE 3500. Special emphasis is given to the development of top management policies and their application toward complex problems of finance. Techniques for identifying and dealing with these problems before they become acute will be investigated. Cases will be integrated with appropriate outside reading.

**FINANCE 3503 Computer Applications in Finance: 3 semester hours**

Prerequisite: INFSYS 1800, FINANCE 3500, one 3000-level finance course and a 2.0 overall GPA. Financial problem solving and applications on the micro-computer. A project oriented course with an emphasis on micro based finance projects: Present value/IRR analysis, duration, immunization, portfolio optimization, leasing, capital budgeting, financial forecasting, options and futures.

**FINANCE 3520 Investments: 3 semester hours**

Prerequisite: FINANCE 3500 and a 2.0 overall GPA. Financial analysis of debt and equity instruments available on organized exchanges and in less tangible 'over the counter' markets. Techniques of such analysis being presented in context with economic and management circumstances within the company, industry and economy.

**FINANCE 3521 Financial Engineering: Applying Derivatives: 3 semester hours**

Prerequisites: FINANCE 3500. Students engage in a comprehensive investigation of advanced risk management techniques. Futures, forwards, options and synthetic securities are explored to determine their effectiveness in generating the desired risk exposure. A comprehensive study of speculative market conditions and characteristics are assessed in conjunction with a variety of financial innovations. Valuation techniques and hedging theories are combined with mathematical models to determine their effectiveness in practical situations. Special topics are introduced as market conditions dictate. It is recommended that students take Investments (FINANCE 3520) prior to enrolling in FINANCE 3521.

**FINANCE 3523 Fixed Income Analysis: 3 semester hours**

Prerequisites: FINANCE 3500. This course explores key issues in fixed income securities. The topics include pricing of bonds, measuring bond yields, bond price volatility, factors affecting yields and the term structure of interest rates, treasury securities, corporate debt instruments, residential mortgage loans, collateralized mortgage/debt obligation, and analysis of bonds with embedded options. The course prepares students for the CFA exams of Level 1 in the area of fixed income analysis.

**FINANCE 3524 Advanced Investment Management: 3 semester hours**

Prerequisites: FINANCE 3520 or consent of the instructor. This course reviews various advanced topics in investment management. The topics include (1) portfolio management, (2) fixed income analysis, (3) equity analysis, (4) economics in a global context, (5) derivatives, (6) alternative investments, and (7) Ethical and Professional Standards. The course provides students with theoretical and practical knowledge in portfolio management techniques and advanced investment strategies. The course materials are related to the CFA (Chartered Financial Analyst) Level I Exam curriculum.

**FINANCE 3525 Practicum in Investments: 1 semester hour**

Prerequisites: FINANCE 3500 and a 2.0 campus GPA. Students will apply their knowledge of stocks and bonds by managing a real dollar portfolio of securities. This course requires that students perform technical and fundamental analysis, prepare research reports, present proposals and participate in group investment decisions. The University's Student Investment Trust provides the money for students to invest. Course may be repeated for credit up to a maximum of 3 credit hours.



**FINANCE 3540 Introduction to Financial Institutions and Financial Markets: 3 semester hours**

Prerequisite: FINANCE 3500 and a 2.0 overall GPA. The course surveys financial institutions and financial markets and addresses the interplay between institutions and markets. State and federal regulation of institutions and markets is explored. A portion of the course addresses current events, managerial policy issues, and regulatory issues in financial services and markets. Focus is primarily U.S. institutions and markets, but the evolving impact of globalization and importance of the Foreign Exchange Market on U. S. financial institutions are developed.

**FINANCE 3541 Commercial Bank Management: 3 semester hours**

Prerequisites: ECON 1002, FINANCE 3500 and a 2.0 overall GPA. Corporate finance and microeconomics are applied to matters of importance to commercial bankers. Among the subjects treated are bank-asset portfolio construction, lending policies, liabilities management, bank capital structure, short-run cash management, financial market rates and flows, and quantitative models for bank management. Commercial bank management is analyzed from an internal viewpoint in terms of what bank managers should look for in asset management and why; what market conditions they should be aware of; and what techniques they can use to meet changing economic and financial conditions.

**FINANCE 3542 Principles of Real Estate: 3 semester hours**

Prerequisites: FINANCE 3500 and a 2.0 campus GPA. As an introduction to the real estate industry, the course broadly explores all phases of acquisition, development and disposal of real property. Topics include legal requirements of contracts, property rights, valuation and appraisal techniques, marketing, brokerage operations and practices, mortgage financing, leasing and property management.

**FINANCE 3545 Seminar in Venture Capital and Private Equity: 3 semester hours**

Prerequisites: FINANCE 3500 and another finance elective. This course examines venture capital and private equity firms as an important category of financial institutions. The main focus of the course is on financial, economic, and legal issues that develop between venture capital firms and their limited partners and between private equity firms and the firms in which they invest. More specifically, the course will explore the following processes: (1) how private equity and venture capital firms raise capital; (2) how they deal with firms in which they invest; and (3) how they exit investments. The course also discusses technology development process including protection through patents before they are licensed or used to establish as startup companies.

**FINANCE 3560 Practice of Personal Financial Planning: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0; FINANCE 3500 or consent of instructor and Area Coordinator. Professional financial planning requires broad knowledge of investments, insurance, income taxation, retirement planning, and estate planning, as well as certification requirements and legal/ethical issues. This course introduces students to the field of financial planning, and provides an integrated overview of the topics listed above. Students interested in the Financial Planning track are encouraged to complete this course prior to taking other courses in the track.

**FINANCE 3561 Principles of Insurance: 3 semester hours**

Prerequisites: FINANCE 3500 and a 2.0 campus GPA. This is a survey course intended to introduce students to the basic concepts of insurance. Topics include the nature of risks, types of insurance carriers and markets, insurance contracts and policies, property and casualty coverages, life and health insurance, and government regulations. The functions of underwriting, setting premiums, risk analysis, loss prevention, and financial administration of carriers are emphasized.

**FINANCE 3562 Life Insurance and Employee Benefits: 3 semester hours**

Prerequisites: FINANCE 3500 or equivalent and a minimum campus GPA of 2.0. This course explores the life insurance business from the perspective of both the consumer and provider. Coverage will include an analysis of the various types of life insurance products, aspects of life insurance evaluation, reinsurance, underwriting, and uses of life insurance in financial planning. Also included is an examination of the tax, legal, and ethical requirements.

**FINANCE 3563 Retirement Planning and Employee Benefits: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0; FINANCE 3500 or consent of instructor and Area Coordinator. The course is designed to give students an understanding of the retirement planning process. Students will gain an appreciation of the usefulness (and shortcomings) of employee benefits and develop an ability to counsel others on important retirement and employee benefit decisions. Corporate pension and profit sharing plans, self-employed Keough plans, IRA's, annuities, health insurance, and social security will be discussed.

**FINANCE 3564 Estate Planning and Trusts: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0; FINANCE 3500 or consent of instructor and Area Coordinator. This course will focus on the responsibility of a financial planner in the formulation and implementation of an estate plan. Topics include wills, lifetime transfers, trusts, gifts, estate reduction techniques, tax implications in estate planning, business and inter-family transfers, dealing with incompetency, postmortem techniques, and the role of fiduciaries. Lectures, cases, and guest speakers will be used to stimulate analysis and discussion.

**FINANCE 3565 Seminar in Financial Planning: 3 semester hours**

Prerequisites: ACCTNG 3441, FINANCE 3520, FINANCE 3560, FINANCE 3561, FINANCE 3563, and FINANCE 3564; a minimum campus GPA of 2.0; or consent of instructor. This course serves as the capstone in the registered Financial Planning curriculum. Students will prepare and present comprehensive, professional-level personal financial plans. This course is required by the Certified Financial Planner Board of Standards for those who wish to sit for the Certified Financial Planner examination.

**FINANCE 3570 Essentials of Fintech: 3 semester hours**

Prerequisites: FINANCE 3500 or consent of the instructor. This is an introductory course to provide students an overview of Fintech (Financial Technology). The course may include the following topics: Blockchain, Cryptocurrencies, FinTech Credit, Artificial Intelligence and Big Data, Robo Advisers, FinTech Regulation and RegTech, and Algorithmic Trading. This course provides students with the foundations for the interaction of finance, technology, and regulation in the financial industry.

**FINANCE 3572 Financial Data Programming: 3 semester hours**

Prerequisites: FINANCE 3500 and a minimum campus GPA of 2.0. Students will learn the fundamentals of financial data programming with Python and R using structured data (tabular data such as spreadsheets) and unstructured data (text data such as social media) for application in finance fields.

**FINANCE 3574 Artificial Intelligence Applications in Finance: 3 semester hours**

Prerequisites: FINANCE 3572 or consent of instructor. This course introduces students to topics in artificial intelligence (AI) and its applications in finance fields. The course discusses the history of AI and machine learning (ML) and its general methodology of development of data models. The course presents AI and ML applications and real life examples in financial services industries, such as portfolio management, algorithmic trading, and credit scoring.

**FINANCE 3576 Blockchain in Business: 3 semester hours**

Prerequisites: FINANCE 3500 or consent of the instructor. The course is designed to provide students with an understanding of key concepts, developments and major applications of the blockchain, a peer-to-peer exchange mechanism without an intermediary. It covers the technical foundations of the blockchain, why it is needed, and how it works. It also explores a series of applications including but not limited to those in business entities. Credit cannot be granted for both FINANCE 3576 and FINANCE 6576.

**FINANCE 3580 International Corporate Finance: 3 semester hours**

Same as INTL BUS 3580. Prerequisites: FINANCE 3500 and a 2.0 campus GPA. This course explores corporate finance in the context of a global environment. Financial managers for an international firm must deal with all the normal problems faced by domestic corporations plus additional foreign exchange and political risks. Class discussions will focus on applying financial techniques to decision making in foreign operations. Students are required to work in a group to undertake a project related to international finance.

**FINANCE 3582 International Investments: 3 semester hours**

Same as INTL BUS 3582. Prerequisites: FINANCE 3500. This course explores the concepts of investing and hedging risk management, portfolio diversification, currency risk, asset pricing, and alternative portfolio strategies. Techniques for using derivatives are discussed in the context of hedging exchange rate risk. Reading foreign exchange quotes and understanding the functioning of global markets is central to the course. A prior course in investments is recommended but not required.

**FINANCE 3583 The Law of International Business Transactions: 3 semester hours**

Same as INTL BUS 3280. Prerequisites: BUS AD 2900 or consent of instructor. This course studies the role and function of International Law and national laws in the regulation of international business transactions. The impact of various legal regimes on import/export transactions, foreign investments, and the operations of multinational enterprises will be included. The role of national governments, supra-national governmental organizations, and non-governmental organizations in forming and administering the international legal environment will be studied.

**FINANCE 3585 Business in China: 3 semester hours**

Same as INTL BUS 3281. Prerequisites: A minimum campus GPA of 2.0 and junior standing. This course introduces students to the practices of doing business in China. Students will be introduced to the Chinese economic and business environment. Issues related to trade and foreign direct investment in China will be discussed. The course adopts an innovative approach, utilizing lectures, case analysis, projects, and student presentations.

**FINANCE 3590 Internship in Finance: 1-3 semester hours**

Prerequisite: a minimum campus GPA of 2.0; one must have completed and/or be currently enrolled in at least 6 credit hours of finance electives and have consent of supervising instructor and Area Coordinator. A Business College GPA of at least 2.5 is also required. Students are employed in the field of finance where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience in a Track area are the primary goals. The student's program will be monitored by a finance faculty member with the student providing a formal written report at the end of the project. FINANCE 3590 may not be counted toward the minimum 15 credit hours of finance electives for a finance emphasis.

**FINANCE 3595 Special Administration Problems - Finance: 1-10 semester hours**

Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 overall GPA. Study of selected special problems in business and administration. May be repeated for credit with different topics.

**FINANCE 3598 Seminar in Finance: 1-3 semester hours**

Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 overall GPA. This course is a selected special topic in the field of finance. May be repeated for credit with different topics.

**FINANCE 3599 Independent Study in Finance: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0 and approval by the supervising professor and the Area Coordinator. Special individual study in finance under the supervision of a full-time finance faculty member.

**FINANCE 5599 Individual Research in Finance: 1-3 semester hours**

Prerequisites: Consent of instructor and graduate director. Special individual research topics in Finance under the guidance of a specific professor.

**FINANCE 6500 Financial Management: 3 semester hours**

Prerequisites: ACCTNG 5400 or ACCTNG 2400, SCMA 5300 or SCMA 3300, and BUS AD 5000 or ECON 1001 and ECON 1002. This course provides an in-depth analysis of corporate finance including asset pricing, risk and return, short- and long-term investment decisions, capital structure choices, dividend policy, derivatives, mergers and acquisitions, and a host of other current topics. The material is taught through lectures and problem solving.

**FINANCE 6501 Advanced Financial Management: 3 semester hours**

Prerequisite: FINANCE 6500 and SCMA 5300. Exposure to recent financial management theory through selected readings. Financial management problems are considered by the use of cases and simulation models. An original research project under the supervision of instructor is required.

**FINANCE 6503 Computer Applications in Finance: 3 semester hours**

Prerequisites: FINANCE 6500 and 3.0 overall GPA. This course focuses on modeling and data analytics in finance. Hands-on projects include applications in loan amortization, buy or lease decisions, financial statement analysis and forecasting, capital budgeting, bond and stock valuation, risk analysis, capital structure, and portfolio analysis. Students will learn basic and sophisticated Excel tools and how to build executive dashboards, interfaces, and other monitoring tools used in day-to-day business. They will also gain exposure to statistical inference, time series modeling, event study analysis, and machine learning techniques for forecasting and working with financial data.

**FINANCE 6520 Security Analysis: 3 semester hours**

Prerequisite: FINANCE 6500 and SCMA 5300. An in-depth study of techniques used in evaluating various financial assets as investment opportunities. Financial assets studied include common stock, preferred stock, and fixed income securities. Other related topics such as sources of investment information and current market trends are discussed.

**FINANCE 6521 Financial Forensics: The Science of Derivatives: 3 semester hours**

Prerequisites: FINANCE 6500. Students engage in a comprehensive investigation of advanced risk management techniques. Futures, forwards, options and synthetic securities are explored to determine their effectiveness in generating the desired risk exposure. A comprehensive study of speculative market conditions and characteristics are assessed in conjunction with a variety of financial innovations. Valuation techniques and hedging theories are combined with mathematical models to determine their effectiveness in practical situations. Special topics are introduced as market conditions dictate. It is recommended that students take Investments (FINANCE 6520) prior to enrolling in FINANCE 6521.

**FINANCE 6523 Fixed Income Analysis: 3 semester hours**

Prerequisites: FINANCE 6500. This course explores key issues in fixed income securities. The topics include pricing of bonds, measuring bond yields, bond price volatility, factors affecting yields and the term structure of interest rates, treasury securities, corporate debt instruments, residential mortgage loans, collateralized mortgage/debt obligation, and analysis of bonds with embedded options. The course prepares students for the CFA exams of Levels I and (part of) II in the area of fixed income analysis.

**FINANCE 6524 Portfolio Analysis and Management: 3 semester hours**

Prerequisites: FINANCE 6500. This course reviews various advanced topics in investment management. The topics include portfolio management, fixed income analysis, equity analysis, economics in a global context, derivatives, alternative investments, ethical and professional standards, and applications of technology in financial services such as machine learning. The course provides students with theoretical and practical knowledge in portfolio management techniques and advanced investment strategies. The course materials are related to the CFA (Chartered Financial Analyst) Level I Exam curriculum.

**FINANCE 6540 Financial Institutions and Financial Markets: 3 semester hours**

Prerequisite: Graduate standing and FINANCE 6500. By lecture and casework, the course surveys markets (Money Market, Capital Markets, Foreign Exchange) and various forms of financial institutions. Historical and evolving business models of financial institutions are explored in the context of regulation, economics, and competition. Interplay between institutions and markets is addressed. Structure and purpose of regulation is examined. A portion of the course involves current events and managerial policy issues in financial services. A major U.S. financial institution is selected and case analyzed by the class. Focus is U.S. institutions and markets, but impact of globalization is discussed.

**FINANCE 6541 Commercial Bank Management: 3 semester hours**

Prerequisite: FINANCE 6500. This course explores the various bank management techniques required to manage a modern commercial bank in a rapidly changing environment. Topics include asset and liability management, capital adequacy, bank holding companies, profitability, and bank market structure and regulation.

**FINANCE 6542 Real Estate: 3 semester hours**

Prerequisite: FINANCE 6500. This course provides a broad introduction to real estate with a focus on legal issues, market analysis, valuation, financing, leasing and investment decisions. Classes are conducted in a standard lecture format with discussion on current topics. No prior knowledge of the industry is required.

**FINANCE 6545 Venture Capital and Private Equity: 3 semester hours**

Prerequisites: FINANCE 6500. This course examines venture capital and private equity firms as an important category of financial institutions. The main focus of the course is on financial, economic, and legal issues that develop between venture capital firms and their limited partners and between private equity firms and the firms in which they invest. More specifically, the course will explore the following processes: (1) how private equity and venture capital firms raise capital; (2) how they deal with firms in which they invest; and (3) how they exit investments. Before discussing the main issues of the course, and as a way of introducing the subject, we begin with a brief discussion of the significance of venture capital funding in the technology transfer process and a simple example of venture capital funding from the perspective of an entrepreneur. As most new technologies are proprietaries, the course also discusses technology development process including protection through patents before they are licensed or used to establish as startup companies.

**FINANCE 6570 Introduction to Fintech: 3 semester hours**

Prerequisites: FINANCE 6500. This course introduces students to the major topics of fintech (financial technology), including blockchain, cryptocurrencies, fintech credit, big data, machine learning, neural network, robo advisers, and algorithmic trading, as they relate to investments and financial institutions.

**FINANCE 6572 Financial Data Analytics: 3 semester hours**

Prerequisites: Graduate standing. This course covers fundamentals of Python and R programming with hands-on projects and specific applications in finance. Students will learn to acquire, clean, analyze and visualize both structured (tabular data such as spreadsheets) and unstructured data (text data such as social media). Both data programming languages are used in data analytics, machine learning, and artificial intelligence in modern financial services industry including banks, brokerage houses, hedge funds, and mutual funds.

**FINANCE 6574 Artificial Intelligence and Machine Learning in Finance: 3 semester hours**

Prerequisites: FINANCE 6572 or consent of the instructor. This course introduces students to artificial intelligence (AI) and machine learning (ML) and the applications in finance. The course covers the historical development of fundamental ideas in AI and ML, and its general methodology of the development of data models. The course provides a sampling of successful applications of AI and ML in different areas of finance, including portfolio management, algorithmic trading, fraud analytics, and credit scoring. Each of these topics are presented with real world examples and programming applications in languages like Python and R.

**FINANCE 6576 Blockchain: Applications in Finance: 3 semester hours**

Prerequisite: FINANCE 6500. This course introduces blockchain technology, a system of exchange among various parties without the need for an intermediary, and covers the evolution of blockchain with discussion of its applications in the financial services industry. Credit cannot be granted for both FINANCE 3576 and FINANCE 6576.

**FINANCE 6580 International Financial Management: 3 semester hours**

Same as INTL BUS 6580. Prerequisite: FINANCE 6500. The objective of this course is to introduce students to financial issues for multinational firms. Besides covering basic tools and techniques, the class stresses the role of the financial manager in analysis and decision-making. Topics include the impact of international accounting and tax issues, capital budgeting in a foreign environment, transfer pricing, and global funding. Conceptual skills for lifelong learning experiences are emphasized. This course employs a lecture and case format with group discussions.



**FINANCE 6581 Seminar in International Investments: 3 semester hours**

Same as INTL BUS 6581. Prerequisite: FINANCE 6500. This course covers topics related to the determination of exchange rates, international parity relations and portfolio diversification. In addition, methods for using foreign exchange derivatives are explored in their use for hedging exchange rate risk. Learning to read foreign exchange quotes and understanding the functioning of global markets is an integral part of the course material. Each student is assigned a foreign country to study throughout the semester with the comprehensive project report. A prior investments course is recommended but not required.

**FINANCE 6582 International Bank Management: 3 semester hours**

Prerequisites: FINANCE 6500. The objective of this course is to introduce students to many challenging issues in international bank management. This is a specialized finance course dealing explicitly with global bank decision-makings of a multinational bank that uses a variety of financial tools and skills. The course will discuss the rapidly blurring distinctions between commercial and investment bankers. Conceptual skills for life-learning (evolving) experiences relevant to the global banking sector are emphasized.

**FINANCE 6590 Seminar in Finance: 3 semester hours**

Prerequisites: FINANCE 6500. This course incorporates a wide range of advanced topics in finance including, but not limited to, an evaluation of various financial assets as investment opportunities, trends in capital markets, derivatives and management of financial and non-financial firms.

**FINANCE 6591 Finance Internship: 1-3 semester hours**

Prerequisites: Students must have completed and/or be enrolled in at least 6 credit hours of finance electives and have consent of supervising faculty member and Area Coordinator. Students work in the field of finance where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience are the primary goals. The student's program will be monitored by a finance faculty member with the student providing a formal written report at the end of the project.

## Foreign Language-Other

### Courses

**FGN LANG 1111 Reacting to the Past: Language, Immigration, and Social Change: 4 semester hours**

Reacting to the Past is a series of culturally accurate simulations built around key moments, ideas, and texts from the past. In each simulation, students are assigned one role; they research their character and learn to speak and write in his or her voice. The course offers students a rigorous inter-disciplinary learning experience in which they conduct academic research, speak publicly, and write extensively in different genres. It integrates critical reading, writing, and thinking skills and studies actual writing practices. Sequenced reading and writing assignments build cumulatively to more complex assignments. Includes formal and informal writing, drafting and revising, editing for correctness, synthesizing source material, and documenting sources accurately. This course fulfills the requirement for Freshman Composition.

**FGN LANG 1199 Special Topics: Language Immersion: 1-5 semester hours**

Prerequisites: Consent of Department Chair. Study abroad experience designed specifically to enhance acquisition of the target language and culture. This course may be repeated for credit provided that the topic is different.

**FGN LANG 1200 Languages and Identities: 3 semester hours**

This course examines how language use impacts and reflects various aspects of human identity. Course materials include contemporary readings, videos, and case studies on language and identity in a variety of Western and non-Western cultures.

**FGN LANG 2100 Languages and World View: 3 semester hours**

Same as ANTHRO 2100 and SOC 2200. Prerequisites: Completion of two semesters of one foreign language at the college level. This course investigates the extent to which peoples' linguistic and cultural background informs their understanding of the world. Experts on a variety of major Western and non-Western languages will introduce students to differences in ideas about time, space, human relationships, and other issues based on language. The course will also analyze common cultural misunderstandings among native speakers of English and speakers of other languages.

**FGN LANG 2110 Parlez-vous French Cinéma?: 3 semester hours**

This discussion-based course focuses on diverse genres of contemporary French cinema. Through the lens of film, students will discover French culture by examining historical and social issues that have shaped French society. This course is taught in English, and films will be screened with English subtitles.

**FGN LANG 2192 Service Learning in Foreign Languages: 1-3 semester hours**

Prerequisites: Permission of course instructor and concurrent enrollment in a Foreign Language course (Arabic, Chinese, English as a Second Language, French, German, Greek, Japanese, Latin or Spanish) at the 2000-level or higher. Taken concurrently with a qualifying foreign language course, students will participate in a community service experience that is academically integrated into the students' course of study. Community service in a local or international community organization, as approved by the course instructor, is required. Determination of the type of community service to be conducted and the number of hours required will be made in consultation with the instructor. May be repeated for a maximum of 6 credit hours.

**FGN LANG 2199 Special Topics: Language Immersion: 1-5 semester hours**

Prerequisites: Consent of department chair. Study abroad experience designed specifically to enhance acquisition of the target language and culture. This course may be repeated for credit provided that the topic is different.

**FGN LANG 3199 Special Topics: Language Immersion: 1-3 semester hours**

Prerequisites: Consent of department chair. Study abroad experience designed specifically to enhance acquisition of the target language and culture. This course may be repeated for credit provided that the topic is different.

**FGN LANG 3294 Internship in Languages: 1-3 semester hours**

Prerequisites: FGN LANG 2100 plus completion of 2000-level language requirements and consent of Internship Coordinator in Languages. This internship gives students of languages and cultures the opportunity to use their unique and developing skills at an appropriate agency, organization, or business, to gain valuable work experience, and to begin networking with organizations in the St. Louis region and beyond. Students will attend a minimum of three face-to-face meetings with the internship coordinator and write weekly journals and a final report about their experiences. Their course grade will reflect their work at the internship site as well as their written assignments for the course.



**FGN LANG 4100 Language Theories and Global Issues: 3 semester hours**

Prerequisites: Junior standing. This course offers an in-depth study of the fabric of language, its impact on self- and cultural identity, and its roles in the shaping of social relations, school and work environments, and geopolitics. Through the lenses of scholarly research, theories of language acquisition, world literature, literary and cultural theory, and first-hand accounts by immigrant populations, students will reflect on what constitutes cultural identity.

**FGN LANG 4394 Advanced Internship in Languages: 1-3 semester hours**

Prerequisites: FGN LANG 2100 plus completion of at least two 3000-level classes in a language and consent of the Internship Coordinator in Languages. This internship gives students of languages and cultures the opportunity to use their unique and advanced language skills at an appropriate agency, organization, or business in the St. Louis region and beyond. Students will attend a minimum of three face-to-face meetings with their internship coordinator and write weekly journals and a final report about their experiences. Their course grade will reflect their work at the internship site as well as their written assignments for the course.

**FGN LANG 4589 Curriculum and Methods of Teaching Foreign Languages: 3 semester hours**

Same as SEC ED 4589. This course is a study of the scope and sequence of the foreign language courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. The course emphasizes second language acquisition and socio-cultural theories of learning which undergird the approach, examination and analysis of foreign language teaching practices. Attention is also directed toward learning the techniques and research of the scholar in the field of foreign language. To be taken concurrently with Practicum I, SEC ED 4989.

**FGN LANG 4590 Foreign Language Teaching Seminar: 2 semester hours**

Same as SEC ED 4590. Prerequisites: Concurrent enrollment in SEC ED 4990 or consent of instructor. A practicum course in the teaching of foreign languages. Review and explanation of drills, dialogues, and a variety of classroom techniques, oral and written. A continuation of FGN LANG 4589 / SEC ED 4589, Curriculum and Methods, with an emphasis on specific practical skills. To be taken concurrently with SEC ED 4990, Student Teaching. Not available for graduate credit.

**FGN LANG 5100 Language Theories and Global Issues: 3 semester hours**

Prerequisites: Graduate standing. This course offers an in-depth study of the fabric of language, its impact on self- and cultural identity, and its roles in the shaping of social relations, school and work environments, and geopolitics. Through the lenses of scholarly research, theories of Language Acquisition, world literature, literary and cultural theory, and first-hand accounts by immigrant populations, students will reflect on what constitutes cultural identity. Designing a professional research project will allow graduate students to consider the practical consequences of language and culture in their field of study and develop strategies to live and work in a diverse environment.

**FGN LANG 5311 Special Topics in Foreign Language Teaching: 3 semester hours**

Prerequisite: Consent of the instructor. Designed for in-service foreign language teachers, this course focuses on the study of special topics in the field of foreign language learning with an emphasis on research applications to the improvement of practice. Topics may include technology for FL learning, the teaching of writing in the FL classroom, the teaching of reading in the FL classroom, proficiency-oriented instruction and assessment, second language acquisition for FL teachers, action research in the FL classroom. May be repeated for credit provided the topic is different. May be applied toward the Master's in Secondary Education with an emphasis in FL teaching.

## French

### Courses

**FRENCH 1001 French Language and Culture I (MOTR LANG 101): 5 semester hours**

Students will develop communicative skills in French, including listening, speaking, reading, and writing. Introduction to Francophone culture through discussion of readings and visual media. Intended for students with no previous French experience. Students with previous French experience are expected to contact the department for placement advising.

**FRENCH 1002 French Language and Culture II (MOTR LANG 102): 5 semester hours**

Prerequisite: FRENCH 1001 or equivalent. Students will continue to develop communicative skills in French, including listening, speaking, reading, and writing. Continued exploration of Francophone culture through discussion of readings and visual media.

**FRENCH 2101 French Language and Culture III: 3 semester hours**

Students will further develop the four language skills through meaningful communicative interaction. Students will advance their understanding of Francophone culture through discussion of readings and visual media. Students who have successfully completed this course may advance to FRENCH 2170 and FRENCH 2180.

**FRENCH 2115A Intensive French: 5 semester hours**

Prerequisite: Special consent required. An intensive study of French language and culture. Students will develop communicative skills, including listening, speaking, reading, and writing. Completion of the course with a grade of C- or better will satisfy the foreign language requirement of the B.A. degree. Students who have successfully completed FRENCH 2115A, FRENCH 2115B, and FRENCH 2115C may advance to FRENCH 2170 and FRENCH 2180.

**FRENCH 2115B Intensive French: 5 semester hours**

Prerequisite: Special consent required. An intensive study of French language and culture. Students will develop communicative skills, including listening, speaking, reading, and writing. Completion of the course with a grade of C- or better will satisfy the foreign language requirement of the B.A. degree. Students who have successfully completed FRENCH 2115A, FRENCH 2115B, and FRENCH 2115C may advance to FRENCH 2170 and FRENCH 2180.

**FRENCH 2115C Intensive French: 3 semester hours**

Prerequisite: Special consent required. An intensive study of French language and culture. Students will develop communicative skills, including listening, speaking, reading, and writing. Completion of the course with a grade of C- or better will satisfy the foreign language requirement of the B.A. degree. Students who have successfully completed FRENCH 2115A, FRENCH 2115B, and FRENCH 2115C may advance to FRENCH 2170 and FRENCH 2180.

**FRENCH 2170 Intermediate French Language and Culture: 3 semester hours**

Prerequisites: FRENCH 2101 or equivalent. This course will help students advance in their development of the four language skills through meaningful communicative interaction. Students will further advance their understanding of Francophone culture. This course may be taken concurrently with FRENCH 2180.

**FRENCH 2180 Readings in French: 3 semester hours**

Prerequisites: FRENCH 2101 or equivalent. This course will introduce students to a variety of literary and non-literary texts in French. This course may be taken concurrently with FRENCH 2170.

**FRENCH 2190 Special Readings in French: 1-3 semester hours**

Prerequisite: FRENCH 2101 and consent of the department. Independent study on mutually acceptable topics through readings, reports, and conferences.

**FRENCH 2199 Special Topics: Language Immersion: French: 1-3 semester hours**

Prerequisite: FRENCH 2101 or consent of instructor. Faculty-led experience designed specifically to enhance acquisition of the target language and culture. This course may be repeated for credit provided that the topic is different.

**FRENCH 3199 Special Topics: Language Immersion in French: 1-3 semester hours**

Prerequisites: Consent of the instructor. Study abroad experience designed specifically to enhance acquisition of the target language and culture. This course may be repeated for credit provided that the topic is different.

**FRENCH 3200 French Grammar in Review: 3 semester hours**

Prerequisites: FRENCH 2170 or FRENCH 2180. This course is designed to improve students' linguistic accuracy and ability to communicate clearly through study and practice of forms and structures of the French language. Students will analyze language and structures from a variety of authentic materials from French and Francophone cultures, with an emphasis on writing.

**FRENCH 3205 French for Professional Communication: 3 semester hours**

Prerequisites: FRENCH 2170 and FRENCH 2180. This course teaches practical applications of French for professional communication, including conventions of correspondence, business etiquette, and travel.

**FRENCH 3210 Introduction to French and Francophone Studies: 3 semester hours**

Prerequisites: FRENCH 2170 and FRENCH 2180. This course focuses on the acquisition of essential terms and strategies for academic oral and written communication through the exploration of a selection of authentic materials from French and Francophone cultures. Topics may vary, and course may be repeated for credit if topics are different.

**FRENCH 3211 Contemporary French Culture: 3 semester hours**

Prerequisites: FRENCH 2170 and FRENCH 2180. Aspects of contemporary French culture, including history, geography, education, politics, and gastronomy, studied through a variety of authentic cultural materials.

**FRENCH 3280 Introduction to French Literature: 3 semester hours**

Prerequisites: FRENCH 2170 and FRENCH 2180. This course is designed to acquaint students with French literature from the Middle Ages through the present.

**FRENCH 3290 Special Readings: 1-3 semester hours**

Prerequisite: Consent of department. Independent study through readings, reports and conferences.

**FRENCH 3301 Introduction to Translation in French: 3 semester hours**

Prerequisites: FRENCH 2170 and FRENCH 2180. This course centers on comparative French/English syntax and stylistics. Students will investigate translation techniques and develop skills in translation. Students will work on several translation projects culminating in a portfolio.

**FRENCH 3311 Introduction to Special Topics in French Culture: 3 semester hours**

Prerequisites: FRENCH 2170 and FRENCH 2180. Selected topics in French or francophone culture taught in French. This course may be repeated once for credit provided that the topic is different.

**FRENCH 4301 Methods of Translation in French and English: 3 semester hours**

Prerequisites: FRENCH 3200 or equivalent. In this course students will study comparative French/English syntax and stylistics, investigate translation techniques, and develop skills in translation. Students will also be responsible for a project and a product useful for a community partner.

**FRENCH 4310 Advanced French and Francophone Studies: 3 semester hours**

Prerequisites: FRENCH 3200 or equivalent. This course is designed to further improve students' acquisition of essential terms and strategies for academic oral and written communication through the analysis of a selection of authentic materials from French and Francophone cultures. Students will learn how to conduct research in French cultural studies. Topics may vary, and course may be repeated for credit if topics are different.

**FRENCH 4311 Special Topics in French Culture and Literature: 3 semester hours**

Prerequisites: Three French courses at the 3000 level or above. Selected topics in French/Francophone culture and literature. This course may be repeated for credit provided the topic is different each time.

**FRENCH 4390 Advanced Independent Study: 1-3 semester hours**

Prerequisite: Consent of instructor. Independent study through readings, reports and discussions.

**FRENCH 4394 Advanced Internship in French: 1-3 semester hours**

Prerequisites: FGN LANG 2100, completion of at least two 3000-level classes in French, and consent of the Internship Coordinator in French. This internship course gives students of French the opportunity to use their unique and advanced language skills at an appropriate agency, organization, or business in the St. Louis region and beyond. This course may be repeated for a maximum of 3 credit hours.

**FRENCH 5311 Advanced Topics in French Culture and Literature: 3 semester hours**

Prerequisites: Graduate standing or permission of instructor. Selected topics in French/Francophone culture and literature. This course may be repeated for credit provided the topic is different each time. Students will be expected to conduct an independent research project.

## Gender Studies

### Courses

**GS 2020 Women and Social Movements in U.S. History: 3 semester hours**

Same as: HIST 2020. Prerequisites: Sophomore standing or consent of the instructor. This course explores the role of women in social movements that transformed the United States during the nineteenth and twentieth centuries. It asks broad questions about how ideas, experiences, and laws regarding gender and sexuality have shaped ordinary people's lives, as well as U.S. institutions, and have been touchstones for social change movements. It considers abolitionism, suffrage, progressive reforms, labor, civil rights, and second wave feminism, among other movements.

**GS 2066 Women and Gender in African History: 3 semester hours**

Same as HIST 2066. Using documentaries, popular culture, graphic histories, and more conventional sources, this course explores the history of Africa, highlighting African women's lives, experiences, and agency, and questioning the application of Western concepts of gender to an African setting.

**GS 2102 Introduction to Gender Studies: 3 semester hours**

Same as SOC WK 2102, HIST 2102, POL SCI 2102, and SOC 2102. This core class is required for all Gender Studies Certificate earners. This class introduces students to cultural, political and historical issues that shape gender. Through a variety of disciplinary perspectives in the humanities, social sciences, and natural sciences, the course familiarizes students with diverse female and male experiences and gendered power relationships.

**GS 2130 Gender and the Military: 3 semester hours**

Same as MVS 2130 and SOC 2802. This course investigates how the military treats gender difference, explores how military culture is defined, and how gender is a socially constructed concept. Topics may include military culture, gender construction, and how gender and sexuality issues affect military readiness and effectiveness.

**GS 2150 Special Topics in Gender Studies: 3 semester hours**

An introduction to a particular topic area in women's and gender studies (topics will be announced prior to registration) drawing on the theories and methods of such disciplines as sociology, psychology, political science, history, philosophy, art history, and others to examine particular aspects of gender in social and cultural life. Course may satisfy the distribution requirement for humanities or social sciences depending on the topic.

**GS 2230 Psychology of Gender: 3 semester hours**

Same as PSYCH 2230. Prerequisites: PSYCH 1003. Evaluation of psychological theories and research regarding physiological, cognitive, and personality gender differences and similarities, gender related problems in adjustment, and gender specific clinical interventions.

**GS 2253 Philosophy and Feminism: 3 semester hours**

Same as PHIL 2253. A critical examination of what various philosophers have said about issues of concern to women. Sample topics include oppression, racism, women's nature, femininity, marriage, motherhood, sexuality, pornography, the ethics of care.

**GS 2290 Gender and the Law: 3 semester hours**

Same as POL SCI 2290. This course examines the ways in which laws and interpretations of laws affect gender equality in the United States. Emphasizing how traditional roles impact both women and men historically and currently, the course highlights major pieces of legislation and court rulings related to employment, economics, education, sexual harassment, pornography, rape, reproductive rights, and domestic relations. The course stresses the impact of federal and state institutions and non-governmental influences on equality. It also addresses gender representation in the legal profession admits effect on judicial decisions. This course satisfies State requirements in American History and Government.

**GS 2380 Politics of Gender in the United States: 3 semester hours**

Same as POL SCI 2380. Prerequisites: POL SCI 1100 or consent of instructor. This course examines the role of gender in political institutions, practices and policy in the United States, past and present. It focuses on various movements for political equality, the relationship between gender and political participation, vote choice, and public opinion, and how legislative, executive, and judicial offices are gendered at the national, state, and local levels.

**GS 3031 History of Women in The United States: 3 semester hours**

Same as HIST 3031. Prerequisites: Junior standing or consent of the instructor. Development of women's economic, political, and social role in the United States with special emphasis on the nineteenth and twentieth centuries; women and work; women and the family; women and reform movements; women and education; feminist theories and activists; images of women.

**GS 3224 Families in Global Perspective: 3 semester hours**

Same as SOC 3224. Prerequisites: SOC 1010 or consent of instructor. This course presents research from the fields of demography, sociology, economics, and public policy in order to develop a broader understanding of the causes and consequences of population aging, one of the major demographic changes faced by social institutions worldwide. Attention to the global diversity of human experiences by age, gender, socioeconomic status.

**GS 3232 Psychology of Trauma: 3 semester hours**

Same as PSYCH 3232. Prerequisites: PSYCH 1003. This course examines responses to potentially traumatic events (e.g., child abuse and neglect, physical and sexual assault, intimate partner violence, community and gun violence, war, natural disasters). Trauma exposure, posttraumatic growth, the development of trauma-related difficulties including PTSD, assessment and intervention are examined with attention to gender, cultural and lifespan issues.

**GS 3243 Marriage, Family, and Kinship: 3 semester hours**

Same as ANTHRO 3243 and SOC 3243. Prerequisites: ANTHRO 1019, SOC 1010, or consent of the instructor. This course will examine will examine the construction of kinship systems, marriages, families and other forms of intimate relationships from anthropological and sociological perspectives. The cross-cultural structure of this class will incorporate global case studies, including U.S. and European marriage and family structures. Students will have the opportunity to explore topics including love, dating, cohabitation, kinship calculation, alternative lifestyles, and divorce.



**GS 3300 The Social Construction of Aging and Ageism: 3 semester hours**

Same as SOC 3300 and GERON 3300. This course examines perspectives of age, aging, and ageism using several perspectives: the theory of social construction and the frameworks of essentialism and intersectionality. The materials, discussions, and assignments in this course will familiarize and provide students with tools to investigate age and ageism in a complex, multidimensional manner. The overarching focus of this course is located in the tension with the "nature versus nurture" debate, paralleling nature with essentialist ideas and nurture with social constructionism. Ideas, conceptions, attitudes, and understandings of age within the media, family, medical community, and other institutions will be investigated as biological and/or a development of society in effort to perpetuate social control, organization, and power dynamics. Through research, fiction and non-fiction work, creative assignments, and theoretical texts, students will approach the following questions: How do we value lived-experiences? How might situated knowledge affect social constructions of aging and ageism? What evidence is provided toward age and/or ageism as an essential or socially constructed outline within society? How are socially constructed ideas developed and perpetuated? How might one affect change in an essentialist and/or socially constructed society?.

**GS 3350 Special Topics in Gender Studies: 3 semester hours**

Prerequisite: GS 2102 or consent of instructor. Special topics in women's and Gender Studies. Topics vary by semester.

**GS 3352 Independent Studies in Gender Studies: 1-3 semester hours**

Prerequisites: Junior standing; two courses in Women's and Gender Studies, including GS 2102; and consent of the instructor and the Institute. Directed independent work in selected women's and gender studies topics through readings, research, reports and/or conferences. Course may satisfy the distribution requirement for the humanities, social sciences, or math/science depending on topic.

**GS 3700 Diversity and Social Justice: 3 semester hours**

Same as SOC WK 3700. Prerequisites: PSYCH 2250 or SOC 2160; and SOC WK 3100 taken prior or concurrently. Analyzes the structure, dynamics, and consequences of social and economic injustice, and the impact on diverse groups in American society. Examines theoretical models and practice principles for work with diverse groups.

**GS 4100 Introduction to Feminist and Gender Theory: 3 semester hours**

Same as SOC 4100. Prerequisites: GS 2102. This class serves as an initial intellectual investigation into gendered ideologies (such as the effects of race, ethnicity, nationality, socioeconomic class, sexuality, and religion) and functions as a bridge to later advanced gender theory and methods courses. Topics include interdisciplinary feminist theories (with a focus on gender equality), including masculinity theory, queer theory, muted group theory, and other evolving frameworks.

**GS 4320 Gender, Sexuality and Aging: 3 semester hours**

Same as GERON 4320. Prerequisites: Junior/senior undergraduate or graduate standing, or permission of the instructor or program director. This course examines advancing age through a gender lens. Men and women experience aging differently based on a host of genetic, biological, psychological, sociocultural and personal identity factors. This course challenges students to consider aging from various perspectives, including cultural expectations and norms, couple and family relationships, health and function, work life and retirement, sexuality, sexual orientation, gender identity, concerns of LGBT elders, and veterans' issues.

**GS 4325 Gender, Crime and Justice: 3 semester hours**

Same as CRIMIN 4325 and SOC 4325. Prerequisites: CRIMIN 1110, CRIMIN 1120, CRIMIN 2130, CRIMIN 2210, CRIMIN 2220, ENGL 3100 or consent of instructor. Analysis of the role of gender in crime and in the justice system. Emphasis on gender differences in crime commission, criminal processing, and the employment of women in criminal justice agencies. Fulfills criminology diversity requirement.

**GS 4330 Violence Against Women: 3 semester hours**

Same as CRIMIN 4330. Prerequisites: Junior Standing, CRIMIN 1110, CRIMIN 1120, CRIMIN 2130, CRIMIN 2210, CRIMIN 2220, and ENGL 3100, or consent of instructor. This course examines the nature, extent, causes and consequences of various types of violence against women, including rape, sexual assault, stalking, and intimate partner violence. Criminal justice policy and practice regarding violence against women are also examined.

**GS 4335 Gender and Body Image in Media and Culture: 3 semester hours**

Prerequisites: GS 2102, GS 4100, and six additional hours of GS courses. Through the lens of feminist and gender theory, this course engages students in conversations pertaining to gender, media, body image, and culture. Students will read and analyze fiction and non-fiction texts in order to realize the multidisciplinary of gender and body image as themes and motifs. Students are required to participate in Service-Learning in order to deepen their understanding of how these issues affect day-to-day lives within their communities.

**GS 4350 Special Topics in Gender Studies: 3 semester hours**

Prerequisites: GS 2102 or consent of instructor. Special topics examined from a gender perspective in the fields of anthropology, art history, criminology, economics, English, foreign language, history, philosophy, political science, psychology, social work, sociology, business, or others. Topics and departments vary by semester. Course may be repeated by permission of Director of the Center.

**GS 4352 Independent Study in Gender Studies: 1-3 semester hours**

Prerequisites: GS 2102 or consent of instructor. Independent, directed readings and research in a women's gender related topic, to be determined in consultation with instructor.

**GS 4353 Internship in Gender Studies: 3 semester hours****GS 4360 Sociology of Minority Groups: 3 semester hours**

Same as SOC 4360. Prerequisites: SOC 1010 and junior standing or consent of instructor. The study of dominant-subordinate group relations. Religion, ethnicity, race, and gender as factors in the unequal distribution of power.

**GS 4452 Feminism and Science: 3 semester hours**

Same as GS 4452. Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. This course will explore major themes and issues in feminist science scholarship, a body of research that focuses on the relationship between science and gender. Feminist research in the philosophy and history of science, and in the biological sciences, are emphasized. Issues include: the nature of objectivity, evidence, and truth; the factors that contribute to the acceptance or rejection of research hypothesis and theories; the nature and consequences of science's cognitive authority; and the relationship between science and values.



**GS 4520 *The Aging Body*: 3 semester hours**

Same as GERON 4520. Prerequisites: GERON 2170 or SOC 2170 or another introductory course (2000 or higher) in Gerontology, Sociology, Psychology, Social Work, or Nursing; or consent of the instructor. This course focuses on the aging body with respect to health and function. Physiologic and cognitive concerns of older men and women are reviewed. Contextual factors (e.g., relationships, socio-cultural, spiritual, environmental) and issues in service delivery are also addressed.

**GS 4600 *Masculinities*: 3 semester hours**

Same as SOC 4600. Prerequisites: GS 2102 or consent of instructor. This course examines men and masculinities through a critical lens, looking carefully at an institutionalized system of gender relations and practices that is assumed to be a natural phenomenon that is culturally universal. The course explores various masculine behaviors, myths, ideologies, and experiences so that students can consider the relationship between masculine practice and social power and delineate choices for future directions. The course is necessarily interdisciplinary and may utilize tools and methods from the social sciences and the humanities. Satisfies GS gender theory requirement.

**GS 4610 *Intimate Partner Violence*: 3 semester hours**

Same as SOC WK 4610. Prerequisites: SOC WK 3510. This course focuses on theoretical and empirical understanding of domestic violence in US society and social work practice with battered women and their families. It addresses direct services, community organizing, and public policy changes to help end violence against women. Relationships between violence against women and other forms of oppression (e.g., racism, economic exploitation, heterosexism and social class) are explored.

**GS 4920 *Gender, Power, and the Environment*: 3 semester hours**

Prerequisites: GS 2102, or consent of instructor. This course will examine how gendered observations about nature create, support, and/or dispute particular cultural and social attitudes toward the environment. Students will consider debates in feminist pedagogy, ecofeminism, and social constructivism about the relationship of gender to nature.

**GS 4925 *Feminism and Witchcraft*: 3 semester hours**

Prerequisites: GS 2102, or consent of instructor. This class will examine literary and historical treatments of witchcraft through a cross-cultural, feminist theoretical framework. Students will read primary historical documents as well as fictional, dramatic, and poetic representations of witches and witchcraft. The course will consider changing perspectives toward witches in contemporary gender theory, spiritualist discourse and popular media.

**GS 4932 *Female Gothic*: 3 semester hours**

Same as ENGL 4932. Prerequisites: Students must satisfy English prerequisites for 4000-level courses or obtain permission of instructor. The course examines the historical development of the female gothic, a genre which employs narrative strategies for expressing fears and desires associated with female experience. From the late 18th century to the present, we will trace the persistence of the Gothic vision in fiction and film.

**GS 4933 *Female Novel Of Development*: 3 semester hours**

Prerequisites: Students must satisfy English prerequisites for 4000-level courses or obtain permission of instructor. The course covers the development of the female Bildungsroman from the late 18th century to the present. We will consider how temporary and current theories of female development help us read these novels within their particular cultural contexts.

**GS 5320 *Gender and Aging*: 3 semester hours**

Same as: GERON 5320. Prerequisites: Graduate standing or permission of instructor. This course examines advancing age through a gender lens. Men and women experience aging differently based on a host of genetic, biological, psychological, sociocultural and personal identity factors. This course challenges students to consider aging from various perspectives, including cultural expectations and norms, couple and family relationships, health and function, work life and retirement, sexual orientation, gender identity, concerns of LGBT elders, and veteran's issues.

**GS 5350 *Topics in Women's and Gender Studies*: 3 semester hours**

Prerequisites: Graduate standing and at least one Gender Studies course. This course will focus on a particular aspect of gender (to be announced prior to registration) and will draw upon recent theoretical and methodological work from a variety of disciplines.

**GS 5450 *Special Topics In Gender Studies*: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. Special topics at the Graduate level examined from a gender perspective in the field of anthropology, art history, criminology, economics, English, foreign language, history philosophy, political science, psychology, social work, sociology, business, or others. Topics and departments vary by semester.

**GS 5500 *Foundations of Human Behavior in the Social Environment*: 3 semester hours**

Same as SOC WK 5500. Prerequisites: SOC WK 3150 or equivalent or admission to the MSW program. Focuses on theoretical and empirical understanding of human behavior in the social environment using a life-span perspective. Introduces biological, behavioral, cognitive, and sociocultural theories of individuals, families, and small groups, and their implications for the professional social worker's understanding of socioeconomic status, gender, disability, ethnicity, race, and sexual orientation.

**GS 5635 *Social Work Practice with LGBT Populations: Deconstructing the Alphabet Soup*: 3 semester hours**

Same as SOC WK 5635. Prerequisites: SOC WK 5100 and SOC WK 5500 or consent of instructor. This advanced-practice course focuses on developing the knowledge and skills necessary for effective social work practice with LGBT persons, families, and communities. The goal of this course is to facilitate deeper understanding of LGBT identities, relationships, health and mental health challenges, and issues of race, age, religion, spirituality, and class and how these intersect. The course treats lesbian women, gay men, bisexual, and transgender persons as four distinct communities.

**GS 5700 *Diversity, Social Justice and Social Practice*: 3 semester hours**

Same as SOC WK 5700. Prerequisites: Graduate Standing. Analyzes the structure, dynamics, and consequences of social and economic injustice, and the impact on diverse groups in American society. Examines theoretical models and practice principles for work with diverse groups.

**GS 5940 *Seminar in Gender and Literature*: 3 semester hours**

Same as ENGL 5940. Gender studies in literature of different periods, types, and genres; satisfies area requirement (1-6) appropriate to its period, national literature, and genre.

**GS 6350 *Gender, Language and Identity*: 3 semester hours**

Same as TCH ED 6350. Prerequisites: Graduate standing. An interdisciplinary look at the ways gendered and racial identities get developed and shaped through language and culture. Readings will address the complex, yet sometimes invisible, ways that identity, language and gender intersect, creating and assigning roles, responsibilities, and possible selves to individuals and groups in a global world.

**GS 6353 Graduate Internship in Gender Studies: 1-6 semester hours**

Prerequisites: Graduate standing and consent of director. Provides an opportunity for the Graduate Gender Studies student to acquire 'real world' experience working in a non-profit, political, economic, or social service organization with a gender focus.

**GS 6410 Gender, Sexuality, and Mental Health: 3 semester hours**

Same as PSYCH 6410. Prerequisites: Admission to the doctoral program in Clinical Psychology or consent of the instructor. This course will focus on contemporary theory and research on gender and sexuality as they pertain to mental health issues. Gender differences and similarities in the presentation, etiology, and treatment of sexual health problems and other mental illnesses will be discussed.

**GS 6450 Seminar in Gender Studies: 3 semester hours****GS 6452 Special Readings in Gender Studies: 3 semester hours**

## Geography

### Courses

**GEOG 1001 Introduction to Geography (MOTR GEOG 101): 3 semester hours**

An introduction to geography as a social science. The identification and explanation of order in the human landscape. A survey of the social, political, economic, and psychological factors which influence geographic patterns.

**GEOG 1002 World Regions (MOTR GEOG 101): 3 semester hours**

Survey of the major regions of the world. Designed to give the student an awareness of the character of each of these major regions through the interrelationships of the various attributes of place. Each semester the geographic perspective will be applied in greater depth to one significant country such as Afghanistan, Iraq, or North Korea.

**GEOG 2001 Cultural Geography: 3 semester hours**

This course examines the effect of geography on culture and cultural groups. Essential to the geographic perspective is identifying the effect on cultures of the current trend toward increasing globalization. Topics include language, religion, attitudes, and the effect of technology.

The major goals are to increase awareness of the diversity of human cultures and to prepare students for a world of increasing intercultural communication and conflict. Satisfies cultural diversity.

**GEOG 4900 Advanced Readings in Geography: 3 semester hours**

Prerequisite: Consent of instructor. This course will provide a more in-depth analysis of the various factors which influence geographic patterns employing methods appropriate to graduate level instruction. The topic selected will vary from semester to semester. This course may be taken for credit more than once as long as the topic discussed in each semester is different.

## Geology

### Courses

**GEOL 1001 General Geology: 3 semester hours**

This course looks at earth materials and processes, including geological aspects of the resource/energy problem.

**GEOL 1001L General Geology Lab: 1 semester hour**

This geology laboratory involves identification of common rocks and minerals.

**GEOL 1002 Historical Geology: 3 semester hours**

This course is a study of changes in geography, climate, and life through geological time. This study includes the origin of the continents, ocean basins, and mountains in the light of continental drift.

**GEOL 1002L Historical Geology Lab: 1 semester hour**

Prerequisites: GEOL 1002 (may be taken concurrently). This course is a Geology laboratory, which primarily involves the description and identification of fossils.

**GEOL 1053 Oceanography (MOTR PHYS 110): 3 semester hours**

The atmospheric and ocean circulations; the chemistry and geology of the deep sea; and their effects on the distribution of marine organisms.

## German

### Courses

**GERMAN 1001 Beginning Language and Culture German I: 5 semester hours**

Introduction for students with little or no knowledge of German. Students will develop listening comprehension, speaking, reading, and writing skills and become familiar with the cultures and history of the German-speaking countries. The course is conducted mainly in German. GERMAN 1001, GERMAN 1002, and GERMAN 2101 together form the introductory German language sequence.

**GERMAN 1002 Beginning Language and Culture: German II: 5 semester hours**

Prerequisite: GERMAN 1001 or equivalent. Students will continue to develop listening comprehension, speaking, reading, and writing skills and to become familiar with the cultures and history of the German-speaking countries. The course is conducted mainly in German. GERMAN 1001, GERMAN 1002, and GERMAN 2101 together form the introductory German language sequence.

**GERMAN 2101 Intermediate Language and Culture: German III: 3 semester hours**

Prerequisites: GERMAN 1002 or equivalent. Students will advance their understanding of German-speaking cultures through discussions, readings, and written work. Through meaningful communicative interaction, students will further develop their language skills. The course is conducted mainly in German. GERMAN 1001, GERMAN 1002, and GERMAN 2101 together form the introductory German language sequence. Students who have successfully completed this course may advance to GERMAN 2170 or GERMAN 2180.

**GERMAN 2170 Intermediate Practice in Speaking and Writing German: 3 semester hours**

Prerequisites: GERMAN 2101 or equivalent. In this course students will strengthen their communication skills and grammar in spoken and written German. Students will work with authentic literary texts, news articles, film, and music. GERMAN 2170 and GERMAN 2180 together form the bridge between the introductory German language sequence (GERMAN 1001, GERMAN 1002, and GERMAN 2101) and the advanced culture and literature courses. The course is conducted in German.

**GERMAN 2180 Intermediate Readings in German: 3 semester hours**

Prerequisites: GERMAN 2101 or equivalent. In this course students will strengthen their communication skills and grammar in spoken and written German. Students will read and discuss authentic German texts. GERMAN 2170 and GERMAN 2180 together form the bridge between the introductory German language sequence (GERMAN 1001, GERMAN 1002, and GERMAN 2101) and the advanced culture and literature courses. The course is conducted in German.

**GERMAN 2190 Intermediate Independent Study: 1-3 semester hours**

Prerequisite: GERMAN 2170 and GERMAN 2180, and consent of instructor and department. In consultation with the instructor, students undertake independent work to further develop intermediate German language skills and to deepen their knowledge of culture and history. The course is conducted in German.

**GERMAN 2199 Special Topics: Language Immersion: 1 semester hour**

Prerequisites: GERMAN 1002. Faculty-led experience designed specifically to enhance acquisition of German language and culture. This course may be repeated for credit if the topics vary. The course is conducted in German.

**GERMAN 3202 Introduction to German Film: 3 semester hours**

Prerequisite: Two years of college German or equivalent. Viewings and critical analysis of selected films produced in the German language. The course is conducted in German.

**GERMAN 3208 The German-Speaking Countries in the Modern World: 3 semester hours**

Prerequisite: Two years of college German or equivalent; GERMAN 2170 or equivalent. A critical examination of issues in the culture and politics of the German-speaking countries since 1945 through a variety of media. The course is conducted in German.

**GERMAN 3210 German Culture and Civilization: 3 semester hours**

Prerequisite: Two years of college German or equivalent. A survey of the development of German culture and civilization and the emergence of a German identity. The course is conducted in German.

**GERMAN 3211 Topics in German Culture: 3 semester hours**

Prerequisites: Two years of college German or equivalent. Discussion of significant topics in German culture. This course may be repeated for credit if the topics vary. The course is conducted in German, or in English when cross-listed with another department.

**GERMAN 3290 Advanced Independent Study I: 1-3 semester hours**

Prerequisite: GERMAN 3201, GERMAN 3202, GERMAN 3208, GERMAN 3210, and consent of instructor and department. In consultation with the instructor, students undertake independent work to transition from intermediate to advanced German language skills and to deepen their knowledge of culture and history. The course is conducted in German.

**GERMAN 4311 Special Topics in German Culture: 3 semester hours**

Prerequisites: At least two 3000 level German courses or consent of instructor and department. Discussion of significant topics in German culture. This course may be repeated for credit if the topics vary. The course is conducted in German, or in English when cross-listed with another department.

**GERMAN 4390 Advanced Independent Study II: 1-3 semester hours**

Prerequisite: GERMAN 3201, GERMAN 3202, GERMAN 3208, and GERMAN 3210, and consent of instructor and department. In consultation with the instructor, students undertake independent work to further develop advanced German language skills and to deepen their knowledge of culture and history. The course is conducted in German.

**GERMAN 4394 Advanced Internship in German: 1-3 semester hours**

Prerequisites: FGN LANG 2100, completion of at least two 3000-level classes in German, and consent of the Internship Coordinator in German. This internship course gives students of German the opportunity to use their unique and advanced language skills at an appropriate agency, organization, or business in the St. Louis region and beyond. This course may be repeated for a maximum of 3 credit hours.

**GERMAN 5311 Advanced Topics in German Culture: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor and department. Discussion of significant topics in German culture. This course may be repeated for credit if the topics vary. The course is conducted in German, or in English when cross-listed with another department.

## Gerontology

### Courses

**GERON 2003 Careers in Health and Medicine: 1 semester hour**

Same as ANTHRO 2003, INTDSC 2003, SOC 2003. In this course, students will learn about occupations in such fields as medicine, the allied health professions, health non-profit organizations, and global healthcare delivery. Students will understand the education and skills necessary for various careers and for application to medical, professional, and graduate schools, and will become familiar with majors, certificates and minors that are available at UMSL. They will learn about employment opportunities in the healthcare industry in the St. Louis metropolitan area, and will be introduced to members of the local community who give guest lectures. Students will gain practical experience by shadowing a healthcare professional in their job.

**GERON 2170 Aging in America: Concepts & Controversies: 3 semester hours**

Same as SOC 2170. This course examines the major theoretical and service issues connected to the study of older adults and their families, using multidisciplinary perspectives. Students are provided with an introduction to the field of aging through an examination of current social issues and controversies. This course emphasizes student involvement through class discussion and applied activities, and is appropriate for students in the arts and sciences, business, communication, education, and nursing.

**GERON 2220 Special Topics in Gerontology: 3 semester hours**

Selected topics dealing with various aspects of gerontology. The specific contents of this course will vary from semester to semester. The course may be repeated with permission from the Gerontology director.

**GERON 2256 Bioethics: 3 semester hours**

Same as PHIL 2256. An examination of ethical issues in health care practice and clinical research and in public policies affecting health care. Topics include: abortion, euthanasia, health care, experimentation, informed consent and the right to health care.

**GERON 3212 Medical Anthropology: 3 semester hours**

Same as ANTHRO 3212. Prerequisites: ANTHRO 1011 or GERON 2170 or PSYCH 1003 or SOC 1010 or consent of instructor or program director. An examination of the growing interaction between anthropology and medicine, and the increasing use of anthropologists in medical and health-care settings. In addition to teaching current theory in medical anthropology, the course focuses on anthropologically-based skills essential to those working in health-related fields.

**GERON 3215 Aging, Culture & Globalization: 3 semester hours**

Same as ANTHRO 3215 and SOC 3215. Prerequisites: ANTHRO 1011 or GERON 2170 or PSYCH 1003 or SOC 1010 or consent of instructor or program director. This course examines the wide-ranging variability in the roles of older people across different cultures and the effects these have on older people, their families, and their societies.



**GERON 3280 Psychology of Death and Dying: 3 semester hours**

Same as PSYCH 3280. Prerequisite: PSYCH 1003 or consent of the instructor. An exploration of end-of-life issues integrating the scholarly, social, and individual dimensions of death and dying. This course provides a solid grounding in theory and research, as well as practical application to students' lives.

**GERON 3300 The Social Construction of Aging and Ageism: 3 semester hours**

Same as SOC 3300 and GS 3300. This course examines perspectives of age, aging, and ageism using several perspectives: the theory of social construction and the frameworks of essentialism and intersectionality. The materials, discussions, and assignments in this course will familiarize and provide students with tools to investigate age and ageism in a complex, multidimensional manner. The overarching focus of this course is located in the tension with the "nature versus nurture" debate, paralleling nature with essentialist ideas and nurture with social constructionism. Ideas, conceptions, attitudes, and understandings of age within the media, family, medical community, and other institutions will be investigated as biological and/or a development of society in effort to perpetuate social control, organization, and power dynamics. Through research, fiction and non-fiction work, creative assignments, and theoretical texts, students will approach the following questions: How do we value lived-experiences? How might situated knowledge affect social constructions of aging and ageism? What evidence is provided toward age and/or ageism as an essential or socially constructed outline within society? How are socially constructed ideas developed and perpetuated? How might one affect change in an essentialist and/or socially constructed society?.

**GERON 3400 Environment, Society, and Aging: 3 semester hours**

Same as SOC 3400. This course examines the intersection of the environment and human society with an emphasis on aging. Drawing from research in environmental sociology, medical sociology, and gerontology, this course will address the following topics: climate change, natural disasters, community development, food production and distribution, waste and pollution, illness and disease epidemiology, and health and well-being.

**GERON 4170 Aging in America: Life Course, Health Care and Socioeconomic Perspectives: 3 semester hours**

Prerequisites: Junior standing or consent of the instructor. This advanced course focuses on aging in North America from three primary perspectives: (1) the life course and trajectories of personal aging; (2) systems and policies associated with health care; and (3) socioeconomic aspects, including workforce issues and retirement. Human aging is relevant to most professional disciplines and areas of study; thus the course emphasizes a multidisciplinary understanding and encourages integrative thinking, discussion and writing.

**GERON 4200 Gerontological Practice with Aging Veterans: 3 semester hours**

Prerequisites: Junior/senior undergraduate or graduate standing, or permission of the instructor or program director. Aging veterans often demonstrate different social, health and psychological support needs. This practice-oriented course reviews and frames gerontological interventions for different veteran subpopulations, including those residing at home, in senior housing, and under Veterans Administration (VA) care. The impacts of age cohort, gender, service during war or peacetime, post-traumatic stress status, substance abuse and addiction, military culture, and pension and service-connected compensation are studied. Special opportunities and challenges for social service providers in the VA health system are also reviewed.

**GERON 4320 Gender, Sexuality and Aging: 3 semester hours**

Same as GS 4320. Prerequisites: Junior/senior undergraduate or graduate standing, or permission of the instructor or program director. This course examines advancing age through a gender lens. Men and women experience aging differently based on a host of genetic, biological, psychological, sociocultural and personal identity factors. This course challenges students to consider aging from various perspectives, including cultural expectations and norms, couple and family relationships, health and function, work life and retirement, sexuality, sexual orientation, gender identity, concerns of LGBT elders, and veterans' issues.

**GERON 4361 Social Gerontology: 3 semester hours**

Same as SOC 4361. Prerequisites: Junior standing or consent of instructor. This course examines a variety of topics related to gerontology including sociological theories of aging, technological and social change and its effects on the environment of older people, and prejudice and discrimination against the elderly.

**GERON 4376 Mental Health and Aging: 3 semester hours**

Same as PSYCH 4376. Prerequisites: PSYCH 2245 or consent of instructor. This course provides a survey of theory and research in mental health issues for older populations, focusing on psychological and social aspects of mental health and functioning. The course details approaches to understanding healthy aging, along with the prevalence, etiology, assessment and treatment of psychological disorders in older adults. The course also provides an overview of health care and community-based delivery systems for behavioral health, and allows students to explore information about careers in aging.

**GERON 4400 Social & Community Services for an Aging Population: 3 semester hours**

Same as SOC 4400. Prerequisites: GERON 2170 / SOC 2170 or consent of the instructor. This service-learning course is designed for students interested in working with and for the benefit of older adults in various settings. Students attend classes on campus and participate in defined volunteer placements with local agencies (e.g., St. Louis County Older Residents Program).

**GERON 4430 Ethnicity, Dementia and Caregiving: 3 semester hours**

Same as SOC 4430. Prerequisites: GERON 2170 or SOC 2170 or 3000 level GERON, SOC, PSYCH or ANTHRO course or consent of instructor. This course examines the interaction between sociocultural factors and the experience of dementia, both for the person who has dementia and their family caregivers. Students will focus on the importance of cultural competence in the provision of health and social services to dementia patients and family caregivers from diverse national and ethnic backgrounds.

**GERON 4445 Aging, Chronic Illness & Disability: 3 semester hours**

Prerequisites: Junior/senior undergraduate or graduate standing, or permission of the instructor or program director. This course will examine the consequences of chronic illness and disability in aging for individual well-being, social roles, family dynamics, and the functioning of society. Chronic illness and disability are presented as medical concerns that have psychosocial and functional impacts for both individuals with these conditions and their caregivers. These impacts are shaped by the changing age structure of society. This course also reviews typologies of chronic illness and relevant state and federal policies intended to support both adults with chronic illness and disability and caregivers. Although the main focus of the course is on aging in the US, population aging is a worldwide phenomenon and global comparisons will be included.

**GERON 4490 Directed Readings: 1-3 semester hours**

Prerequisites: Consent of instructor. Directed reading and research or field work. May be repeated for a maximum of three hours.



**GERON 4500 Physiology & Pharmacology of Aging: 3 semester hours**

Same as PSYCH 4500. Prerequisites: Junior/senior undergraduate or graduate standing, or consent of the instructor or program director. This course examines functional health in advancing age and the impacts of common disease processes on the aging body. Symptom presentations, diagnostic considerations, treatment and management issues are discussed. A special emphasis is placed on pharmacology, especially how the aging body responds to different medication types, risks for drug-drug interactions, and challenges associated with polypharmacy. The course emphasizes a 'whole person' approach to health and well-being, and targets the learning needs of those wishing to work with older adults in health, social and community service settings.

**GERON 4520 The Aging Body: 3 semester hours**

Same as GS 4520. Prerequisites: GERON 2170 or SOC 2170 or another introductory course (2000 or higher) in Gerontology, Sociology, Psychology, Social Work, or Nursing; or consent of the instructor. This course focuses on the aging body with respect to health and function. Physiologic and cognitive concerns of older men and women are reviewed. Contextual factors (e.g., relationships, socio-cultural, spiritual, environmental) and issues in service delivery are also addressed.

**GERON 4620 Dying, Grief & Death in Older Adulthood: 3 semester hours**

Prerequisites: Junior/senior undergraduate or graduate standing, or permission of the instructor or program director. This course examines trajectories to death in older age, the dying process, influences of medical and aging-related conditions, euthanasia and suicide, life extension and longevity, personal beliefs and existential responses, how individuals and families cope, ethical concerns, and strategies for supportive intervention. Topics are addressed from clinical, supportive care, and interdisciplinary perspectives. Ideal for those planning to work with older adults in counseling, health care, hospice, and/or community support settings.

**GERON 4680 Introduction to Gerontological Practice: 3 semester hours**

Same as SOC WK 4680. Prerequisites: Junior/senior undergraduate or graduate standing, or permission of the instructor or program director. This course introduces key concepts and practices in the evaluation and care of older adults. It is intended for students considering aging-focused careers in the social service or healthcare fields. Topics include developmental and health-related theories of aging, functional and psychosocial aspects of aging, working with older adults in various service settings, multi and interdisciplinary team approaches, and basic standards of professional conduct that apply across professions.

**GERON 4720 Ageless Arts: Creativity in Later Life: 3 semester hours**

Same as SOC 4720. Prerequisites: Junior/senior undergraduate or graduate standing, or permission of the instructor or program director. This course examines how the lives of older adults are enriched through engagement in artistic, creative activities. Key approaches to creative aging are explored, with emphasis on benefits to physical health, emotional well-being, and interpersonal connection. Influencing factors are examined, including ageism, generativity, family and personal networks, environmental resources, sensory and cognitive deficits, and other health and physical changes of aging. The works of historical and current artists - painters, novelists, filmmakers, playwrights, musicians and others - are surveyed with an emphasis on products from later in the life course. Finally, the therapeutic benefits of creativity are examined through evidence-based research and the personal narratives of successful senior artists.

**GERON 5361 Advanced Social Gerontology: 3 semester hours**

Prerequisites: Graduate standing. An examination of sociological theories of aging, technological and social change and its effects on the environment of older people, and prejudice and discrimination against the elderly.

**GERON 5376 Psychopathology and Aging: 3 semester hours**

Prerequisites: Graduate standing. Recent theory and research in mental health issues for older populations. The primary focus is on major psychological disorders prevalent among older adults and in assessment and treatment approaches for aging populations.

**GERON 5400 Aging and Environmental Change: 3 semester hours**

Prerequisites: Graduate standing. This course examines how changes in the natural environment affect aging and the life course. This course will draw from research in gerontology and related disciplines to explore how changes in the climate, urban and rural landscapes, food production and consumption, and waste and pollution impact health and illness in later life with a focus on the implications of a changing environment for gerontological policy, industry, and clinical practice.

**GERON 5420 Research Methods and Analysis I: 3 semester hours**

Prerequisites: Admission to the MSG Program or graduate standing. The first of a two-course sequence designed to provide students with the knowledge base and skills for using the scientific method to advance gerontological knowledge, theory and evidence-based practice. Focuses on research methods employed in aging-related studies, with a special emphasis on the critical evaluation of academic studies and the evidentiary basis of key findings. Covers quantitative and qualitative approaches, research design, sampling procedures, measurement, use of results, impact of research, and ethical considerations.

**GERON 5440 Sociocultural Aspects of Aging: 3 semester hours**

Same as ANTHRO 5440. Prerequisites: Graduate status or consent of the instructor or program director. Focuses on the variety of solutions encountered in different sociocultural contexts for dealing with the problems, challenges and opportunities of growing old. It is organized around topics that are of concern to both anthropology and social gerontology: the status of the aged, intergenerational relations, aging in modernizing societies, ethnic dimensions of aging in complex societies, health in later life, death and dying. Both in-depth case studies and cross-cultural comparisons are examined in an effort to arrive at a culturally informed assessment of factors affecting aging and the aged in the United States.

**GERON 5450 Research Methods and Analysis II: 3 semester hours**

Prerequisites: GERON 5420 or equivalent. An advanced course focused on the framing and analysis of qualitative and quantitative data to advance gerontological knowledge, theory, and evidence-based practice. Students learn to use and interpret various statistical procedures for analyzing qualitative and quantitative data (including bivariate and multivariate analyses). Students apply various analytic techniques using computer software applications.

**GERON 6120 Theory and Practice with Older Adults: 3 semester hours**

Same as SOC WK 6120. Prerequisites: Graduate standing. This course examines theory and empirically-based assessment and intervention models for work with older adults. Topics include the differences between life circumstances of older adults and younger adult populations; how ethnicity, gender, social class, and sexual orientation intersect with age and create special intervention issues; discussion of ethical and value issues (e.g. client autonomy, rationing of health care); examination of family and community resources in providing care; interventions with older adults with physical and mental disabilities; and older adults in residential settings.

**GERON 6441 Aging and Health Behavior: 3 semester hours**

Prerequisite: Graduate standing. This course examines sociocultural influences on health care practices of older adults. The role of social support and other social resources in the health behavior of older adults is emphasized. Topics include self care decisions, formal service utilization, family caregiving, and planned interventions for older adults.

**GERON 6443 Health Care Policy: 3 semester hours**

Same as P P ADM 6430, POL SCI 6443, and SOC WK 6443. Prerequisites: Graduate standing or consent of instructor. Survey course examining current issues in health policy that face the nation. Policies are placed in a historical context to show how issues have been influenced by different political and economic conditions. Secondary consequences and limitations of current trends in health policy are explored.

**GERON 6444 Seminar in Public Policy and Aging: 3 semester hours**

Same as P P ADM 6444, and POL SCI 6444. The study of specialized issues and methods related to federal, state, and local policies that affect the elderly. Potential policy areas to be covered include: housing, taxation, mental health, transportation, etc. May be repeated for credit, provided the subject matter is different.

**GERON 6450 Gerontological Assessment: 3 semester hours**

Same as SOC WK 6450. Prerequisite: Graduate standing. This course provides an overview of psychosocial assessment with older adults and their family caregivers. Major areas of gerontological assessment practice are considered, including dementia, mood disorders, suicide, grief, alcoholism, elder abuse/neglect, family caregiving, and interdisciplinary team issues.

**GERON 6490 Directed Study: 1-3 semester hours**

Prerequisite: Consent of instructor. Designed to give the student an opportunity to pursue a more in-depth study of a problem area in gerontology than is normally covered in more formal courses. May be repeated for a total of six credit hours.

**GERON 6495 Practicum in Gerontology: 3 semester hours**

This course provides supervised work experience in an agency that serves older adults. Students are required to complete a minimum of 150 clock hours at the practicum site.

**GERON 6496 Advanced Practicum in Gerontology: 3 semester hours**

Prerequisites: GERON 6495 and consent of instructor. This course provides advanced practicum experience beyond GERON 6495. Students must complete a minimum of 150 clock hours of supervised field work (service or research) with older adults.

**GERON 6497 Interdisciplinary Geriatric Care: 3 semester hours**

Prerequisites: Consent of instructor. Interdisciplinary approaches that address the medical, social, instrumental and functional needs of older adults will be examined. Information about geriatric care management and social issues affecting the well-being of older adults will be provided. Clinical, theoretical, and educational perspectives will be presented.

**GERON 6498 Advanced Seminar in Gerontology: 3 semester hours**

Prerequisite: Graduate standing. This course will provide in-depth analysis of specialized topics in gerontology which are not covered in required courses. (Course may be repeated for a maximum of nine credits, assuming topics are different.).

**GERON 6500 Practicum in Gerontological Research: 3 semester hours**

Prerequisites: GERON 6495 and consent of the instructor. A supervised social science research experience involving a combination of two or more of the following activities: literature review, hypothesis generation, study design and proposal, IRB application, participant recruitment, data collection, data management, data analysis, and report/article generation.

**GERON 6510 Directed Research in Aging: 1-3 semester hours**

Prerequisites: Consent of the instructor. Designed to give the student an opportunity to explore a question of interest from a qualitative and/or quantitative research perspective. This supervised experience may include one or more of the following activities (depending on enrolled hours): literature review, hypothesis generation, study design and proposal, IRB application, participant recruitment, data collection, data management, data analysis, and report/article generation.

## Health and Physical Education

### Courses

**HLTH PE 3275 Psychological Aspects of Physical Education: 3 semester hours**

Prerequisite: PSYCH 1003 or ED PSY 2212. A study of the psychological processes underlying the learning and performance of motor skills and participation in physical activity. Covers how humans learn skilled actions, how principles of motor performance and learning can be applied to teaching, and how teachers can create positive motivational climates.

**HLTH PE 3277 Foundations of Health and Physical Education Programs: 3 semester hours**

Prerequisites: Junior standing. A study of the historical, philosophical, and cultural influences in education and issues related to health and physical education programs.

**HLTH PE 3280 Human Anatomy and Physiology: 4 semester hours**

Prerequisite: BIOL 1012 and BIOL 1013 or consent of instructor, junior standing. Study of the basic aspects of human anatomy and physiology and their relationship to concepts in sport and physical activity. Two hours laboratory per week.

**HLTH PE 3284 Physiology of Human Exercise: 3 semester hours**

Prerequisite: HLTH PE 3280. Study of the physiological effects of human exercise, training, and sport activities upon the human body; emphasis also given to factors of work, fatigue, nutrition, gender, and environment.

**HLTH PE 3285 Safety and Emergency Care for Health and Physical Education: 3 semester hours**

Prerequisites: HLTH PE 3280 or equivalent. A study of safety issues relating to health and physical education, including prevention and treatment of physical activity-related injuries. Emphasis will be given to emergency responses, including CPR certification.

**HLTH PE 3380 Introduction to Nutrition for Health and Performance: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. Study of human nutrition and its relationship to healthy lifestyles and exercise performance. Includes study of nutrients, food sources, healthy weight and body composition, energy intake and expenditure, fluid and electrolyte balance, and ergogenic aids.

**HLTH PE 3432 Teaching Health and Physical Education in Elementary Schools: 3 semester hours**

Prerequisites: Sophomore standing. This course covers health and physical education programs in elementary schools. Emphasis is given to the teacher's roles and responsibilities as they relate to the content and services found in the coordinated school health program.

**HLTH PE 3433 Health Education Concepts and Skills: 3 semester hours**

Prerequisites: Junior standing. A study of health concepts and lifestyle skills found in K-12 health education strands, including mental health, sexuality education, drug education, nutrition, personal health and disease prevention.

**HLTH PE 3434 Teaching of Health and Wellness: 4 semester hours**

Prerequisites: HLTH PE 3280 or the equivalent, or consent of the instructor. Study of concepts and issues related to health and active lifestyle behavior development, with emphasis given to the design and preparation of appropriate instructional experiences and techniques.

**HLTH PE 4989 Practicum I: Site-Based Experience in Physical Education: 3 semester hours**

Prerequisites: Accepted Practicum I application. This course is a two-day per week intensive, collaborative professional experience in diverse school settings with students, emphasizing improving K-12 student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Course includes mandatory on-site and on-campus seminars, which could be scheduled outside of normal class time. Applicable methods course assignments will be completed in Practicum I. Students are required to take the appropriate DESE-mandated content exam during Practicum I.

**HLTH PE 4990 Practicum II: 12-Week Site-Based Experience in Health and Physical Education: 9 semester hours**

Prerequisites: Successful completion of Practicum I requirements. This course is a five-day per week intensive, collaborative professional experience in diverse school settings with students, emphasizing improving K-12 student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Course includes mandatory on-site and on-campus seminars, which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum II. This course must be taken concurrently with HLTH PE 4992.

**HLTH PE 4991 Practicum II: Health and Physical Education Grades 5-9: 6 semester hours**

Prerequisites: HLTH PE 4989. Clinical teaching experiences in Health and Physical Education settings in schools under university and school supervision. Required of all majors in Physical Education receiving certification in Health Education and Physical Education, K-9. Not available for graduate credit.

**HLTH PE 4992 Practicum II: 4-Week Site-Based Experience in Health and Physical Education: 3 semester hours**

Prerequisites: Successful completion of Practicum I requirements. This course is a five-day per week intensive, collaborative professional experience in diverse school settings with students, emphasizing improving K-12 student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Course includes mandatory on-site and on-campus seminars, which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum II. This course must be taken concurrently with HLTH PE 4990.

**HLTH PE 5989 Practicum I: Site-Based Experience in Health and Physical Education: 2 semester hours**

Prerequisites: Graduate standing. This course is a one or two-day per week intensive, collaborative professional experience in diverse K-12 educational settings. The course emphasizes improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. The course includes mandatory on-site and on-campus seminars which may be scheduled outside of normal class time. Concurrent Level III methods course assignments may be completed in Practicum I. The Missouri Content Exam (MOCA) is an entrance requirement into the Teach in 12 Program, and it must be successfully passed prior to a Practicum I placement.

**HLTH PE 5991 Practicum II: Site-Based Experience in Health and Physical Education, 12 Week Placement: 6 semester hours**

Prerequisites: HLTH PE 5989. This is an intensive, supervised clinical teaching experience, 4 or 5 days per week in K-12 school settings for a minimum of 12 weeks, with seminar included. Teacher candidates will improve student learning through collaboration, designing instruction and developing lesson plans, and teaching small and whole groups.

**HLTH PE 5992 Practicum II: Site-Based Experience in Health and Physical Education, 4 Week Placement: 2 semester hours**

Prerequisites: HLTH PE 5989. This is an intensive, supervised clinical teaching experiences, 4 or 5 days per week in K-12 school settings for 4 weeks, with seminar included. Teacher candidates will improve student learning through collaboration, designing instruction and developing lesson plans, and teaching small and whole groups.

## Higher Education

### Courses

**HIGHERED 5401 Current Issues in Higher Education: 3 semester hours**

Prerequisites: Graduate standing. Familiarizes student with nature and characteristics of American higher education. Students learn about the structure of higher education, the roles played by the various constituencies, and current issues.

**HIGHERED 5402 Student Affairs Administration: 3 semester hours**

Prerequisite: Graduate standing. A survey course in student personnel administration with an emphasis on understanding the college student and on learning ways to meet both his/her academic and nonacademic needs.

**HIGHERED 6404 Seminar: 1-10 semester hours**

Prerequisite: Graduate standing.

**HIGHERED 6405 Financial Issues in Higher Education: 3 semester hours**

Prerequisite: Graduate standing. Provides an overview of the state/federal funding mechanisms for higher education in the U.S. Addresses practices in budgeting at various types of postsecondary institutions.

**HIGHERED 6406 Governance of Higher Education: 3 semester hours**

Prerequisites: Graduate standing. Concentrates on the study of the unique system of governance in higher education, including faculty, instructional, system, and state governing mechanisms.

**HIGHERED 6408 Legal Issues in Student Affairs: 3 semester hours**

Prerequisite: Graduate standing. Provides an exploration of the legal and philosophical principles that guide decision-making in higher education institutions and the courts. It also includes a detailed, in-depth analysis of legal cases that have an impact on students in private and public two- and four-year colleges and universities in the United States.



**HIGHERED 6409 Critical Issues in Student Affairs: 3 semester hours**

Prerequisite: Graduate standing. Explores the historical development and foundational theories of the student affairs profession. This course also explores the organization and management of programs and services, the formulation of policies that guide student personnel service programs, and the integration of program elements, research, current problems and trends.

**HIGHERED 6410 Ethics in Higher Education Administration: 3 semester hours**

Prerequisites: Graduate standing. Students will examine the historical philosophical foundations of ethics and their implications for faculty, staff and students in the academic workplace.

**HIGHERED 6422 Policy Analysis of Higher Education: 3 semester hours**

Prerequisites: Graduate standing. Introduces students to the analysis of higher education public policy. Includes state and local policy analysis and examination of legislative history of major federal higher education laws.

**HIGHERED 6430 The Community College: 3 semester hours**

Prerequisites: Graduate standing. The purpose of this course is to develop an understanding of the two-year college - its past, present and future. Examines history, operations, funding, internal constituents, curricular mission, societal role, and current issues.

**HIGHERED 6431 Community College Leadership: 3 semester hours**

Prerequisite: Graduate standing. Introduces students to leadership theory and practice and the literature of leadership development. Applies theory and practice to the unique role of the leader in community colleges, including the community college presidency. Particular emphasis is given to the diverse roles expected of the successful leader in today's community college.

**HIGHERED 6432 Current Issues in Community College Education: 3 semester hours**

A review and analysis of current issues affecting community college students, instruction, administration, policy and community relations. HIGHERED 6430, The Community College, is recommended before taking this course for those not currently working in community college settings.

**HIGHERED 6440 Issues in Institutional Research I: 3 semester hours**

Prerequisites: Graduate standing. Provides a history and overview of institutional research in postsecondary education. Other areas of interest include student issues, student outcomes, higher education funding, productivity funding, and legal issues.

**HIGHERED 6441 Issues in Institutional Research II: 3 semester hours**

This course provides the study of key issues in institutional research, including faculty workload and salary, program assessment, fact books, peer institutions, national databases, and strategic planning.

**HIGHERED 6473 Curriculum in Higher Education: 3 semester hours**

Prerequisite: Graduate standing. The development, implementation, and assessment of curriculum in higher education as well as historical and philosophical perspectives; major figures and emerging trends are included.

**HIGHERED 6474 The College Student: 3 semester hours**

Prerequisite: Graduate standing. A comprehensive overview of the theories and research related to college and university student development. Particular attention is given to student demographics, patterns of growth and development, and attitudinal changes.

**HIGHERED 6476 Organization and Administration of Higher Education: 3 semester hours**

Prerequisites: Graduate standing. This course includes the study of missions, governance, and organizational structures of American higher education institutions. Within this context, particular attention is given to administrative roles and responsibilities and issues of leadership.

**HIGHERED 6477 History and Philosophy of American Higher Education: 3 semester hours**

Prerequisite: Graduate standing. This course is a systematic study of the historical and philosophical contexts that have conditioned the evolution of American higher education. Particular attention is given to significant events, trends, and movements within American higher education.

**HIGHERED 6497 Problems: 1-10 semester hours**

Prerequisites: Graduate standing and consent of instructor.

**HIGHERED 6900 Internship: 1-10 semester hours**

Prerequisites: Graduate standing and consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

**HIGHERED 7800 Higher Education Doctoral Seminar: 1-6 semester hours**

Prerequisites: Doctoral standing or consent of instructor. Intensive directed study of selected issues related to the administration of higher education institutions.

## History

### Courses

**HIST 1000 Introductory Topics in History: 3 semester hours**

This course covers various special topics in history to be determined by the field, availability of instructors and interest of students. The course may be repeated for credit with the consent of the instructor.

**HIST 1001 American Civilization to 1865 (MOTR HIST 101): 3 semester hours**

This course considers the development of the Americas and the United States from the pre-Columbian era to the Civil War, with emphasis on the ideas and institutions that shaped U.S. Americans' experiences. Students will work with primary sources and additional materials to deepen understanding of the relationship between the U.S. and the world. Assignments further develop students' written communication skills. Course fulfills American History and Government General Education requirement.

**HIST 1002 American Civilization 1865 to Present (MOTR HIST 102): 3 semester hours**

This course examines the development of the modern United States from Reconstruction through the present. It considers the ideas, institutions, economic and social changes that shaped Americans' experiences. Students work with primary sources and additional materials to deepen understanding of the relationship between the U.S. and the world. The course further develops students' written communication skills. Course fulfills the American History and Government General Education requirement.



**HIST 1003 African American History: 3 semester hours**

This course will selectively survey the experiences of African Americans from the period of the Trans-Atlantic slave trade to the late twentieth century. Topics may include the development of the slave trade and the institutionalization of slavery, slave culture and resistance, the role of African Americans during the Civil War and Reconstruction period, the rise of segregation and the disfranchisement of African Americans, the Depression and WWII eras, and recent protest movements. Course fulfills American History and Government General Education Requirement.

**HIST 1007 Introduction to African and African American Studies: 3 semester hours**

This course draws from history, literature, sociology, art, and economics to survey the impact of African migrations on the Americas. It highlights the movements, conditions, and experiences that have shaped the development of African American history, culture, and society. Course fulfills American History and Government General Education Requirement.

**HIST 1010 U.S. Business History: 3 semester hours**

This course explores key developments in the business and economic history of America from the founding to the present. It offers foundational knowledge of the history of American business, connecting it to key issues in American history.

**HIST 1030 Ancient Greece and the Roman Empire: 3 semester hours**

This course surveys the history of ancient Greece and Rome in the context of the larger Mediterranean world. Topics may include politics and economy, war and society, and culture. The chronological span is from the establishment of the Minoan and Mycenaean civilizations (2000-1500 BCE) to the fall of the Western Roman Empire in the fifth century CE.

**HIST 1031 From the Middle Ages to the Age of Revolutions (MOTR WCIV 101): 3 semester hours**

This course covers the development of western European societies and traditions from the fall of the Western Roman Empire in the fifth century CE, through the Middle Ages to the Renaissance, and the Enlightenment to the end of the French Revolution in 1799. Themes may include politics and economy, war and society, and culture.

**HIST 1032 Topics in European Civilization: 1715 to the Present (MOTR WCIV 102): 3 semester hours**

This course covers the development of western European societies and traditions from 1715 to the present. Themes may include politics and economy, war and society, and culture.

**HIST 1034 Introduction to Ancient Egypt and Its Civilization: 3 semester hours**

Same as ANTHRO 1034. This course will survey ancient Egyptian history and culture from predynastic times to Greco-Roman rule, roughly 3000 BCE to 30 BCE. Students will discuss archaeological sites, mummification, religion, architecture, texts, and more. Through comparing ancient Egyptian culture with our own, students will explore what has changed in the world and what has endured for millennia.

**HIST 1037 The Wonders of Greece: Introduction to Greek History and Culture: 3 semester hours**

Same as ANTHRO 1037. Our democracy and culture have been heavily influenced by Greek civilization. This course will introduce students to the culture and civilization of Greece in order to provide a better understanding of our own society. The course will cover the political and military history, art, literature, philosophy, and science of Greece from prehistoric to modern times, with special emphasis on Greek civilization's enduring democratic and cultural ideals. The course will include screening of films and use of online resources.

**HIST 1041 East Asian Civilization: 3 semester hours**

The development of Asian civilization from earliest times to the Manchu conquest.

**HIST 1043 Topics in East Asian History and Culture: 3 semester hours**

This course introduces students to historical and cultural issues in different areas of East Asia, especially Japan, Korea, and China. Topics may include a survey of history, as well as more specialized areas of politics, culture, literature, art, gender or more contemporary issues. The regional emphasis is determined by the instructor. It may be taken more than once, provided the course topic is different.

**HIST 1062 Modern Africa: From Colonies to Nations: 3 semester hours**

This course uses film, fiction, music, and historical sources to explore the history of twentieth century Africa, focusing on African experiences of the colonial and postcolonial periods.

**HIST 1075 World History to 1500: 3 semester hours**

A survey of the history of humankind to 1500 including the beginnings of civilization Mesopotamia, Africa, Asia and the Americas, the rise of Classical civilizations and the development of major transnational social, economic, political and religious networks.

**HIST 1076 World History Since 1500: 3 semester hours**

A survey of the history of humankind since 1500, emphasizing the growing interdependency of regional economic, political, and social systems. Topics will include imperialism, industrialization, and globalization.

**HIST 1111 Reacting to the Past: 4 semester hours**

Reacting to the Past is a series of historical simulations built around key moments and texts from the past. In each simulation, students are assigned a role and develop that character. The course offers students a rigorous academic experience in which they conduct historical research, speak, and write extensively. Because this course requires extensive writing, it fulfills the requirement for Freshman Composition.

**HIST 1901 Capitalism in American History: 3 semester hours**

Same as POL SCI 1901. This course offers students the opportunity to approach America's political economy with tools different from those offered by more quantitative economic constructs. Students will analyze market processes through a three dimensional approach that focuses not just on market competition but also on relationships of command-the exercise of power in firms, among nations, and between social groups-and on processes of historical change from the late colonial era through the twentieth century.

**HIST 1999 Big History: From the Big Bang to the Present: 3 semester hours**

Same as INTDSC 1999. An introduction to the humanities, social science, and science disciplines through a sweeping overview of natural and human history from the Big Bang to the present. Course will include lectures from faculty in various Arts and Sciences units, films, and group discussions.

**HIST 2000 Selected Topics in History: 3 semester hours**

This course covers various special topics in history to be determined by the field, availability of instructors and interest of students. The course may be repeated for credit with the consent of the instructor.

**HIST 2002 Introduction to Latinx Studies: 3 semester hours**

This course introduces the experiences and conditions of U.S. Latinx of Caribbean, Latin American, and, especially, Mexican descent. Students will examine how people from Hispanic- and Indo-America are both incorporated into American culture, history, and occupational life and often marginalized as either outsiders or foreigners. The course studies how historical forces push and pull people from Latin America to the United States, where they create new U.S. ethnic, racial and local identities. Using films, novels/memoirs, music, and art as windows, students will identify patterns of identity formation, ethnic culture, community politics, labor struggles, and social mobility, and will map the heterogeneous mosaic of Latin American and Caribbean migrations and communities.

**HIST 2004 The Civil War Era: Slavery, Emancipation, and the Greater Reconstruction: 3 semester hours**

Prerequisites: Sophomore standing or consent of instructor. This course examines one of the most significant experiences in U.S. history across three chronological units: American slavery and debates over it; historical explanations for U.S. slavery's demise; and the broader meaning and legacies of the Civil War and Reconstruction. Students pay particular attention to Civil War St. Louis. This is a hands-on course with field trips and community engagement. Course fulfills the American History and Government General Education Requirement.

**HIST 2005 Becoming Modern America: From the Gilded Age to the Great Depression: 3 semester hours**

Prerequisites: Sophomore Standing or consent of the instructor. This course explores the economic, political, cultural, and social transformations of the emerging industrial United States from 1877 through the Great Depression of the 1930s. Students will use historical sources, such as memoirs, film, images, newspapers, literature, and historians' accounts to consider how the United States changed during these crucial decades. This course fulfills the American History and Government General Education requirement.

**HIST 2008 History of St. Louis: 3 semester hours**

Prerequisites: Sophomore standing or the consent of the instructor. This course will provide an overview of the history of the St. Louis metropolitan region. Topics may include the St. Louis region before the Europeans, forces leading to the founding of the city, St. Louis as an 'urban frontier,' the Age of Steam on water and rail, the questions of slavery and the Civil War, St. Louis in the Gilded Age, the World's Fair, early efforts at city planning, impact of the automobile, St. Louis during the Depression and World War II, post-war suburbanization, urban renewal, and 21st century prospects. This is an experiential course requiring field trips and community engagement.

**HIST 2017 African American History: From Civil Rights to Black Power: 3 semester hours**

Prerequisites: Sophomore standing or consent of instructor. This seminar focuses on the activities, ideas, movement centers, and personalities that created the Civil Rights and Black Power movements in the U.S. from the 1950s through the 1970s. Some familiarity with the broad contours of U.S. History is presupposed. Special attention will be devoted to the roles of the African American masses, college students, and women, and to the points of conflict, cooperation, and intersection between African America and the larger American society.

**HIST 2020 Women and Social Movements in U.S. History: 3 semester hours**

Same as GS 2020. Prerequisites: Sophomore standing or consent of the instructor. This course explores the role of women in social movements that transformed the United States during the nineteenth and twentieth centuries. It asks broad questions about how ideas, experiences, and laws regarding gender and sexuality have shaped ordinary people's lives, as well as U.S. institutions, and have been touchstones for social change movements. It considers abolitionism, suffrage, progressive reforms, labor, civil rights, and second wave feminism, among other movements.

**HIST 2021 War and Violence in Modern Times: 3 semester hours**

Same as MVS 2021. Prerequisites: Sophomore standing or consent of the instructor. This course examines the connections between warfare and resistance, gangs and poverty, and state and non-state officials as enactors of violence. It explores the effects of war and violence on the poor in Brazil and the United States, prisoners of war in Asia, and resistance fighters in Latin America and northern Africa. Students will watch films/short videos, read academic and newspaper articles, and listen to short podcasts to grapple with the issues underlying structures of violence.

**HIST 2025 U.S. Foreign Relations and Military History: 3 semester hours**

Same as MVS 2025. This course surveys the development of American land, sea, air, space, and cyber power from the start of the colonial era to the present, with an emphasis on the interrelationship between U.S. foreign and military policies and between diplomacy and force.

**HIST 2026 Baseball and the Making of Modern America: 3 semester hours**

This course uses the lens of baseball to aid in the development of a deeper understanding of the United States. It explores how social, cultural, economic, and political forces shaping the U.S. after the Civil War were reflected in the national past time. In the study of key trends and events in baseball history, students will learn how broader themes in U.S. history, such as industrialization and urbanization, race and ethnicity, imperialism, war, gender, and business impacted and were influenced by the sport.

**HIST 2028 Sex, Drugs, and Rock 'n Roll: The 1960s in Song, Fashion, Dating, and Protest: 3 semester hours**

Prerequisites: Sophomore standing or consent of the instructor. This course examines the turbulent 1960s and the period's identification with sex, drugs, and rock 'n roll by looking historically at drugs, music, and changes in gender roles. It uses these histories to explore the cultural and political movements of the 1960s (1955 through 1973)-civil rights, black power, new left, antiwar, and feminist movements-along with the emergence of the counterculture, hallucinogenic drugs, the sexual revolution, and the whole hip scene. The class is discussion-based. There is a mid-term exam and several assignments, including a class presentation and papers on readings, music, and movies.

**HIST 2030 U.S. Immigration: 1790 to the 21st Century: 3 semester hours**

This course examines the history of free and forced newcomers to the U.S. and the laws that shaped their ability to immigrate. It looks at the conditions that newcomers faced and their subsequent struggles for political, social, and economic rights and freedoms. It explores the legal foundations that grounded the admission of certain newcomers and the exclusion or marginalization of others.

**HIST 2050 Introduction to Public History: 3 semester hours**

This course introduces students to the foundations, theory, and practice of public history, which is the study of whose history is preserved, remembered, and celebrated in American society. It explores how everyday people engage with history, the diverse venues in which history is presented and produced, and the efforts public historians must make in order to respectfully represent the histories of underrepresented groups. Students will acquire a knowledge about the practices of public history and its professional opportunities, as well as the challenges faced by public historians today.

**HIST 2066 Women and Gender in African History: 3 semester hours**

Same as GS 2066. Using documentaries, popular culture, graphic histories, and more conventional sources, this course explores the history of Africa, highlighting African women's lives, experiences, and agency, and questioning the application of Western concepts of gender to an African setting.

**HIST 2067 African History through Fiction and Film: 3 semester hours**

Prerequisites: Sophomore standing or consent of the instructor. This course will examine modern African history with literature and film, focusing on works that have poignantly captured important events in African history such as slavery, colonialism, and independence.

**HIST 2068 Aiding Africa: 3 semester hours**

This course examines the history of economic development on the African continent. Students will learn about the local and the international encounters that development has fostered; they will explore how Africans have experienced and reformulated development in different contexts and time periods; and they will study the changing international policies on development, which have deeply shaped the lives of Africans. This course satisfies the Cultural Diversity requirement.

**HIST 2082 Christianity: From Jesus to Martin Luther: 3 semester hours**

This course orients students in the scholarship about the Christian Church in the Western tradition as an institution. Open discussion is encouraged, and all traditions will be respected in the interest of expanding our knowledge of the past as well as communities today.

**HIST 2083 Europe in Early Middle Ages: Paganism to Christianity: 3 semester hours**

Prerequisite: Sophomore standing or consent of the instructor. The end of the Roman Empire as a universal entity; the successor states of the Mediterranean and Northern Europe; the emergence of a Western Christendom under the Franks; the development of feudal states; the Gregorian reforms; the Crusades; the revival of education and learning in the twelfth century.

**HIST 2084 Crusades and Plagues: Europe in the High and Late Middle Ages: 3 semester hours**

Prerequisite: Sophomore standing or consent of the instructor. Medieval society at its political, economic, and intellectual zenith; the crisis of the later Middle Ages; the Papal schism and the development of national particular churches within Catholicism; and the rise of estate institutions.

**HIST 2085 Medieval England: From Arthur to Richard III: 3 semester hours**

Prerequisite: Sophomore standing or consent of the instructor. A brief summary of the Anglo-Saxon heritage and the impact of the Norman Conquest, followed by an investigation of the institutional, social, and legal evolution of the realm of England. English development will be viewed in its European context.

**HIST 2100 Careers with a History Degree: 1 semester hour**

This course is an orientation to career opportunities for history majors. It is recommended for majors and minors and is open to students who are considering the field. It explores careers directly related to history and other sectors for which the degree is valuable, including business, law, education, communication and more. Students engage in activities that help them to identify their professional goals, network in the region, and become familiar with internships, minors, and certificates that enhance their degree.

**HIST 2102 Introduction to Gender Studies: 3 semester hours**

Same as GS 2102, SOC WK 2102, POL SCI 2102, and SOC 2102. This core class is required for all Gender Studies Certificate earners. This class introduces students to cultural, political and historical issues that shape gender. Through a variety of disciplinary perspectives in the humanities, social sciences, and natural sciences, the course familiarizes students with diverse female and male experiences and gendered power relationships.

**HIST 2112 Democracy, Freedom, and Equality: Historical Role Playing Games: 3 semester hours**

This course uses historical game simulations built around key moments and texts from the past that explore issues of democracy, freedom, and equality in the U.S. In each simulation, students are assigned a role and develop their character for game sessions. The course offers students a rigorous academic experience in which they conduct historical research, work collaboratively, speak, and write extensively. It can be repeated with different historical topics and games.

**HIST 2117 Greek History and Culture: 3 semester hours**

Same as ANTHRO 2117. Greek civilization has had a deep impact on contemporary society in art; social, political, and economic organization; philosophy; law; medicine; and science. This course covers major aspects of Greek history and culture from antiquity to the present. It considers the major political and military events of Greek History, as well as important aspects of Greek culture, including sports and the history of the Olympic Games, literature, philosophy, and mythology.

**HIST 2120 Global Girl Cultures: 3 semester hours**

Same as ANTHRO 2101. This course explores themes of identity and gender construction, media representation, and cultural production found in a spectrum of historic and modern international and US girl cultures. 1950s British Teddy Girls, 1970s Japanese Takanokozoku, 1990s American Riot Grrrls, 2000s Mexican American Cholas, and other girl cultures teach us about the many strategies teens and young women use to construct their own forms of identity through music, language, zines, fashion, and other diverse activities. This course satisfies the Cultural Diversity requirement.

**HIST 2160 Introduction to American Studies: 3 semester hours**

Same as ENGL 2160. Prerequisite: Sophomore standing or consent of the instructor. This course introduces students to the multidisciplinary nature of American Studies and is a required course for those who wish to complete the minor in American Studies. It reviews the discipline from its origins in the 1930s, and it introduces students to St Louis' rich resources for American Studies.

**HIST 2185 Introduction to Religious Studies: 3 semester hours**

Same as PHIL 2185. This course introduces students to the interdisciplinary study of religion. With an emphasis on research methods and perennial philosophical and historical topics, students will develop tools for investigating the various dimensions of worldview and gain exposure to many different religious traditions.



**HIST 2420 Maiko, Maids, and Masako: Women in Japanese Cultural History: 3 semester hours**

Same as ANTHRO 2420. This course offers perspectives on famous Japanese women who have captured the public eye at various historical junctures. Students will learn to critically assess representations of these mythological, religious, occupational, and subcultural figures, as well as their linkage to notions of nationhood and modernity. This course satisfies the cultural diversity requirement.

**HIST 2425 Food and Drink in Japan: A Cultural History: 3 semester hours**

Same as ANTHRO 2425. This course explores food and drink as core aspects of intimate and public life in Japan and as key elements of nationalism. It examines distinct class, ethnic, and regional dimensions of food and drink that have their own unique histories. Students will learn how food and drink encode a spectrum of historical meanings as well as great cultural hybridity. This course satisfies the Cultural Diversity requirement.

**HIST 2430 Ghosts, Goblins, and Godzillas: 3 semester hours**

Same as ANTHRO 2430. This course explores the spirits, ghouls, and animal tricksters who populate the historic and modern Japanese imagination. Students will learn about the supernatural beings, and the exceptional humans who interact with or control them, who are found in centuries of Japanese religion, folklore, literature, and art, and are also frequent themes in modern art, film, anime and manga. This course satisfies the Cultural Diversity requirement.

**HIST 2800 History of American Economic Development: 3 semester hours**

Same as ECON 2800. Prerequisites: ECON 1000 or ECON 1001 or consent of instructor. Uses economic concepts to explain historical developments in the American economy, beginning with the hunter gatherers who crossed the Bering land bridge around 12,000 BC. Main topics include the Native American economies, European exploration and conquest, the colonial economies, indentured servitude, the American Revolution, the US Constitution, westward expansion, transportation, the Industrial Revolution, state banking and free banking, slavery, the Civil War, post-bellum agriculture, the rise of big business and antitrust, banking panics, the Federal Reserve Act, the First and Second World Wars, the New Deal, and the growth of government in postwar economy.

**HIST 3000 Special Topics in History: 3 semester hours**

Prerequisite: Junior standing or consent of instructor. This course covers various special topics in history to be determined by the field, availability of instructors and interest of students. The course may be repeated for credit with the consent of the instructor.

**HIST 3032 Modern China: From the Decline of the Qing Empire to the Global Age: 3 semester hours**

Prerequisite: Junior Standing or consent of instructor. The economic, social, and political development of modern China.

**HIST 3035 Gender and Sexuality in Modern U.S. History: 3 semester hours**

This course will examine how gender has been historically constructed in the United States during the 20th and 21st centuries. It considers how women and men have understood their place in society, what social and cultural forces informed their understandings, and how these concepts changed over time. Students will critically engage with the categories of gender and sexuality as historical and cultural productions within the context of 20th century US politics, culture, and social movements.

**HIST 3043 History of Crime and Justice: 3 semester hours**

Same as CRIMIN 3043. Prerequisites: Junior standing or consent of instructor. The analysis, development, and change in philosophies and responses to crime. Emphasis on major forms and definitions of crime, the emergence of modern policing, the birth of the prison, and the juvenile court system.

**HIST 3065 From Ivory to Oil: Mining and Extraction in African History: 3 semester hours**

Prerequisites: Sophomore standing or consent of the instructor. This course focuses on mining and its effects on economic and human development in twentieth century Africa. It examines specific case studies, which may include oil, diamonds, uranium, copper, and ivory to understand how African states and economies have been affected by valuable resources.

**HIST 3092 War and Upheaval in Europe, 1900-1950: 3 semester hours**

Prerequisites: Junior standing or consent of the instructor. This course is a social, political, economic, and cultural survey of Europe during the eras of two world wars. Topics may include the 'Belle Epoque,' the cataclysm of World War I, peace treaties, the rise of communism and fascist states, the Great Depression and collapse of democracy, World War II, the Holocaust, and the efforts at a postwar settlement.

**HIST 3093 Europe in Peace and Prosperity, 1950-Present: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course surveys the main social, economic, political, military, and cultural trends in Europe from the end of World War II. Topics may include the postwar settlement, the development of the social welfare state, the establishment, development, and collapse of communism, and the various phases of the European Union.

**HIST 3199 Introduction to Historical Inquiry: 4 semester hours**

Prerequisites: ENGL 3100 (may be taken concurrently). This course is designed to develop historical thinking and research skills. Students will read historical sources, exploring the rhetoric of history, identifying perspectives in historical sources, and the process of formulating historical questions, and building research plans. Other topics covered may include proper citation procedures and historiography. The course is writing intensive and will involve primary source research at libraries and archives.

**HIST 3214 Writing Systems of the World: 3 semester hours**

Same as ANTHRO 3214. This course studies the writing systems from around the world leads to appreciation for one of humankind's most important technological inventions. Students will explore the origins and development of writing systems over time, the linguistic classification of writing, and the transmission of writing across languages and cultures. This course satisfies the Cultural Diversity requirement.

**HIST 3218 Visual and Material Culture of Japan: 3 semester hours**

Same as ANTHRO 3218. This course offers students the opportunity to research Japanese visual genres and material artifacts, from the iconography of Buddhism and fifteenth century pottery to postwar political cartoons, advertising posters, and etiquette comics. Students will discover how artifacts and images provide a means for communicating cultural meaning, while also reflecting aesthetics, humor, and cultural norms. This course satisfies the Cultural Diversity requirement.

**HIST 3999 Internship: 3 semester hours**

Prerequisites: Consent of supervising instructor and institution offering the internship. This supervised practicum in a museum, historical agency, or other institution offers an opportunity for hands-on experience in public history. Contact the History Department undergraduate advisor for information on arranging an internship.



**HIST 4001 Special Readings: 1-10 semester hours**

Prerequisite: Consent of the instructor. Independent study through readings, reports and conferences.

**HIST 4002 Collaborative Research: 3 semester hours**

Prerequisite: Consent of instructor. Faculty-student collaboration on a research project designed to lead toward the publication of a jointly-authored article. The faculty member will direct the research.

**HIST 4014 World History for the Secondary Classroom: 3 semester hours**

Prerequisites: TCH ED 3310 or consent of the instructor. This course is required for Social Studies certification. It adapts the themes and subject matter of World History to the secondary classroom and trains teachers in techniques particularly designed to maximize the use of primary sources, foster critical inquiry, and encourage knowledge of subject matter. This course cannot be counted towards the minimum 33-hour history major requirement, but does count towards the 45 hour maximum and for Social Studies Certification.

**HIST 4142 Inquiries in U.S. History: 3 semester hours**

Prerequisites: HIST 2999. This course will develop historical thinking and writing skills through investigation in topics in National History.

**HIST 4143 Inquiries in World History: 3 semester hours**

Prerequisites: HIST 2999. This course will develop historical thinking and writing skills through investigation in topics in World History.

**HIST 4999 Senior Seminar: 5 semester hours**

Prerequisites: HIST 3199, presentation of three examples of formal written work submitted in prior upper-division courses in history, and consent of department. This course studies in historical methodology and historiography. Directed readings, research, and writing leading to the production of an original piece of historical scholarship. An exit interview is required. This course is required for majors seeking Degree with Distinction. It may not be taken for graduate credit.

**HIST 5000 Advanced Selected Topics in History: 3 semester hours**

Prerequisite: Graduate standing. Special topics in history. The course may be repeated for credit with consent of the instructor.

**HIST 5142 Advanced Inquiries in U.S. History: 3 semester hours**

Prerequisite: Graduate standing. This course will develop historical thinking and writing skills through investigation in topics in United States history.

**HIST 5143 Advanced Inquiries in World History: 3 semester hours**

Prerequisite: Graduate standing. This course will develop historical thinking and writing skills through investigation in topics in World history.

**HIST 5592 The History of the Visual Arts in American Museums: 3 semester hours**

Same as ANTHRO 5592 and ART HS 5592. Prerequisites: Graduate standing and consent of instructor. This course is an introduction to selected topics in the history of museology, focusing on art and anthropology museums as sites for the interpretations of art and culture, and as contested meeting grounds for various views of history and culture.

**HIST 6000 The Historian's Craft: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce incoming students to graduate work, both in the field of history generally and to the M.A. program at UM-St. Louis in particular. It will familiarize them with the fields of historical study and the UMSL faculty who teach them, protocols of the profession, and methodologies of historical research, writing, and analysis. It will also help students learn about and prepare for careers outside the academy and/or Ph.D. programs in the field. Students may be required to attend colloquia off campus.

**HIST 6001 Introduction to Public History and Cultural Heritage: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. This seminar will introduce students to the theory and practice of public history and cultural heritage. Readings will acquaint students with these fields of study and offer commentary on a variety of strategies for making the past relevant for contemporary audiences.

**HIST 6002 Material Culture in Historical Context: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. This course will present various theoretical and methodological approaches to the study of material culture. It will explore how the interpretation of objects has contributed to the understanding (or misunderstanding) of past and present cultures. The course will also examine contemporary museum practice in the display of material culture. Students will be expected to make on-site observations at different types of local museums, and will conduct research into a category of material culture that appeals to their individual interests.

**HIST 6003 Economics of Museums and Heritage: 3 semester hours**

Prerequisites: Graduate standing and consent of the instructor. This course introduces students to the financial history of museums and heritage, explores debates about economic strategies for museums and heritage, and empowers museum professionals to work effectively with the chief financial/administrative officer of their museum or heritage site. Topics include: government policies toward museums and heritage, the economics of blockbuster exhibitions, debates concerning collections as an economic resource for museums and cities, daily financial management, best practices for using financial resources to achieve institutional mission and priorities, long-term strategic planning, the history and development of public-private partnerships, cultural philanthropy and donations.

**HIST 6004 Writing for Museums: 3 semester hours**

Prerequisites: Graduate standing and consent of Museum Studies program director. This course will develop skills for professionals working in museum settings who need to communicate effectively with multiple audiences through various platforms. Topics will include writing for proposals, object descriptions, interpretive texts, and digital storytelling.

**HIST 6014 World History for the Secondary School Classroom: 3-6 semester hours**

Prerequisites: Graduate standing or consent of instructor. The intent of this course is to adapt the themes and subject matter of World history to the secondary classroom and to train teachers in the methodology of the Socratic symposium, techniques designed to maximize the use of sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting themes of World history, on expanding bibliography, and on methods for choosing primary sources for use in an interactive classroom.

**HIST 6115 Historical Thinking in Research and Practice: 3 semester hours**

Same as TCH ED 6115. Prerequisites: Graduate Standing or consent of instructor. In this hands-on course, students examine current research and effective teaching strategies that facilitate historical thinking while also broadening content knowledge. Students further design, implement, and assess educational materials and practices that foster historical thinking, reading, and writing.

**HIST 6116 Historical Thinking in Theory and Practice II: 3 semester hours**

Same as TCH ED 6116. Prerequisites: HIST 6115 / TCH ED 6115 or consent of instructor. Building upon HIST 6115 / TCH ED 6115, this course emphasizes the design, implementation, and assessment of teaching materials and practices that foster historical thinking and reading. In this hands-on, action research course, students will focus on their own teaching materials and practices to improve their capacity to teach and assess students' historical thinking.

**HIST 6121 Directed Readings: 1-3 semester hours**

Prerequisites: Consent of a member of the Doctoral Faculty. Directed research at the graduate level.

**HIST 6122 Collaborative Research: 3-6 semester hours**

Prerequisites: Graduate Standing and consent of instructor. Faculty-student collaboration on a research project designed to lead toward the publication of a jointly-authored article. The faculty member will direct the research.

**HIST 6123 Thesis Seminar: 1-6 semester hours**

Prerequisites: Graduate standing and consent of instructor. Thesis research and writing on a selected topic in history.

**HIST 6124 Graduate Internship: 3 semester hours**

Prerequisites: Consent of supervising instructor and institution offering the internship. Supervised practicum in a museum, historical agency, and other institution offering an opportunity for hands-on experience in public history.

**HIST 6125 Practicum in Public History and Cultural Heritage: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. In collaboration with a designated community partner, students will research and interpret the past for contemporary audiences. The course will combine traditional classroom sessions with hands-on training.

**HIST 6126 Museum Studies Internship: 1-4 semester hours**

Prerequisites: Graduate standing and consent of instructor. Professionally-supervised work experience in a museum setting. Requires a minimum of 50 hours of on-site attendance per credit hour and submission of a final paper.

**HIST 6127 Museums and Communities: 3 semester hours**

Prerequisites: Graduate standing and consent of the Director of Museum Studies. As museums and heritage institutions have sought to attract new audiences, they have tried to re-present their collections with new stories, address topics of concern to the denizens of their cities, and provide a broader range of programming than ever before. This course considers how to identify community characteristics and needs, create entry points for multiple audiences at museums, and build strong, long-term relationships with local partners. We consider difficult histories, conflict, and strategies to create space for diverse perspectives; the role of communications technologies in soliciting participation and promoting dialogue; and networks and the organizational skills for community development. Students will examine case studies of community-based museum programming, and develop an engagement strategy around an exhibit.

**HIST 6129 Emerging Museum Practices: 3 semester hours**

Prerequisites: Graduate students in Museum Studies or Public History or consent of the Director of Museum Studies. This course examines emerging trends and models in the museum field. The museum's educational role in society is quickly changing. Learning is not only more collaborative but also more accessible beyond the walls of the museum. Through readings, activities, and exercises, students will explore the mechanics of partnerships with cultural organizations, creative individuals, and the local community, while considering how museums should function in society today. We will examine interdisciplinary programming via collaboration with the creative class; creating social/participatory experiences; making collections personally relevant to audiences; and engaging in the sharing city. We pay particular attention to the museum's responsibility to civic duty and sustainable practices.

**HIST 6131 Museum Origins and Evolution: 3 semester hours**

Prerequisites: Consent of Director of Museum Studies Program. This course traces the social and cultural history of museums from their origins in curiosity cabinets, princely collections, freak shows, and exhibitions, through their late 19th and early 20th century institutionalization, to present-day developments such as blockbuster exhibitions, community collaborations, masterpiece architecture, and the spread of museal and heritage institutions around the globe. Topics include colonialism, modernity, and the production of taxonomical knowledge; museums and nationalism; theories of culture, patrimony, and ownership; manufacture, marketing, and museums; the relationships between museums and academia; identity politics and culture wars; community-based initiatives; and virtual and digital museum spaces.

**HIST 6132 Digital Video for Museums and Community History: 3 semester hours**

Prerequisites: Consent of Director of Museum Studies Program. This course covers basic production and post-production in digital video, and examines how digital video has been and can be used for community history projects and museum installations. Students will learn basics of shooting, lighting, sound, scripting, and non-linear editing; interviewing and observational footage; and produce a series of documentary shorts. Readings will include the special characteristics of the cinematic medium and case studies of digital video for community-based research, advocacy, and museum audiences.

**HIST 6133 Museums and History in the Digital Age: 3 semester hours**

This course introduces and explores the key issues, analyses, critical debates, opportunities and potential drawbacks for museums and public historians using digital media to engage with communities. Students will gain facility in implementing digital strategies for museum and public history initiatives, including how to plan, manage, and assess the success of media projects.

**HIST 6134 History Curatorship: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. Principles and practices of curatorship, with a focus on historical collections. Curatorial responsibilities for object care. Role of curator in exhibit research, design, and implementation. Issues of inclusivity and shared authority. Historical shifts in curatorial practice, collecting, and museum missions.

**HIST 6138 Museum Studies Master's Project: 5 semester hours**

Same as ART HS 6038 and ANTHRO 6138. Prerequisites: Consent of Director of Museum Studies Program. Research and writing/exhibit development on a selected topic.

**HIST 6139 Practicum in Exhibit and Program Development: 3 semester hours**

Prerequisites: Consent of the instructor and graduate standing. Development of exhibits and related education programs. Students work as teams with museum professionals to develop and implement an exhibit concept that integrates design, education, and marketing from the onset. Methods in planning, flow charting, budgeting, team dynamics and related skills.

**HIST 6142 Readings in U.S. History: 3-5 semester hours**

Prerequisite: Graduate Standing. Directed readings and writing in selected topics and areas in United States History.

**HIST 6143 Readings in World History: 3-5 semester hours**

Prerequisite: Graduate Standing. Directed readings and writing on selected topics and areas in World History.

**HIST 6145 Topics in Environmental History: 3-5 semester hours**

Prerequisite: Graduate standing. This course is an interdisciplinary examination of the interactions people have had with the land and sea, the biophysical environment, over time. Satisfies the elective requirement outside the Biology Department for the Tropical Biology and Conservation Graduate Certificate Program. May be repeated provided the topic is different.

**HIST 6152 Directed Readings in U.S. History: 1-3 semester hours**

Prerequisites: Consent of a member of the graduate faculty. Directed readings and research at the graduate level.

**HIST 6153 Directed Readings in World History: 1-3 semester hours**

Prerequisites: Consent of a member of the graduate faculty. Directed readings and research at the graduate level.

## Honors

### Courses

**HONORS 1100 Honors Freshman Composition: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Through formal and informal writing assignments, discussion, instruction, and research, students will improve their critical reading, thinking and writing skills, as well as their research techniques. The course is designed to help students meet the rigorous challenges of academic writing across the disciplines by emphasizing intellectual inquiry, logic, style, correct and concise expression, and formal research and documentation. In addition to four formal essay assignments, students will complete a variety of informal writings.

**HONORS 1110 Western Traditions: Humanities: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. All Western Traditions seminars will be based on the reading and discussion of works of exceptional importance in the development of western culture and civilization. The works to be discussed in each seminar will follow a central theme (defined by its particular relevance to the traditional academic disciplinary areas of the humanities, arts, social sciences, mathematics, or sciences) but will relate that theme to wider developments in Western Traditions and to the American concept of a liberal education.

**HONORS 1130 Western Traditions: Social and Behavioral Sciences: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. All Western Traditions seminars will be based on the reading and discussion of works of exceptional importance in the development of western culture and civilization. The works to be discussed in each seminar will follow a central theme (defined by its particular relevance to the traditional academic disciplinary areas of the humanities, arts, social sciences, mathematics, or sciences) but will relate that theme to wider developments in Western Traditions and to the American concept of a liberal education.

**HONORS 1150 Western Traditions: The Sciences: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College All Western Traditions seminars will be based on the reading and discussion of works of exceptional importance in the development of western culture and civilization. The works to be discussed in each seminar will follow a central theme (defined by its particular relevance to the traditional academic disciplinary areas of the humanities, arts, social sciences, mathematics, or sciences) but will relate that theme to wider developments in Western Traditions and to the American concept of a liberal education.

**HONORS 1200 Freshman Symposium: Cultural Traditions I - Humanities: 3 semester hours**

Prerequisite: Consent of the Dean of the Honors College. This course surveys Western and non-Western cultural traditions from their beginnings until the 1700s. It will introduce the intellectual traditions of a wide variety of cultures through major works of literature, religion and philosophy. This course will approach texts and materials from a humanities perspective.

**HONORS 1201 Freshman Symposium: Cultural Traditions II - Humanities: 3 semester hours**

Prerequisite: Consent of the Dean of the Honors College. This course surveys Western and non-Western cultural traditions from the 1700s to current times. It will introduce intellectual traditions of a wide variety of cultures through major works of literature, religion and philosophy. This course will approach texts and materials from a humanities perspective.

**HONORS 1202 Freshman Symposium: Cultural Traditions I - Social Science: 3 semester hours**

Prerequisite: Consent of the Dean of the Honors College. This course surveys Western and non-Western cultural traditions from their beginnings until the 1700s. It will introduce the intellectual traditions of a wide variety of cultures through major works of literature, religion, history, and political theory. This course will approach texts and materials from a social science perspective.

**HONORS 1203 Freshman Symposium: Cultural Traditions II - Social Science: 3 semester hours**

Prerequisite: Consent of the Dean of the Honors College. This course surveys Western and non-Western cultural traditions from the 1700s. It will introduce the intellectual traditions of a wide variety of cultures through major works of literature, religion, history, science and political theory. This course will approach texts and materials from a social science perspective.

**HONORS 1230 American Traditions: Social and Behavioral Sciences: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Honors seminars in the American Traditions series involve reading and discussion of texts of major importance in the development of the culture, politics, ideologies, and values which are or have been characteristic of the United States of America. Every American Traditions seminar will cover a broad range of time, and each may include contemporary issues. HONORS 1230 (Social Sciences) satisfies the American history and government requirement, and any course in the American Traditions sequence may be taken to satisfy one of the 'core' requirements for the American Studies Minor.

**HONORS 1310 Non-Western Traditions Series Humanities: 3 semester hours**

Prerequisite: Consent of the Dean of the Honors College. Seminars focus on different topics in the humanities but address themes and problems in non-western cultures that are related to the freshmen core classes (HONORS 1200 and HONORS 1201). These topics will be examined in depth through reading discussion, and students will produce formal papers and participate in individual or small group presentations.

**HONORS 1330 Non-Western Traditions Series-Social Sciences: 3 semester hours**

Prerequisite: Consent of the Dean of the Honors College. Seminars focus on different topics in the social sciences but address themes and problems in non-western cultures that are related to the freshmen core classes (HONORS 1200 and HONORS 1201). These topics will be examined in depth through reading discussion, and students will produce formal papers and participate in individual or small group presentations.

**HONORS 2001 Topics in Communication Proficiency: 3 semester hours**

Prerequisites: Permission of the dean of the Honors College. Honors courses approved for Core: Communication Proficiency in UMSL's General Education program.

**HONORS 2002 Topics in Information Literacy: 3 semester hours**

Prerequisites: Consent of the dean of the Honors College. Honors topics approved for Core: Information Literacy in UMSL's General Education program.

**HONORS 2003 Topics in American History and Government: 3 semester hours**

Prerequisites: Consent of the dean of the Honors College. Honors topics approved for Core: American History and Government in UMSL's General Education program.

**HONORS 2010 Inquiries in The Humanities: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one of more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2020 Inquiries in the Fine and Performing Arts: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2030 Inquiries in the Social and Behavioral Sciences: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2040 Inquiries in Mathematics and Computing: 3 semester hours**

Prerequisite: Consent of the Dean of the Honors College. 2040 Inquiries courses may be used to meet relevant General Education requirements in the Explore area of Math and Life/Natural Sciences. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2050 Inquiries in the Natural Sciences: 1-3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2051 Inquiries in the Sciences: Laboratory or Field Work: 1 semester hour**

Prerequisites: Permission of Honors Dean. This course develops students' understanding of how the experimental procedures of the life and physical sciences are used to collect data and to develop and test scientific hypotheses. HONORS 2051 is taken as a required companion course to specific sections of HONORS 2050, (Inquiries in the Sciences), when laboratory or field work experience is essential to students' understanding of and competence in the scientific subject matter of the companion section of HONORS 2050.



**HONORS 2060 Inquiries in Business: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Courses in the 2060 series of courses, 'Inquiries in Business,' satisfy the Social Science area of General Education. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2070 Inquiries in Education: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors. College Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2080 Inquiries in Nursing: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Inquiries seminars focus on the particular contributions academic disciplines can make to relatively broad areas of inquiry, and reading, discussion, writing and where appropriate laboratory work or field trips will enhance students' understanding of the strengths, frailties, and particular characteristics of one or more disciplinary strategies. Inquiries courses may be used to meet relevant General Education requirements. Where special arrangements have been agreed, they can meet more specific departmental and divisional requirements. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 2310 Cultural Diversity in the Humanities: 3 semester hours**

This seminar focuses upon cultural diversity themes, texts, and perspectives within the humanities.

**HONORS 2330 Cultural Diversity in the Social Sciences: 3 semester hours**

This seminar focuses upon cultural diversity themes, texts, and perspectives within the social sciences.

**HONORS 3001 Topics in Global Awareness: 3 semester hours**

Prerequisite: Consent of the dean of the Honors College. Honors topics approved by the College of Business for their Global Awareness requirement.

**HONORS 3010 Advanced Honors Seminar in the Humanities: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Usually restricted to Juniors and Seniors, these advanced seminars focus on in-depth study of a significant body of subject matter. The perspective employed will normally be interdisciplinary or multidisciplinary and will underscore the value of making connections between diverse areas of study. These courses will not usually require specific prerequisites, but may (with the consent of the appropriate department or division) be taken as major or minor courses. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 3020 Advanced Honors Seminar in the Fine and Performing Arts: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Usually restricted to Juniors and Seniors, these advanced seminars focus on in-depth study of a significant body of subject matter. The perspective employed will normally be interdisciplinary or multidisciplinary and will underscore the value of making connections between diverse areas of study. These courses will not usually require specific prerequisites, but may (with the consent of the appropriate department or division) be taken as major or minor courses. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 3030 Advanced Honors Seminar in the Social and Behavioral Sciences: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Usually restricted to Juniors and Seniors, these advanced seminars focus on in-depth study of a significant body of subject matter. The perspective employed will normally be interdisciplinary or multidisciplinary and will underscore the value of making connections between diverse areas of study. These courses will not usually require specific prerequisites, but may (with the consent of the appropriate department or division) be taken as major or minor courses. The course number may be repeated for credit whenever the topic is substantially different.

**HONORS 3100 Honors Advanced Composition: Writing The City: 3 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Enhances critical thinking, research, discussion and writing skills by focusing on the city of St. Louis and on the specific fields of study of those enrolled in the course. Issues such as depth and development of content, voice, style, tone, correct expression, and research techniques are among the topics emphasized. Students maintain a Commonplace Book of journals, drafts, and creative writings; they also submit a minimum of four formal papers. This course is required for transfer students (two-year Honors Program) and an elective for students on the four-year program. For students on either program, HONORS 3100 meets the Advanced Composition requirement of the University.

**HONORS 3120 Honors Business Writing: 3 semester hours**

Prerequisite: Junior standing. This Honors course further develops the experienced writer's style and analytical capabilities to the level of sophistication necessary for upper-division writing assignments and for business and professional settings. Writing assignments may include business correspondence, reports, resumes, proposals, analyses, feasibility studies, and articles for in-house publications. The course emphasizes clarity, conciseness, organization, format, style, tone and mechanical correctness; expands upon students' research and documentation skills; and requires research in university libraries. Formal assignments, including one large project and several informal papers, are required for this challenging Honors course. HONORS 3120 fulfills the University's junior-level writing requirement.

**HONORS 3160 Honors Writing in the Sciences: 3 semester hours**

Prerequisites: Junior-level standing. This honors course, designed to meet the needs for students in the science disciplines, will satisfy the campus junior-level writing requirement. The course will stress writing observation reports, academic journals, laboratory reports and a major project suited to the specific area of study of each student enrolled in the class. Instruction will include correct documentation of science sources, synthesis techniques of research information, technology-based research skills and effective laboratory reporting methods. Four formal papers, including one large project, and several informal papers will be required for this challenging course.

**HONORS 4100 Independent Portfolio Writing: 1-2 semester hours**

Prerequisites: Senior status. Students in this course will meet with their instructor on a regular basis to discuss and revise their writing portfolio and write their master resume, career or academic resume, personal statements for graduate school, or other projects for careers or their futures. The course is required to be at least one hour and may be taken for two hours to allow for more personal time and assistance from the instructor.

**HONORS 4900 Independent Study in Honors: 1-6 semester hours**

Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Most Honors students will fulfill their Honors independent study requirements in another department or division of the university. Where this is not possible, and where academic credit seems an appropriate reward for the independent study in question, the project may be undertaken as HONORS 4900, normally as a 3-credit course. This will involve substantial reading, research, and/or field work, and will be supervised by a permanent member of the Honors College academic staff. Completed proposal forms for this course must be submitted to the Honors College not later than the deadline for university registration.

**HONORS 4910 Independent Study: Internships: 1-6 semester hours**

## Information Systems

### Courses

**INFSYS 1800 Computers and Information Systems: 3 semester hours**

This course develops skills in technology awareness, computer fluency, computing devices, ethical use of the Internet, and business applications for problem solving, communicating, and making informed decisions, including word processors, presentation software, electronic spreadsheets, and database management systems. Students will gain skills in developing business applications and web pages. Credit cannot be granted for both CMP SCI 1010 and INFSYS 1800.

**INFSYS 2800 Information Systems Concepts and Applications: 3 semester hours**

Prerequisites: INFSYS 1800 or satisfactory performance on proficiency exam. This course provides an overview of the field of information systems including concepts of systems analysis and design, ethics in information systems usage, electronic business, database management, enterprise systems, information security, and JavaScript programming concepts. Business cases will be utilized to illustrate how information systems improve decision-making. Students will also gain valuable strategies for career development and networking.

**INFSYS 3806 Managerial Applications of Object-Oriented Programming I: 3 semester hours**

Prerequisites: INFSYS 2800 or CMP SCI 1250, and a minimum campus GPA of 2.0. This course provides an introduction to object-oriented programming. Topics include object-oriented design principles and choices, encapsulation, inheritance, and event-driven programming. Hands-on labs during class sessions and assignments help students develop applied programming skills. Students may not receive credit for both INFSYS 3806 and INFSYS 6806.

**INFSYS 3807 Legacy Systems: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0. This course covers structured programming techniques for legacy business applications. Students will learn COBOL syntax, structure, design and best programming practices to create, maintain, debug, compile and execute COBOL programs.

**INFSYS 3810 Information Systems Analysis: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0 and INFSYS 3806 or permission of instructor. In this course, students will learn how to identify, evaluate, and document business systems using traditional and agile methodologies. This includes how to study systems' ability to meet the business needs and information requirements of an organization, and defend alternatives that better meet needs. Students will conduct a systems analysis of an actual organization in project teams, including the identification of and defense of alternatives.

**INFSYS 3815 Object-Oriented Applications in Business: 3 semester hours**

Prerequisites: INFSYS 3806 and a minimum campus GPA of 2.0. This course provides a study of web application development using Java and JavaScript. Students will learn about Java Collections Framework, Spring, Hibernate, design patterns, software testing, and front-end web technologies. Credit cannot be granted for both INFSYS 3815 and INFSYS 6815.

**INFSYS 3816 Managerial Application of Object-Oriented Programming II: 3 semester hours**

Prerequisites: INFSYS 3806 and a minimum campus GPA of 2.0. This course builds on skills learned in INFSYS 3806 and focuses on contemporary client-server development environments and tools. Topics include database integration, web applications, and web services. Students will be provided hands-on application development experiences during class and in assignments.

**INFSYS 3817 Advanced Legacy Systems: 3 semester hours**

Prerequisites: INFSYS 3807 or consent of instructor. This course will build upon Contemporary z/OS COBOL 1. Topics may include JCL, file management, utilities/tools (like SORTING, File-Aid, IEB's, JCLCheck), file access (VSAM, DB2, and Sequential), scheduling, debugging, testing, and mainframe-server communication protocols. Students will be prepared for leadership roles in managing IT landscapes consisting of both legacy and modern systems. Credit cannot be granted for both INFSYS 3817 and INFSYS 6817.

**INFSYS 3818 Management of Software Testing: 3 semester hours**

Prerequisites: INFSYS 3806 or INFSYS 3844 or consent of instructor. This course provides the core concepts of the lifecycle of Software Assurance, Quality Control and Testing. It will emphasize the importance of testing strategies, methodologies, planning, design, staging, reporting and managing defects, test environment management and Test Driven Development. Credit cannot be granted for both INFSYS 3818 and INFSYS 6818.

**INFSYS 3820 Introduction to Systems Administration: 3 semester hours**

Prerequisites: INFSYS 2800 or CMP SCI 1250 or permission of Information Systems department chair. This course provides an overview of modern Information Technology (IT) infrastructure components and focuses on systems administration in Linux and Windows server environments. Students will learn to install, configure, operate, maintain, and secure servers. Topics include user management and policies, file systems, backup and recovery, network configuration, and host security among others. Virtualization and cloud environments are introduced. Basic foundations of automation and configuration management using shells and other contemporary tools are provided. Credit cannot be granted for both INFSYS 3820 and INFSYS 6820.

**INFSYS 3830 Data Programming: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0 or consent of instructor. In this course, students will learn the fundamentals of data programming with R and Python using structured (tabular data such as spreadsheets) and unstructured data (text data such as social media) for application in Business and Cyber Analytics, Machine Learning, and Artificial Intelligence. Credit cannot be granted for both INFSYS 3830 and INFSYS 6830.

**INFSYS 3841 Enterprise Information Systems: 3 semester hours**

Prerequisites: INFSYS 2800 and a minimum campus GPA of 2.0. This course provides students the skills and knowledge needed for roles as ERP business analysts, ERP configuration specialists, and consultants. Students will be introduced to integrated business processes through the application of SAP modules supporting Sales and Distribution (SD), Materials Management (MM), Financial Accounting (FI), Production Planning (PP), and Controlling (CO) as components of the SAP integrated business solution. Students will complete exercises to construct a functioning company operating in an integrated SAP R/3 environment.

**INFSYS 3842 Data Networks and Security: 3 semester hours**

Same as INTL BUS 3882. Prerequisites: INFSYS 2800 and a minimum campus GPA of 2.0; or consent of instructor. This is a foundational course in data networking and network security. It covers the fundamentals of networking and security implications of data networks with hands-on exercises. Topics include networking layers and standardization of functionality across layers, wired and wireless Local Area Networks (LANs) along with switching and physical layer technologies, Internetworking, supporting and supervisory protocols; application layer protocols such as HTTP, and fundamentals of network security. Students will also learn about network protocol analyzers such as Wireshark, virtualization, and networking in virtual environments. Credit cannot be granted for both INFSYS 3842 and INFSYS 6836. Course satisfies/fulfills the College of Business Global Awareness requirement.

**INFSYS 3843 Decision Support Systems for Business Intelligence: 3 semester hours**

Prerequisites: SCMA 3300 and a minimum campus GPA of 2.0. This class examines the applications of data and analytics (models) to support the needs of decision makers. Descriptive, predictive and prescriptive analytics tools are coupled with Big Data and well-designed user interfaces to provide the necessary tools. Topics such as how to construct the data warehouse, how to clean and store data in the appropriate form, how to construct and implement a useful visualization of data, and how to construct and support decision makers are included. DSS component design in response to decision making and business intelligence needs are discussed.

**INFSYS 3844 Developing Business Applications in .NET: 3 semester hours**

Prerequisites: INFSYS 2800 or CMP SCI 2250, and a minimum campus GPA of 2.0. This course will enable students to design, implement, and debug object-oriented and data driven business applications in C#.NET. Students will learn application design choices, object-oriented design principles, event-driven programming, user interface programming, user interface controls, data binding and database access, exception handling, debugging and effective ways of working with C#.NET.

**INFSYS 3845 Database Management Systems: 3 semester hours**

Prerequisites: INFSYS 2800, INFSYS 3816, ACCTNG 2400, and a minimum campus GPA of 2.0. This course provides an introduction to the design and use of databases in meeting business information needs. Topics include database planning, conceptual design, and data administration. The concepts are studied with projects involving the use of a current database management system.

**INFSYS 3847 Web Design: 3 semester hours**

Prerequisites: INFSYS 2800 and a minimum campus GPA of 2.0. This course focuses on website planning, design, and construction. Topics include site structure, navigation, content management, markup languages, CSS, scripting languages, and important tools, libraries and frameworks.

**INFSYS 3848 Introduction to Information Security: 3 semester hours**

Prerequisites: INFSYS 2800 or CMP SCI 2250 or consent of instructor and a minimum campus GPA of 2.0. This course provides an introductory survey of the vast field of Information Security (InfoSec). It intersects both management and technical aspects of security as relevant to organizations, governments, individuals, and society. Topics include fundamental principles of InfoSec and cyber defense, the threat environment, management of InfoSec in organizations, technologies and tools in InfoSec, cryptology/cryptography, web application security, and current issues. Hands-on labs expose students to basics of penetration testing, applications of cryptography, and vulnerability management. Course is open to all majors. Credit cannot be granted for both INFSYS 3848 and INFSYS 6828. Course satisfies/fulfills the College of Business Global Awareness requirement.

**INFSYS 3858 Advanced Security and Information Systems: 3 semester hours**

Prerequisites: INFSYS 3848 or Permission of Department Chair. This course builds upon the principles of information security. It covers topics ranging from networking, penetration testing, formal verification of systems, formal models of information flow and protection, distributed system authentication, protocol design and attack, computer viruses and malware, as well as intrusion and anomaly detection models. Students are exposed to virtualization, defensive security, offensive security, and other forms of cybersecurity. Credit cannot be granted for both INFSYS 3858 and INFSYS 6858.

**INFSYS 3860 Data Integration: 3 semester hours**

Prerequisites: INFSYS 2800 or consent of instructor. This course discusses the theories and techniques for blending unstructured and structured data including big data and social media streams with relational databases, data warehouses, spreadsheets, and other sources of data. It provides hands-on experience in integrating data from diverse sources, screening and cleaning it, and producing descriptive and visual summaries in tables, graphs, maps, and text for business intelligence. Students will be introduced to tools that integrate data from different sources and provide input to dashboards for rich visualization and advanced analytics. Students may not receive credit for both INFSYS 3860 and INFSYS 6860.



**INFSYS 3862 Artificial Intelligence Applications for Business: 3 semester hours**

Prerequisites: INFSYS 3830 or consent of instructor. This course introduces students to topics in Artificial Intelligence (AI) and its applications in Business and Cybersecurity. The course discusses the history of AI and delves into Machine Learning (ML) and its general methodology of development of data models. The course provides a sampling of successful applications of AI and ML in different areas of Business such as portfolio management, algorithmic trading, fraud analytics, and credit scoring. Credit cannot be granted for both INFSYS 3862 and INFSYS 6862.

**INFSYS 3864 Applied Cryptography for Business: 3 semester hours**

Prerequisites: INFSYS 3806 and INFSYS 3848, or consent of instructor. This course provides an overview of the building blocks of contemporary cryptographic solutions to address information security needs in organizations. The focus will be on understanding cryptographic primitives and applying them to assure confidentiality, integrity, authentication, and non-repudiation among other information security goals. Using best practices, students will work on projects aimed at evaluating, selecting, and implementing an appropriate mix of cryptographic solutions given particular application domains. Application areas in traditional as well as cloud-based information technology environments will be considered. Credit cannot be granted for both INFSYS 3864 and INFSYS 6864.

**INFSYS 3866 Cloud Security for Business: 3 semester hours**

Prerequisites: INFSYS 3843 or INFSYS 3848 or consent of instructor. This course covers the fundamentals of cloud security in public cloud computing environments with a focus on business applications. Topics include identity and access management, secure configuration of cloud services, and various security focused cloud services. Data collection and analysis of cloud-based data logging services to aid in security auditing and compliance is covered. Emerging topics, such as use of artificial intelligence-based services and tools in cloud security are also discussed. Student may not receive credit for both INFSYS 3866 and INFSYS 6866.

**INFSYS 3868 Secure Software Development: 3 semester hours**

Prerequisites: A first course in programming such as INFSYS 3806 or CMP SCI 2250 or consent of instructor. This course covers the concepts of software assurance and the fundamentals of the secure software lifecycle as it relates to software development. Students will experience the secure software lifecycle process by developing concrete artifacts and practicing in a lab environment. Credit cannot be granted for both INFSYS 3868 and INFSYS 6868.

**INFSYS 3878 Information Security Risk Management and Business Continuity: 3 semester hours**

Prerequisites: INFSYS 3848 or consent of Instructor. This course provides students the tools and concepts necessary to plan for, prevent, and when needed successfully respond to disruptions in business operations. Topics covered include security policies, frameworks, information and materials management, risk management, and regulatory compliance. Credit cannot be granted for both INFSYS 3878 and INFSYS 6878.

**INFSYS 3890 Internship in Information Systems: 1-3 semester hours**

Prerequisites: Minimum business GPA of 2.5, minimum campus GPA of 2.0, completed and/or currently enrolled in at least 6 credit hours of information systems electives at the 3000 level or above, consent of supervising instructor, and consent of department chair. Students are employed in the field of information systems where they apply the knowledge and skills learned in the classroom. Professional development obtaining specialized work experience are primary goals. An information systems faculty member will monitor the student's program with the student providing a formal written report at the end of the project.

**INFSYS 3898 Seminar in Information Systems: 1-3 semester hours**

Prerequisites: To be determined each time course is offered and to include a minimum 2.0 overall GPA. This course is a selected special topic in the field of information systems. May be repeated for credit with different topics.

**INFSYS 3899 Independent Study in Information Systems: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0 and approval by the supervising professor and the Area Coordinator. Special individual study in information systems under the supervision of a full-time information systems faculty member.

**INFSYS 4800 IT Leadership: 3 semester hours**

Prerequisite: INFSYS 2800. This course seeks to prepare students for IT leadership roles using business cases as exemplars. Credit cannot be granted for both INFSYS 4800 and INFSYS 5800.

**INFSYS 4847 IT Project Management: 3 semester hours**

Prerequisites: INFSYS 2800 or consent of instructor. Effective project management ensures that a project is completed on time, within budget, and includes the necessary scope. This course explores the project management processes shared by all projects: project selection, planning, control, and closing. Traditional and Agile project management techniques will be explored in the contexts of Information Technology and Supply Chain Management. Credit cannot be granted for both INFSYS 4847 and INFSYS 6847.

**INFSYS 4850 Information Systems Design: 3 semester hours**

Prerequisites: INFSYS 3810, INFSYS 3816, INFSYS 3845 and a minimum campus GPA of 2.0. This course builds on the skills learned in INFSYS 3810. System design, implementation, and methods of systems installation and operation are presented. A system development project is required.

**INFSYS 5800 Management Information Systems: 3 semester hours**

Same as P P ADM 6800. Prerequisites: Graduate standing. This course provides an overview of issues related to the management of information systems within organizations. Course topics may include the role of the Chief Information Officer, business value from emergent information technologies (IT), enterprise systems, the impact of IT on organizational competitiveness, managing IT-enabled projects, extracting business intelligence from big data, sourcing IT, cybersecurity, ethics, intellectual property rights, and societal impacts of IT.

**INFSYS 5890 Graduate Internship in Information Systems: 1-6 semester hours**

Prerequisites: INFSYS 6840 or permission of instructor. The internship will be a supervised field experience in a US-based business/organization or a US-based international business/organization. Students will be employed off-campus for a 10-16 week period on projects directed by host organization supervisors in consultation with a UM-St. Louis faculty member. The project requires students to apply IS concepts to a real-world problem. The project does not duplicate, but builds upon material in the IS curriculum. A professional written report will be required.

**INFSYS 5899 Individual Research in Information Systems: 1-3 semester hours**

Prerequisites: Consent of instructor and graduate director. Special individual research topics in Information Systems under the guidance of a specific professor.



**INFSYS 6805 Applications of Programming for Business Solutions: 3 semester hours**

Prerequisite: Graduate standing. This course will enable students to design, implement, and debug object-oriented and data driven business applications in C#.NET. Students will learn application design choices, object-oriented design principles, event-driven programming, user interface programming, user interface controls, data binding and database access, exception handling, debugging and effective ways of working with C#.NET.

**INFSYS 6806 Managerial Applications of Object-Oriented Technologies: 3 semester hours**

Prerequisites: Graduate Standing. This course provides an introduction to object-oriented programming. Topics include object-oriented design principles and choices, encapsulation, inheritance, and event-driven programming. Hands-on labs during class sessions and assignments help students develop applied programming skills. Students may not receive credit for both INFSYS 3806 and INFSYS 6806.

**INFSYS 6807 Contemporary z/OS COBOL: 3 semester hours**

Prerequisites: Graduate standing. This course covers structured programming techniques for legacy business applications. Students will learn COBOL syntax, structure, design and best programming practices to create, maintain, debug, compile and execute COBOL programs.

**INFSYS 6808 Advanced Object-Oriented Programming for Business: 3 semester hours**

Prerequisite: INFSYS 6806. This course builds on skills learned in INFSYS 6806 and focuses on contemporary client-server development environments and tools. Topics include database integration, web applications, and web services. Students will be provided hands-on application development experiences during class and in assignments.

**INFSYS 6814 Web Applications for Business: 3 semester hours**

Prerequisites: Graduate standing. This course focuses on website planning, design, and construction. Topics include site structure, navigation, content management, markup languages, CSS, scripting languages, and important tools, libraries and frameworks.

**INFSYS 6815 Advanced Web Applications for Business: 3 semester hours**

Prerequisites: INFSYS 6806 and INFSYS 6814 or consent of instructor. This course provides a study of web application development using Java and JavaScript. Students will learn about frameworks, design patterns, software testing, and front-end web technologies. Students may not receive credit for both INFSYS 3815 and INFSYS 6815.

**INFSYS 6817 Advanced COBOL and Modern z/OS System Tools: 3 semester hours**

Prerequisites: INFSYS 6807 or consent of instructor. This course will build upon Contemporary z/OS COBOL 1. Topics will include JCL, file management, utilities/tools (like SORTING, File-Aid, IEB's, JCLCheck), file access (VSAM, DB2, and Sequential), scheduling, debugging, testing, and mainframe-server communication protocols.

**INFSYS 6818 Management of Software Testing: 3 semester hours**

Prerequisites: INFSYS 6805 or INFSYS 6806 or consent of instructor. This course provides the core concepts of the lifecycle of Software Assurance, Quality Control and Testing. It will emphasize the importance of testing strategies, methodologies, planning, design, staging, reporting and managing defects, test environment management and Test Driven Development.

**INFSYS 6820 Systems and IT Infrastructure: 3 semester hours**

Prerequisites: Graduate standing. This course establishes the critical role of Linux and Windows server environments in contemporary Information Technology (IT) infrastructure management. Students will explore both the technical and management aspects of server infrastructure. Technical aspects include installation, operation, maintenance, virtualization, and systems security. Management aspects include server lifecycles and management of server environments at scale using automation and configuration management tools within the context of application development, security operations, and IT operations. Credit cannot be granted for both INFSYS 3820 and INFSYS 6820.

**INFSYS 6828 Principles of Information Security: 3 semester hours**

Prerequisites: Graduate standing. This course is a survey of the vast field of Information Security (InfoSec). It intersects both management and technical aspects of security as relevant to organizations, governments, individuals, and society. Topics covered include fundamental principles of InfoSec and cyber defense, the threat environment, management of InfoSec in organizations, technologies and tools in InfoSec, cryptology/cryptography, web application security, vulnerability management, and current issues. Hands-on labs expose students to basics of penetration testing, applications of cryptography, and vulnerability management. A graduate research paper is required. This course is open to all majors. Credit cannot be granted for both INFSYS 6828 and INFSYS 3848.

**INFSYS 6830 Data Programming for Business Intelligence: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. This course introduces students to the fundamentals of data programming with R and Python using structured (tabular data such as spreadsheets) and unstructured data (text data such as social media) for application in business and cyber analytics, machine learning, and artificial intelligence. Students may not receive credit both INFSYS 3830 and INFSYS 6830.

**INFSYS 6832 Information Systems Strategy: 3 semester hours**

Prerequisites: Graduate Standing. This course presents the management of computer-based information resources in the context of business organizations. Issues may include: management strategies and policies for improving organizational productivity, measurement, evaluation and acquisition of management information services, office automation, end-user computing, computer use in international environments, social and organizational perspectives and ethical implications. The course will be taught using cases.

**INFSYS 6833 Decision Support Systems for Business Intelligence: 3 semester hours**

Same as ACCTNG 5443. Prerequisites: SCMA 5300. This course examines the applications of data and analytics (models) to support the needs of decision makers. Descriptive, predictive and prescriptive analytics tools are coupled with big data and well-designed user interfaces to provide the necessary tools. Topics such as how to construct the data warehouse, how to clean and store data in the appropriate form, how to construct and implement a useful visualization of data, and how to construct and support decision makers are included. DSS component design in response to decision making and business intelligence needs are discussed. Credit cannot be granted for both INFSYS 3843 and INFSYS 6833.

**INFSYS 6836 Management of Data Networks and Security: 3 semester hours**

Prerequisites: INFSYS 5800 (may be taken concurrently) or Consent of Instructor. This course focuses on the big-picture implications and challenges of data networking and network security within contemporary Information Technology environments. It covers fundamentals of networking and security implications of data networks with hands-on exercises. Topics include networking layers and standardization of functionality across layers, wired and wireless Local Area Networks (LANs) along with switching and physical layer technologies, Internetworking, supporting and supervisory protocols, application layer protocols, network design and management, and fundamentals of network security. Students will also learn about network protocol analyzers such as Wireshark, virtualization, networking in virtual environments; and how some common networked applications operate by utilizing the networking infrastructure. Credit cannot be granted for both INFSYS 6836 and INFSYS 3842.

**INFSYS 6838 Business Processes: Design, Management and Integration: 3 semester hours**

Prerequisite: INFSYS 5800. Business design methodologies are used to create new, or improve existing processes. Examples of business processes include: call centers, order-flow processing in financial services, manufacturing, hospital emergency services, and more. Special attention is paid to the role of information technology during the design process. Specific business process design methods we will cover are: SIPOC (supplier-input-process-output-customer), Process Flow Mapping, Simulation Modeling, Performance Scorecards, Quality Functional Deployment, Failure Mode and Effects Analysis, and Theory of Constraints. Case studies are used to illustrate the concepts and guest speakers will discuss their applications of the latest business process design methods and software.

**INFSYS 6840 Information Systems Analysis: 3 semester hours**

Prerequisite: INFSYS 6805 or INFSYS 6806. In this course, students will learn how to identify, evaluate, and document business systems using traditional and agile methodologies. This includes how to study systems' ability to meet the business needs and information requirements of an organization, and defend alternatives that better meet needs. Students will conduct a systems analysis of an actual organization in project teams, including the identification of and defense of alternatives.

**INFSYS 6845 Database Management Systems: 3 semester hours**

Prerequisites: INFSYS 5800 and either INFSYS 6805 or INFSYS 6806. This course provides an introduction to the design and use of databases in meeting business information needs. Topics include database architecture, design, administration, and implementation. The concepts are studied with projects involving the use of a current database management system.

**INFSYS 6847 Project Management: 3 semester hours**

Prerequisite: INFSYS 5800. Effective project management ensures that a project is completed on time, within budget, and has high quality. The purpose of this class is to examine the task of project resource management with a focus on IT and services. It will cover conventional aspects of project management, such as the project evaluation, planning, roles, responsibilities, scheduling, and tracking. In addition, this class will examine risk management, change management, critical chain management, build vs. buy analysis, package vs. custom solutions, vendor qualification and selection, and the roles of certification in the process. The class will also cover the management of programs or a portfolio of IT projects.

**INFSYS 6848 Knowledge Management and Business Intelligence: 3 semester hours**

Prerequisite: INFSYS 5800. Knowledge management (KM) is the process of creating, and drawing value from, an organization's intellectual assets. It deals with how to best leverage the organization's knowledge internally as well as externally. The emphasis on knowledge management within business organizations has risen dramatically in the last few years, to some extent as a result of the rapid progress in information technology capabilities. The course covers the following topics: KM tools, technologies, and systems, including knowledge repositories, knowledge portals, and expert seeker systems, creating and sustaining a knowledge sharing culture, managing and measuring intellectual capital, managing knowledge in networked organizations, including interorganizational alliances and supply chains, aligning knowledge with business strategy, risks of knowledge loss and knowledge leakage, business intelligence, and social aspects of knowledge management.

**INFSYS 6849 Data Warehouse Design and Implementation: 3 semester hours**

Prerequisites: INFSYS 6845 or consent of instructor. Course will cover different design configurations for structuring and organizing data in a data warehouse. Formal methodologies for the development of data warehouses will also be discussed and implemented.

**INFSYS 6850 Information Systems Design: 3 semester hours**

Prerequisites: INFSYS 6840 and INFSYS 6845. This course builds upon the analysis techniques presented in INFSYS 6840. It requires the student, usually working in a group to design and implement a system in a real-world environment. Advanced design concepts are presented to support the students in their project work.

**INFSYS 6851 Practicum in Business Intelligence: 3 semester hours**

Prerequisites: INFSYS 6833. This course will provide the context for students to integrate, synthesize and apply their Business Intelligence skills in an actual business organization. Project work will be jointly supervised and coordinated by a faculty member and a supervisor in the relevant business organization.

**INFSYS 6858 Advanced Cybersecurity Concepts: 3 semester hours**

Prerequisites: INFSYS 6828. This course provides an in-depth examination of advanced principles of cybersecurity. A broad range of topics are covered, including penetration testing, formal verification of systems, formal models of information flow and protection, distributed system authentication, protocol design and attack, computer viruses and malware, as well as intrusion and anomaly detection models. Multi-level security architecture, active defenses, investigation and forensics, network firewalls, virtualization, anonymity and identity, mobile security, and database security models and mechanisms are also studied. The course content is largely influenced by the latest research in the field. Credit cannot be granted for both INFSYS 6858 and INFSYS 3858.

**INFSYS 6860 Advanced Data Integration: 3 semester hours**

Same as ACCTNG 6460. Prerequisites: Graduate standing. This course discusses the theories and techniques for blending unstructured and structured data including big data and social media streams with relational databases, data warehouses, spreadsheets, and other sources of data. It provides hands-on experience in integrating data from diverse sources, screening and cleaning it, and producing descriptive and visual summaries in tables, graphs, maps, and text for business intelligence. Students will be introduced to tools that integrate data from different sources and provide input to dashboards for rich visualization and advanced analytics. Students may not receive credit for both INFSYS 3860 and INFSYS 6860.

**INFSYS 6862 Artificial Intelligence Applications for Business and Cybersecurity: 3 semester hours**

Prerequisite: Graduate standing. This course introduces students to topics in artificial intelligence (AI) and its applications in business and cybersecurity. The course starts with a historical development of fundamental ideas in AI and their relationship to the state of the art. The course then introduces one of the most successful branches of AI—machine learning (ML), and its general methodology of the development of data models. The course provides a sampling of successful applications of AI and ML in different areas of business such as portfolio management, algorithmic trading, fraud analytics, and credit scoring. Credit cannot be granted for both INFSYS 3862 and INFSYS 6862.

**INFSYS 6864 Applied Cryptography for Business Applications: 3 semester hours**

Prerequisites: INFSYS 6805 or INFSYS 6806, and INFSYS 6828, or consent of instructor. This course provides an overview of the building blocks of contemporary cryptographic solutions to address information security needs in organizations. The focus will be on understanding cryptographic primitives and applying them to assure confidentiality, integrity, authentication, and non-repudiation, among other security goals. Students will work on projects aimed at evaluating, selecting, and implementing an appropriate mix of cryptographic solutions, based on best practices, given particular application domains. Application areas in traditional as well as cloud-based Information Technology (IT) environments will be considered. Students will also learn about important considerations and pitfalls in managing cryptographic solutions at scale in modern IT environments. Students may not receive credit for both INFSYS 3864 and INFSYS 6864.

**INFSYS 6866 Cloud Security Management: 3 semester hours**

Prerequisites: INFSYS 6828 or INFSYS 6833 or consent of instructor. This course covers the fundamentals of cloud security in public cloud computing environments with a focus on business applications. Topics include identity and access management, secure configuration of cloud services, and security focused cloud services such as the analysis of cloud-based data logging to aid in security auditing and compliance, and new artificial intelligence-based tools. Students may not receive credit for both INFSYS 3866 and INFSYS 6866.

**INFSYS 6868 Software Assurance: 3 semester hours**

Prerequisites: INFSYS 6805 or INFSYS 6806 or consent of Instructor. This course provides an overview of the vast field of software assurance. The goal is to make students aware of the fundamentals of the secure software lifecycle enabling them to apply principles of secure software development and management. The course also provides practical applications that allow the learners to experience the secure software lifecycle process by developing concrete artifacts. Credit cannot be granted for both INFSYS 6868 and INFSYS 3868.

**INFSYS 6878 Management of Information Security: 3 semester hours**

Prerequisites: INFSYS 6828. This course provides students the necessary background knowledge and skills to develop and run a systematic information security management program that is in line with organizational strategy, structure, processes, and culture. Specifically, the course introduces governance, strategy, policies, implementation, operation, evaluation, and improvement of an organization's information security to achieve business objectives and be resilient to information security threats. Credit cannot be granted for both INFSYS 6878 and INFSYS 3878.

**INFSYS 6888 Capstone in Information Security: 3 semester hours**

Prerequisites: INFSYS 6828 and one of either INFSYS 6858 or CMP SCI 5782. This course provides students an opportunity to participate in the full information security lifecycle in an applied setting using a project-based approach. Students from technical and non-technical backgrounds will work together in teams. Major tasks may include creating an information security management plan, conducting risk assessments, implementing technical and administrative controls to mitigate information security risks, and managing security operations with a focus on incident detection and response. Students may work on projects through an actual organization and demonstrate application of knowledge gained through all prior courses in the degree program. This course must be taken the last semester prior to graduation. Cannot receive credit for INFSYS 6888 and CMP SCI 5888.

**INFSYS 6891 Seminar in Information Systems: 3 semester hours**

Prerequisites: INFSYS 5800. Topics of current interest in management information systems. Topics may include international information systems, electronic commerce, decision support systems, information systems strategy, telecommunications, and information systems management.

## Interdisciplinary Courses

### Courses

**INTDSC 1000 Special Topics: 3 semester hours**

Topics may vary from semester to semester, however, they will all focus in the cultural heritage of Great Britain with material taken from art, theater, literature, and selected topics in philosophy.

**INTDSC 1003 University Studies: 1 semester hour**

This course, required of all new freshmen in the College of Arts and Sciences, is designed to assist students in making the transition to the university experience and to UMSL by giving students the knowledge and tools needed to succeed as a scholar. The course will also familiarize students with the relationship between their education and their career and personal goals, and will assist in developing positive connections with faculty, staff, and peers at UMSL. Students will learn about faculty expectations, support services, and student life, as well as academic disciplines. The course counts toward the 120 credit hours needed for graduation.

**INTDSC 1004 SUCCEED Special Topics: 1-3 semester hours**

Prerequisites: By consent of SUCCEED director. This course is designed to assist students in the SUCCEED program make the transition to the university experience and to UMSL. This course gives students in SUCCEED the opportunity to be co-enrolled in courses that meet their interests and abilities through a mutual agreement between SUCCEED staff and UMSL course instructors regarding enrollment and student expectations.

**INTDSC 1010 Information Research and Student Success: 1 semester hour**

Students will use online library resources to learn search techniques for different types of information. Course content will be delivered through interactive, online tutorials and short, informative videos. Students will develop an understanding of academic research that will set a foundation for critical thinking skills. The course will help students in practical ways, such as for researching term papers, but also in more abstract ways, such as exposing them to the world of scholarship and academic knowledge.



**INTDSC 1011 Introduction to Disability Studies: 3 semester hours**

This course introduces the theory and scholarship of the interdisciplinary field of Disability Studies. Disability will be addressed as a matter of identity, culture, language, writing, power, education, politics, literature, art, and more.

**INTDSC 1012 History of Disability: 3 semester hours**

This course explores the history of disability from various perspectives, moving from antiquity to present day. Perspectives will include: the individual, society at large, the family, sexuality and disability, educational systems, and legal and ethical issues. Students will explore how these perspectives can drive public policy and service delivery systems. Students will gain knowledge and a foundational understanding of current legislation, Independent Living Philosophy, advocacy, empowerment, and self-empowerment that will enable them to create an organized and efficient independent living plan.

**INTDSC 1030 Language and Communicative Arts Across the Disciplines: 3 semester hours**

This course is designed to advance the academic skills of university-level students. This course consists of listening to academic lectures across the disciplines; reading texts and articles to supplement lectures; writing summaries, essays and responses to exam questions; understanding and editing grammar and sentence structure; phonetics and word stress patterns; presentation skills; and advancing skills in note-taking, critical thinking, and comprehension of advanced college-level vocabulary of various fields of study.

**INTDSC 1500 Prior Learning Assessment Portfolio Preparation: 1 semester hour**

Prerequisites: Consent of the faculty coordinator for the BA in Organizational Leadership. This course is designed to help students identify areas of learning they may want to have evaluated for college-level equivalency. It will also guide students through the preparation and compilation of components that will be required for the evaluation of a portfolio of prior learning. This course is required for students to apply for Prior Learning Assessment (PLA) via portfolio review.

**INTDSC 1700 Major and Career Exploration: 1 semester hour**

This course is designed to provide students with the opportunity to learn and explore various majors and career paths within a structured setting. Both informative and interactive, the course will provide students with the opportunity to learn broadly about college majors and their relationship to the 'world of work,' while also researching specifically the options they are interested in pursuing. The course seeks to assist students with answering two questions, 'What do I want to study?' and 'How do I want to make a life for myself (and family)?' Components of the course will also educate students about the current and projected employment market, and how to further research pertinent career information.

**INTDSC 1999 Big History: From the Big Bang to the Present: 3 semester hours**

Same as HIST 1999. An introduction to the humanities, social science, and science disciplines through a sweeping overview of natural and human history from the Big Bang to the present. Course will include lectures from faculty in various Arts and Sciences units, films, and group discussions.

**INTDSC 2001 Introduction to Organizational Leadership: 3 semester hours**

This course will survey current research and case studies of leadership with a strong focus on self-awareness and introspection as drivers of organizational leadership success. It will invite students to consider leadership as a process more than a product.

**INTDSC 2003 Careers in Health and Medicine: 1 semester hour**

Same as ANTHRO 2003, GERON 2003, SOC 2003. In this course, students will learn about occupations in such fields as medicine, the allied health professions, health non-profit organizations, and global healthcare delivery. Students will understand the education and skills necessary for various careers and for application to medical, professional, and graduate schools, and will become familiar with majors, certificates and minors that are available at UMSL. They will learn about employment opportunities in the healthcare industry in the St. Louis metropolitan area, and will be introduced to members of the local community who give guest lectures. Students will gain practical experience by shadowing a healthcare professional in their job.

**INTDSC 3010 Peer Mentoring: 1-3 semester hours**

Prerequisites: Consent of instructor. The objective of this interdisciplinary course is to prepare and support undergraduate students working across campus as learning assistants, tutors, peer mentors, student leaders, etc. The course will support the development of general pedagogical knowledge of active learning, leadership and facilitation skills, and effective communication and listening skills, that they will use to facilitate learning in settings where students are working collaboratively, reviewing course content, or receiving supplemental instruction to guide their success. This course may be repeated for up to 6 credit hours.

**INTDSC 4001 Organizational Leadership Capstone: 3 semester hours**

Prerequisites: INTDSC 2001. This course will help students achieve and demonstrate proficiency in organizational leadership. Students will apply insights gained from previous coursework into individual and group projects that identify and address real-world leadership challenges.

## International Business

### Courses

**INTL BUS 3280 The Law of International Business Transactions: 3 semester hours**

Same as FINANCE 3583. Prerequisites: BUS AD 2900 or consent of instructor. This course studies the role and function of International Law and national laws in the regulation of international business transactions. The impact of various legal regimes on import/export transactions, foreign investments, and the operations of multinational enterprises will be included. The role of national governments, supra-national governmental organizations, and non-governmental organizations in forming and administering the international legal environment will be studied.

**INTL BUS 3281 Business in China: 3 semester hours**

Same as FINANCE 3585. Prerequisites: A minimum campus GPA of 2.0 and junior standing. This course introduces students to the practices of doing business in China. Students will be introduced to the Chinese economic and business environment. Issues related to trade and foreign direct investment in China will be discussed. The course adopts an innovative approach, utilizing lectures, case analysis, projects, and student presentations.

**INTL BUS 3282 Managing the Global Workforce: 3 semester hours**

Prerequisite: MGMT 3600 and at least one of the following: MGMT 3611, MGMT 3621 or enrollment in the Honors College, a minimum 2.0 campus GPA or consent of instructor. A study of the international dimensions of organizational behavior and human resource management. The course provides an overview of the tools and skills that are necessary to understand and manage people in global organizations. Topics include motivation, leadership, communication, hiring, training, and compensation.



**INTL BUS 3283 International Business and Society: 3 semester hours**

Encompasses the readings, lectures, company and government agency visits, and cultural visits that comprise annual Country Study Tours, (e.g., Austria, Japan, Thailand, etc.). The program includes 45 contact hours or more of classroom lectures covering aspects of the chosen country's business and society, in-depth pre-departure cross-cultural orientation and training supplemented by briefings on the country's economy and on U.S. market penetration by the Commercial Service, U.S. Embassy; a briefing by the in-country State of Missouri representative; briefings by host country agencies; company visits and factory tours; and tours of cultural sites. Student evaluation will be based on active participation and on a research paper based on readings, lectures, interviews and field observations.

**INTL BUS 3285 Role of the Global Corporation: 3 semester hours**

Prerequisites: A minimum 2.0 campus GPA and MGMT 3600 or permission of instructor. The purpose of this course is to create awareness of controversial issues about international business. Students will gain a better understanding of resistance to and criticism of international business and will become better prepared for dealing with these issues and problems.

**INTL BUS 3286 International Business Ethics: 3 semester hours**

Same as PHIL 3286. This course will deal with moral issues that are raised by the increasing globalization of business. Apart from the general issue of whether this globalization is itself a good thing, we will discuss such issues as child labor, working conditions, safety standards, environmental policies, bribery and other 'corrupt' practices, respect for intellectual property, etc. Frequent short papers will be assigned.

**INTL BUS 3289 Practicum in International Business: 3 semester hours**

Prerequisites: At least one INTL BUS course, 2.0 campus GPA and completion of an approval form. Students will apply both their language skills and knowledge of international business by working for a three month period in an organization located outside the student's country of origin. This course requires students to prepare a research report summarizing the global experience and how it relates to the international business program.

**INTL BUS 3290 Internship in International Business: 3-6 semester hours**

Prerequisites: ECON 1001 and ECON 1002, ACCTNG 2400 and ACCTNG 2410, an additional 12 hours in Business Administration, a minimum overall gpa of 2.0 and concurrent enrollment in a UM overseas program. The internship will be a supervised field experience in a business/ international organization at a foreign site. Students will work for 10 weeks on projects directed by host-organization supervisors in consultation with a UM-St. Louis faculty member. Prior to the field experience students will receive training that includes familiarization with the language and practices of the country's business, the background of the host firm, and international information sources. The student will complete a written report of his/her project. Course may not be repeated for more than 6 hours credit.

**INTL BUS 3299 Independent Study in International Business: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0 and approval by the supervising professor and the Area Coordinator of the specific discipline. Special individual study in international business under the supervision of an approved faculty member.

**INTL BUS 3580 International Corporate Finance: 3 semester hours**

Same as FINANCE 3580. Prerequisites: FINANCE 3500 and a 2.0 campus GPA. This course explores corporate finance in the context of a global environment. Financial managers for an international firm must deal with all the normal problems faced by domestic corporations plus additional foreign exchange and political risks. Class discussions will focus on applying financial techniques to decision making in foreign operations. Students are required to work in a group to undertake a project related to international finance.

**INTL BUS 3582 International Investments: 3 semester hours**

Same as FINANCE 3582. Prerequisites: FINANCE 3500. This course explores the concepts of investing and hedging risk management, portfolio diversification, currency risk, asset pricing, and alternative portfolio strategies. Techniques for using derivatives are discussed in the context of hedging exchange rate risk. Reading foreign exchange quotes and understanding the functioning of global markets is central to the course. A prior course in investments is recommended but not required.

**INTL BUS 3680 International Management: 3 semester hours**

Same as MGMT 3680. Prerequisites: ECON 1002 and MGMT 3600, a minimum 2.0 campus GPA or consent of the instructor. A study of international business and management practices. Topics covered include an introduction to international management and the multinational enterprise, the cultural environment of international management, planning in an international setting, organizing for international operations, directing international operations, international staffing, preparing employees for international assignments, and the control process in an international context.

**INTL BUS 3780 International Marketing: 3 semester hours**

Same as MKTG 3780. Prerequisites: MKTG 3700 and a 2.0 overall GPA. Marketing management problems, techniques and strategies needed to apply the marketing concept to the world marketplace. Understanding a country's cultural and environmental impact on the marketing plan is emphasized, as well as competing in markets of various cultures. Worldwide consumerism, economic and social development, the spread of multinational corporations, business ethics, and current economic and marketing issues are examined.

**INTL BUS 3882 Data Networks and Security: 3 semester hours**

Same as INFSYS 3842. Prerequisites: INFSYS 2800 and a minimum campus GPA of 2.0; or consent of instructor. This is a foundational course in data networking and network security. It covers the fundamentals of networking and security implications of data networks with hands-on exercises. Topics include networking layers and standardization of functionality across layers, wired and wireless Local Area Networks (LANs) along with switching and physical layer technologies, Internetworking, supporting and supervisory protocols; application layer protocols such as HTTP, and fundamentals of network security. Students will also learn about network protocol analyzers such as Wireshark, virtualization, and networking in virtual environments. Credit cannot be granted for both INFSYS 3842 and INFSYS 6836.

**INTL BUS 4280 International Business Experience: 0 semester hours**

Students with an International Business emphasis must complete one of the following international experience requirements: (a) study abroad for three or more credit hours, (b) complete a minimum of one year international experience (e.g., Peace Corps, volunteer work, missionary work, an international posting by an organization) within 5 years of entering the program, or (c) complete an international internship approved by the International Business Institute. May be taken on a satisfactory/unsatisfactory basis only.

**INTL BUS 4281 Entrepreneurship in the Global Environment: 3 semester hours**

Prerequisites: ECON 1002; ACCTNG 2410; MKTG 3700. This course explores changes in the planet's physical environment and ways of reversing, retarding or coping with those changes. Students will be required to develop proposals for new business ventures that have as a goal preservation or restoration of the natural environment.

**INTL BUS 4289 International Strategic Management: 3 semester hours**

Prerequisites: INTL BUS 3282, MKTG 3780 and FINANCE 3580, a minimum 2.0 campus GPA or consent of instructor. A study of the international dimensions of strategic management. Provides an introduction to the key concepts and tools necessary for international competitive analysis. Topics include the international dimensions of strategy formulation and implementation, diversification, strategic alliances, and divestment.

**INTL BUS 4381 Global Supply Chain Management: 3 semester hours**

Same as SCMA 4381. Prerequisites: SCMA 3301 and a minimum campus GPA of 2.0. This course covers business logistics and supply chain strategies involving shipments across national boundaries. Topics may include the effects of international agreements and regional trading blocks on supply chain strategies, the design of global logistics networks, managerial processes and systems for international production and distribution, and risk management for international logistics.

**INTL BUS 5289 International Business Strategies: 3 semester hours**

Prerequisites: BUS AD 5000 and ACCTNG 5400. This course focuses on those managerial issues which follow from the definition and implementation of corporate strategy for worldwide operations, as distinguished from purely domestic firms or those only marginally involved in international activities. It aims to develop an appreciation for the unique competitive, sociocultural and political environments in which international business takes place and the skills required to deal with these changes.

**INTL BUS 5290 Internship in International Business: 3 semester hours**

Prerequisites: Consent of IMBA Director. Students will apply both their language skills and knowledge of international business by working in an organization located outside the student's country of origin. This course requires students to submit regular evaluations and prepare a research report summarizing their global experience and how it relates to the international business program.

**INTL BUS 5381 Global Supply Chain Management: 3 semester hours**

Same as SCMA 5381. Prerequisites: SCMA 5310 (may be taken concurrently). This course covers global supply chain management strategy, planning and operations. Topics include issues in global trade, global network design and facility location strategies, international logistics, import-export operations, and global supply chain risk management.

**INTL BUS 5780 Seminar in International Marketing: 3 semester hours**

Same as MKTG 5780. Prerequisite: MKTG 5700. An advanced seminar on topics in international or global marketing. Possible topics include the globalization of trade, export marketing, international market opportunity analysis, and negotiation for international marketers. Students who take one version of this course (e.g., globalization of trade) can take a second version of the course (e.g., negotiation for international marketers) with prior permission.

**INTL BUS 6580 International Financial Management: 3 semester hours**

Same as FINANCE 6580. Prerequisite: FINANCE 6500. The objective of this course is to introduce students to financial issues for multinational firms. Besides covering basic tools and techniques, the class stresses the role of the financial manager in analysis and decision-making. Topics include the impact of international accounting and tax issues, capital budgeting in a foreign environment, transfer pricing, and global funding. Conceptual skills for lifelong learning experiences are emphasized. This course employs a lecture and case format with group discussions.

**INTL BUS 6581 Seminar in International Investments: 3 semester hours**

Same as FINANCE 6581. Prerequisite: FINANCE 6500. This course covers topics related to the determination of exchange rates, international parity relations and portfolio diversification. In addition, methods for using foreign exchange derivatives are explored in their use for hedging exchange rate risk. Learning to read foreign exchange quotes and understanding the functioning of global markets is an integral part of the course material. Each student is assigned a foreign country to study throughout the semester with the comprehensive project report. A prior investments course is recommended but not required.

## Japanese

### Courses

**JAPAN 1001 Japanese I: 5 semester hours**

Emphasis is placed upon the understanding, speaking, and writing of Japanese and upon the acquisition of the fundamentals of grammar and syntax.

**JAPAN 1002 Japanese II: 5 semester hours**

Prerequisites: JAPAN 1001 or equivalent. Emphasis is placed upon the understanding, speaking, reading, and writing of Japanese. Continuation of the acquisition of the fundamentals of grammar and syntax.

**JAPAN 1005 Practicum in East Asian Calligraphy: 1 semester hour**

Same as CHINESE 1005. This course is an introduction to the art of calligraphy in East Asia. Emphasis is placed on writing Japanese syllabaries and Chinese characters correctly with a calligraphy brush and ink. Students practice writing basic strokes and characters and creating their own calligraphic works.

**JAPAN 1011 Anime Nation: Popular Culture in Japan: 3 semester hours**

A look at postmodern samurai, preteen ninjas, praying at shrines and other elements of J-pop culture. This online course uses various clips and full-length animated features to introduce and explore topics such as family life, school life, shared values, contemporary social issues, fashion, and metaphysics. Critical texts, essays, and narrated presentations provide background for analysis and appreciation.

**JAPAN 1199 Special Topics: Language Immersion: Japanese: 1 semester hour**

Prerequisite: JAPAN 1001 or concurrent enrollment in JAPAN 1001. Faculty-led experience designed specifically to enhance acquisition of the target language and culture. This course may be repeated for credit if the topics vary.

**JAPAN 2101 Intermediate Japanese I: 5 semester hours**

Prerequisite: JAPAN 1002 or equivalent. Students will advance their understanding of Japanese culture through discussions, readings, and written work. Language skills will be further developed through meaningful communicative interaction. This course fulfills the Humanities requirement.

**JAPAN 2102 Intermediate Japanese II: 5 semester hours**

Prerequisites: JAPAN 2101 or equivalent. Continuation of JAPAN 2101.

**JAPAN 2111 The World of Anime - Advanced Topics in Japanese Animation: 3 semester hours**

Prerequisites: JAPAN 1011 or consent of instructor. Students will explore and analyze anime and manga from sociological, literary, and anthropological perspectives, attempting to foster deeper understanding of contemporary Japan and the historical context from which the selected works emerged.

**JAPAN 2150 Classical Japanese Literature in Translation: 3 semester hours**

An exploration of Classical Japanese literary masterpieces and the world from which they arose. All required readings will be in English translation. This course may be repeated for credit with different literary works as a topic.

**JAPAN 2170 Kanji: A Radical Approach: 3 semester hours**

Prerequisites: JAPAN 2101 or equivalent. This course will systematically introduce the most common radicals and other key components of kanji (Chinese characters). Students will learn how to use radicals to interpret unfamiliar kanji, categorize them, and more efficiently commit them to memory. The principles learned in this course can be used to facilitate students' individual kanji-learning goals, which may include mastery of the 2136 joyo kanji.

**JAPAN 2190 Special Readings: 1-3 semester hours**

Prerequisites: JAPAN 2102 or consent of the department. Independent study through readings, reports, and conferences.

**JAPAN 2191 Special Topics in Japanese Culture: 3 semester hours**

A topically organized introduction to Japanese culture and society. May be repeated for credit when the topic varies.

**JAPAN 3201 Intermediate Japanese III: 4 semester hours**

Prerequisites: JAPAN 2102 or equivalent. In this course, students will continue to advance their understanding of Japanese culture through discussions, readings, and written work. Language skills will be further developed through meaningful communicative interaction. This course satisfies the University cultural diversity requirement.

**JAPAN 3202 Intermediate Japanese IV: 4 semester hours**

Prerequisites: JAPAN 3201 or equivalent. In this course, students will continue to advance their understanding of Japanese culture through discussions, readings and written work. Language skills developed in JAPAN 3201 will be further developed in this course through meaningful communicative interaction.

**JAPAN 3210 Japanese Culture and Society: 3 semester hours**

This faculty-led study tour enhances acquisition of the target culture and language through guided experiential learning. Pre-departure lectures introduce various aspects of Japanese society and culture, including history, pop culture, and business. In-country activities include follow-up lectures, language study, trips to sites of historical significance, and company and museum visits. The course is conducted in English and is designed for students of various disciplines. This course may be repeated once for credit.

**JAPAN 3211 Topics in Japanese Culture: 3 semester hours**

Prerequisites: JAPAN 2102, or concurrent enrollment in JAPAN 3201. This course advances communication and presentation skills through discussions of significant topics in Japanese culture. The course is conducted in Japanese. This course may be repeated for credit if the topics vary.

**JAPAN 3280 Readings in Japanese: 3 semester hours**

Prerequisites: JAPAN 3201 or concurrent enrollment in JAPAN 3202. Development of language skills through reading and discussion of a variety of literary and non-literary texts in Japanese.

**JAPAN 3290 Special Readings: 1-3 semester hours**

Prerequisites: JAPAN 2190 or consent of instructor. Independent study through readings, reports and conferences.

**JAPAN 4301 Advanced Japanese I: 3 semester hours**

Prerequisite: JAPAN 3202 or equivalent. This course develops students' existing linguistic knowledge and communicative skills in both spoken and written Japanese. Students will use authentic materials such as newspaper articles, essays, short stories, television programs, and films as the basis for discussion. This course may be repeated for credit a limited number of times if the topics vary.

**JAPAN 4302 Advanced Japanese II: 3 semester hours**

Prerequisite: JAPAN 4301 or equivalent. Building on JAPAN 4301, this course continues to develop students' linguistic knowledge and communicative skills in both spoken and written Japanese. Students will use authentic materials such as newspaper articles, editorials, essays, short stories, television programs and films for the basis of discussion. This course may be repeated for credit a limited number of times if the topics vary.

**JAPAN 4380 Advanced Readings in Japanese: 3 semester hours**

Prerequisites: JAPAN 4301 or concurrent enrollment in JAPAN 4302. Continued development of advanced language skills through reading and discussion of a variety of literary and non-literary texts in Japanese.

**JAPAN 4390 Special Readings: 1-3 semester hours**

Prerequisites: JAPAN 3290 or consent of instructor. Independent study through readings, reports and conferences.

**JAPAN 4394 Advanced Internship in Japanese: 1-3 semester hours**

Prerequisites: FGN LANG 2100, completion of at least two 3000-level classes in Japanese, and consent of the Internship Coordinator in Japanese. This internship course gives students of Japanese the opportunity to use their unique and advanced language skills at an appropriate agency, organization, or business in the St. Louis region and beyond. This course may be repeated for a maximum of 3 credit hours.

## Joint Civil Engineering

### Courses

**J C ENGR 1430 Introduction to Engineering Design: CAD & GIS: 2 semester hours**

Prerequisites: Civil Engineering major. An introduction to engineering design in the context of civil engineering problems and applications. Students will learn the basics of GIS and computer-aided design and drafting concepts and techniques to learn the fundamentals of spatial reasoning and graphical representation. Introduction to terminology, symbols, multiple use blocks and details, origins and uses of survey data, contours, alignments, working with 2D and 3D, using both model space and layouts, dimensioning and dimension styles, attributes, and xrefs, and using templates. Freehand sketching, including pictorial and orthographic views, applied to the design process as well.

**J C ENGR 2160 Surveying: 3 semester hours**

Prerequisites: Civil Engineering major. Horizontal and vertical control surveys, including traverses, triangulation, trilateration, and leveling; basic adjustments of observations; geologic data; coordinate systems. Basic route surveying, including horizontal and vertical curves.



**J C ENGR 3210 Computer Methods of Engineering Analysis: 2 semester hours**

Prerequisites: MATH 2020, CMP SCI 1250 (may be taken concurrently), and junior standing. This course provides an introduction to engineering design and analysis utilizing numerical methods, spreadsheet functions, and database queries. Students will build on skills gained in CMP SCI 1250 to utilize a high level programming language and spreadsheet functions to develop techniques for civil engineering design and problem solving.

**J C ENGR 3360 Civil Engineering Materials Lab: 1 semester hour**

Prerequisite: J M ENGR 2410. This course and J M ENGR 3360 should be taken concurrently. Testing procedures, testing machines, use of laboratory equipment, analysis of data, and presentation of results. Laboratory tests on static tension, compression, bending, and torsion of metal specimens. Tests on wood. Determination of compressive and tensile strengths of concrete. Design of concrete mixes and verification of strength. Experiments in advanced topics in mechanics of materials.

**J C ENGR 3410 Structural Analysis: 3 semester hours**

Prerequisites: ENGR 2310, J M ENGR 2410 and Civil Engineering major. A review of the calculation of reactions, shear, and bending moment. Definition, construction and use of influence lines. Deflections for statically determinate structures using the work method. Analysis of statically indeterminate trusses using the method of consistent deformations. Analysis of continuous beams and planar frames using the consistent deformation, slope-deflection and moment distribution methods. The influence of span on strength, stability, and economy of structures. An introduction to structural analysis software.

**J C ENGR 3420 Structural Design: 3 semester hours**

Prerequisites: J M ENGR 2410 and J C ENGR 3410. Fundamentals of structural design in steel, reinforced concrete, and timber. Familiarization with the sources of various design codes and practice in interpreting them. Computer graphics applications.

**J C ENGR 3430 Civil Engineering Design CAD & GIS: 2 semester hours**

Prerequisites: J M ENGR 1413, junior standing. This course provides an introduction to engineering design in the context of civil engineering. Students will build on skills gained in J M ENGR 1413 to utilize computer-aided design software and GIS software to learn techniques of civil engineering design and problem solving.

**J C ENGR 3460 Transportation Engineering: 3 semester hours**

Prerequisites: Civil Engineering major. Fundamental treatment of the planning, engineering, design, and procedural aspects of multimodal transportation are covered. Intermodal freight and urban transportation planning processes and overview of environmental, energy, and economic issues are discussed.

**J C ENGR 3520 Water and Wastewater Treatment: 3 semester hours**

Prerequisites: J M ENGR 3700 (may be taken concurrently) and Civil Engineering major, or consent of instructor. Application of the basic principles of chemistry, microbiology, and fluid mechanics to the analysis of environmental problems, especially those involving control of water and land contamination. Properties of municipal and industrial wastewater, solid waste, and hazardous waste. Estimation of assimilative capacity and other characteristics of receiving waters. Introduction to unit processes and unit operations used in the treatment of municipal and industrial wastewater. Design of processes and facilities used for treating drinking water, wastewater, and sludge disposal. Waste minimization and recycling in both industrial and municipal settings.

**J C ENGR 3760 Hydraulic Engineering: 3 semester hours**

Prerequisites: J M ENGR 3700 and Civil Engineering major. The principles of open channel flow will be discussed and illustrated with practical examples. Methods for channel design, storm sewer, culvert and bridge analysis will be presented using the concepts of gradually-varied, steady flow. A design project using computerized analysis and design is used to implement concepts in a large practical application.

**J C ENGR 4000 Independent Study: 1-3 semester hours**

Prerequisites: Civil Engineering major and consent of instructor. Independent investigation of a civil engineering topic of special interest to a student performed under the direction of a faculty member.

**J C ENGR 4190 Soil Mechanics: 3 semester hours**

Prerequisites: J M ENGR 2410, J M ENGR 3700 and Civil Engineering major. Basic geology as it relates to index and classification properties of soil. Exploration, sampling, and testing techniques. Soil classification systems. clay minerals and soil structures. Compaction and stabilization. Capillary, shrinkage, swelling, and frost action in soils. Effective stress, permeability, seepage, and flow nets. Consolidation and consolidation settlements. stresses in soil. Time rate of consolidation. Mohr's circle, stress path, and failure theories. Shearing strength of sand and clays.

**J C ENGR 4200 Soil Exploration and Testing: 1 semester hour**

Prerequisites: J C ENGR 4190 (may be taken concurrently) and Civil Engineering major. Soil exploration; in-situ soil testing, laboratory testing of soil; processing of test data using a microcomputer; statistical analysis of test data; use of test results in the decision-making process.

**J C ENGR 4630 Design of Steel Structures: 3 semester hours**

Prerequisites: J C ENGR 3410, J C ENGR 3420, and Civil Engineering major. Behavior and design of steel frames by 'allowable stress' and 'maximum strength' based on deterministic and LRFD (Load-resistance factor design) methods. Design of beams, columns, beamcolumns, plate girders, connections, multistory frames, and bridge girders, Torsional design of steel structures. Plastic analysis and design of steel structures. Miscellaneous topics in structural steel construction and design.

**J C ENGR 4640 Foundation Engineering: 3 semester hours**

Prerequisites: J C ENGR 3420, J C ENGR 4190, J C ENGR 4200 and Civil Engineering major. Principal problems in design and construction of foundations for bridges and buildings. Bearing capacity of deep and shallow foundations; pressure on retaining walls and shallow foundations; pressure on retaining walls and slope stability; modern developments in piling, cofferdams, open caissons, pneumatic caissons.

**J C ENGR 4660 Advanced Design of Concrete Structures: 3 semester hours**

Prerequisites: J M ENGR 3360, J C ENGR 3410, J C ENGR 3420, and Civil Engineering major. Flexural behavior and design, strength and deformation of rectangular and nonrectangular sections, shear strength, beamcolumns, long columns, slab systems, design of frames, and footings will be covered.

**J C ENGR 4670 Structural Design Projects: 3 semester hours**

Prerequisites: J C ENGR 4630 and Civil Engineering major. Students carry out the complete design of typical and unusual building and bridge structures. Use of the computer as a design tool is emphasized. Projects are conducted in cooperation with production engineers.

**J C ENGR 4720 Legal Aspects of Construction: 3 semester hours**

Prerequisites: Junior standing or permission of instructor, and Civil Engineering major.



**J C ENGR 4740 Economic Decisions in Engineering: 3 semester hours**

Same as J M ENGR 4730. Prerequisites: Enrolled in the Joint Engineering Program. This course examines the principles of economics involved in engineering decisions. It looks at decisions between alternatives based on the efficient allocation of resources. Topics include the time element in economics, analytical techniques for economic studies and taxes.

**J C ENGR 4830 Fundamentals of Surface Water Hydrology and Environmental Engineering: 3 semester hours**

Prerequisites: J M ENGR 3700 and senior status. The principles of the hydrologic cycle including precipitation, evaporation, transpiration, infiltration, runoff, streamflow, and groundwater will be discussed and illustrated. In addition, computational fundamentals of hydrologic analysis will be presented such as unit hydrographs, routing, data analysis, and flood frequency. Elements of quantitative problems in urban stormwater systems and management, water quality and urbanization. Concepts of sustainability and green engineering such as low impact development and other best management practices will be presented. Computer software will be utilized.

**J C ENGR 4910 Hydrology and Hydraulic Design Project: 3 semester hours**

Prerequisites: J M ENGR 3700, J C ENGR 3760, J C ENGR 4830 and Civil Engineering major. This course is designed to provide seniors in Hydrology and Hydraulics with a major design/facility plan project. The principals of hydrologic and hydraulic design will be utilized in developing the hydrology, hydraulics and floodplain analysis for a local watershed or land area. Hydrologic analysis is performed to size hydraulic systems and evaluate watershed and floodplain performance. The course is structured to apply hydrologic theory and modeling techniques to engineering hydrology and hydraulics for watershed analysis, floodplain delineation, and urban stormwater. The student will also consider the next generation of hydrologic computation, watershed evaluation and the importance of severe storm impacts and flood management. Consideration of sustainability and green infrastructure practices will also be included. A final written report and class presentation of the design project is included.

**J C ENGR 4950 Fundamentals of Civil Engineering Review: 1 semester hour**

Prerequisite: Senior standing. A review and preparation of the most recent NCEES Fundamentals of Engineering (FE) Exam specifications for Civil Engineering students is offered in a classroom setting. Exam strategies will be illustrated using examples.

## Joint Computer Science

### Courses

**J CMP SC 1002 Introduction to Computing Tools: Matlab Skills: 1 semester hour**

This course is aimed at the acquisition of MATLAB skills through hands-on familiarization and practice. Students practice the array, vector, and meshgrid representations, programming and plotting, and apply these skills to solve numerical problems and generate reports.

## Joint Electrical Engineering

### Courses

**J E ENGR 2300 Introduction to Electrical Networks: 3 semester hours**

Prerequisites: Electrical Engineering or Mechanical Engineering major. Elements, sources, and interconnects. Ohm's and Kirchoff's laws, superposition and Thevenin's theorem; the resistive circuit, transient analysis, sinusoidal analysis, and frequency response.

**J E ENGR 2320 Introduction to Electronic Circuits: 3 semester hours**

Prerequisites: J E ENGR 2300 and Electrical Engineering major. Introduction to contemporary electronic devices and their circuit applications. Terminal characteristics of active semiconductor devices. Incremental and D-C models of junction diodes, bipolar transistor (BJTs), and metal-oxide semiconductor field effect transistors (MOSFETs) are developed and used to design single- and multi-stage amplifiers. Models of the BJT and MOSFET in cutoff and saturation regions are used to design digital circuits.

**J E ENGR 2330 Electrical and Electronic Circuits Laboratory: 3 semester hours**

Prerequisites: J E ENGR 2300 and Electrical Engineering major. Lectures and laboratory exercises related to sophomore topics in introductory networks and basic electronics.

**J E ENGR 2340 Electrical Laboratory for Mechanical Engineers: 1 semester hour**

Prerequisites: J E ENGR 2300 (may be taken concurrently) and Mechanical Engineering major. Laboratory in introductory electrical circuits and devices of relevance to mechanical engineers.

**J E ENGR 2600 Introduction to Digital Logic and Computer Design: 3 semester hours**

Prerequisites: CMP SCI 1250. Digital computers and digital information-processing system; Boolean algebra, principles and methodology of logical design; machine language programming; register transfer logic; microprocessor hardware, software, and interfacing; fundamental of digital circuits and systems; computer organization and control; memory systems; arithmetic unit design. Occasional laboratory exercises.

**J E ENGR 3300 Engineering Electro Magnetic Principles: 3 semester hours**

Prerequisites: Electrical Engineering major. Electromagnetic theory as applied to electrical engineering; vector calculus; electrostatics and magnetostatics; Maxwell's equations, including Poynting's theorem and boundary conditions; uniform plane-wave propagation; transmission lines-TEM modes, including treatment of general, lossless line, and pulse propagation; introduction to guided waves; introduction to radiation and scattering concepts.

**J E ENGR 3310 Electronics Laboratory: 3 semester hours**

Prerequisites: J E ENGR 2300, J E ENGR 2330 and Electrical Engineering major. Laboratory exercises for juniors covering topics in computeraided measurements, computer simulation, and electronic circuits.

**J E ENGR 3320 Power, Energy and Polyphase Circuits: 3 semester hours**

Prerequisites: J E ENGR 2300 and Electrical Engineering major. Fundamental concepts of power and energy; electrical measurements; physical and electrical arrangement of electrical power systems; polyphase circuit theory and calculations; principle elements of electrical systems such as transformers, rotating machines, control, and protective devices, their description and characteristics; elements of industrial power system design.

**J E ENGR 3360 Principles of Electronic Devices: 3 semester hours**

Prerequisites: Electrical Engineering major. Introduction to the solid-state physics of electronic materials and devices, including semiconductors, metals, insulators, diodes and transistors, Crystals growth technology and fundamental properties of crystals. Electronic properties and band structure of electronic materials, and electron transport in semiconductor materials. Fabrication of pn junction diodes, metal-semiconductor junctions, and transistors and integrated-circuit chips. Fundamental electrical properties of rectifying diodes and light-emitting diodes, bipolar transistors and field effect transistors. Device physics of diodes and transistors, large-signal electrical behavior and high-frequency properties.

**J E ENGR 3370 Electronic Devices and Circuits: 3 semester hours**

Prerequisites: J E ENGR 2320 and Electrical Engineering major. Introduction to semiconductor electronic devices: transistors and diodes. Device electrical DC and high-frequency characteristics. Bipolar transistors, field-effect transistors for analog electronics applications. Transistors fabrication as discrete devices and as integrated-circuit chips. Large-signal analysis of transistor amplifiers: voltage gain, distortion, input resistance and output resistance. Analysis of multitransistor amplifiers: Darlington, Cascode, and coupled-pair configurations. Half-circuit concepts, differential-mode gain, common-mode gain, and differential-to-single-ended conversion. Transistor current sources, active loads, and power-amplifier stages. Applications to operational amplifiers and feedback circuits.

**J E ENGR 3510 Signals and Systems: 3 semester hours**

Prerequisites: J E ENGR 2300, J E MATH 3170 and Electrical Engineering major. Elementary concepts of continuous-time and discrete-time signals and systems. Linear time-invariant (LTI) systems, impulse response, convolution, Fourier series, Fourier transforms, and frequency-domain analysis of LTI systems. Laplace transforms, Z-transforms, and rational function descriptions of LTI systems. Principles of sampling and modulation. Students participate weekly in recitation sections to develop oral communications skills using class materials.

**J E ENGR 3620 Computer Architecture: 3 semester hours**

Prerequisites: J E ENGR 2600 and Electrical Engineering major. Study of interaction and design philosophy of hardware and software for digital computer systems: Machine organization, data structures, I/O considerations. Comparison of minicomputer architectures.

**J E ENGR 4000 Independent Study: 1-3 semester hours**

Prerequisites: Electrical Engineering major and consent of instructor. Opportunities to acquire experience outside the classroom setting and to work closely with individual members of the faculty. A final report must be submitted to the department. Open as a senior elective only. Hours and credit to be arranged. Credit variable, maximum credit per semester 3 hours. Maximum program total credit 3 hours.

**J E ENGR 4050 Reliability and Quality Control: 3 semester hours**

Prerequisites: J E MATH 3260, MATH 1320 and Electrical Engineering major. An integrated analysis of reliability and quality control function in manufacturing. Statistical process control, analysis, reliability prediction, design, testing, failure analysis and prevention, maintainability, availability, and safety are discussed and related. Qualitative and quantitative aspects of statistical quality control and reliability are introduced in the context of manufacturing.

**J E ENGR 4340 Solid State Power Circuits and Applications: 3 semester hours**

Prerequisites: J E ENGR 2320, J E ENGR 3510, and Electrical Engineering major. Study of the strategies and applications of power control using solid-state semiconductor devices. Survey of generic power electronic converters. Applications to power supplies, motor drives, and consumer electronics. Introduction to power diodes, thyristors, and MOSEFETs.

**J E ENGR 4350 Electrical Energy Laboratory: 3 semester hours**

Prerequisites: J E ENGR 2330 and Electrical Engineering major. Experimental studies of principles important in modern electrical energy systems. Topics: power measurement, transformers, batteries, static frequency converters, thermoelectric cooling, solar cells, electrical lighting, induction, commutator, and brushless motors, synchronous machines.

**J E ENGR 4360 Energy Alternatives: 3 semester hours**

Same as J M ENGR 4360. Prerequisites: J E ENGR 2300 or J M ENGR 3200. This course introduces engineering analyses of the human uses of energy. Both non-renewable (e.g., oil, natural gas, coal, nuclear) and sustainable (e.g., hydropower, solar, wind, biomass) resources are covered. Topics include the engineer's role in harvesting, production, storage, conversion, delivery, and uses of energy. Students will learn system analysis, design, integration, optimization, and operational aspects of selected resources delivery systems, and end uses. Technical content will include site selection, conversion and delivery efficiency calculations, engineering economic analyses, control systems, and energy resource systematic classification. Measure will consist of a mix of homework, quizzes, tests, class participation, and projects.

**J E ENGR 4410 Control Systems I: 3 semester hours**

Same as J M ENGR 4310. Prerequisites: J E MATH 3170, J E ENGR 2300. Introduction to automatic control concepts. Block diagram representation of single and multiloop systems. Multi-input and multi-output systems. Control system components. Transient and steady-state performance; stability analysis; Routh, Nyquist, Bode, and root locus diagrams. Compensation using lead, lag and lead-lag networks. Synthesis by Bode plots and root-locus diagrams. Introduction to state-variable techniques, state-transition matrix, state-variable feedback.

**J E ENGR 4440 Sensors and Actuators: 3 semester hours**

Prerequisites: Senior standing. The course provides engineering students with basic understanding of two of the main components of any modern electrical or electromechanical system; sensors as inputs and actuators as outputs. This course is useful for those students interested in control engineering, robotics and systems engineering.

**J E ENGR 4470 Robotics Laboratory: 3 semester hours**

Prerequisites: J E ENGR 3510 or J E ENGR 4410, and Electrical Engineering major. Introduces the students to various concepts such as modeling, identification, model validation and control of robotic systems. The course focuses on the implementation of identification and control algorithms on a two-link robotic manipulator (the so-called pendubot) that will be used as an experimental testbed. Topics include: introduction to the mathematical modeling of robotic systems; nonlinear model, linearized model; identification of the linearized model: input-output and state-space techniques; introduction to the identification of the nonlinear model: energy-based techniques; model validation and simulation; stabilization using linear control techniques; a closer look at the dynamics; stabilization using nonlinear control techniques.

**J E ENGR 4520 Power Systems Analysis: 3 semester hours**

Prerequisites: J E ENGR 3320 and Electrical Engineering major.

Introduction to the modeling and elements of power systems; machines, lines, and loads; load flow methods and applications; short circuit analysis using symmetrical components on symmetrical and unsymmetrical faults; methods of economic operation of power systems and contingency; state estimators, stability, and introduction of the independent system operator.

**J E ENGR 4710 Communications Theory and Systems: 3 semester hours**

Prerequisites: J E ENGR 3510, J E MATH 3260 or MATH 1320, and Electrical Engineering major. Introduction to the concepts of transmission of information via communication channels. Amplitude and angle modulation for the transmission of continuous-time signals. Analog-to-digital conversion and pulse code modulation. Transmission of digital data. Introduction to random signals and noise and their effects on communication. Optimum detection systems in the presence of noise. Elementary information theory. Overview of various communication technologies such as radio, television, telephone networks, data communication, satellites, optical fiber, and cellular radio.

**J E ENGR 4720 Internet Communications: 3 semester hours**

Prerequisites: Electrical Engineering major. This course will introduce and cover the architecture, protocols, security, and quality of service (QoS) of Internet Communications. Starting with the design principles and architecture of the Internet, communication applications such as Voice over IP (VoIP), video conferencing, and presence and instant messaging will be covered. Protocols developed by the Internet Engineering Task Force (IETF) including IP, TCP, UDP, DNS, SIP, XMPP, and ENUM will be studied. Latest areas of research including the Service Oriented Architecture (SOA) and peer-to-peer (P2P) architectures for Internet Communications will be covered.

**J E ENGR 4730 Radar Systems: 3 semester hours**

Prerequisites: J E ENGR 3510. Overview of a radar system and examples of fielded radars. The block diagram representation of a radar. Review of signals. Introduction to common radar waveforms. How the environment can distort the waveform. Introduction to noise and clutter. How a target and clutter look like to a radar. Overview of the radar range equation and its multiple forms. Introduction and overview of noise sources present in a radar and their effect on performance. A more detailed look at radar waveforms in the presence of clutter and noise. Optimum detection systems in the presence of clutter and noise. Radar design from a systems engineering approach. Techniques to improve signal to noise ratio. A second look at fielded radars using what we have learned.

**J E ENGR 4820 Digital Signal Processing: 3 semester hours**

Prerequisites: J E ENGR 3510 and Electrical Engineering major. Introduction to analysis and synthesis of discrete-time linear time-invariant (LTI) systems. Discretetime convolution, discrete-time Fourier transform, Z-transform, rational function descriptions of discrete-time LTI systems. Sampling, analog-to-digital conversion and digital processing of analog signals. Techniques for the design of finite impulse response (FIR) and infinite impulse response (IIR) digital filters. Hardware implementation of digital filters and finiteregister effects. The discrete Fourier transform and the fast Fourier transform (FFT) algorithm.

**J E ENGR 4950 Fundamentals of Electrical Engineering Review: 1 semester hour**

Prerequisites: Senior standing. A review and preparation of the most recent NCEES Fundamentals of Engineering (FE) Exam specifications for Electrical Engineering students is offered in a classroom setting. Exam strategies will be illustrated using examples.

**J E ENGR 4990 Electrical Engineering Senior Seminar: 1 semester hour**

Prerequisites: Senior standing. This course focuses on personal and professional development to prepare graduates entering the electrical engineering profession. Topics may include personality characteristics, diversity, team dynamics, professionalism, early career development, graduate study, effective presentations, and case histories of electrical engineering projects. Performance is based on class participation, oral presentations, and written reports.

## Joint Engineering Mathematics

### Courses

**J E MATH 3170 Engineering Mathematics: 4 semester hours**

Prerequisites: MATH 2020 or equivalent, and Electrical Engineering or Mechanical Engineering major. The Laplace transform and applications; series solutions of differential equations, Bessel's equation, Legendre's equation, special functions; matrices, eigenvalues, and eigenfunctions; Vector analysis and applications; boundary value problems and spectral representation; Fourier series and Fourier integrals; solution of partial differential equations of mathematical physics.

**J E MATH 3260 Probability and Statistics for Engineering: 3 semester hours**

Prerequisites: MATH 2000, and Electrical Engineering or Mechanical Engineering major. Study of probability and statistics together with engineering applications. Probability and statistics: random variables, distribution functions, density functions, expectations, means, variances, combinatorial probability, geometric probability, normal random variables, joint distribution, independence, correlation, conditional probability, Bayes theorem, the law of large numbers, the central limit theorem. Applications: reliability, quality control, acceptance sampling, linear regression, design and analysis of experiments, estimation, hypothesis testing. Examples are taken from engineering applications.

## Joint Mechanical Engineering

### Courses

**J M ENGR 1413 Introduction to Engineering Design: CAD: 2 semester hours**

Prerequisites: Civil Engineering or Mechanical Engineering major. An introduction to engineering design in the context of mechanical engineering. Students learn the fundamentals of spatial reasoning and graphical representation. Freehand sketching, including pictorial and orthographic views, are applied to the design process. Computer modeling techniques provide accuracy, analysis, and visualization tools necessary for the design of devices and machines. Topics in detailing design for production, including fasteners, dimensioning, tolerancing, and creation of part and assembly drawings are also included.

**J M ENGR 1414 Introduction to Engineering Design: Project: 2 semester hours**

Prerequisites: Mechanical Engineering major. An introduction to engineering design in the context of mechanical engineering. Students first complete a series of experiments that introduce physical phenomena related to mechanical engineering. Understanding is achieved by designing and building simple devices and machines. The course proceeds to a design contest in which the students design and build from a kit of parts a more significant machine that competes in a contest held at the end of the course. The course is open to all and is appropriate for anyone interested in mechanical devices, design, and the design process.



**J M ENGR 2110 Machine Shop, Fabrication, and Prototyping: 2 semester hours**

Basic machine shop and mechanical fabrication skills are taught in the context of case studies from prototype design and build projects. After considering possible redesigns, students build the hardware considered in the case study. Through these 'build' assignments students learn basic machine shop skills including precision measurement, workholding, sawing, drilling, turning, milling, and grinding. The assignments also provide the opportunity to learn general purpose mechanical fabrication activities including glueing, basic woodwork, welding, and basic electronic control. Completion of the course provides certification to use the Washington University engineering machine shop.

**J M ENGR 2410 Mechanics of Deformable Bodies: 3 semester hours**

Prerequisites: MATH 1900, ENGR 2310, and Civil Engineering or Mechanical Engineering major. Normal and shear stresses and strains. Stress-strain diagrams. Hooke's law and elastic energy. Thermal stresses. Stresses in beams, columns, torsional members, and pressure vessels. Elastic deflection of beams and shafts. Statically indeterminate structures. Mohr's circle of stress. Stability concepts.

**J M ENGR 3010 Computer Aided Design: 3 semester hours**

Prerequisites: J M ENGR 1413 and Mechanical Engineering major. Computer aided design, analysis and optimization of parts and assemblies; solid modeling of complex surfaces, creation of detail drawings, dimensioning and tolerancing; assembly modeling, assembly constraints, interference checking; motion constraints, force and acceleration analysis, thermal analysis; part optimization for weight, strength and thermal characteristics using Unigraphics software.

**J M ENGR 3110 Mechanical Design and Machine Elements: 3 semester hours**

Prerequisite: J M ENGR 2410. Provides a thorough overview of the steps in the engineering design process and introduces analytical/quantitative techniques applicable to each step. Topics include recognition of need, specification formulation, concept generation, concept selection, embodiment, and detail design. Includes an introduction to several classes of machine elements such as shafts, bearings, gears, brakes, and threaded fasteners. Underlying analytical models of the machine elements are presented along with guidelines about designing and choosing such elements for practical applications. Students complete a case study project to conclude the course.

**J M ENGR 3200 Thermodynamics: 3 semester hours**

Prerequisites: MATH 1900, CHEM 1111 and PHYSICS 2111, and Electrical Engineering or Mechanical Engineering major. Classical thermodynamics; thermodynamic properties; work and heat; first and second laws. Entropy, irreversibility, availability. Application to engineering systems.

**J M ENGR 3250 Material Science for J M ENGR: 4 semester hours**

Prerequisites: CHEM 1111. Introduces the chemistry and physics of engineering materials. Emphasis on atomic and molecular interpretation of physical and chemical properties, the relationships between physical and chemical properties, and performance of an engineering material.

**J M ENGR 3360 Material Science for J C ENGR: 3 semester hours**

Prerequisites: CHEM 1111 and Civil Engineering major. Introduces the chemistry and physics of engineering materials. Emphasis on atomic and molecular interpretation of physical and chemical properties, the relationships between physical and chemical properties, and performance of an engineering material.

**J M ENGR 3700 Fluid Mechanics: 3 semester hours**

Prerequisites: MATH 2020 and ENGR 2320. Fundamental concepts of fluids as continua. Viscosity. Flow field: velocity, vorticity, streamlines. Fluid statics: hydrostatic forces manometers. Conservation of mass and momentum. Incompressible inviscid flow. Dimensional analysis and similitude. Flow in pipes and ducts. Flow measurement. Boundary-layer concepts. Flow in open channels.

**J M ENGR 3710 Principles of Heat Transfer: 3 semester hours**

Prerequisites: J M ENGR 3200, J M ENGR 3700 and J E MATH 3170, and Mechanical Engineering major. Introductory treatment of the principles of heat transfer by conduction, convection, or radiation. Mathematical analysis of steady and unsteady conduction along with numerical methods. Analytical and semiempirical methods of forced and natural convection systems. Heat exchangers: LMTD and e-NTU analysis. Boiling and condensation heat transfer. Radiation between blackbody and real surfaces. Radiation network analysis.

**J M ENGR 3721 Fluid Mechanics Laboratory: 1 semester hour**

Prerequisites: J M ENGR 3700 and Civil Engineering or Mechanical Engineering major. Physical laboratory exercises focusing on fluid properties and flow phenomena covered in J M ENGR 3700. Calibration and use of a variety of equipment; acquisition, processing, and analysis of data by manual as well as automated methods.

**J M ENGR 3722 Heat Transfer Laboratory: 1 semester hour**

Prerequisites: J M ENGR 3721, J M ENGR 3710 and Mechanical Engineering major. Physical laboratory exercises, including some numerical simulations and computational exercises, focusing on heat-transfer phenomena covered in J M ENGR 3710. Calibration and use of variety of laboratory instrumentation; acquisition, processing, and analysis of data by manual as well as automated methods; training in formal report writing.

**J M ENGR 3750 Fluid Control and Power Systems Theory and Practice: 3 semester hours**

Prerequisites: J M ENGR 3700 and Mechanical Engineering major. Topics to be covered include: design of hydraulic and pneumatic control and power systems using advanced concepts and analytical tools; analysis of fluid flow through small orifices and between parallel and inclined planes; theory of spool and flapper valves; physical configuration of practical components: pumps, motors, fluid lines and valves, accumulators and storage devices; integration of components into practical systems, development of realistic performance diagrams using MATLAB Symulink; application of performance diagrams in design and analysis of fluid power systems.

**J M ENGR 4000 Independent Study: 1-3 semester hours**

Prerequisites: Mechanical Engineering major and consent of instructor. Independent investigation of a mechanical engineering topic of special interest to a student performed under the direction of a faculty member.

**J M ENGR 4110 Mechanical Engineering Design Project: 3 semester hours**

Prerequisites: J M ENGR 3110. Small student teams complete design projects subject to various constraints (e.g. economic, safety, legal, environmental, ethical), and appropriate codes and standards. Teams first perform a background information study, which is followed by a specification and conceptual design study. Embodiment and fabrication plans are produced for the chosen concept. The results of an engineering analysis study influence the final design of a working prototype, which is built and demonstrated. This is 'documented' in an appropriate manner (e.g. a CAD model) that allows others to reproduce a version, and it is 'published' so that other interested parties learn of its existence.



**J M ENGR 4120 Design of Thermal Systems: 3 semester hours**

Prerequisites: J M ENGR 3200 and senior standing. Analysis and design of advanced thermo-fluid systems. Student teams participate in the design process which could involve research, design formulation, codes, standards, engineering economics, a design project report, and formal presentations. Topics include: thermal-fluid systems and components, such as power, heating, and refrigeration systems, pumps, fans, compressors, combustors, turbines, nozzles, coils, heat exchangers and piping.

**J M ENGR 4170 Dynamic Response of Physical Systems: 2 semester hours**

Prerequisites: ENGR 2320 and J E MATH 3170, J M ENGR 4170 and J M ENGR 4180 must be taken in the same semester. Free and forced vibration of mechanical systems with lumped inertia, springs, and dampers. Methods of Laplace transform, complex harmonic balance, and Fourier series. Electrical analogs. Introduction to Lagrange's equations of motion and matrix formulations. Transient response of continuous systems by partial differential equations, by rayleigh methods, and by lumped parameters.

**J M ENGR 4180 Dynamic Response Laboratory: 1 semester hour**

Prerequisites: J M ENGR 4170 and J M ENGR 4180 must be taken during the same semester. Laboratory problems focusing on materials covered in J M ENGR 4170.

**J M ENGR 4250 Material Selection in Engineering Design: 3 semester hours**

Prerequisites: J M ENGR 3250 and Mechanical Engineering major. Analysis of the scientific bases of material behavior in the light of research contributions of the last 20 years. Development of a rational approach to the selection of materials to meet a wide range of design requirements for conventional and advanced applications. Although emphasis will be placed on mechanical properties, other properties of interest in design will be discussed, e.g., acoustical, optical and thermal.

**J M ENGR 4310 Control Systems I: 3 semester hours**

Same as J E ENGR 4410. Prerequisites: J E MATH 3170, J E ENGR 2300. Introduction to automatic control concepts. Block diagram representation of single and multi-loop systems. Multi-input and multi-output systems. Control system components. Transient and steady-state performance; stability analysis; Routh, Nyquist, Bode, and root locus diagrams. Compensation using lead, lag, and lead-lag networks. Synthesis by Bode plot plots and root-locus diagrams. Introduction to state-variable techniques, state transition matrix, state-variable feedback.

**J M ENGR 4360 Energy Alternatives: 3 semester hours**

Same as J E ENGR 4360. Prerequisites: J E ENGR 2300 or J M ENGR 3200. This course introduces engineering analyses of the human uses of energy. Both non-renewable (e.g., oil, natural gas, coal, nuclear) and sustainable (e.g., hydropower, solar, wind, biomass) resources are covered. Topics include the engineer's role in harvesting, production, storage, conversion, delivery, and uses of energy. Students will learn system analysis, design, integration, optimization, and operational aspects of selected resources delivery systems, and end uses. Technical content will include site selection, conversion and delivery efficiency calculations, engineering economic analyses, control systems, and energy resource systematic classification. Measure will consist of a mix of homework, quizzes, tests, class participation, and projects.

**J M ENGR 4630 Nanotechnology: Concepts and Applications: 3 semester hours**

The aim of this course is to introduce to students the general meaning, terminology and ideas behind nanotechnology and its potential application in various industries. The topics covered will include nanoparticles - properties, synthesis and applications, carbon nanotubes - properties, synthesis and applications, ordered and disordered nanostructured materials and their applications, quantum wells, wires and dots, catalysis and self-assembly, polymers and biological materials, nanoelectronics and nanophotonics, nanomanufacturing and functional nano-devices, health effects and nanotoxicity etc.

**J M ENGR 4700 Sustainable Environmental Building Systems: 3 semester hours**

Prerequisites: Mechanical Engineering major. Sustainable design of building lighting and HVAC systems considering performance, life-cycle cost and downstream environmental impact. Criteria, codes and standards for comfort, air quality, noise/vibration and illumination. Life cycle and other investment methods to integrate energy consumption/conservation, utility rates, initial cost, system/component longevity, maintenance cost and building productivity. Direct and secondary contributions to acid rain, global warming and ozone depletion.

**J M ENGR 4706 Aircraft Performance: 3 semester hours**

Prerequisites: Enrolled in the Joint Engineering Program. This course introduces the principles and applications of aerodynamics to determine the performance of typical jet engine and propeller airplanes. The performance calculations include flight conditions of takeoff, climb, level flight, and landing. The topics covered also include range and endurance computation, turning flight, flight envelope, constraint analysis and design process. The knowledge and skill gained in this course can be readily applied in the preliminary design of an airplane.

**J M ENGR 4730 Economic Decisions in Engineering: 3 semester hours**

Same as J C ENGR 4740. Prerequisites: Enrolled in the Joint Engineering Program. This course examines the principles of economics involved in engineering decisions. It looks at decisions between alternatives based on the efficient allocation of resources. Topics include the time element in economics, analytical techniques for economic studies and taxes.

**J M ENGR 4810 HVAC Analysis and Design I: 3 semester hours**

Prerequisites: Enrolled in the Joint Engineering Program. Moist air properties and the psychrometric chart. Classic moist air processes and design procedures for heating and cooling systems. Design of heating, ventilating, and air conditioning systems for indoor environmental comfort and health. Basics of heat transfer in building structures. Solar radiation effects on building heat transfer. Calculation procedures for the analysis of heating and cooling loads in buildings.

**J M ENGR 4820 HVAC Analysis and Design II: 3 semester hours**

Prerequisites: Enrolled in the Joint Engineering Program. Energy calculations to estimate the quantity of energy needed to heat and cool building structures. Fundamentals of incompressible flow, basics of centrifugal pump performance, and design procedures for water piping systems. Space air diffuser design to assure that temperatures, humidities, and air velocities within occupied spaces are acceptable. Air duct design and fan analysis for optimally distributing air through building air duct systems. Performance analysis of refrigeration systems, including the effects of pressure losses and heat transfer. Direct contact heat and mass transfer.

**J M ENGR 4900 Engineering Project Management: 3 semester hours**

Prerequisites: Electrical Engineering or Mechanical Engineering major. Basic fundamentals and advanced concepts of engineering project management applicable to projects and programs, both large and small. Project management skills, techniques, systems, software and application of management science principles will be covered and related to research, engineering, architectural, and construction projects from initial evaluations through approval, design, procurement, construction and startup.

**J M ENGR 4950 Fundamentals of Mechanical Engineering Review: 1 semester hour**

Prerequisites: Senior standing and Mechanical Engineering major. A review and preparation of the most recent NCEES Fundamentals of Engineering (FE) Exam specifications for Mechanical Engineering students is offered in a classroom setting. Exam strategies will be illustrated using examples.

**J M ENGR 4990 Mechanical Engineering Senior Seminar: 1 semester hour**

Prerequisites: Mechanical Engineering major. Personal and professional development to prepare graduates entering the mechanical engineering profession. Topics may include personality characteristics, diversity, team dynamics, professionalism, early career development, graduate study, effective presentations, and case histories of mechanical engineering projects. Performance is based on class participation, oral presentations, and written reports.

## Management

### Courses

**MGMT 3600 Management and Organizational Behavior: 3 semester hours**

Same as SOC 3600. Prerequisites: Junior standing and a 2.0 overall GPA. This course involves the study of the behavior of individuals and groups in an organizational setting. Specific topics examined include: motivation, leadership, organizational design, and conflict resolution, as well as basic coverage of management principles. In covering these topics, both 'classic' and current perspectives are provided.

**MGMT 3611 Advanced Management and Organizational Behavior: 3 semester hours**

Prerequisites: MGMT 3600 and a 2.0 overall GPA. Building upon MGMT 3600, course provides a more detailed examination of motivation, leadership, group process, decision making, job design, and organizational development. In addition to providing more detail in terms of content, this course provides the student with considerable practical experience through the use of class exercises, case studies, and small group discussions.

**MGMT 3612 Professional Skills Development: 3 semester hours**

Prerequisite: A minimum 2.0 campus GPA and junior standing. This course focuses on career management. Topics include job search, interviews, resumes and cover letters, presentation skills, business etiquette, entry strategies, and career alternatives.

**MGMT 3621 Human Resource Management: 3 semester hours**

Prerequisites: MGMT 3600 and a 2.0 overall GPA. In-depth examination of selected human resource management issues from a contemporary manager's viewpoint. Topics examined include: employee selection, performance appraisal, training and development, compensation, legal issues, and labor relations.

**MGMT 3622 Industrial and Labor Relations: 3 semester hours**

Prerequisite: MGMT 3600 and a 2.0 overall GPA. Emphasis is on the dynamic relationship between management, employees, unions, and government as determinants in the efficient and effective use of human resources. Current issues and case material are used to supplement text and lecture.

**MGMT 3623 Industrial and Organizational Psychology: 3 semester hours**

Same as PSYCH 3318. Prerequisites: PSYCH 2201 or MATH 1105 (or equivalent). This course introduces students to psychological research and theories pertaining to human behavior in the work setting. Topics covered may include: selection, performance appraisal, training, leadership, motivation, job satisfaction, and organizational design.

**MGMT 3624 Employee Training and Development: 3 semester hours**

Prerequisites: A minimum overall GPA of 2.0. In addition, MGMT 3600 or permission of instructor. An intensive study of training in organizations, including needs analysis, learning theory, management development, and development of training objectives and programs. Projects and exercises are used to supplement the readings.

**MGMT 3625 Leadership in Organization: 3 semester hours**

Prerequisites: MGMT 3600 and a minimum 2.0 campus GPA. This course introduces classic and contemporary theories of leadership. The emphasis is on building a sound grasp of good practice and on developing the student's ability to apply such knowledge as he/she enters today's global workforce. The course covers key theories and models of effective leadership in organizations.

**MGMT 3626 Diversity Management: 3 semester hours**

This course provides students with the tools to broaden and deepen their understanding of the differences around them in the workplace. It is designed to help employees and managers work with and learn from individuals with various differences to increase intellectual engagement and understanding of the implications and benefits of diversity, equity, and inclusion. Through case analysis, in-depth discussions and projects, students will gain an appreciation and respect for these principles.

**MGMT 3680 International Management: 3 semester hours**

Same as INTL BUS 3680. Prerequisites: A minimum 2.0 campus GPA. In addition, ECON 1002 and MGMT 3600; or consent of the instructor. A study of international business and management practices. Topics covered include an introduction to international management and the multinational enterprise, the cultural environment of international management, planning in an international setting, organizing for international operations, directing international operations, international staffing, preparing employees for international assignments, and the control process in an international context.

**MGMT 3690 Internship in Management: 1-3 semester hours**

Prerequisites: A minimum campus GPA of 2.0; one must have completed and/or be currently enrolled in at least 6 credit hours of Management electives and have consent of supervising instructor and Area Coordinator. A Business College GPA of 2.5 is also required. Students are employed in the field of Management where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience are primary goals. A Management faculty member will monitor the student's program with the student providing a formal written report at the end of the project. MGMT 3690 may not be counted toward the minimum 12 credit hours of management electives required for a MOB emphasis.

**MGMT 3695 Special Admin Problems - Management & Organization Behavior: 1-10 semester hours**

Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 overall GPA. Study of selected special problems in business and administration. May be repeated for credit with different topics.

**MGMT 3698 Seminar in Management: 1-3 semester hours**

Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 overall GPA. This course is a selected special topic in the field of management. May be repeated for credit with different topics.

**MGMT 3699 Independent Study in Management: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0 and approval by the supervising professor and the Area Coordinator. Special individual study in management under the supervision of a full-time management faculty member.

**MGMT 4219 Strategic Management: 3 semester hours**

Prerequisites: Senior standing and FINANCE 3500, MKTG 3700, MGMT 3600; a minimum overall GPA of 2.0. This is a capstone course drawing on the subject matter covered in prerequisite courses. Emphasis is on the formulation and implementation of corporate, business and functional strategies designed to achieve organizational objectives. Topics include the role of top management, globalization of business and ethical perspectives. Case studies and research reports may be used extensively. (It is preferred that this course be taken during the student's final semester. Concurrent enrollment in MGMT 4220 is required.

**MGMT 4220 Business Assessment Testing: 0 semester hours**

Strategic Management. A one-time lab during which a major field exam in business is administered. Course graded on a satisfactory/ unsatisfactory basis. Satisfactory grade required for graduation. Concurrent enrollment in MGMT 4219 is required.

**MGMT 4614 Entrepreneurship/Small Business Management: 3 semester hours**

Prerequisite: BUS AD 2900, FINANCE 3500, MKTG 3700, MGMT 3600, and a 2.0 overall GPA. This integrative general management course is designed to communicate the academic principles of business management applicable to solving of problems of small and medium-size businesses and assist in their development. This course will provide a background in the forms of business, the development of business plans and systems integration, venture capital, accounting, procurement, promotion, financing, distribution and negotiations for initial organization, and operation and expansion of the firm.

**MGMT 5600 Managing People in Organizations: 3 semester hours**

Same as P P ADM 6600. Prerequisites: Graduate standing or consent of instructor. The theoretical and research contribution of the behavioral sciences to management and administration are examined and applied to selected organizational situations. Areas to be considered from the standpoint of both individual and organizational performance are communication, motivation, conflict, decision-making, goal setting, leadership, organizational design, climate, development and control. Utilizing a systems perspective, the course attempts to develop in each student an ability to analyze and solve organizational problems.

**MGMT 5611 Advanced Organizational Behavior and Administrative Processes: 3 semester hours**

Prerequisite: MGMT 5600. An in-depth examination of selected organizational and individual theories affecting behavior and operating performance. Organizational structure and design, formal and informal organization, decision making, communications and motivation are analyzed for their organizational impact. The course seeks to develop further the ability to analyze and evaluate organizational processes and individual behavior.

**MGMT 5621 Managing Human Resources: 3 semester hours**

Prerequisite: MGMT 5600. In-depth examination of selected of human resource management issues from a contemporary manager's viewpoint. Topics examined include: personnel planning; employee selection; performance appraisal, training, and development; compensation; legal issues; discipline; and labor relations. The course examines these topics as they relate primarily to operational activities in organizations.

**MGMT 5622 Union-Management Relations and Collective Bargaining: 3 semester hours**

Prerequisite: MGMT 5600 and BUS AD 5900. Primary concern is with the setting and the dynamics of contract negotiation and administration. Emphasis is on the development of insight and understanding of the forces affecting the decisions of the parties to a labor contract within the context of the social, political and economic environment of the organization. A dynamic approach is taken to examine difficulties that arise in attempting to administer a collectively established relationship between employer and employee.

**MGMT 5624 Training and Development: 3 semester hours**

Prerequisites: Graduate standing. This course provides an overview of the foundations of industrial training and the applications and considerations of building an impactful training and development program. Review of learning and memory concepts and the implications for training and development in applied settings are explored. The course includes study of methods and techniques used for analysis, design, development, and evaluation of training include and considers the impact of recent advances in computing and instructional technologies.

**MGMT 5625 Talent Acquisition and Retention: 3 semester hours**

Prerequisites: Graduate standing. This course provides an advanced treatment of talent acquisition and retention. Among the topics examined are job analysis, employee recruitment, on-boarding pre-employment screening devices, interviewing, test validation, promotion decisions, employee retention, and downsizing.

**MGMT 5627 Employment Law: 3 semester hours**

Prerequisites: Graduate standing. This course blends core case law with applied business principles to introduce common issues that arise in the employment context. It also covers the full scope of the employment relationship, including what constitutes an "employee," employee testing and selection, harassment and discrimination, wages and benefits, and terminating the employment relationship. Students will learn to recognize potential legal threats and how to proactively avoid them.

**MGMT 5628 Authentic Leadership: 3 semester hours**

Prerequisites: Graduate standing. This course introduces contemporary theories of authentic leadership and covers key concepts pertaining to effective leadership in organizations. The three goals of this course are learning about authentic leadership behaviors, managerial skills, and organizational awareness.

**MGMT 5630 HR Analytics: 3 semester hours**

This course focuses on the application of data insights to strategic human resource decision-making. Students will review statistical concepts and data issues and how human resource professionals use data to inform decisions about the employee experience and lifecycle, such as recruiting and hiring, compensation and benefits, performance management, employee engagement, and turnover. The course will also explore how to use data to tell a story using a variety of visualization techniques.

**MGMT 5690 Management Internship: 1-3 semester hours**

Prerequisites: Students must have completed and/or be enrolled in at least 6 credit hours of management electives and have consent of a supervising faculty member and the Department Chair. The student works in the field of management where he/she applies the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience are the primary goals. The student's program will be monitored by the management faculty member supervising the internship with the student providing a formal written report at the end of the project.

**MGMT 5695 Seminar in Management: 3 semester hours**

Prerequisites: MGMT 5600. Topics of current interest in management. Possible topics include: human resource management, international management, and entrepreneurship.

**MGMT 5699 Individual Research in Management: 1-3 semester hours**

Prerequisites: Consent of instructor and graduate director. Special individual research topics in Management under the guidance of a specific professor.

## Marketing

### Courses

**MKTG 3700 Basic Marketing: 3 semester hours**

Prerequisites: ECON 1001, junior standing and a minimum overall GPA of 2.0. An examination of the character and importance of the marketing process, its essential functions and the institutions performing them. Attention is focused on the major policies (such as distribution, product, price, and promotion) which underlie the multifarious activities of marketing institutions and the managerial, economic, societal implications of such policies.

**MKTG 3710 Consumer Behavior: 3 semester hours**

Prerequisites: MKTG 3700, and a minimum overall GPA of 2.0. A study of such consumer functions as decision-making, attitude formation and change, cognition, perception, and learning. The marketing concepts of product positioning, segmentation, brand loyalty, shopping preference and diffusion of innovations are considered in context with the environmental, ethical, multicultural and social influences on an increasingly diverse American consumer.

**MKTG 3721 Introduction to Digital Marketing Strategies: 3 semester hours**

Prerequisites: MKTG 3700 and a minimum campus GPA of 2.0. This course explores the world of digital media marketing and how it impacts and is integrated along with our traditional marketing channels. It explores how the balance of power has shifted between brands and consumers. Consumers are becoming more active in the marketing process and in influencing how brands communicate with them. This course explores the latest digital marketing trends, how to build a strong website from an organic perspective, search strategies for success, website intelligence and tracking using Google Analytics, retaining customers via Email marketing, online display advertising, and developing an integrated marketing plan.

**MKTG 3722 Introduction to Social Media Marketing: 3 semester hours**

Prerequisites: MKTG 3721. In this course, students will learn how to create a brand presence on social networks, understand the differences between earned and paid media, be introduced to the various tools (free and paid) used to listen and engage with consumers, discuss how brands manage healthy communities, and learn techniques used by social media managers to identify influencers. Students will also learn how to create various forms of content for consumption by consumers on these platforms including livestreaming, video, blogs, podcasts, memes, and more. Students will support the College of Business social media platforms via content creation, curation, production and distribution.

**MKTG 3733 Customer Relationship Management (CRM): 3 semester hours**

Prerequisites: MKTG 3721 and MKTG 3722 or consent of instructor. The marketing and sales technology framework covered in this course includes project management, automation and email, Customer Experience Platforms (CMS), Customer Relationship Management (CRM) systems, E-Commerce, data analytics and internet sources. We'll cover best-in-class technologies for use in small businesses through enterprises. Students will learn how to immediately apply the marketing technology roadmap and choose the right digital marketing tools to execute successful campaigns. Students may not receive credit for both MKTG 3733 and MKTG 5733.

**MKTG 3734 Seminars in Digital and Social Media Marketing: 3 semester hours**

Prerequisites: MKTG 3721 or MKTG 3722 or consent of instructor if prior digital/social media experience. In this course, the students will be attending three one, or three day intensive workshops covering various digital and social media marketing topics in depth. Topics may include CRM and email marketing strategy, advanced Facebook advertising, Google Analytics, strategic search engine marketing, paid search, LinkedIn strategy, data analytics and visualization, video production/editing, and podcasting strategy. All seminars are on various Fridays and Saturdays. Contact the instructor for the exact schedule for these workshops.

**MKTG 3738 Advertising Technique: 3 semester hours**

Same as MEDIA ST 3338. Prerequisites: MEDIA ST 1100 or MKTG 3700 or consent of instructor. Techniques for creating advertising messages and campaigns to reach target audiences. Focus on the process of persuasion, importance of advertising in modern economics, rationale for company advertisement, evaluation of advertising effectiveness, and assessment of advertising myths and truths. Practical application of messages and campaigns will be stressed.

**MKTG 3740 Marketing Analysis: 3 semester hours**

Prerequisites: INFSYS 1800, MKTG 3700, SCMA 3300, and a 2.0 Overall GPA. An investigation of the acquisition, presentation, and application of marketing information for management. Particular problems considered are defining information requirements, evaluating research findings, and utilizing information. Statistical methods, models, and/or cases are employed to illustrate approaches to marketing intelligence problems, such as sales forecasts, market delineation, buyer motives, store location, and performance of marketing functions.



**MKTG 3750 Sales Management: 3 semester hours**

Prerequisites: MKTG 3700 and MGMT 3600. (MGMT 3600 may be taken concurrently). Also a minimum campus GPA of 2.0. The aim of this course is to provide an understanding of how selling is critical to the success of marketing. The course will promote critical thinking skills as well as practical selling skills needed in a competitive marketplace. Course topics include, among others, selling principles & techniques, understanding of the tasks and roles of the sales manager, the management of sales professionals within an organization, developing and applying effective persuasive communications, creating a vision, developing and implementing a sales-team strategy, structuring sales-force, designing and assigning territories, recruiting, training, motivation and evaluating salespeople, methods of compensation, and forecasting sales. The emphasis will be on ways the sales-force can be molded to build long-lasting relationships with customers through the systematic analysis and solution of customer's problems.

**MKTG 3751 Personal Selling: 3 semester hours**

Prerequisites: Junior standing and MKTG 3700, or consent of instructor. This course presents the business-to-business and customer-focused selling processes and their application through discussion, role-play, individual and group activities. Essential skills such as the appropriate use of communication tools, effective time-management and an understanding of various selling environments are also incorporated into the course.

**MKTG 3760 Business to Business Marketing: 3 semester hours**

Prerequisites: MATH 1105, MKTG 3700, overall GPA of 2.0 and senior standing. A study of the nature of the business-to-business (organizational) marketplace, concentrating on those aspects that differentiate it from consumer markets. The major focus of the course is marketing strategy, starting with analysis of the market wants and segments, concepts of pricing, the distribution arrangements, and buyer/seller relations. In this last area, consideration will be given to service, personal selling, sales promotion, and advertising, as found in the organizational marketplace. At all times emphasis is given to relating business-to-business marketing strategy to basic concepts in underlying business disciplines. Lectures and case discussions are used heavily in the course.

**MKTG 3765 Sports Marketing: 3 semester hours**

Prerequisite: MKTG 3700. This course is a study of how the principles of marketing are applied in the sports industry. The course examines the marketing of sports, teams, athletes, etc., as well as the use of sports to market products (e.g., sponsorship and promotional licensing).

**MKTG 3770 Introduction to Transportation: 3 semester hours**

Same as SCMA 3370. Prerequisite: A minimum campus GPA of 2.0. This course provides an overview of the transportation sector, including history, providers, users, government regulation, and the central role of transportation in supply chain management. The course covers the importance of domestic and global transportation, the operational aspects of the various transportation modes (rail, water, motor, air, and pipeline), the role of transportation intermediaries, the demand and supply of transportation, and the managerial aspects of transport in both the commercial and urban environment.

**MKTG 3771 Traffic and Transportation Management: 3 semester hours**

Same as SCMA 3371. Prerequisites: SCMA 3370 or MKTG 3770, and a minimum campus GPA of 2.0. This course focuses on transportation management as a function of a firm's logistics and supply chain strategy. The course covers the management of the various transportation modes (rail, motor, air, water, and pipeline), strategic use of transportation intermediaries such as 3PL's, and linkages between transportation and warehousing. This course is designed to provide a basic understanding of the issues and work performed by transportation managers, including costing and pricing, transportation procurement, transportation technology, and cross border trade management.

**MKTG 3776 Transportation Security and Risk: 3 semester hours**

Same as SCMA 3376. Prerequisites: SCMA 3370 or MKTG 3770 and a minimum campus GPA of 2.0. This course emphasizes risk and security issues related to transportation systems and supply chains, including highway, aviation, pipeline, waterway, transit, and rail networks, as well as port facilities. This course also provides an overview of transportation safety issues including passenger and employee safety, and hazardous materials. It addresses transportation and supply chain risk management and continuity strategies to prepare for, and respond to, disruptions as from terrorism events or natural disasters.

**MKTG 3777 Aviation Business: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course addresses the development of aviation from the early 20th century through today, including significant aviation events, individuals, companies and aircraft. This course focuses on the administrative aspects of airline operations and management, aviation regulation and deregulation, commercial organizations and firms, as well as current industry trends. This course is not offered for graduate credit.

**MKTG 3780 International Marketing: 3 semester hours**

Same as INTL BUS 3780. Prerequisites: MKTG 3700 and a 2.0 overall GPA. Marketing management problems, techniques and strategies needed to apply the marketing concept to the world marketplace. Understanding a country's cultural and environmental impact on the marketing plan is emphasized, as well as competing in markets of various cultures. Worldwide consumerism, economic and social development, the spread of multinational corporations, business ethics, and current economic and marketing issues are examined.

**MKTG 3785 Women in International Entrepreneurship: 3 semester hours**

Prerequisites: MKTG 3700; MKTG 3780 or INTL BUS 3780; and junior standing. This course is an integration of international business and entrepreneurship, with a focus on women entrepreneurs. It is designed to help students learn how entrepreneurs create and grow their ventures internationally. We will examine how entrepreneurs search, evaluate, and exploit opportunities across national boundaries to market goods and services effectively. We will explore the unique circumstances faced by women entrepreneurs and the appropriate strategies developed in order to sustain international growth.

**MKTG 3790 Internship in Marketing: 1-3 semester hours**

Prerequisites: A minimum campus GPA of 2.0; one must have completed and/or be currently enrolled in at least 6 credit hours of Marketing electives and have consent of supervising marketing instructor and Area Coordinator. A Business College GPA of 2.5 is also required. Students are employed in the field of Marketing where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience are primary goals. A Marketing faculty member will monitor the student's program with the student providing a formal written report at the end of the project. MKTG 3790 may be counted toward the minimum credit hours of marketing electives required for a marketing emphasis.

**MKTG 3795 Special Administration Problems - Marketing: 1-10 semester hours**

Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 overall GPA. Study of selected special problems in business and administration. May be repeated for credit with different topics.

**MKTG 3798 Seminar in Marketing: 1-3 semester hours**

Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 overall GPA. This course is a selected special topic in the field of marketing. May be repeated for credit with different topics.

**MKTG 3799 Independent Study in Marketing: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0 and approval by the supervising professor and the area coordinator. Special individual study in marketing under the supervision of a full-time marketing faculty member.

**MKTG 4700 Marketing Management: 3 semester hours**

Prerequisites: MATH 1105, MKTG 3700, three other marketing elective courses, senior standing, and a 2.0 campus GPA. An intensive analysis of major marketing decisions facing the firm, such as level, mix, allocation, and strategy of marketing efforts. Specific decision areas investigated include market determination, pricing, physical distribution, product policy, promotion, channel management, and buyer behavior. Competitive, political, legal, and social factors that may affect such areas of decisions are discussed. Cases, models, and problems are used heavily.

**MKTG 5700 Contemporary Marketing Concepts: 3 semester hours**

Prerequisite: BUS AD 5000. Designed for students with no prior course work in the field of marketing. A wide spectrum of marketing institutions and activities is covered. The impact of marketing on the total firm, the economy, and society in general is assessed. The course is intended to develop and organize the fundamental marketing concepts necessary to an analytical study of consumer behavior, the economic environment and four managerial aspects of marketing. The acquisition and utilization of marketing research data for problem solving is stressed. Relation and integration of basic marketing knowledge to the successful development of sound marketing policy, planning, and strategy is developed.

**MKTG 5701 Marketing Planning and Strategy: 3 semester hours**

Prerequisite: MKTG 5700. Emphasizes the development of a total marketing program through an analytical study of the marketing-mix, the diagnosis of the business situation, along with the influence of exogenous variables and the development of an effective overall marketing strategy. Stresses importance of an integrated marketing plan and utilizes modern decision-making tools. Supplementary readings, journal articles, and current periodicals are used to place the theoretical framework of the course into the contemporary environment of the market place.

**MKTG 5710 Consumer Motivation and Behavior: 3 semester hours**

Prerequisite: MKTG 5700. An analysis of the socio-psychological foundations of consumer behavior including personality differences, needs and wants, status symbols, social change and mobility, fads and fashions. Consumer spending and saving habits, product preferences, leisure-time patterns, shopping behavior and motivation research also are examined for their impact on advertising, selling and marketing management.

**MKTG 5721 Digital Marketing Strategies and Measurement: 3 semester hours**

Prerequisites: MKTG 5700. This course provides students with the theoretical understanding of the internet marketplace necessary to adapt to its many changes, while also introducing them to the real-world internet marketing problems. The following topics will be covered: (1) an overview of the digital landscape and status quo; (2) digital advertising and promotion including search advertising and display advertising; and (3) transitioning to digital: product, price, and place.

**MKTG 5722 Social Media Marketing Strategy: 3 semester hours**

Prerequisite: MKTG 5721. This course teaches students how to create a brand presence on social networks, to understand the differences between earned and paid media, to understand the various tools used to listen and engage with consumers, how we manage healthy communities, techniques used to identify influencers, crisis management, rules of engagement for high profile individuals and corporations, the importance of transparency, and the various ways engagement is measured. Students will also learn how to create various forms of content for consumption by consumers on various social media platforms including livestreaming, video, blogs, podcasts, and memes and will become Hootsuite Certified by the end of the semester.

**MKTG 5731 Special Seminars in Digital and Social Media Marketing: 3 semester hours**

Prerequisites: MKTG 5721 or MKTG 5722 or consent of instructor if prior digital/social media experience. This course provides students with three one, two or three day intensive workshops covering various digital and social media marketing topics in depth. Topics may include CRM and email marketing strategy, advanced Facebook advertising, Google Analytics, strategic search engine marketing, paid search, LinkedIn strategy, data analytics and visualization, video production/editing, and podcasting strategy. All seminars are on Fridays and Saturdays. Contact the instructor for the exact schedule for these workshops.

**MKTG 5733 Customer Relationship Management Strategies: 3 semester hours**

Prerequisites: MKTG 5721 and MKTG 5722, or consent of instructor. The course covers project management, automation and email, Customer Experience Platforms (CMS), Customer Relationship Management (CRM) systems, E-Commerce, data analytics and internet sources. Best-in-class technologies for use in small businesses through enterprises will be covered. Students may not receive credit for both MKTG 3733 and MKTG 5733.

**MKTG 5740 Marketing and Business Analytics: 3 semester hours**

Prerequisites: MKTG 5700 and SCMA 5300. A broad approach to marketing research as a model for acquiring, retrieving, and analyzing decision-making information. Includes market measurement, evaluation of sales and cost effectiveness, sales forecasting and primary marketing research studies aimed at solving specific problems. Emphasis is placed also on building a theoretical and analytical framework to provide flexibility in the design of marketing experiments and in judging recent research innovations.

**MKTG 5761 Business to Business Marketing: 3 semester hours**

The course provides graduate students with an understanding of the role of business to business marketing as it pertains to business, government, and institutional customers. The course places a heavy emphasis on buyer-seller interaction embodying business to business marketing. In addition to discussing the standard theories and covering the subject domain of business marketing, the course focuses on the finer aspects of business to business marketing negotiations using exercises and readings. Student groups enact complex industrial buyer-seller negotiations striving to achieve their respective organizational goals.

**MKTG 5770 Supply Chain Management Strategy: 3 semester hours**

Prerequisite: Consent of instructor. Course addresses supply chain management and its implications, with a focus on what firms can do to maintain competitiveness in the quickly changing business landscape. Topics may include, but are not limited to, value chain analyses, marketing business-to-business, supply chain analytics, procurement, production, logistics, and inventory management within supply chains.

**MKTG 5775 Domestic Transportation: 3 semester hours**

Domestic Transportation is the study of North American transportation modes, their management and operating characteristics. This graduate course is part of the Mid-West Transportation Consortium where UMSL, along with 5 other Universities, provides guest lectures that comment on aspects of transportation. UMSL students concentrate on the business aspects of transportation.

**MKTG 5780 Seminar in International Marketing: 3 semester hours**

Same as INTL BUS 5780. Prerequisite: MKTG 5700. An advanced seminar on topics in international or global marketing. Possible topics include the globalization of trade, export marketing, international market opportunity analysis, and negotiation for international marketers. Students who take one version of this course (e.g., globalization of trade) can take a second version of the course (e.g., negotiation for international marketers) with prior permission.

**MKTG 5795 Seminar in Marketing: 3 semester hours**

Prerequisites: MKTG 5700. This course addresses advanced problems in contemporary marketing. Topics may include, but are not limited to, marketing strategy, marketing communications and advertising, product management, consumer behavior, channels of distribution, international marketing, and marketing research.

**MKTG 5799 Individual Research in Marketing: 1-3 semester hours**

Prerequisites: Consent of instructor and graduate director. Special individual research topics in marketing under the guidance of a specific professor.

## Mathematics

### Courses

**MATH 0005 Intermediate Algebra: 3 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. Preparatory material for college level mathematics courses. Covers systems of linear equations and inequalities, polynomials, rational expressions, exponents, quadratic equations, graphing linear and quadratic functions. This course carries no credit towards any baccalaureate degree.

**MATH 1020 Contemporary Mathematics (MOTR MATH 120): 3 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. Presents methods of problem solving, centering on problems and questions which arise naturally in everyday life. May include aspects of algebra and geometry, the mathematics of finance, probability and statistics, exponential growth, and other topics chosen from traditional and contemporary mathematics which do not employ the calculus. Designed for students who do not plan to take calculus and may not be used as a prerequisite for other mathematics courses. Credit will not be granted for MATH 1020 if credit has been granted for MATH 1310, MATH 1800, MATH 1100, MATH 1102, or MATH 1105. Concurrent enrollment in MATH 1020 and any of these courses is not permitted. This course fulfills the University's general education mathematics proficiency requirement.

**MATH 1021 Choice and Chance: 3 semester hours**

Same as PHIL 1021. Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. This course provides an introduction to inductive logic and the theory of probability in an organized and systematic way, so as to give students tools for more effective decision-making. We will introduce the probability calculus, basic concepts of utility theory, decision theory and different approaches to understanding probability. This course is designed to be accessible to students of all levels. This course fulfills the University's general education mathematics proficiency requirement.

**MATH 1025 Geometry in the Real World: 3 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. Presents topics in geometry designed to enrich the student's understanding of mathematics. Geometry as it applies to the physical world and such fields as art, music, nature, motion, architecture and city planning will be examined. This course is designed to be accessible to students of all levels. This course fulfills the University's general education mathematics proficiency requirement.

**MATH 1026 The Music of Math: 3 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. This course presents topics in mathematics as they relate to music. Fundamental concepts of music such as intervals, scales, chords, tuning will be explored by developing an understanding of their mathematical underpinnings. An ability to read music in treble and bass clef is strongly recommended. Satisfies the general education mathematics proficiency requirement.

**MATH 1030 College Algebra (MOTR MATH 130): 3 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course, or approval of the department. This is a foundational course in math. Topics may include factoring, complex numbers, rational exponents, simplifying rational functions, functions and their graphs, transformations, inverse functions, solving linear and nonlinear equations and inequalities, polynomial functions, inverse functions, logarithms, exponentials, solutions to systems of linear and nonlinear equations, systems of inequalities, matrices, and rates of change. This course fulfills the University's general education mathematics proficiency requirement.

**MATH 1035 Trigonometry: 2 semester hours**

Prerequisite: MATH 1030 or MATH 1040, or concurrent registration in either of these two courses, or a satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. A study of the trigonometric and inverse trigonometric functions with emphasis on trigonometric identities and equations.



**MATH 1045 PreCalculus (MOTR MATH 150): 5 semester hours**

Prerequisites: A satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course. This course covers topics including factoring, simplifying rational functions, functions and their graphs, solving linear and nonlinear equations, polynomial functions, inverse functions, the binomial theorem, logarithms, exponentials, solutions to systems of equations using matrices, solutions to nonlinear systems of equations, and sequences. Students will also study trigonometric and inverse trigonometric functions with emphasis on trigonometric identities and equations. This course is intended for students planning to take MATH 1800 and fulfills the University's general education mathematics proficiency requirement.

**MATH 1100 Basic Calculus: 3 semester hours**

Prerequisites: MATH 1030 or MATH 1040 or MATH 1045 or a satisfactory score on the UMSL ALEKS Placement Examination, obtained at most one year prior to enrollment in this course. This course introduces plane analytic geometry and basic differential and integral calculus with applications to various areas. No credit for Mathematics majors. Credit not granted for both MATH 1800 and MATH 1100.

**MATH 1102 Finite Mathematics: 3 semester hours**

Prerequisites: MATH 1030 or MATH 1040 or MATH 1045 or a satisfactory score on the UMSL ALEKS Math Placement Examination, obtained at most one year prior to enrollment in this course. This course introduces logic and set theory, partitions and counting problems, elementary probability theory, stochastic processes, Markov chains, vectors and matrices, linear programming, and game theory.

**MATH 1105 Basic Probability and Statistics: 3 semester hours**

Prerequisites: MATH 1030 or MATH 1040 or MATH 1045 or a satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course or consent of the department. This course is an introduction to probability and statistics. Topics may include the concept of probability and its properties, descriptive statistics, discrete and continuous random variables, expected value, distribution functions, the central limit theorem, random sampling, and sampling distributions. Credit will not be granted for more than one of MATH 1310, MATH 1320, and MATH 1105.

**MATH 1150 Structure of Mathematical Systems I: 3 semester hours**

Prerequisites: 45 hours of college credit and a satisfactory score on the UMSL Math Placement Examination, obtained at most one year prior to enrollment in this course OR successful completion of MATH 1030 no more than 2 years prior to enrollment in this course. This course examines topics including problem solving, patterns, sets, numeration systems, whole numbers and operations, positive rational numbers and operations, and an introduction to variables and equations, with an emphasis placed on using multiple techniques for each of the aforementioned topics.

**MATH 1310 Elementary Statistical Methods: 3 semester hours**

Prerequisites: MATH 1030 or MATH 1040 or MATH 1045 or a satisfactory score on the UMSL ALEKS Math Placement Examination, obtained at most one year prior to enrollment in this course. An introduction to the basic tools and elementary methods of statistics, such as testing of hypotheses, analysis of variance, method of least squares, and time series. A student may not receive credit for more than one of MATH 1310, MATH 1320, and MATH 1105.

**MATH 1320 Introduction to Probability and Statistics: 3 semester hours**

Prerequisites: MATH 1030 or MATH 1040 or MATH 1045 or consent of the department. The course will cover basic concepts and methods in probability and statistics. Topics include descriptive statistics, probabilities of events, random variables and their distributions, sampling distributions, estimation of population parameters, confidence intervals and hypothesis testing for population means and population proportions, chi-square tests. A student may not receive credit for more than one of MATH 1310, MATH 1320 and MATH 1105.

**MATH 1800 Analytic Geometry and Calculus I: 5 semester hours**

Prerequisites: MATH 1030 and MATH 1035, or MATH 1040 and MATH 1035, or MATH 1045, or a satisfactory score on the UMSL ALEKS Math Placement Examination, obtained at most one year prior to enrollment in this course, or approval of the department. This course provides an introduction to differential and integral calculus. Topics include limits, derivatives, related rates, Newton's method, the Mean-Value Theorem, Max-Min problems, the integral, the Fundamental Theorem of Integral Calculus, areas, volumes, and average values.

**MATH 1900 Analytic Geometry and Calculus II: 5 semester hours**

Prerequisite: MATH 1800. Topics include conic sections, rotation of axes, polar coordinates, exponential and logarithmic functions, inverse (trigonometric) functions, integration techniques, applications of the integral (including mass, moments, arc length, and hydrostatic pressure), parametric equations, infinite series, power and Taylor series.

**MATH 2000 Analytic Geometry and Calculus III: 5 semester hours**

Prerequisite: MATH 1900. Topics include vectors, cylindrical and spherical coordinates, vector-valued functions, arc length and curvature, functions of several variables, partial and directional derivatives, gradients, extrema, Lagrange multipliers, multiple integrals, change of variables, surface area, vector fields, Stokes' Theorem.

**MATH 2010 Introduction to Inquiry Approaches to STEM Education (STEP I): 1 semester hour**

Same as CHEM 2010, PHYSICS 2010, BIOL 2010, and SEC ED 2010. Prerequisites: Concurrent enrollment BIOL 1821, BIOL 1831, CHEM 1111, CHEM 1121, PHYSICS 2111, PHYSICS 2112, MATH 1800, or MATH 1900 or have a declared STEM major. Students who want to explore teaching careers become familiar with lesson plan development by writing, teaching and observing lessons in a local school class. Students build and practice inquiry-based lesson design skills and become familiar with and practice classroom management in the school setting. As a result of the STEP I experiences students should be able to decide whether to continue to explore teaching as a career and ultimately finishing the remainder of the WE TEACH MO curriculum leading to teacher certification. The classroom observations and teaching represent a major field component and requires at least one two hour block of free time during the school day once a week.

**MATH 2011 Designing Inquiry-Based STEM Experiences (STEP II): 1 semester hour**

Same as CHEM 2011, PHYSICS 2011, BIOL 2011, and SEC ED 2011. Prerequisites: BIOL 2010, CHEM 2010, PHYSICS 2010, MATH 2010, or SEC ED 2010. Students explore teaching careers, become familiar with STEM school setting through observing and discussing the school environment and by developing and teaching inquiry-based lessons.

**MATH 2020 Introduction to Differential Equations: 3 semester hours**

Prerequisite: MATH 2000. Topics will be chosen from: linear differential equations, equations with constant coefficients, laplace transforms, power series solutions, systems of ordinary differential equations.



**MATH 2300 Introduction to Discrete Structures: 3 semester hours**

Prerequisites: MATH 1100 or MATH 1800, and CMP SCI 1250. This course treats fundamental mathematical concepts in discrete structures useful for computer science. Topics include logic, sets, equivalence relations and partitions, functions, elementary number theory, cardinality, basic combinatorial methods, trees and graphs.

**MATH 2450 Elementary Linear Algebra: 3 semester hours**

Prerequisite: MATH 1100 or MATH 1900. An introduction to linear algebra. Topics will include complex numbers, geometric vectors in two and three dimensions and their linear transformations, the algebra of matrices, determinants, solutions of systems of equations, eigenvalues and eigenvectors.

**MATH 2510 Structure of Mathematical Systems II: 3 semester hours**

Prerequisites: MATH 1150. Topics include an introduction to probability, statistics, and displays of data; a study of elementary geometry, including points, lines, planes, angles, properties of triangles, properties of quadrilaterals, other 2- and 3-dimensional shapes; similarity; measurement and conversions; Pythagorean Theorem; perimeter; area; surface area, and volume. This course does not apply towards the elective requirements for any of the majors, minors or related areas in mathematics and statistics.

**MATH 3000 Discrete Structures: 3 semester hours**

Prerequisites: MATH 1800 or MATH 1100, and CMP SCI 1250 or equivalent. This course introduces fundamental concepts and important data structures in Discrete Mathematics and serves as an important foundation for subsequent courses in Computer Science. It provides a formal system on which mathematical reasoning is based, and various problem-solving strategies with emphasis on the algorithmic approach (both iterative and recursive). Topics include logic, sets, functions and relations; methods of proof, including mathematical induction; elements of number theory; order of growth and basic analysis of algorithms efficiency; recurrence relations; basic counting methods; graphs and trees. This course does not apply towards the elective requirements for any of the majors, minors or related areas in mathematics and statistics.

**MATH 3250 Foundations of Mathematics: 3 semester hours**

Prerequisites: MATH 1900 and CMP SCI 1250. The course will focus on developing an understanding of proofs and rigorous mathematical reasoning. Topics will include logic, sets, relations, functions, number theory, and counting methods.

**MATH 3320 Applied Statistics: 3 semester hours**

Prerequisites: MATH 1320. The course will cover topics including multiple regression, analysis of variance, generalized linear models, and applications of these methods. Using R for statistical analysis will be part of the course.

**MATH 3520 Structure of Mathematical Systems III: 3 semester hours**

Prerequisites: MATH 2510. Topics from MATH 1150 and MATH 2510 are continued. Other topics include integers and the real number system, relations and functions, coordinate system and linear equations, congruence, geometric constructions, geometric proofs, isometries, tessellations, and trigonometry. This course does not apply towards the elective requirements for any of the majors, minors or related areas in mathematics and statistics.

**MATH 4005 Exploratory Data Analysis with R: 3 semester hours**

Prerequisites: (MATH 1100 or MATH 1800) and (ANTHRO 3220 /SOC 3220 or BIOL 4122 or CRIMIN 2220 or ECON 3100 or MATH 1320 or POL SCI 3000 or PSYCH 2201). This course covers data analysis methods with R. It introduces the basic goals and techniques of the data science process, methods of characterizing and visualizing data and building predictive and inferential models. R will be introduced at the beginning of the class and then used throughout the rest of the class.

**MATH 4010 Financial Mathematics I: 3 semester hours**

Prerequisites: MATH 1900 or MATH 1100, and MATH 1320 or SCMA 3300 (or equivalents). This course introduces the theory of interest, annuities (certain), annuities with differing pay periods, amortization schedules, and sinking funds.

**MATH 4020 Financial Mathematics II: 3 semester hours**

Prerequisite: MATH 4010. This course introduces the premium-discount formula for bonds, bond amortization, term structure of interest rates, and pricing theory for options.

**MATH 4030 Applied Mathematics I: 3 semester hours**

Prerequisite: MATH 2020 and MATH 2450. Topics chosen from Fourier series, special functions, partial differential equations, and boundary value problems.

**MATH 4060 Applied Differential Equations: 3 semester hours**

Prerequisites: MATH 2020 and MATH 2450. The study of ordinary differential equations and partial differential equations is continued with applications in such areas as physics, engineering and biology.

**MATH 4070 Introduction to Nonlinear Optimization: 3 semester hours**

Prerequisites: MATH 1320, MATH 2000, MATH 2450 and (MATH 3000 or MATH 3250). This course will introduce the theory, methods, and applications of nonlinear optimization. It will cover convex functions, convex analysis, linear and quadratic programs, semidefinite programming and other optimization problems. Topics may include duality theory, algorithms of descent method, Newton's method and interior-point methods, and applications to signal processing, statistics and other fields will be covered. Credit cannot be earned for both MATH 4070 and MATH 5070.

**MATH 4080 Introduction to Scientific Computation: 3 semester hours**

Prerequisites: MATH 2000 and MATH 2450. This course will introduce fundamental algorithms in numerical linear algebra, matrix factorizations including SVD and QR, direct and iterative methods for solving linear systems, least squares problems and eigenvalue problems. Other topics covered will be chosen from numerical integration and differentiation, iterative methods for ODEs and PDEs, Discrete Fourier transform and FFT, spline smoothing and kernel smoothing. Credit cannot be earned for both MATH 4080 and MATH 5080.

**MATH 4090 Introduction to High-dimensional Data Analysis: 3 semester hours**

Prerequisites: MATH 1320, MATH 2000 and MATH 2450. This course introduces several advanced classical and modern techniques for modeling and analysis of high-dimensional datasets with low-dimensional structures. The topics covered in this course include principal component analysis, factor analysis, clustering-based methods, and sparse and low-rank recovery theory and algorithms. Credit cannot be earned for both MATH 4090 and MATH 5090.

**MATH 4100 Real Analysis I: 3 semester hours**

Prerequisites: MATH 3250, or CMP SCI 3130, or consent of instructor. This course provides an introduction to real analysis in one variable. Topics include the real number system, limits, continuity, differentiability, and sequences and series of functions.

**MATH 4160 Complex Analysis I: 3 semester hours**

Prerequisites: MATH 2000 or consent of the instructor. This course introduces complex numbers and their geometrical representation, point sets, analytic functions of a complex variable, complex integration, Taylor and Laurent series, residue theorem, and conformal mapping.

**MATH 4200 Mathematical Statistics I: 3 semester hours**

Prerequisites: MATH 1320 and MATH 2000. Introduction to the theory of probability and statistics using concepts and methods of calculus.

**MATH 4210 Mathematical Statistics II: 3 semester hours**

Prerequisites: MATH 4200. Continuation of MATH 4200. Sampling distributions, estimation theory, properties of estimators, hypothesis testing, Neyman-Pearson Theorem, likelihood ratio tests, introduction of analysis of variance and linear models. Basics of some nonparametric procedures.

**MATH 4220 Bayesian Statistical Methods: 3 semester hours**

Prerequisites: MATH 1320, MATH 2000 or MATH 1100; or consent of the instructor. This course introduces Bayesian methods in data analysis and the use of the R language and BUGS. The first half of the course covers inferential theorems and computation methods on fundamental Bayesian statistics, such as estimation, hypothesis testing, MCMC methods, model selection and hierarchical modeling. The second half of the course concentrates on particular models used in practice, such as Bayesian generalized linear models, Bayesian two-factor ANOVA, Bayesian logistic and probit models.

**MATH 4225 Introduction to Statistical Computing: 3 semester hours**

Prerequisites: MATH 1320, MATH 2000 and MATH 2450. This course will introduce fundamental algorithms in Monte Carlo methods: random variable generation, Monte Carlo integration, Monte Carlo optimization, Markov chain Monte Carlo, Metropolis-Hastings algorithm, Gibbs sampler, Langevin algorithms and Hamilton Monte Carlo, perfect, iterated and sequential importance sampling. Other topics covered may include particle systems, hidden Markov models, parallel and cloud computing. Credit cannot be earned for both MATH 4225 and MATH 5225.

**MATH 4230 Numerical Analysis I: 3 semester hours**

Prerequisites: MATH 2020, MATH 2450, and the ability to program in an upper-level language. Solutions of equations, interpolation and approximation numerical differentiation and integration, and numerical solutions of initial value problems in ordinary differential equations. Selected algorithms will be programmed for solution on computers.

**MATH 4250 Introduction to Statistical Methods in Learning and Modeling: 3 semester hours**

Prerequisites: MATH 1320, MATH 2000 and MATH 2450. This course will introduce basic statistical principles and methods for modeling, inference, prediction and classification. The topics will be chosen from linear regression, basis expansion methods, kernel smoothing methods, model regularization, model selection and assessment, and other nonparametric methods. Credit cannot be earned for both MATH 4250 and MATH 5250.

**MATH 4260 Introduction to Stochastic Processes: 3 semester hours**

Prerequisites: MATH 4200. Basic theory and applications of stochastic processes. Markov chains, recurrent and transient states, stationary distributions, ergodic theorem, renewal processes, discrete martingales and stationary processes.

**MATH 4350 Theory of Numbers: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3000 or MATH 3250; or consent of instructor. This course examines the properties of integers, multiplicative functions, congruences, primitive roots, and quadratic residues.

**MATH 4390 Topics in Probability and Statistics: 3 semester hours**

Prerequisites: Consent of instructor. A seminar on special topics in probability and statistics to be determined by the interests of the instructor. May be repeated for credit provided different topics are studied.

**MATH 4400 Introduction to Abstract Algebra I: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3250 or CMP SCI 3130; or consent of instructor. This course introduces groups, rings, and fields, with an emphasis on groups and rings.

**MATH 4450 Linear Algebra: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3250 or CMP SCI 3130; or consent of instructor. This course focuses on topics selected from vector spaces, bases, linear transformations, matrices, canonical forms, eigenvalues, hermitian and unitary matrices, inner product spaces, and quadratic forms.

**MATH 4460 Introduction to Coding Theory: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3000 or MATH 3250. This course is an introductory course in coding theory. Topics may include linear codes, generator and parity check matrices, dual codes, weight and distance, encoding and decoding, and the Sphere Packing Bound; various examples of codes like the Hamming codes, Golay codes, binary Reed-Muller codes, and the hexacode; Shannon's theorem for the binary symmetric channel, upper and lower bounds on the size of linear and nonlinear codes; constructions and properties of finite fields, basic theory of cyclic codes; concepts of idempotent generator, generator polynomial, zeros of a code, and defining sets, special families of BCH and Reed-Solomon cyclic codes as well as generalized Reed-Solomon codes. Credit cannot be granted for both MATH 4460 and MATH 5460.

**MATH 4500 Special Readings: 1-10 semester hours**

Prerequisites: 6 credit hours at the Math 4000 level and consent of the instructor. Advanced topics in Mathematics. May be repeated for credit if the topic differs.

**MATH 4550 Combinatorics: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3000 or MATH 3250; or consent of instructor. This course introduces advanced counting methods including the use of generating functions for the solution of recurrences and difference equations. Additional topics may include: graphs and trees, combinatorial designs, combinatorial games, error-correcting codes, and finite-state machines.

**MATH 4580 Mathematical Logic: 3 semester hours**

Prerequisites: MATH 2450 and one of MATH 3250, CMP SCI 3130, or PHIL 4460; or consent of instructor. This course focuses on a study of the logic of mathematics by the axiomatic method, with a development of the propositional calculus and restricted predicate calculus emphasizing its application to the foundations of mathematics.

**MATH 4660 Foundations of Geometry: 3 semester hours**

Prerequisites: MATH 2450 and either MATH 3250 or CMP SCI 3130; or consent of instructor. This course focuses on a development of portions of Euclidean geometry from a selected set of axioms, including a discussion of consistency, independence, categoricity, and completeness of the axioms.

**MATH 4670 Introduction to Non-Euclidean Geometry: 3 semester hours**

Prerequisites: MATH 2000, MATH 2450, and either MATH 3250 or CMP SCI 3130; or consent of instructor. This course focuses on a summary of the history of the non-Euclidean geometries and a study of hyperbolic plane geometry.

**MATH 4800 Introduction to Topology: 3 semester hours**

Prerequisites: MATH 2000 and either MATH 3250 or CMP SCI 3130; or consent of instructor. This course focuses on the study of topological spaces, including the concepts of limit, continuity, connectedness, compactness, etc. Special emphasis is placed on, and examples taken from, the space of real numbers.

**MATH 4890 Topics in Mathematics: 3 semester hours**

Prerequisite: Consent of instructor.

**MATH 4995 Internship in Actuarial Science: 1-3 semester hours**

Same as ECON 4995. Prerequisites: Junior standing and consent of program director. Supervised off-campus training in a private or public sector position in which the student applies the knowledge and skills learned in their actuarial science coursework. The internship is monitored by a faculty member and the student must provide a written report at the end of the project. This course may be repeated for a maximum of 6 credit hours.

**MATH 5060 Computational Harmonic Analysis: 3 semester hours**

Prerequisites: MATH 4030, MATH 4100 and MATH 4450. The course covers the basics of Fourier analysis and wavelet analysis. Topics include Fourier transforms and series, discrete Fourier transform, discrete cosine transform and their fast computational schemes, fast wavelet transform, and the lifting scheme. Additional topics include industrial standards for image compression and several aspects of signal processing.

**MATH 5070 Nonlinear Optimization: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce the theory, methods, and applications of nonlinear optimization. It will cover convex functions, convex analysis, linear and quadratic programs, semidefinite programming and other optimization problems. Topics chosen from duality theory, algorithms of descent method, Newton's method and interior-point methods, and applications to signal processing, statistics and other fields will be covered. Topics are identical to Math 4070 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be earned for both MATH 4070 and MATH 5070.

**MATH 5080 Scientific Computation: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce fundamental algorithms in numerical linear algebra, matrix factorizations including SVD and QR, direct and iterative methods for solving linear systems, least squares problems and eigenvalue problems. Other topics covered will be chosen from numerical integration and differentiation, iterative methods for ODE's and PDE's, Discrete Fourier transform and FFT, spline smoothing and kernel smoothing. Topics are identical to MATH 4080 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be earned for both MATH 4080 and MATH 5080.

**MATH 5090 High-dimensional Data Analysis: 3 semester hours**

Prerequisites: Graduate standing. This course introduces several advanced classical and modern techniques for modeling and analysis of high-dimensional datasets with low-dimensional structures. The methods covered in this course include principal component analysis, factor analysis, clustering-based methods, and sparse and low-rank recovery theory and algorithms. Topics are identical to MATH 4090 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be earned for both MATH 4090 and MATH 5090.

**MATH 5100 Real Analysis II: 3 semester hours**

Prerequisites: MATH 4100. Introduction to measure and integration. Topics include the Riemann-Stieltjes integral, Lebesgue measure, measurable functions, the Lebesgue integral, Radon-Nikodym and Fubini theorems and the basics of  $L_p$ -spaces.

**MATH 5140 Set Theory and Metric Spaces: 3 semester hours**

Prerequisites: MATH 4100 or consent of instructor. Naive set theory, cardinal arithmetic, ordinal numbers, the axiom of choice and equivalents, metric spaces, convergence, continuity, compactness, contraction principals and applications. Construction of completions and examples like real numbers and  $p$ -adic numbers. Other topics could include the Stone-Weierstrass theorem and metrizable theorems.

**MATH 5160 Complex Analysis II: 3 semester hours**

Prerequisites: MATH 4160 and either MATH 4100 or MATH 4800. A second course in complex analysis, emphasizing the theory of analytic functions, and including various topics like the Riemann mapping theorem, normal families, analytic continuation, representations of analytic functions, and elliptic functions.

**MATH 5225 Statistical Computing: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce fundamental algorithms in Monte Carlo methods: random variable generation, Monte Carlo integration, Monte Carlo optimization, Markov chain Monte Carlo, Metropolis-Hastings algorithm, Gibbs sampler, Langevin algorithms and Hamilton Monte Carlo, perfect, iterated and sequential importance sampling. Other topics covered may include particle systems, hidden Markov models, parallel and cloud computing. Topics are identical to Math 4085 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be earned for both MATH 4225 and MATH 5225.

**MATH 5250 Statistical Methods in Learning and Modeling: 3 semester hours**

Prerequisites: Graduate standing. This course will introduce basic statistical principles and methods for modeling, inference, prediction and classification. The topics will be chosen from linear regression, basis expansion methods, kernel smoothing methods, model regularization, other nonparametric methods, and model selection and assessment. Topics are identical to MATH 4250 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be earned for both MATH 4250 and MATH 5250.

**MATH 5320 Topics in Statistics and its Applications: 3 semester hours**

Prerequisites: MATH 4210 or consent of instructor. The course studies classical and recently developed statistical procedures selected from areas including multivariate analysis, linear and non-linear models, nonparametric methods, and statistical learning. Emphasis is on applications of the procedures.

**MATH 5460 Coding Theory: 3 semester hours**

Prerequisites: Graduate standing. This course is an introductory course in coding theory. Topics may include linear codes, generator and parity check matrices, dual codes, weight and distance, encoding and decoding, and the Sphere Packing Bound; various examples of codes like the Hamming codes, Golay codes, binary Reed-Muller codes, and the hexacode; Shannon's theorem for the binary symmetric channel, upper and lower bounds on the size of linear and nonlinear codes; constructions and properties of finite fields, basic theory of cyclic codes; concepts of idempotent generator, generator polynomial, zeros of a code, and defining sets, special families of BCH and Reed-Solomon cyclic codes as well as generalized Reed-Solomon codes. Topics are identical to MATH 4460 but material is covered at a greater depth and additional projects/assignments are required. Credit cannot be granted for both MATH 4460 and MATH 5460.

**MATH 5500 Directed Readings: 1-6 semester hours**

Prerequisite: Consent of instructor. Independent readings at an advanced level.



**MATH 5550 Topics in Advanced Math for the Teacher: 3 semester hours**

Prerequisite: Consent of instructor. This course will look at various topics in Algebra, Analysis, and Geometry that will deepen a teacher's understanding of the Mathematics of the precollegiate curriculum. It can be taken more than once for credit.

**MATH 5600 Topics in Computation: 3 semester hours**

Prerequisite: Consent of instructor. The course will cover various advanced topics in computation, and can be taken more than once for credit. Examples of such topics are: computer graphics, computer architecture, theories of language, analysis of operating systems, numerical geometry and computer aided design, etc.

**MATH 5700 Topics in Applied Mathematics: 3 semester hours**

Prerequisite: Consent of instructor. The course will cover various advanced topics on applied mathematics, and can be taken more than once for credit. Examples of such topics are: fast transforms, digital filters, etc.

**MATH 5710 Topics in Analysis: 3 semester hours**

Prerequisites: MATH 5100 or consent of instructor. Topics selected from the areas of Fourier analysis, harmonic analysis, functional analysis, special functions, generalized functions, and partial differential equations. May be taken more than once for credit with consent of department.

**MATH 5770 Advanced Topics in Nonlinear Optimization: 3 semester hours**

Prerequisites: MATH 4070 or MATH 5070; or consent of the instructor. Topics chosen from theory and algorithms of Lagrange multipliers, algorithms for solving variational inequalities, forward-backward splitting algorithms and proximal alternating minimization algorithm for non-convex optimization problems.

**MATH 5820 Topics in Algebra: 3 semester hours**

Prerequisite: Consent of instructor. Topics selected from the theory of groups, rings, fields, algebras and other algebraic systems. May be taken more than once for credit with consent of department.

**MATH 5890 Advanced Topics in Mathematics: 3 semester hours**

Prerequisites: Consent of the instructor. The course will cover various advanced topics in mathematics, statistics, or data science. May be taken more than once if the topic differs.

**MATH 6900 Masters Thesis: 1-6 semester hours**

Prerequisite: Consent of instructor. Thesis work under the supervision of a faculty member. The course is designed for those students intending to present a thesis as part of their M.A. program. Students who do not write a thesis cannot apply MATH 6900 to a degree.

**MATH 7990 Ph.D. Dissertation Research: 1-9 semester hours**

Prerequisites: Completion of comprehensive examinations. May be taken for no more than nine hours.

## Media Studies

### Courses

**MEDIA ST 1065 Internet Media: 3 semester hours**

This studio course will cover the principles of media design as they apply to the interactive world of the web. Sensitivity to the visual elements of online interfaces will be developed through analysis of the changing nature of communication technologies. Students will conceive and create their own web-based media projects.

**MEDIA ST 1070 Introduction to Cinema: 3 semester hours**

Same as THEATR 1070. This course provides an overview of American cinema from the early beginnings of D.W. Griffith and his contemporaries to the present day. The course will discuss both the Hollywood studio system and today's independent movement. Genre, film theory, criticism, and aesthetics are also covered.

**MEDIA ST 1100 Introduction to Advertising: 3 semester hours**

An introduction to the history, rhetoric, and aesthetics of Advertising. A basic understanding of industry issues and key areas such as account management, research, strategy, creative, media, and production.

**MEDIA ST 1110 Introduction to Broadcasting and Digital Media: 3 semester hours**

This course provides an introduction to the broadcasting and digital media industries. It also addresses topics including history, government regulations, technological changes, and social implications.

**MEDIA ST 1198 Practicum in Media Studies: 1-6 semester hours**

Prerequisites: Consent of instructor. Open to Media Studies majors or minors only; not open to students who have delayed grades outstanding. Practical work in a field related to media studies supervised by a faculty member. This course may be repeated for up to 20 credit hours.

**MEDIA ST 2080 Advertising Copywriting: 3 semester hours**

Same as ENGL 2080. To give students a hands-on approach for writing advertising material for print and broadcast against tight deadlines in a professional setting.

**MEDIA ST 2113 Media Production I: 3 semester hours**

Study of the basic skills needed to create media packages. The class will provide students with practical experience in camera operation, directing, producing, switching, audio mixing, and lighting, as well as basic non-linear editing. Lab arranged.

**MEDIA ST 2180 Introduction to News Writing: 3 semester hours**

This course focuses on developing stories and news writing; staff of The Current and other student publications are encouraged to enroll.

**MEDIA ST 2210 Video Production I: 3 semester hours**

This course covers the basic theories and practice of remote video production. Producing and directing in the field will be examined and practiced. The course will focus on technical and aesthetic aspects of cinematic production. Lab arranged.

**MEDIA ST 2211 Introduction to Digital Multimedia Production: 3 semester hours**

Students will explore different state-of-the-art digital multimedia applications, including audio, video, and computer generated graphics, that are presently used in television, radio, CD, DVD, and online presentation. Current media related software such as QuickTime, Window Media, and Flash multimedia creation will be demonstrated and utilized to develop skill sets in those areas.

**MEDIA ST 2225 Live Events Media: 3 semester hours**

Techniques and aesthetics of recording live video events. Course will include practical application training for single- and multi-camera shoots of concerts, lectures, theatre, dance, weddings, and other special events.

**MEDIA ST 2235 Media Theory: 3 semester hours**

Prerequisite: COMM 1050. This courses presents a theory-based explanation of the relationship between mass media and society. The topics covered include agenda-setting, violence and television, and other current issues from a critical perspective.



**MEDIA ST 3025 Current Issues in Strategic Communication: 3 semester hours**

Prerequisites: MEDIA ST 1100 or COMM 1150, junior standing or consent of instructor. The course covers current trends, topics, and controversies in advertising, public relations, and related fields. Students will analyze, evaluate, and critique current topics in group discussions. Students are expected to help select and research the topics as well as lead discussion with the support from the instructor.

**MEDIA ST 3113 Media Production II: 3 semester hours**

Prerequisite: MEDIA ST 2113. Advanced study of the skills needed to create media packages. The class will provide students with a continuation of practical training in camera operations, directing, producing, switching, audio mixing, and lighting, as well as more advanced post production techniques. Lab arranged.

**MEDIA ST 3150 Feature Writing: 3 semester hours**

Same as ENGL 3150. Prerequisites: ENGL 1100 or equivalent. Study of freelance and staff-written magazine or newspaper feature articles. Emphasis on relationship between types of publication and article content, research methods, and writing style. Frequent short assignments - journal entries, interviews, library projects, article critiques, and market reports - lead to production of full-length feature articles. May not be taken on the satisfactory/unsatisfactory option. The course counts toward the English Certificate in Writing.

**MEDIA ST 3201 Narratives from the Forever Wars: 3 semester hours**

Same as MVS 3201 and ENGL 3201. This course studies literature and film written by and about those who served in the wars in Iraq and Afghanistan, with particular interest in how veterans as individuals are represented in it.

**MEDIA ST 3260 Design for Stage and Screen: 3 semester hours**

Same as THEATR 3260. Prerequisites: Consent of instructor. This course surveys the professional theories and practices used in the field of design for stage and screen. It emphasizes a digital design process and collaboration.

**MEDIA ST 3261 Lighting for Stage and Screen: 3 semester hours**

Prerequisite: Consent of instructor. This course surveys the theories and techniques used in digital lighting design and production for the stage and screen. It emphasizes professional practices and applications of lighting for both stage and screen.

**MEDIA ST 3310 Video Production II: 3 semester hours**

Prerequisite: MEDIA ST 2210. Study of advanced theories of media production. Refinement of production principles learned in MEDIA ST 2210. Exploration of complex program formats, and advanced non-linear editing techniques. Lab arranged.

**MEDIA ST 3313 Advanced Video Editing: 3 semester hours**

Prerequisites: Six (6) hours of television production. Study of advanced non-linear editing techniques, animation, and advanced graphics development. Exploration of state of the art editing formats. Lab arranged.

**MEDIA ST 3318 Advanced Independent Video Production: 3 semester hours**

Prerequisites: MEDIA ST 2210. This course will enable students to plan, script, shoot and edit advanced independent video productions for exhibition and competitive formats. Emphasis will be placed upon auteur conceptualization, production, and direction. May be repeated for up to a total of 6 credit hours.

**MEDIA ST 3338 Advertising Technique: 3 semester hours**

Same as MKTG 3738. Prerequisites: MEDIA ST 1100 or MKTG 3700 or consent of instructor. Techniques for creating advertising messages and campaigns to reach target audiences. Focus on the process of persuasion, importance of advertising in modern economics, rationale for company advertisement, evaluation of advertising effectiveness, and assessment of advertising myths and truths. Practical application of messages and campaigns will be stressed.

**MEDIA ST 3355 Media Law and Regulation: 3 semester hours**

Prerequisites: COMM 1050 or MEDIA ST 1110. This course addresses laws affecting the mass media. The topics covered include problems and issues in legal regulation of media content, ownership, access, and accountability as well as industry self-regulation and the influence of citizens' organizations.

**MEDIA ST 3356 Global Media Systems and Trends: 3 semester hours**

This course will survey major theories, global trends, and key stakeholders in the field of mass and digital media. It addresses issues regarding the transnational and transcultural flow of media content and communication technologies. Topics include the historical context and cultural implications of globalization, patterns of international media flow, and the roles of transnational media and communication organizations.

**MEDIA ST 3398 Internship in Media Studies: 3-6 semester hours**

Prerequisites: Senior standing; consent of instructor; open to Media Studies majors only; not open to students who have any delayed grades. Practical work at an off-campus agency, supervised by a professional in consultation with a faculty member. This course may be repeated for up to 20 credit hours.

**MEDIA ST 3990 Directed Readings in Media Studies: 3 semester hours**

Prerequisites: Consent of instructor; not open to students who have any delayed grades. Supervised independent study involving readings, conferences, papers, in one of the department's disciplines: advertising, radio, television, film, or journalism.

**MEDIA ST 4040 Special Topics in Media Studies: 1-6 semester hours**

Prerequisites: Junior, senior, or graduate standing and consent of instructor. Special topics with subject matter dealing with current issues, (theoretical or applied), in the discipline of media studies. Since the topics of MEDIA ST 4040 may change from semester to semester, the course may be repeated for up to 12 credit hours.

**MEDIA ST 4400 Senior Project: 3-6 semester hours**

Prerequisites: Senior status and consent of instructor. The capstone experience requires seniors to produce an original research project, a representative portfolio, or an intrinsic case study, which exemplifies their undergraduate study. Students will present their work to the instructor supervising the course, as well as program related-faculty. Repeatable up to 6 credit hours.

## Middle Education

### Courses

**MID ED 4246 Teaching Mathematics in the Middle School: 3 semester hours**

Prerequisites: Completion of Level I and II requirements and mathematics area of concentration. A study of the middle school math curriculum with state standards and appropriate instructional strategies, materials, and assessments.

**MID ED 4253 Teaching Social Studies in the Middle School: 3 semester hours**

Prerequisites: Completion of Level I and II requirements. Study of middle school social studies emphasizing current social studies curricular content, methods of teaching, and instructional materials. If taken concurrently with internship, field hours will be combined within the internship experience. If this course is taken separately, middle school based field experiences are required in addition to scheduled course time.

**MID ED 4315 The Middle Level School: 3 semester hours**

Prerequisites: Completion of Level I requirements and admission to teacher education program. An in-depth study of the philosophical and historical basis of the goals and organization of middle level schools, including a review of research as the basis for current trends and practices.

**MID ED 4316 Middle Level Curriculum and Instruction: 3 semester hours**

Prerequisites: MID ED 4315 and completion of Level I requirements. Preparation for teaching and learning in a middle school, grades 5-9. Content focuses on curriculum development, methods, techniques, materials, planning, organization, and assessment in middle level education for early adolescents.

**MID ED 4317 The Middle-Level Child: 3 semester hours**

Prerequisites: Completion of Level II requirements. Developmental characteristics and needs of early adolescents are studied through field experience in middle school classrooms. The relationship between needs and behavior is explored and skills for effective student teacher relationships are highlighted. This course is to be taken concurrently with MID ED 4989.

**MID ED 4350 Teaching Science in the Middle School: 3 semester hours**

Prerequisites: Completion of Level I and II requirements or equivalent preparation. Students will analyze both methodology and content, apply appropriate teaching and learning strategies, and become acquainted with technological advances in teaching science. Students will use informal and formal assessment as well as design and implement original science activities and instruction for all areas of science. If taken concurrently with internship, field hours will be combined within the internship experience. If this course is taken separately, then middle school based field experiences are required in addition to scheduled course time.

**MID ED 4989 Practicum I: Middle Level Education Site-Based Experience: 3 semester hours**

Prerequisites: Accepted practicum application. This course is a two-day per week intensive, collaborative professional experience in inclusive K-12 settings with emphasis in middle school classrooms. This course emphasizes improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Practicum I includes mandatory on-site and on-campus seminars which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum I.

**MID ED 4990 Practicum II: Middle Level Education Site-Based Experience: 12 semester hours**

Prerequisites: Successful completion of Practicum I requirements. This course is a four-day per week intensive, collaborative professional experience in inclusive K-12 settings with emphasis in middle school classrooms. This course emphasizes improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Practicum II includes mandatory on-site and on-campus seminars which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum II.

**MID ED 4994 Practicum I/TESOL: Site-Based Experience: 3 semester hours**

Prerequisites: Accepted practicum application. This course is a two-day per week intensive, collaborative professional experience in inclusive K-12 settings with emphasis in middle school classrooms. This course emphasizes improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Particular emphasis will be given to differentiated instruction and impacting student achievement for diverse populations. Practicum I includes mandatory on-site and on-campus seminars which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum I.

**MID ED 5989 Practicum I: Middle Education Site-Based Experience: 2 semester hours**

Prerequisites: Graduate standing. This is an intensive professional development experience working in K-12 settings with middle-grade students. Activities on site cover all areas of instruction, assessment, and classroom management. Particular emphasis will be given to impacting students' achievement for diverse populations and differentiated instruction. Students must be practicing teachers holding a bachelor's degree.

## Military and Veterans Studies

### Courses

**MVS 1100 Veterans Transition Seminar: 1 semester hour**

This course is designed for the student veteran who is new to UMSL but not eligible for the First Year Experience class. It will survey essential life skills (time management, financial management, physical fitness) and tools for academic success (note-taking, writing, research, oral presentation). It will familiarize students with the relationship between their education and their career and personal goals. It will also expose students to campus and veteran-specific support services. Maybe most importantly, this course will provide a venue for veterans to connect with other veterans who are facing a similar transition.

**MVS 2000 Selected Topics in Military or Veterans Studies: 1-3 semester hours**

Selected topics in military or veterans studies. The topics will vary each semester. May be taken more than once for credit as long as the topic differs.

**MVS 2021 War and Violence in Modern Times: 3 semester hours**  
Same as HIST 2021. Prerequisites: Sophomore standing or consent of the instructor. This course examines the connections between warfare and resistance, gangs and poverty, and state and non-state officials as enactors of violence. It explores the effects of war and violence on the poor in Brazil and the United States, prisoners of war in Asia, and resistance fighters in Latin America and northern Africa. Students will watch films/short videos, read academic and newspaper articles, and listen to short podcasts to grapple with the issues underlying structures of violence.

**MVS 2025 U.S. Foreign Relations and Military History: 3 semester hours**

Same as HIST 2025. This course surveys the development of American land, sea, air, space, and cyber power from the start of the colonial era to the present, with an emphasis on the interrelationship between U.S. foreign and military policies and between diplomacy and force.

**MVS 2100 Veterans in American Society: 3 semester hours**  
Same as SOC 2801. Prerequisite: ENGL 1100. This survey course will focus on the American veteran experience and explore basic concepts, ideas and research into veterans and veteran institutions. In a multidisciplinary manner, students will examine military culture, the unique status of veterans in our society, and veteran institutions. Students will also study the successes, challenges and obligations our society faces related to its veteran community.

**MVS 2130 Gender and the Military: 3 semester hours**  
Same as SOC 2802 and GS 2130. This course investigates how the military treats gender difference, explores how military culture is defined, and how gender is a socially constructed concept. Topics may include military culture, gender construction, and how gender and sexuality issues affect military readiness and effectiveness.

**MVS 2200 Examining Cultural Experiences of Veterans: 3 semester hours**

Prerequisites: Consent of the instructor. This course is designed to explore the cultural experiences of veterans. Through discussion, reflection and writing, students will examine the service experience in another culture and then relate those limited interactions within the context of the culture as a whole. For non-western cultural experiences, this course meets UMSL Cultural Diversity [CD] requirement.

**MVS 2850 National Security Policy and Practice: 3 semester hours**  
Same as POL SCI 2551. This simulation-driven course focuses on national security policies and the processes that put these policies into practice. It examines the elements that underpin national security policy and the processes employed by the US government for integrating and synchronizing those instruments in the pursuit of national security objectives.

**MVS 2860 Understanding Terrorism in the 21st Century: 3 semester hours**

Same as POL SCI 2860. This course seeks to provide insight into the use of terrorism, as a means to achieve a political end, in our current globalized environment. It will review various facets of terrorism including societal disturbances that allow terrorist organizations to flourish, various types of domestic and international non-state actors that use terrorism, terrorism as the next generation of warfare, and the global response to the threat of terrorism. Students will exit the course with a more complete understanding of the multi-faceted threat terrorism poses to our increasingly globalized society.

**MVS 3100 Current Issues in Military and Veterans Studies: 1-4 semester hours**

Selected topics in military or veterans affairs with emphasis on current issues and trends. May be repeated as long as the topic is different for a maximum of 6 credit hours.

**MVS 3201 Narratives from the Forever Wars: 3 semester hours**

Same as MEDIA ST 3201 and ENGL 3201. This course studies literature and film written by and about those who served in the wars in Iraq and Afghanistan, with particular interest in how veterans as individuals are represented in it.

**MVS 3300 Veteran Social Policy: 3 semester hours**

Same as SOC 3802. Prerequisite: SOC 1010. This course provides an overview of American public policy towards military veterans. Students will research, design, and propose policy changes using various written products and presentations.

**MVS 3500 Internship in Veterans Studies: 1-3 semester hours**

Prerequisites: Junior Standing and consent of the department chair. Independent study involving regular on-site work with an appropriate public or private agency serving the veteran community. A written report reflecting on the experience is required. Course may be repeated for a maximum of 6 credit hours.

**MVS 4100 Veterans Studies Capstone Seminar: 3 semester hours**

Prerequisites: MVS 2100 and senior standing. Mentored by a faculty member, students in this course will apply insights gained from previous coursework into a substantial Veterans Studies project. Students will work with the instructor and the class to develop a topic, establish a research or project plan, then prepare a project or paper suitable for presentation to the public. Students should expect that their work will be published or presented at an end-of-the-year symposium. This is not an independent study.

**MVS 4200 Independent Study in Military and Veterans Issues: 1-3 semester hours**

Prerequisite: Consent of instructor. Faculty mentored, independent study through readings, reports, or field research. No student may take more than a cumulative total of 6 hours of Independent Study.

**MVS 4300 Current Topics in Military or Veterans Studies: 1-3 semester hours**

Prerequisites: Junior standing. Selected topics in military or veterans studies with emphasis on current issues and trends. May be repeated as long as the topic is different for a maximum of 6 credit hours.

**MVS 4345 War Crimes, Genocide, and Justice in the 20th and 21st Centuries: 3 semester hours**

Same as SOC 4345, POL SCI 4345, and CRIMIN 4345. Prerequisite: ENGL 3100. This course provides advanced undergraduate and Master's level students a comprehensive overview of the subject of war crimes, crimes against humanity, genocide and legal responses to these crimes in the modern era. The goal of this course is to engage students in sustained, critical thought about these issues and to foster a deeper understanding of both the causes and consequences—legal, social and human—of these egregious crimes.

**MVS 6220 Social Policy and Military Veterans: 3 semester hours**

Same as SOC WK 6220. Prerequisites: SOC WK 5200 or its equivalent or consent of the instructor and graduate standing. This course provides an overview of public policy towards military veterans, with an emphasis on social work. The course focuses on political theory and public policy and reviews the various methodological approaches to studying public policy, the pertinent theories related to public policy analysis, an introduction to military culture and current issues facing veterans. The main focus of the course will be on understanding the current issues facing veterans and how public policy affects these issues.

## Military Science

### Courses

**MIL SCI 1101 Introduction to Leadership I: 3 semester hours**

Examine the challenges and competencies that are critical for effective leadership. You will learn how the personal development of life skills such as cultural understanding, goal setting, time management, mental/physical resiliency, and stress management relate to leadership, officership, and the Army profession. Enrollment in MIL SCI 1101 does not require a commitment to join the US Army, (FALL ONLY).

**MIL SCI 1102 Introduction to Leadership II: 3 semester hours**

Investigate leadership fundamentals such as problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. You will explore dimensions of leadership attributes and core leader competencies in the context of practical, hands-on, and interactive exercises. Learn fundamental military concepts and explore the Army's leadership philosophy. Enrollment in MIL SCI 1102 does not require a commitment to join the US Army. (SPRING ONLY).

**MIL SCI 1500 Leadership Laboratory: 0 semester hours**

Prerequisites: Must be currently enrolled in a MIL SCI course. Leadership Laboratory provides basic and advanced leadership experience in military courtesy, drill and ceremonies and practical application of classroom-taught subjects. Functions and responsibilities of leadership positions are developed through student-led staff planning actions and command positions. This course normally meets at Washington University. Note: All military science scholarship and advanced course students must register for MIL SCI 1500.

**MIL SCI 2201 Innovative Team Leadership: 3 semester hours**

Explore the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and leadership theories. The focus continues to build on developing knowledge of leadership attributes and core leader competencies through the understanding of Army rank, structure, and duties as well as broadening knowledge of land navigation and squad tactics. Enrollment in MIL SCI 2201 does not require a commitment to join the US Army. (FALL ONLY).

**MIL SCI 2202 Foundations of Tactical Leadership: 3 semester hours**

Develop greater self-awareness as you assess your own leadership styles and practice communication and team building skills. Examine the challenges of leading teams in the complex operational environment. Study dimensions of terrain analysis, patrolling, and operation orders. Explores the dynamics of adaptive leadership in the context of military operations. Enrollment in MIL SCI 2202 does not require a commitment to join the US Army. (SPRING ONLY).

**MIL SCI 3301 Adaptive Team Leadership: 3 semester hours**

Prerequisites: Successful completion of MIL SCI 1101 through 2202; OR attendance at the Leader's Training Course (LTC); OR member of US Army Reserve or National Guard Unit. This is an academically challenging course where you will study, practice, and apply the fundamentals of Army leadership, officership, Army values and ethics, and small unit tactics. At the conclusion of this course you will be capable of planning, coordinating, navigating, motivating and leading a team or squad in the execution of a tactical mission during a classroom practical exercise (PE), a leadership lab, or during a situational training exercise (STX) in a field environment. (FALL ONLY).

**MIL SCI 3302 Applied Team Leadership: 3 semester hours**

Prerequisites: MIL SCI 3301. Continue to learn and apply the fundamentals of Army leadership, officership, Army values and ethics as you hone your leadership abilities in a variety of tactical environments and the classroom. Successful completion of this course will help prepare you for success at the ROTC Leader Development and Assessment Course (LDAC) which you will attend the summer following this course at Fort Lewis, WA. You will receive systematic and specific feedback on your leadership attributes, values and core leader competencies from your instructors, other ROTC cadre, and senior cadets. (SPRING ONLY).

**MIL SCI 4401 Adaptive Leadership: 3 semester hours**

Prerequisites: Successful completion of the ROTC Leadership Development and Assessment Course (LDAC). This course focuses on practical application of adaptive leadership. Throughout the semester, students will attend weekly training meetings and fill the roles of Army staff officers. They will plan, execute and assess ROTC training and recruiting events. Study will also focus on the Army values, leader ethics and how they are applied in the Full Spectrum Operating Environment. The officer's role in the Uniform Code of Military Justice, counseling of subordinates, administrative actions and other aspects of everyday military life will also be discussed. (FALL ONLY).

**MIL SCI 4402 Leaders in a Complex World: 3 semester hours**

Prerequisites: MIL SCI 4401. Explore the dynamics of leading in the complex situation of current military operations in the contemporary operating environment. Examine differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. You will also explore aspects of interacting with non-government organizations, civilians on the battlefield and host nation support. Significant emphasis is placed on preparing you for your branch school and first unit of assignment. (SPRING ONLY).

**MIL SCI 4411 Advanced Military Science Studies I: 3 semester hours**

Prerequisites: MIL SCI 4401 or permission of instructor. An in-depth study of the role of the Army officer in today's Army.

**MIL SCI 4413 Military Medical Technologies Independent Study: 3 semester hours**

This course explores how medical advances have improved soldiers' chances of surviving battlefield injuries from the Civil War to the Iraq War. Also explores how soldiers are now surviving more catastrophic injuries and what the implications are on long term health care for these soldiers both physically and mentally.



# Music Education

## Courses

***MUS ED 2770 An Introduction to Music for the Elementary School Teacher: 3 semester hours***

Through hands-on experiences and classroom lessons, students will develop an understanding and appreciation of the basics of music in order to create and present lesson plans that utilize music as a tool for teaching elementary subjects. Students will also learn basic music instrumentation, comprehension of musical elements and terminology, and the ability to play simple treble clef melodies on classroom instruments, e.g., soprano recorders and xylophones.

***MUS ED 3570 Curriculum and Methods of Teaching Elementary and Secondary General Music: 3 semester hours***

Prerequisites: THRY COM 2311 and THRY COM 2312 and completion of Level I Education courses for the music education major. This course provides a study of the elementary and secondary school music curriculum emphasizing the objectives, methods of teaching and staffing music classes, and analysis of instructional materials and resources. Must be completed in residence.

***MUS ED 3680 Curriculum and Methods of Teaching Instrumental Music: 3 semester hours***

Prerequisites: THRY COM 2311, THRY COM 2312, PRACTM 2510, and MUS ED 3570. A study of the teaching techniques, materials, curriculum, and organization of the beginning instrumental music education program. Topics include student recruitment, the elementary band/orchestra, small group instruction, jazz ensemble, and marching band. This course must be completed in residence. Concurrent enrollment in MUS ED 3570 is required.

***MUS ED 3710 Curriculum and Methods of Teaching Choral Music: 3 semester hours***

Prerequisites: THRY COM 2311, THRY COM 2312, MUS ED 3570, PRACTM 2180, and completion of Level I Education courses. A study of the following topics pertinent to an elementary and middle school choral music program: curriculum, methods of teaching techniques, organization, and administrative procedures for choral performance classes. This course must be completed in residence. Limited to music education majors.

***MUS ED 5060 Graduate Workshop in Music Education: 1-5 semester hours***

Prerequisites: Graduate standing and consent of instructor. Intensive workshop in Music Education. Variable topics. To gain skills and knowledge in specific areas not readily available in existing courses.

***MUS ED 5510 Graduate Instrumental Methods: 3 semester hours***

Prerequisites: Graduate standing in music. Development of objectives for instrumental programs and methods of achieving those objectives. Comprehensive musicianship through instrumental performance, analysis of instrumental literature, instrumental philosophies and methodologies, rehearsal organization, and recent research in instrumental music education will be discussed.

***MUS ED 5570 Advanced Curriculum and Methods of Teaching Elementary and Secondary General Music: 3 semester hours***

Prerequisites: Graduate standing and music coordinator approval. This course prepares students to teach general music to students at the elementary and secondary level. The course emphasizes the formation of a philosophy of music education and practices that consider the developmental needs of children as they are introduced to musical concepts and skills. Topics of the course may include lesson planning and observations, a review of traditional and current music education pedagogies, National and State music standards, music repertoire, assessment strategies, and differentiated teaching methods for music instruction.

***MUS ED 5610 Graduate Choral Methods: 3 semester hours***

Prerequisites: Graduate standing in music. Development of objectives for choral programs and methods of achieving those objectives. Comprehensive musicianship through choral performance, analysis of choral literature, the changing voice, choral philosophies and methodologies, rehearsal organization, and recent research in choral music education will be discussed.

***MUS ED 5620 Guitar in the Classroom: 3 semester hours***

Prerequisites: Graduate standing in music. A study of guitar instruction in grades 5-12 with a focus on curricular sequence that includes chords, strums and picking patterns essential for song accompaniment skill development. Current materials, suitable for upper elementary and secondary students will be explored.

***MUS ED 5680 Advanced Curriculum and Methods of Teaching Instrumental Music: 3 semester hours***

Prerequisites: Graduate standing and music coordinator approval. This course prepares students to teach instrumental music to students at the elementary and secondary level. The course emphasizes the formation of a philosophy of music education and practices that consider the developmental needs of students as they are introduced to musical concepts and skills through the playing of musical instruments in bands, orchestras, and other instrumental ensembles. Topics of the course may include lesson planning and the creation of behavioral objectives, teaching musical notation, rhythmic reading, sight reading, principles of musical acoustics, tone and intonation, bowing and articulation, and the study of rehearsal and performance procedures.

***MUS ED 5712 Advanced Choral Music Methods: 3 semester hours***

Prerequisites: Graduate standing and music coordinator approval. This course prepares students to teach choral music to students at the elementary and secondary level. This course emphasizes the formation of a philosophy of music education and practices that consider the developmental needs of students as they are introduced to musical concepts and skills through singing in vocal ensembles. Topics of the course may include lesson planning and the creation of behavioral objectives, building vocal tone, diction, rehearsal communication and techniques, diagnosing choral problems, working with changing voices, and developing style in choral singing.

***MUS ED 5750 Computer Applications in Music Education: 3 semester hours***

Prerequisites: Graduate standing in music. An examination of the potential of computers in the music education field. Experiences with available hardware and software suitable for applications that include inventory, budget, music library cataloging, digital music synthesis, digital music recording and editing, music-related graphics and basic animation with music soundtracks.

**MUS ED 5810 Foundations of Music Education: 3 semester hours**

Prerequisite: Graduate standing in music. A study of the historical, philosophical, and psychological foundations of music education, includes principles necessary for development, implementation, and evaluation of total school music program.

**MUS ED 5830 Contemporary Music Education: 3 semester hours**

Prerequisite: Graduate standing in music. A study of recent trends and issues in music education.

**MUS ED 5910 Music Education Research: 3 semester hours**

Prerequisite: Graduate standing in music. Applications of various approaches in defining and analyzing research problems in music education. Historical, experimental, descriptive, and philosophical research will be included.

**MUS ED 5950 Special Problems in Music Education: 1-3 semester hours**

Prerequisite: Graduate Standing in music. Selected Problems to meet the needs of the individual student.

**MUS ED 5990 Master's Project in Music Education: 3 semester hours**

Prerequisite: Graduate standing in music. A project utilizing historical, experimental, philosophical, descriptive, or analytical research techniques. The project will include a written report.

## Music History

### Courses

**M H L T 1001 Introduction to Music (MOTR MUSC 100): 3 semester hours**

An historically oriented study of art music, its styles and forms from the Baroque period to the present day. This course will not apply toward requirements for a music major.

**M H L T 1003 History of Rock Music (MOTR MUSC 100RP): 3 semester hours**

This course is a year-by-year review of the music, artists, composers, record producers, and others associated with rock 'n' roll from 1954 to the present with emphasis on the controversies surrounding this genre. The course will examine the artistry of rock music as well as its historical contexts and social implications.

**M H L T 1070 Introduction to Jazz (MOTR MUSC 100J): 3 semester hours**

A survey course which examines the musical, historical and social aspects of the subject. This course will not count toward requirements for a music major.

**M H L T 1080 Introduction to Irish Traditional Music: 3 semester hours**

Will survey the rich tapestry of Irish traditional music, song and dance. Particular attention will be given to the cultural history of the traditional music maker in Irish society, as well as among the constituent communities of the Irish diaspora in Europe and North America. Will introduce students to the instruments, performance settings and regional styles of Irish traditional music. Using field recordings and archive materials collected in Ireland and North America, will focus on celebrated folk performers of the past and present, and evaluate the impact of contemporary media on their ancient, yet evolving, musical genre. No prior experience of Irish traditional music is necessary to pursue this course.

**M H L T 1140 Popular Music in America: 3 semester hours**

This course is designed as a survey of major genres of American popular music - Tin Pan Alley, musical theater, ragtime, blues, early and more popular phases of jazz, country, rock, pop, hip-hop, rap, etc. Included will be a broad spectrum of cultural and historical contexts, insight into the development of the music industry, study of significant artists, and understandings of the formal and stylistic components of the music.

**M H L T 1150 Drumming Cultures of the World (MOTR MUSC 102): 3 semester hours**

Drumming is one of the oldest forms of expression in the world and is prevalent on every continent. This course is designed as a survey of drumming throughout the world and the significance to the cultures therein. Included will be a broad spectrum of cultural and historical contexts, performance practices and hands on instruction. The major focus in this course will be the drumming practices of Africa, Asia, South America and the Caribbean. This course satisfies the cultural diversity requirement for the University.

**M H L T 1160 Musical Journey through Latin America: 3 semester hours**

Explore the diversity of this contagious music of the past and present, from the tango of Argentina, to salsa and meringue of the Caribbean, and from huayno of Amerindian cultures, to the marimba of Middle Latin America! This introduction to musical cultures of Latin America reveals the rich and wide range of musical forms, instruments, and styles that has influenced music on almost all parts of the globe today.

**M H L T 1170 Musical Journey through the Far East: 3 semester hours**

This class will explore the musical traditions and instruments of the countries of East Asia - China, Japan, and Korea. Much of the legendary founding of music and musical instruments originated on the Asian continent and transplanted along the Silk Road (trade routes from India, Persia and the Mediterranean) to the Far East. We will examine some of the world's most amazing sounds of the Orient.

**M H L T 1180 Musical Journey Through Africa: 3 semester hours**

This introduction to musical cultures of Africa provides a snapshot of African music south of the Sahara, or sub-Saharan Africa. We will explore the extraordinary rich and diverse musical traditions through the sounds and rhythms of its people. Highlights of the course include the introduction to a wide range of authentic musical instruments from Africa.

**M H L T 1190 Musical Journey of the Native North American: 3 semester hours**

This introduction to musical cultures of the Native American provides a snapshot of the aboriginal and modern day Native American in North America. We will explore the extraordinary rich and diverse musical traditions through the sounds and cultural practices of its people. Highlights of the course include the introduction to a wide range of authentic musical instruments of the Native American.

**M H L T 1200 History of Jazz Music: 3 semester hours**

This course is a chronological exploration of the history of jazz with an examination of its roots, important genres and styles, historic recordings, important musicians, and relation to society.

**M H L T 2010 History of Western Music I (MOTR MUSC 103): 3 semester hours**

Prerequisites: THRY COM 1311 and THRY COM 1312, or consent of instructor. This course is a survey of music history from antiquity through the Baroque period, with readings, listening, and lecture. The principal objectives are to acquaint students with important musical works from this period of Western music history, and to place these works in their larger social, cultural, economic, and intellectual contexts.

**M H L T 2020 History of Western Music II (MOTR MUSC 104): 3 semester hours**

Prerequisites: M H L T 2010, or consent of instructor. This course is a survey of music history from ca. 1750 to the present, with readings, listening, and lecture. The principal objectives are to acquaint students with important musical works from this period of Western music history, and to place these works in their larger social, cultural, economic, and intellectual contexts.

**M H L T 4220 Music of the Renaissance: 3 semester hours**

Prerequisite: M H L T 2010 or consent of department. A study of the theoretical and practical impact of humanism on music, musicians, and musical thought from 1450 to 1600. Sacred and secular music; the rise of an instrumental idiom.

**M H L T 4230 Music of the Baroque: 3 semester hours**

Prerequisite: M H L T 2010 or consent of department. A detailed study of music from 1600 to 1750. The rise of the new style, national styles in the seventeenth century and the culmination of the Baroque period.

**M H L T 4240 Music of the Classic Period: 3 semester hours**

Prerequisite: M H L T 2020 or consent of department. A study of the growth of classical style; Galant and expressive styles; Mozart, Haydn and Beethoven.

**M H L T 4250 Music of the Romantic Period: 3 semester hours**

Prerequisite: M H L T 2020 or consent of department. Composers, forms and styles in nineteenth century music. The literary and social background of musical romanticism.

**M H L T 4260 Music from 1900 to the Present: 3 semester hours**

Prerequisite: M H L T 2020 or consent of department. A detailed study of trends in modern music and of influential composers; impressionism, serial composition, electronic music and other recent techniques.

**M H L T 4280 American Music: 3 semester hours**

Prerequisites: M H L T 2010 or M H L T 2020 or consent of department. A study of the history and literature of American music, its composers, performers and influences on American and world culture. Compositions studied include classical compositions from the colonial era through contemporary times as well as literature from the gospel, blues, jazz and popular music genres.

## Music: Pedagogy

### Courses

**PDGOGY 1250 Brass Techniques: 2 semester hours**

Prerequisites: Consent of the department. The objective of this course is to familiarize students with materials and techniques for teaching all brass instruments including trumpet, horn, trombone, euphonium, and tuba in the school setting.

**PDGOGY 1260 Woodwind Techniques: 2 semester hours**

Prerequisites: Consent of the department. The objective of this course is to familiarize students with materials and techniques for teaching all woodwind instruments including flute, clarinet, oboe, bassoon, and saxophone in the school setting.

**PDGOGY 1270 String Techniques: 2 semester hours**

Prerequisites: Consent of the department. The objective of this course is to familiarize students with materials and techniques for teaching all string instruments including violin, viola, cello, and bass in the school setting.

**PDGOGY 1280 Percussion Instrumental Techniques: 2 semester hours**

Prerequisites: Consent of the department. The objective of this course is to familiarize students with materials and techniques for teaching all percussion instruments including snare drum, tom-tom, bass drum, cymbals, drumset, timpani, mallet instruments and miscellaneous percussion instruments in the school setting.

**PDGOGY 2220 Jazz Pedagogy: 3 semester hours**

Students will participate in interactive sessions that will "boost the jazz teaching chops" whether students are seasoned teachers or novices in the field of jazz education. A wide range of jazz teaching methods will be studied, including those that have been successful in the instructor's nationally recognized jazz camps. Lab groups will be formed for "hands on-minds on" teaching and learning. Students will experience jazz teaching techniques, examine jazz method series, listen to a variety of jazz styles, and examine and perform jazz literature from different styles.

**PDGOGY 5001 Studio Pedagogy: 1 semester hour**

Prerequisites: Consent of the instructor and graduate standing required. In this class, typically supervised by the student's applied instructor, the student will focus on research of teaching techniques that apply specifically to the student's instrument or voice.

## Music: Practicum

### Courses

**PRACTM 1140 Piano Proficiency I: 1 semester hour**

Prerequisite: Permission of department. Group instruction for music majors who do not meet beginning keyboard requirements.

**PRACTM 1150 Piano Proficiency II: 1 semester hour**

Prerequisite: PRACTM 1140 or Consent of department. Group instruction for music majors who do not meet beginning keyboard requirements.

**PRACTM 1200 Jazz Improvisation: 1 semester hour**

Prerequisite: Consent of instructor. This course provides an introduction to jazz improvisation. Students will engage in study and application of the basic theoretical, technical, and performance aspects of jazz improvisation. It may be repeated once for a total of two credits.

**PRACTM 1250 Singer's Diction: English, Italian and German: 1 semester hour**

Prerequisites: AP MUS 1459. A study of English, Italian and German pronunciation using the International Phonetic Alphabet.

**PRACTM 1260 Singer's Diction: Latin, French, and Spanish: 1 semester hour**

Prerequisites: AP MUS 1459. A study of Latin, French, and Spanish pronunciation using the International Phonetic Alphabet.

**PRACTM 1270 Digital Music Notation: 3 semester hours**

This course is an in-depth study of a complex music notation program (Finale). The course will focus on various modes of notation entry, playback, basic engraving, MIDI and XML input, as well as several different output formats. An ability to read traditionally notated music in treble and bass clefs is necessary for this class.

**PRACTM 1530 Collaborative Piano I: 1 semester hour**

Prerequisites: Consent of instructor. This course focuses on basic practices of collaborative piano, for keyboard majors. Public performance of works studied is required.

**PRACTM 1540 Collaborative Piano II: 1 semester hour**

Prerequisites: PRACTM 1530 or consent of instructor. This course is a continuation of PRACTM 1530 with a focus on practices of collaborative piano, for keyboard majors. Public performance of works studied is required.

**PRACTM 1550 Collaborative Piano III: 1 semester hour**

Prerequisites: PRACTM 1540 or consent of instructor. This course is a continuation of PRACTM 1540 with a focus on practices of collaborative piano, for keyboard majors. Public performance of works studied is required.

**PRACTM 1570 Piano Performance Class: 2 semester hours**

Prerequisites: Two semesters of AP MUS 1450: Piano. This class allows for additional study of repertoire, giving students greater opportunities to perform and receive critiques from instructor, adjudicators, and peers. Course may be repeated for credit.

**PRACTM 2160 Piano Proficiency III: 1 semester hour**

Prerequisite: PRACTM 1150 or permission of department. Continuation of piano proficiency study.

**PRACTM 2170 Jazz Keyboard Harmony I: 1 semester hour**

Prerequisite: PRACTM 1150 or consent of department. This course provides group keyboard instruction in a jazz idiom. Students will develop proficiency in the performance of basic jazz harmonic progressions.

**PRACTM 2171 Jazz Keyboard Harmony II: 1 semester hour**

Prerequisite: PRACTM 2170. This course provides group keyboard instruction in advanced jazz harmony. Students will continue their development of performance techniques introduced in Jazz Keyboard Harmony I (PRACTM 2170).

**PRACTM 2180 Piano Proficiency IV: 1 semester hour**

Prerequisite: PRACTM 2160 or consent of department. Continuation of piano proficiency study.

**PRACTM 2191 Brass Jazz: 1 semester hour**

Prerequisites: By audition and consent of department. Class lessons emphasizing improvisation and jazz styles. Applicable to the minor in jazz studies only. May be repeated for credit. Concurrent registration in Jazz Ensemble (by audition) or Jazz Combo required.

**PRACTM 2192 Woodwind Jazz: 1 semester hour**

Prerequisites: By audition and consent of department. Class lessons emphasizing improvisation and jazz styles. Applicable to the minor in jazz studies only. May be repeated for credit. Concurrent registration in Jazz Ensemble (by audition) or Jazz Combo required.

**PRACTM 2193 Rhythm Section Jazz: 1 semester hour**

Prerequisites: By audition and consent of department. Class lessons emphasizing improvisation and jazz styles. Applicable to the minor in jazz studies only. May be repeated for credit. Concurrent registration in Jazz Ensemble (by audition) or Jazz Combo required.

**PRACTM 2200 Advanced Jazz Improvisation: 1 semester hour**

Prerequisite: PRACTM 1200. This course provides a study of advanced harmonic concepts and their application to jazz improvisation. Students will continue their study begun in 'Jazz Improvisation' (PRACTM 1200). Course may be repeated for credit.

**PRACTM 2510 Conducting I: 2 semester hours**

Prerequisite: THRY COM 2301. Concurrent registration in PRACTM 2610 required for Bachelor of Music in Music Education program. Techniques and problems in conducting.

**PRACTM 2610 Instrumental Literature Laboratory: 1 semester hour**

Prerequisites: THRY COM 2301 and THRY COM 2302. Analysis and evaluation of selected instructional and concert materials for elementary, junior and senior high school groups.

**PRACTM 2611 Choral Literature Laboratory: 1 semester hour**

Prerequisites: THRY COM 2301 and THRY COM 2302. This course focuses on the analysis and evaluation of selected instructional and concert materials for elementary and secondary grades.

**PRACTM 3190 Piano Proficiency V: 1 semester hour**

Prerequisite: PRACTM 2180 or consent of department. Continuation of piano proficiency study.

**PRACTM 3280 Score Reading at the Keyboard: 1 semester hour**

Prerequisites: PRACTM 2180, or consent of instructor. This course provides practical experience in the keyboard realization of figured bass and score reading with emphasis on C-clefs, transposition, and modulation.

**PRACTM 3290 Piano Proficiency VI: 1 semester hour**

Prerequisite: PRACTM 3190 or consent of department. Continuation of piano proficiency study.

**PRACTM 3521 Conducting II - Instrumental: 2 semester hours**

Prerequisite: PRACTM 2510. Advanced study of instrumental conducting and rehearsal techniques, score reading and interpretation.

**PRACTM 3522 Conducting II - Choral: 2 semester hours**

Prerequisite: PRACTM 2510. Advanced study of choral conducting and rehearsal techniques, score reading and interpretation. Concurrent enrollment in PRACTM 3620 required for Bachelor of Music in Music Education program.

**PRACTM 3920 Senior Research: 2-4 semester hours**

Prerequisite: Consent of department. Required of all senior music majors. Directed readings and research in an area mutually acceptable to the student and instructor.

**PRACTM 4000 Directed Studies: Variable Topic: 1-5 semester hours**

Prerequisites: Consent of department. Directed independent study of selected topics in music. May be repeated, if topic is substantially different, but no more than 5 hours may be applied toward a degree.

**PRACTM 4100 Senior Project in Theory/Composition: 2-4 semester hours**

Prerequisites: Consent of department. Required of all students in the BM in Theory/Composition program. This project could take any number of forms, dependent upon mutual agreement between student and instructor. For example, a student with a focus in music theory would write a thesis of substantial depth on a theoretical/analytical topic, and a student with a focus in composition would either write a large-scale work (for orchestra, wind ensemble, etc.) or prepare and lead a recital of several of his or her own compositions.

**PRACTM 4920 Internship: 1-3 semester hours**

Prerequisite: Senior standing in B.M. Business emphasis and permission of the instructor. Supervised experience in the area of the student's career objective, as music or instrument merchandising, arts management, mass communication, publishing, manufacturing or other, as available. May be repeated once for credit in different area.



**PRACTM 5001 Interacting with an Audience: 1 semester hour**

Prerequisites: Consent of the instructor. This course provides students with techniques of addressing a general classical music audience in ways that are engaging, casual, informative, and that will ultimately enhance the audience's concert experience. The curriculum will include analysis of both live and video presentations, techniques to overcome fear and anxiety, and methodology to select and balance appropriate subject matter from a vast array of available information.

**PRACTM 5002 Interdisciplinary Studies in Music: 1 semester hour**

Prerequisites: Consent of the instructor. In this course, the student will learn to give effective presentations in interdisciplinary educational settings, based on their study of potential connections between aspects of music and the subject in question. The non-musical subjects involved will be chosen by the student in consultation with the instructor. The course will culminate in an interdisciplinary presentation in a collegiate non-music class on the UMSL campus.

**PRACTM 5210 Graduate Conducting: 3 semester hours**

Prerequisites: Graduate standing in music. Conducting techniques, score reading, and interpretation of choral, orchestral, and band literature.

## Nursing

### Courses

**NURSE 1000 Cultural Diversity in Healthcare: 3 semester hours**

This course introduces cultural congruence across the lifespan. Transcultural nursing concepts will be examined, as well as theories & practices in relationship to human caring. Application and analysis of health care practices within selected cultural contexts are explored.

**NURSE 1050 Communication for the Healthcare Professional: 3 semester hours**

This course focuses on the development of communication skills utilized in professional nursing. The individual's relationship with self, individuals, communities, and populations are discussed. Communication and collaboration concepts in nursing are introduced to develop effective human caring relationships with diverse populations.

**NURSE 2000 Nutrition in Health: 3 semester hours**

This course examines nutritional needs across the illness and wellness continuum with emphasis on nutritional principles related to health promotion and protection. Content includes assimilation, digestion and absorption of nutrients, and cultural and economic influences on dietary practices across the lifespan.

**NURSE 2050 Pathophysiology: 3 semester hours**

Prerequisites: BIOL 1141 and BIOL 1162. This course focuses on the normal processes and mechanisms operating within the human body. Explores the nature of disease, its causes and the bodily changes that accompany. The course includes general principles of disease, diseases specific to internal organs, and the clinical implications.

**NURSE 2101 Introduction to Nursing: 2 semester hours**

This course introduces the historical and theoretical development of nursing as a discipline. Nursing is examined as a dynamic practice profession. Variables that influence nursing and health care are discussed. Concepts and skills introduced in this course guide the student's educational experience within the nursing major.

**NURSE 2103 Nutrition and Health: 3 semester hours**

This course examines nutritional needs throughout the life span with emphasis on nutritional principles related to health promotion and protection. Content includes assimilation, digestion and absorption of nutrients and cultural and economic influences on dietary practices.

**NURSE 2105 Communication in the Nursing Profession: 3 semester hours**

This course focuses on the development of communication abilities utilized in professional nursing. The individual's relationship with self, others and groups is discussed. Students learn verbal and non-verbal communication skills, self-awareness, and sensitivity to others. Interpersonal skills are introduced to enable the student to develop effective human caring relationships with a diverse population of clients and colleagues.

**NURSE 3000 Health Promotion and Disease Prevention Concepts Across the Lifespan: 3 semester hours**

Prerequisites: Admission to nursing clinical major. This course focuses on the role of the nurse in promoting health and reducing risk behaviors of individuals and families across the lifespan. Concepts of nutrition, physical activity, coping and stress management skills, social determinants of health, and health disparities will be examined with an emphasis on the impact of genetics, values, lifestyles and cultural influences. Patient education for health promotion, risk reduction, and disease prevention across the lifespan will be explored.

**NURSE 3005 Introduction to Professional Nursing: 3 semester hours**

Prerequisites: Admission to the Accelerated BSN program. This course introduces students to the role of the professional nurse. Health promotion and disease prevention across the life span are examined. Ethics, legal standards, and healthcare policy concepts are also explored.

**NURSE 3010 Foundations of Professional Practice: 3 semester hours**

Prerequisites: Admission to the nursing clinical major. An introductory course to the discipline of professional nursing. Concepts of nursing process and clinical reasoning are introduced and explored within the context of the domain of nursing (person, environment, health, nursing).

**NURSE 3015 Professional Nursing Concepts and Practice: 6 semester hours**

Prerequisites: Admission to the Accelerated BSN Program. Introduction to the structure of the discipline of nursing, selected theoretical and conceptual models, and their application to nursing process, clinical reasoning, and education as a foundation for socialization into professional nursing practice. Includes didactic, laboratory, and clinical components.

**NURSE 3020 Fundamental Concepts of Nursing Care: 3 semester hours**

Prerequisites: Admission to nursing clinical major. Introduces fundamental evidence based nursing concept, skills, and standard of care that underpin the implementation phase of the nursing process. Course allows for students to acquire and practice the skills in a lab setting with the application of skills with patients in an assigned clinical setting.

**NURSE 3030 Health Assessment Concepts: 3 semester hours**

Prerequisites: Admission to nursing clinical major. This course integrates concepts related to theoretical knowledge and interpersonal skills in the assessment of clients, focusing on differentiating normal from abnormal findings. It emphasizes the use of problem solving, critical thinking, and cultural competency in identifying and documenting multidimensional health variations across the lifespan. The course includes a classroom component and laboratory experiences, including practice of psychomotor skills.

**NURSE 3035 Health Assessment and Promotion: 3 semester hours**

Prerequisites: Admission to the Accelerated BSN Program. Health promotion, client education, and physical assessment skills across the lifespan are developed using the nursing process framework. Didactic and laboratory components are included.

***NURSE 3040 Concepts of Evidence-Based Practice: 3 semester hours***

Prerequisites: Admission to nursing clinical major. This course focuses on utilizing evidence-based practice to promote health and wellness, illness, and prevent injury among individuals, families, communities, and populations. Emphasis is placed on education, collaboration, utilizing evidence in practice for quality improvement, and resource utilization. This course builds on content presented in previous coursework and increases the complexity of students' mastery of focus concepts.

***NURSE 3050 Concepts of Pharmacology: 3 semester hours***

Prerequisites: Admission to nursing clinical major. Building upon knowledge of illness and wellness concepts developed in previous coursework, students will learn to apply this knowledge to the pharmacotherapeutic component of caring for patients across the lifespan.

***NURSE 3055 Foundations of Nursing Pharmacotherapeutic Concepts: 3 semester hours***

Prerequisites: NURSE 3005, NURSE 3015. This course covers concepts and principles of pharmacology across the lifespan with an emphasis on pharmacotherapeutics and an evidence-based, comprehensive approach to the clinical application of drug therapy. Cultural considerations, individual needs, and patient education related to pharmacology are examined.

***NURSE 3060 Behavioral Health Concepts: 5 semester hours***

Prerequisites: NURSE 3000, NURSE 3010, NURSE 3020, and NURSE 3030. This course focuses on mental health and illness across the lifespan for individuals experiencing emotional distress, crisis, and severe, persistent mental illness. Students will increase basic skills in interpersonal communication, decision-making, and professional behavior as they utilize theory concepts and research from nursing, psychology, pharmacology, and other disciplines in the provision of care to individuals, families, groups, and vulnerable populations. The course includes basic theory and clinical experiences in hospital and community settings. Students will complete 90 clinical hours.

***NURSE 3065 Professional Nursing Adult and Elder Care I: 5 semester hours***

Prerequisites: NURSE 3005, NURSE 3015, NURSE 3035. This course covers nursing care of adult and elder patients including healthy aging and maintenance of functional capacity. Its content addresses common physiologic and social changes, challenges, and adaptations affecting adult and elder populations. Strategies for health promotion and disease management are addressed in the care of adult and elder patients experiencing fluid and electrolyte imbalances, cardiovascular, integumentary, immunologic, pulmonary, and hematologic alterations. Pathophysiologic processes of organ systems are explored. Didactic and clinical components are included.

***NURSE 3070 Concepts of Caring for Adults I: 5 semester hours***

Prerequisites: NURSE 3000, NURSE 3010, NURSE 3020 and NURSE 3030. This course focuses on the nursing care of the adult patient experiencing selected pathophysiological processes affecting body regulatory mechanisms. These mechanisms are related to multiple concepts across the illness and wellness continuum. Emphasis is placed on health restoration, maintenance and support of chronic illness as well as the continued development of critical thinking processes, and evidence-based nursing practice. This course includes lecture and active learning within the classroom, as well as a clinical component. Students will complete 90 clinical hours.

***NURSE 3075 Professional Nursing Mental Health: 5 semester hours***

Prerequisites: NURSE 3015, NURSE 3055. This course covers theoretical knowledge and skill to promote the mental health of patients across the lifespan. Common and complex mental health disorders affecting individuals, families, and communities are examined. Students will learn and apply therapeutic communication techniques with patients experiencing mental health disorders. Ethical, moral, and legal issues in mental health nursing practice are addressed. Didactic and clinical components are included.

***NURSE 3101 Nursing and Health: 6 semester hours***

Prerequisites: BIOL 1131; BIOL 1141; CHEM 1052; NURSE 1010, NURSE 3106; NURSE 3110; NURSE 3111. An introduction to the discipline of nursing, the historical and theoretical development of nursing is explored with an emphasis on critical thinking, the teaching/learning process, and foundational practice concepts. Through modular laboratory experiences, the student acquires psychomotor skills to provide safe and effective nursing care to clients promoting health and wellness. Includes classroom, laboratory and clinical experiences.

***NURSE 3106 Assessment of Clients in Health and Illness: 4 semester hours***

Prerequisites: BIOL 1131; BIOL 1141; BIOL 1162; CHEM 1052; PSYCH 1268; NURSE 1010. This course integrates theoretical knowledge and interpersonal skills in the assessment of clients, focusing on differentiating normal from abnormal findings. It emphasizes the use of problem solving, critical thinking and cultural competency in identifying multidimensional health variations across the life span. The course includes classroom and laboratory experiences.

***NURSE 3110 Pathophysiological Bases of Nursing Practice: 3 semester hours***

Prerequisites: BIOL 1131, BIOL 1141, BIOL 1162, CHEM 1052 (or equivalent); NURSE 1010. This course focuses on the nature of disease, its causes and the bodily changes that accompany it. The course includes a study of general principles of disease, specific diseases of individual organs and systems and the clinical implications.

***NURSE 3111 Pharmacotherapeutics in Nursing Practice: 3 semester hours***

Prerequisites: BIOL 1141, BIOL 1162, CHEM 1052, NURSE 1010; pre/co requisite: NURSE 3110. This course introduces key terminology, legal foundations, general principles and clinical applications of pharmacology.

***NURSE 3120 Foundations of Nursing: 7 semester hours***

Prerequisites: All general education requirements and accelerated nursing option prerequisite non-nursing courses. This course introduces the student to the theoretical concepts and foundations of professional nursing practice. Utilizing an integrated approach, health promotion and protection throughout the lifespan are explored and supported using theories of nursing practice, health assessment of well individuals, and general principles and concepts of pharmacology and critical thinking.

***NURSE 3121 Clinical Foundations of Nursing: 3 semester hours***

Prerequisites: NURSE 3120. This course assists in the development and application of clinical reasoning in the lab, clinical agency, and simulation environments. Through clinical learning experiences, the student acquires basic psychomotor, communication, and medication administration skills. The student applies these skills in the provision of safe and effective nursing care to clients while promoting health, wellness, and clinical reasoning.

***NURSE 3205 Adult Health Nursing I: 5 semester hours***

Prerequisites: All 3100 level nursing courses and PSYCH 1268. This course focuses on the nursing care of the adult experiencing selected pathophysiological processes affecting body regulatory mechanisms. These mechanisms are related to immune responses, problems of oxygenation: ventilation, transport and perfusion: kidney function; regulatory mechanisms and digestion absorption and elimination. Emphasis is placed on health restoration, maintenance and support as well as the continued development of the nurse-client relationship, critical thinking processes, and research-based nursing practice. This course includes classroom and clinical activities in a variety of settings.

***NURSE 3206 Adult Health Nursing II: 5 semester hours***

Prerequisites: All 3100 level nursing courses, NURSE 3205, and PSYCH 1268. This course focuses on the nursing care of the adult experiencing selected pathophysiological processes affecting body regulatory mechanisms. These mechanisms are related to endocrine, sensory-perceptual, gynecological, and genitourinary functions. Emphasis is placed on health restoration, maintenance and support as well as the continued development of the nurse-client relationship, critical thinking processes, and research-based nursing practice. This course includes classroom and clinical activities in a variety of settings.

***NURSE 3214 Psychiatric Mental Health Nursing: 4 semester hours***

Prerequisites: All 3100-level nursing courses; PSYCH 1268. This course focuses on health and illness across the lifespan of clients who have acute and chronic emotional and psychosocial difficulties and psychiatric illnesses. The course emphasizes development of students' decisional capabilities, self-awareness and professional behaviors as they utilize theory and research from nursing, psychology and related disciplines for the provision of nursing care to individuals, families, & groups. Clinical experiences in community and acute care settings are designed for students to engage in individual and group strategies that promote and maintain mental health. Course includes classroom and clinical activities in a variety of settings.

***NURSE 3215 Nursing of Women and Childbearing Families: 4 semester hours***

Prerequisites: All 3100 level nursing courses, PSYCH 1268. Focuses on the childbearing family and women's reproductive health, including family dynamics and growth and development. Health promotion, protection, maintenance and restoration are covered in experiences that include hospital and community settings. Health care policy and systems as relevant to these populations are included. Course includes classroom and clinical activities in a variety of settings.

***NURSE 3216 Child and Family Health Nursing: 4 semester hours***

Prerequisites: All 3100 level nursing courses, PSYCH 1268. This course focuses on pediatric health and illness with emphasis on family dynamics, growth and development and communication with children and their families. Health promotion, protection, restoration, maintenance and support concepts are covered in experiences that include hospital and community settings. Health care policy and systems are studied as relevant to this population. Course includes classroom and clinical activities in a variety of settings.

***NURSE 3330 Nursing of Adults I: 5 semester hours***

Prerequisites: NURSE 3120, NURSE 3121. This course focuses on the nursing care of the adult experiencing health problems affecting body regulatory mechanisms. These mechanisms are related to perioperative processes, immune processes, problems of oxygenation, cardiovascular alterations, fluid and electrolyte/acid-base imbalances, integumentary problems, abnormalities of the reproductive system and genetics, oncology and hematology problems. This course also incorporates relevant concepts of pharmacology and pathophysiology related to these conditions. Emphasis is placed on health promotion and restoration, maintenance and support as well as the continued development of the nurse-client relationship, clinical reasoning, and evidence-based nursing practice across the adult life span.

***NURSE 3331 Clinical Nursing of Adults I: 3 semester hours***

Prerequisites: NURSE 3330. This course focuses on the nursing care of adults in the lab, clinical agency, and simulation environments. Utilizing an integrated approach, advanced nursing skills and assessment techniques for adult clients are mastered in perioperative processes, immune processes, problems of oxygenation, hematology, cardiovascular alterations, fluid and electrolyte/acid-base imbalances, integumentary problems, abnormalities of the reproductive system, genetics and oncology problems. Clinical reasoning is developed and applied in order to provide safe and effective nursing care to adult clients across the health/illness continuum.

***NURSE 3340 Behavioral Health Nursing: 2.5 semester hours***

Prerequisites: All 3100 level nursing courses and PSYCH 1268. This course focuses on health and illness across the lifespan of clients who have acute and chronic psychosocial and behavioral health issues and specific psychiatric illnesses. An emphasis is placed on the nurse/client relationship in behavioral health promotion, restoration, maintenance and support.

***NURSE 3341 Clinical Behavioral Health Nursing: 1.5 semester hour***

Prerequisites: NURSE 3340. In this course students utilize theory and evidence from nursing and related disciplines in the provision of nursing care to individuals, families, and groups with psychiatric and behavioral health problems. Clinical experiences in community and acute care settings are designed so that students can engage in individual and group strategies that promote and maintain mental health.

***NURSE 3350 Nursing of Adults II: 5 semester hours***

Prerequisites: NURSE 3120, NURSE 3121. This course focuses on the nursing care of the adult experiencing complex pathophysiologic processes affecting body regulatory mechanisms. These mechanisms are related to endocrine, neurological, musculoskeletal, gastrointestinal, sensory-perceptual, male reproductive and genitourinary problems. This course also incorporates relevant concepts of pathophysiology and pharmacology related to these conditions. Emphasis is placed on health promotion and restoration, maintenance and support, as well as the continued development of the nurse-client relationship, critical thinking and evidence-based nursing practice across the adult life span. NURSE 3350 and NURSE 3351 are co-requisites to be taken together in an 8-week period.

**NURSE 3351 Clinical Nursing of Adults II: 3 semester hours**

Prerequisites: Co-requisite with NURSE 3350. This course focuses on the nursing care of adults in the lab, clinical agency and simulation environments. Utilizing an integrated approach, complex psychomotor skills and assessment techniques for adult clients are mastered in patients with musculoskeletal problems, endocrine alterations, renal/genitourinary problems, sensory-perceptual problems, and liver problems. Clinical reasoning is developed and applied in order to provide safe and effective nursing care to adult clients with complex problems across the health/illness continuum. NURSE 3350 and NURSE 3351 are co-requisites to be taken together in an 8-week period.

**NURSE 3360 Maternal-Child Nursing: 5 semester hours**

Prerequisites: PSYCH 1268, NURSE 3120, NURSE 3121. This course focuses on women's reproductive health, childbearing and child-rearing families, as well as the health and illness of children from conception through adolescence. There is an emphasis on family dynamics, growth and development, and communication with children and their families. Health care policy and systems are incorporated as they relate to diverse populations. NURSE 3360 and NURSE 3361 are co-requisites to be taken together in an 8-week period.

**NURSE 3361 Clinical Maternal-Child Nursing: 3 semester hours**

Prerequisites: Co-requisite with NURSE 3360. Health promotion, protection, restoration, and maintenance for the mother-child and family care are addressed in experiences that include nursing skills lab, hospital agency and a variety of community settings. NURSE 3360 and NURSE 3361 are co-requisites to be taken together in an 8-week period.

**NURSE 3799 Statistics for Population Health: 3 semester hours**

Prerequisite: Admission to the College of Nursing's RN to BSN Program. This course provides students with an introduction to the use and interpretation of basic statistics, statistical databases, and data analysis. Basic statistical techniques will be introduced and utilized to identify and support evidence-based clinical decisions related to health and society.

**NURSE 3804 Ethical and Legal Dimensions of Nursing Practice: 3 semester hours**

Prerequisites: Philosophy (3 credits). This course explores the ethical and legal dimensions of nursing practice. The relationship between ethical and legal issues is examined within nursing situations. The student participates in dialogue addressing ethical-legal issues in professional nursing practice to explore personal values, increase sensitivity to others and to develop ethical reasoning abilities.

**NURSE 3807 Research and Evidence-Based Nursing Practice: 3 semester hours**

Prerequisites: NURSE 3799 (or equivalent) and NURSE 3817. This course prepares nurses to provide evidence-based care to patients among the rapid advances in the science and technology of healthcare. This course provides a basic understanding of how evidence is developed, including the research process, clinical judgment, interprofessional perspectives, and patient preference as applied to nursing practice. Students will learn a systematic method to evaluate and apply research findings and other evidence in designing and implementing nursing care that is multidimensional, high quality, and cost-effective.

**NURSE 3808 Management And Leadership In Nursing: 2-3 semester hours**

Prerequisites: All 3000 level nursing courses; ECON 1000 or (equivalent) This course prepares the nurse to coordinate and manage client care in diverse health care settings. Emphasis is placed on leadership and management theory and related skills, collaboration, delegation, coordination, and evaluation of multi-disciplinary work and the application of outcome-based nursing practice.

**NURSE 3817 Introduction to Health and Nursing Informatics: 3 semester hours**

This online laboratory course establishes competency in fundamental information management and computer technology skills. It enables students to use existing information systems and available information to manage nursing practice. Students critically evaluate technology, information, and its sources; use decision support systems designed for clinical decision making; and focus on the representation of nursing data, information, and knowledge.

**NURSE 3820 Introduction to Evidence-Based Nursing Practice and Informatics: 5 semester hours**

Prerequisites: NURSE 3799 or equivalent statistics course. This course will focus on current review of qualitative and quantitative nursing literature and research utilization through evidence-based practice and establish competency in fundamental information management and technology. Students will examine the research and evidence-based process through analysis and critique of nursing literature; critically evaluate technology, information, and its sources; use decision support systems designed for clinical and ethical decision making; and focus on the presentation of nursing data, information, and knowledge.

**NURSE 3873 Guided Study in Nursing: 1-3 semester hours**

This course is an in-depth independent study of selected topics in nursing under the guidance of a specific instructor. No more than six hours may be taken under this option.

**NURSE 3900 Role of the Baccalaureate-Prepared Nurse: 3 semester hours**

Prerequisite: Admission to the College of Nursing's RN to BSN Program. This course provides an overview of the expanded expectations of the baccalaureate-prepared nurse in today's changing healthcare climate. The role of the baccalaureate prepared nurse in influencing healthcare delivery, healthcare systems, and health outcomes of individuals, families, and communities will be explored.

**NURSE 3910 Nursing Theory for Population Health: 3 semester hours**

Prerequisites: Admission to the College of Nursing's RN to BSN Program. This course provides the opportunity to examine evidence-based practice nursing interventions, select theories, models, assessment strategies, and tools that can be used to promote health for populations. The roles and responsibilities of the professional nurse in population-based health systems will be explored.

**NURSE 3920 Health Assessment for the Professional Nurse: 3 semester hours**

Prerequisite: Admission to the College of Nursing's RN to BSN Program. This course will incorporate a holistic, multidimensional approach that culminates in the ability to perform a comprehensive health assessment. The course will emphasize the use of clinical reasoning to determine areas in which health promotion activities should be implemented. The impact of social determinants of health, genomics, lifestyle, environmental factors, literacy, and culture will be explored.

**NURSE 3930 Nursing Research and Evidence-Based Practice for the Professional Nurse: 3 semester hours**

Prerequisite: Admission to the College of Nursing's RN to BSN Program. This course prepares nurses to provide evidence-based nursing care to patients among the rapid advances in the science and technology of healthcare. This course provides a basic understanding of how evidence is developed, including the research process, clinical judgment, interprofessional perspectives, and patient preference as applied to nursing practice. Students will learn a systematic method to evaluate and apply research findings and other evidence in designing and implementing nursing care that is multidimensional, high quality, and cost-effective.



***NURSE 3940 Leadership and Management for Professional Nursing: 3 semester hours***

Prerequisites: Admission to the College of Nursing's RN to BSN Program. This course prepares the nurse to coordinate and manage client care in diverse health care settings. The use of information systems and data to guide management decisions will be emphasized. Leadership and management concepts, issues, and functions as applied to the role of the professional nurse in delivering culturally competent, safe, and quality care will be examined.

***NURSE 4010 Concepts of Caring for Adults II: 5 semester hours***

Prerequisites: NURSE 3050 and NURSE 3070. This course focuses on the application of nursing care of the adult patient experiencing selected pathophysiological processes affecting body regulatory mechanisms across the illness and wellness continuum. Emphasis is placed on health restoration, maintenance and support of acute illness as well as the continued development of the nurse-client relationship, critical thinking processes, research-based nursing practice and use of technology. A focus on care collaboration, communication, quality of care, health care ethics and legal implications is provided. This course includes lecture and active learning, in addition to a clinical portion. Completion of 90 clinical hours.

***NURSE 4015 Professional Nursing Adult & Elder Care II: 5 semester hours***

Prerequisites: NURSE 3065. This course covers nursing care of adult and elder patients including healthy aging and maintenance of functional capacity. Content addresses common physiologic, psychological, and social changes, challenges, and adaptations affecting adult and elder populations. Strategies for health promotion and disease management are addressed in the care of adult and elder patients experiencing genitourinary, gastrointestinal, neurological, endocrine, musculoskeletal, health restoration, and/or sensory-perceptual alterations. Pathophysiologic processes of organ systems are explored. Didactic and clinical components are included.

***NURSE 4020 Concepts of Caring for Women and the Childbearing Family: 3 semester hours***

Prerequisites: NURSE 3000, NURSE 3010, NURSE 3020, NURSE 3030, and NURSE 3050. This course focuses on the application of health and illness continuum concepts related to the care of the woman, gravid mother, newborn, and growing family. This course builds on knowledge developed in previous coursework. Concurrent enrollment in NURSE 4025 and NURSE 4030 is required.

***NURSE 4025 Care of Women and Children Clinical: 2 semester hours***

Prerequisites: Concurrent enrollment in NURSE 4020 and NURSE 4030. This clinical course focuses on the application of health and illness continuum concepts of the gravid woman, newborn, family, and child in relation to nursing care, in addition to women across the lifespan. This course builds on knowledge developed in previous coursework. Students will complete a pediatric-focused clinical of 45 hours and a maternal-focused clinical of 45 hours. Concurrent enrollment in NURSE 4020 and NURSE 4030 is required.

***NURSE 4030 Concepts of Caring for Children and Families: 3 semester hours***

Prerequisites: NURSE 3000, NURSE 3010, NURSE 3020, NURSE 3030, and NURSE 3050. This course focuses on the pediatric health and illness continuum with an emphasis on family dynamics, growth and development, and communication with children and their families. Nursing concepts include safety, community, cultural congruence, education, collaboration, environmental health, and ethics. Concurrent enrollment in NURSE 4020 and NURSE 4025 is required.

***NURSE 4035 Nursing Care of Children: Infancy to Adolescence: 4 semester hours***

Prerequisites: NURSE 3035, NURSE 3055. This course covers pediatric health promotion and disease management with an emphasis on integration of the concepts of communication and growth and development to provide primary, secondary, and tertiary levels of prevention for children and their families. Nursing care of pediatric patients experiencing acute and chronic illness are examined. Didactic and clinical components are included.

***NURSE 4045 Nursing Care of the Childbearing Patient-Family System: 4 semester hours***

Prerequisites: NURSE 3035, NURSE 3055. This course covers theoretical basis and clinical skills necessary to provide quality care to patient/family systems during the childbearing/child-rearing stages of life with an emphasis on family and system theories. Didactic and clinical components are included.

***NURSE 4050 Concepts of Community Focused Care: 5 semester hours***

Prerequisites: NURSE 3070, NURSE 4010, NURSE 4020, and NURSE 4030. This course includes a variety of experiences to prepare the student to assess the health care needs in diverse community settings and develop interventions to meet those needs. Student will complete 90 clinical hours. Concurrent enrollment in NURSE 4060 and NURSE 4065 is required.

***NURSE 4060 Synthesis of Concepts in Professional Nursing: 4 semester hours***

Prerequisites: NURSE 3070, NURSE 4010, NURSE 4020, and NURSE 4030. This course will focus on the synthesis of previous nursing concepts and general education courses with the goal of preparing the student for entry into professional nursing practice. Areas of study are selected from across the lifespan, including diverse populations in a variety of healthcare systems. This course builds upon knowledge developed in previous coursework. Concurrent enrollment in NURSE 4050 and NURSE 4065 is required.

***NURSE 4065 Synthesis of Professional Practice Immersion Clinical: 4 semester hours***

Prerequisites: Concurrent enrollment in NURSE 4050 and NURSE 4060. This clinical course includes a variety of experiences to prepare the student nurse to lead, coordinate, and manage client care in diverse health care settings. This course includes evidence-based strategies. Areas of practice are selected from across the lifespan, including diverse populations in a variety of health care systems. Students will complete 180 clinical hours. Concurrent enrollment in NURSE 4050 and NURSE 4060 is required.

***NURSE 4075 Global Health Immersion: 3 semester hours***

Prerequisite: Consent of instructor. This is an international healthcare trip that will include a full immersion experience into a foreign culture with emphasis on the analysis of healthcare systems and social determinants of health. Core coursework may include basic foreign language skills, a review of historical and cultural concepts relevant to the country, and application of medical/nursing treatment options. This course may be taken twice for credit.

***NURSE 4105 Professional Nursing Leadership and Synthesis: 8 semester hours***

Prerequisites: NURSE 3065, NURSE 3075, NURSE 4015, NURSE 4035, NURSE 4045. This course is a leadership practicum experience which reflects synthesis of cognitive and affective skills acquired in the Accelerated BSN program. Areas of study are selected from across the lifespan, including diverse populations in a variety of healthcare systems. Didactic and clinical components are included.

***NURSE 4125 Community Nursing and Public Health: 5 semester hours***

Prerequisites: NURSE 3065, NURSE 3075, NURSE 4015, NURSE 4035, NURSE 4045. This course is a synthesis of community and public health nursing that prepares students to apply, promote, and protect the health of patients, families, communities, and populations. Global perspectives on health equity, policy, and diversity are explored. Didactic and clinical components are included.

***NURSE 4135 Evidence-Based Practice: Integration of Research in Professional Nursing: 2 semester hours***

Prerequisites: Admission to the Accelerated BSN Program. This course is designed to provide a foundational theoretical review of evidence-based practice in the nursing profession. Students synthesize knowledge and skill from the natural and behavioral sciences, humanities, and nursing in order to understand the research process and its relevance in guiding nursing practice and improving patient care. Emphasis is placed on identifying and using research evidence in clinical decision making.

***NURSE 4300 Community Health Nursing: 4 semester hours***

Prerequisites: All 3000 level nursing courses. This course provides a conceptual foundation for nursing that recognizes the community as client in society. The course examines socioeconomic, environmental, epidemiological, and legislative influences, ethical/legal issues, and the impact of health beliefs and practices on health promotion and protection in communities and society. The student applies various theories and concepts when encountering families, groups and communities with diverse value systems and cultural backgrounds. Course includes classroom and clinical activities in a variety of settings.

***NURSE 4310 Senior Synthesis: 6 semester hours***

Prerequisites: All 3000 level nursing courses; NURSE 4300 and NURSE 3808 may be taken concurrently. This course integrates theory and practice from previous nursing and general education courses with the goal of preparing the student for entry into professional nursing practice. Within a seminar context, students explore a variety of clinical and professional nursing topics. The course includes research-based strategies utilized for health promotion and protection, health restoration, maintenance and support. Areas of study are selected from across the lifespan, including diverse populations in a variety of health care systems. Course includes classroom and clinical experiences in a variety of settings. Not for graduate credit.

***NURSE 4520 Population Focused Nursing: 2 semester hours***

Prerequisites: All 3300 level nursing courses, NURSE 3804, NURSE 3820. This course provides a conceptual foundation for nursing that recognizes populations in society. The course examines the effect of socioeconomic and environmental, epidemiological factors, and the impact of health beliefs and practices on health promotion and protection in populations. This course also focuses on epidemiological factors and legislative influences in diverse populations.

***NURSE 4521 Clinical Population Focused Nursing: 2 semester hours***

Prerequisites: NURSE 4520. This clinical course focuses on the nursing care of populations in various settings. The student applies population-based theories and concepts when encountering individuals, families, groups and populations with diverse value systems and cultural backgrounds.

***NURSE 4530 Leadership Development and Professional Nursing Practice: 4 semester hours***

Prerequisites: All 3300 level nursing courses, NURSE 3804, NURSE 3820. This course integrates theory and practice from previous nursing and general education courses with the goal of preparing the student for entry into professional nursing practice. Areas of study are selected from across the lifespan, including diverse populations in a variety of health care systems. Topics will include leadership, management theory and related skills, collaboration, delegation, coordination, and evaluation of outcome based interdisciplinary nursing practice.

***NURSE 4531 Clinical Leadership Development and Professional Nursing Practice: 4 semester hours***

Prerequisites: NURSE 4530. This clinical course includes a variety of experiences to prepare the student nurse to lead, coordinate, and manage client care in diverse health care settings. This course includes research-based strategies utilized for health promotion and protection, health restoration, maintenance, and support. Areas of study are selected from across the lifespan, including diverse populations in a variety of health care systems.

***NURSE 4720 Perioperative Nursing: 3 semester hours***

Prerequisite: Consent of the instructor. Provides experiences in preoperative, intraoperative, and postoperative settings. Includes a clinical component.

***NURSE 4730 Nursing Care at the End of Life: 3 semester hours***

Prerequisites for Nursing Students NURSE 3205 and NURSE 3214. All others by consent of instructor. This course focuses on the nursing care of terminally ill patients and their families. Topics explored will include the impact of personal values and beliefs about death, physiology of end stage disease processes, symptom assessment and management, psychosocial and spiritual support, consideration in special patient populations, societal issues and trends in end of life care, ethical considerations in caring for the dying patient, grief and bereavement processes, and the role nursing in end of life care across settings.

***NURSE 4741 Advanced Nursing Assessment and Management of Clients with Cardiac Dysrhythmias: 3 semester hours***

Prerequisite: Senior status. Focuses on advanced nursing assessment and management of clients with cardiac rhythm problems and conduction disturbances. Includes a clinical component.

***NURSE 4900 Ethics and Values in Population Health: 3 semester hours***

Prerequisites: Admission to the College of Nursing's RN to BSN program. This course provides an introduction to the impact of values and ethical issues on professional nursing practice and population health. Emphasis is on values clarification, ethical theories and principles, ethical decision-making, and professional ethical standards. Ethical issues affecting nursing practice and the delivery of care will be explored.

***NURSE 4902 Ethics, Values, and Policy in Population Health: 6 semester hours***

Prerequisites: Admission to the College of Nursing's RN to BSN Program and all 3000-level RN to BSN courses. This course provides an introduction to the impact of values, ethical issues and health policy on professional nursing practice and population health. Students will have the opportunity to analyze public policy's influence on shaping healthcare. Ethical issues affecting nursing practice and patient care will be explored. The opportunity to identify vulnerable populations locally, nationally, and globally will be provided. Epidemiological, demographic, economic, and environmental health factors will be explored to identify community oriented strategies aimed to promote population health.

***NURSE 4905 Values in Professional Nursing: 3 semester hours***

Prerequisites: All 3000 level RN/BSN nursing courses or consent of instructor. Explores values and beliefs as they shape professional nursing practice and influence clinical decision making and interventions in the evolving health care system. Attention is given to the impact of sociocultural factors and health/illness beliefs and practices of the diverse populations served by the professional nurse. Students examine their own understanding of the moral nature of professional nursing within the context of a diverse society.

***NURSE 4910 Health Policy for the Professional Nurse: 3 semester hours***

Prerequisites: Admission to the College of Nursing's RN to BSN Program. This course familiarizes the professional nurse with health care policy and how it impacts the delivery of health care. The role of the nurse in influencing health outcomes and improving health care for populations through the policy process will be explored.

***NURSE 4911 Community and Population Health Synthesis: 6 semester hours***

Prerequisites: Admission to the College of Nursing's RN to BSN Program and RN Licensure. This practicum course focuses on community-based application and synthesis of professional nursing roles and responsibilities across a continuum of health care settings, with selected populations determined to be at risk for a variety of health-related problems. Students integrate and apply curricular concepts such as health policy, epidemiology, health promotion strategies, and evidence-based practice in planning care for a select population. This is taken during the last semester of RN to BSN courses. This course consists of 4 semester hours of didactic and 2 semester hours of clinical.

***NURSE 6075 Advanced Global Health Immersion: 3 semester hours***

Prerequisites: Consent of the instructor and graduate standing. This is an international healthcare trip that will include a full immersion experience into a foreign culture with emphasis on the analysis of healthcare systems and social determinants of health. Core coursework may include basic foreign language skills, a review of historical and cultural concepts relevant to the country, and application of medical/nursing treatment options. This course may be taken twice for credit.

***NURSE 6111 Healthcare Systems: 3 semester hours***

Prerequisites: Graduate standing. This course introduces the historical development, current structure, and projected transformation of the U.S. healthcare system and provides the student with an understanding of the complex nature of the healthcare sector.

***NURSE 6130 Research, Interventions and Evidence-Based Practice: 3 semester hours***

Prerequisites: Consent of Program Director. This course provides opportunities to examine the processes and evaluation components of evidence-based practice, including the identification of significant clinical problems, evaluation of evidence underlying competing interventions, effectiveness of interventions, and implementation and evaluation of health promotion and therapeutic interventions that improve the quality of care or health outcomes for individuals, groups, and populations. Students will have opportunities to develop skills needed to critically analyze scientific literature foundational to implementing evidence-based practice projects.

***NURSE 6320 Learning and Curriculum Development in Nursing: 3 semester hours***

Prerequisites: NURSE 6309. This course examines theoretical foundations, principles, and issues in curriculum design. Explores systematic evaluation of curriculum at all levels.

***NURSE 6321 Instructional Strategies in Nursing: 3 semester hours***

Prerequisites: NURSE 6309 or consent of instructor; must be taken concurrently with NURSE 6320. This course focuses on the development and analysis of teaching and learning strategies in nursing education. Adult learning principles of teaching and learning will be incorporated into the innovative strategies developed within this course. Integration of new technology in instructional design and delivery will be highlighted. Evaluation methods of both teacher and learner will be explored.

***NURSE 6322 Evaluation Strategies in Nursing: 3 semester hours***

Prerequisites: NURSE 6309. This course provides students the opportunity to learn evaluation concepts, including testing and measurement in nursing education at the didactic, clinical and programmatic levels. Content includes strategies to assess and evaluate learning in the cognitive, psychomotor and affective domains. Quality improvements, as well as legal and ethical considerations are explored. Key concepts include criterion and norm referenced theory and technique; reliability, validity, and the associated descriptive statistics; preparation of instrumental objectives for use in developing classroom tests and clinical nursing performance evaluations.

***NURSE 6418 Organizational Behavior and Human Resource Management in Healthcare: 3 semester hours***

Prerequisites: Graduate standing. This course applies theory and concepts from organizational behavior and human resources to the healthcare system as a framework for improving an organization's performance.

***NURSE 6420 Healthcare Law and Regulation: 3 semester hours***

Prerequisites: Consent of Program Director. This course introduces and examines a wide range of topics in the area of health law and regulation, and discusses how laws and regulations can promote or impede health and well-being. Students will explore concepts that inform healthcare policy, potential legal problems in various health care settings, issues and rights that are implicated, and the role of law in healthcare and policy. Students will identify issues and propose solutions or plans of action. The emphasis will be on formulating analyses of federal, state, and local law related to healthcare and public health. Specific topics will include the role that policy and law have played in areas such as tobacco regulation, managed care, healthcare reform, and laws utilized for emergency use of drugs and during public health emergencies.

***NURSE 6424 Social Determinants of Health for Underserved Populations: 3 semester hours***

Prerequisites: Graduate standing. This course examines the health and well-being of underserved populations through the lens of the social determinants of health. The course will explore responses to social factors that adversely influence vulnerability and health behaviors.

**NURSE 6509 Role of the Clinical Nurse Specialist/Nurse Practitioner: 2 semester hours**

Prerequisites: Admission to the Master's Program in the College of Nursing or consent of instructor. This course will focus on issues affecting the emerging roles of the nurse practitioner and clinical nurse specialist. It is designed to facilitate the role development of nurses who desire to function as primary care providers and/or as specialists within a specific clinical area of advanced nursing practice. Emphasis include sub-roles of advanced practice (leader, consultant, expert, researcher, educator), legal and professional issues, change theories, and standards of practice.

**NURSE 6518 Pathophysiology for Advanced Nursing Practice: 3 semester hours**

Prerequisites: Consent of Program Director. This course prepares the student to interpret changes in physiology that result in symptoms indicative of illness by a systematic examination of disease processes. The graduate student will compare and contrast differential diagnosis within physiological systems of sub-cellular and cellular origin, biochemical, and anatomical changes across the life span.

**NURSE 6520 Pharmacology for Advanced Nursing Practice: 3 semester hours**

Prerequisites: NURSE 6518 or consent of Program Director. This is a course in clinical pharmacotherapeutics that builds on prior knowledge of drug classifications, actions, interactions, and adverse drug reactions. The major focus of the course is the pharmacotherapeutic use of medications for primary healthcare management by advanced practice nurses. Emphasis is placed on clinical critical thinking processes used to prescribe drugs in the management of specific illnesses. The laws and regulations for advanced practice nurse prescriptive authority will be addressed. Emphases include pharmacodynamics, pharmacokinetics, pharmacotherapeutics, health-related information, medication compliance, and issues that pertain to the prescribing of medications in advanced nursing practice.

**NURSE 6521 Healthcare Finance: 3 semester hours**

Prerequisites: Graduate Admission. This course analyzes various financial sectors of the healthcare system. Analyses of the financial and economic structures for providers, health insurance organizations, pharmaceutical industries, not-for-profit, and federally-funded clinics will occur.

**NURSE 6524 Health Assessment for Advanced Nursing Practice: 3 semester hours**

Prerequisite: NURSE 6518 or consent of Program Director. This course provides a systematic approach to advanced physical assessment as well as psychological, sociocultural, developmental, and spiritual assessment of individuals across the life span. This course builds upon basic health assessment knowledge and skills, laboratory work interpretation, validation, documentation, and analysis of assessment findings. This course includes mandatory didactic and clinical experiences.

**NURSE 6527 Patient Safety, Performance Improvement, and Compliance: 3 semester hours**

Prerequisites: Graduate standing. This course covers the key principles of patient safety, performance improvement, and compliance. The epidemiology of healthcare error, distinguishing safety from quality, and understanding the policy environment for patient safety will be examined. Strategies to enhance patient safety, evaluation of performance improvement activities, and the management for the risk of error will be addressed.

**NURSE 6530 Clinical Diagnostics for Advanced Nursing Practice: 3 semester hours**

Prerequisites: Consent of Program Director. This course provides an introduction to the interpretation and appropriate use of diagnostic measures for advanced practice nurses in primary care settings. Special attention is paid to laboratory, radiographic and diagnostic testing. In addition, clinical opportunities will be provided to gain clinical interventional skills for advanced practice nursing.

**NURSE 6660 Introduction to Health Systems Management, and Policy for Underserved: 3 semester hours**

Prerequisites: Consent of Program Director. This course provides a comprehensive survey of the U.S. health care system, healthcare policy, integrative care practice models, and management principles useful in primary care settings dedicated to underserved populations. Selected topics include health behaviors, health maintenance and the management of primary healthcare in underserved populations, access to mental health care and substance abuse treatment, the U.S. healthcare system (both public and private sectors), the legal and ethical bases for caring for the underserved, the public policy-making process, and management principles of strategic planning, marketing, and project management in clinics serving the underserved. The analysis of community health indicators, health disparities, and healthcare trends impacting underserved populations will be incorporated into a community based experience.

**NURSE 6721 Foundations of Psychiatric Mental Health: 3 semester hours**

Prerequisites: NURSE 6518, NURSE 6520, NURSE 6524. This course provides a foundation for students to assume advanced practice nursing roles in health promotion, disease prevention, diagnosis, and management of psychiatric health and mental illness across the lifespan and within the family context. A foundation for an integrative practice, including psychiatric interviewing, psychotherapy, neurobiology, and psychopharmacology for the management of psychiatric conditions will be developed.

**NURSE 6722 Foundations of Adolescent and Geriatric Health: 3 semester hours**

Prerequisites: NURSE 6518, NURSE 6520, NURSE 6524. This course provides a foundation for students to assume an advanced practice nursing role in the care of adolescent and geriatric populations. Therapeutic strategies to address adolescent and geriatric health promotion, preventative care and the most common health conditions managed in these populations in primary care practice will be developed.

**NURSE 6723 Foundations of Pediatric Health: 3 semester hours**

Prerequisites: NURSE 6518, NURSE 6520, NURSE 6524. This course provides a foundation for students to assume advanced practice nursing roles in health promotion, disease prevention, diagnosis and management of health and illness in newborn, infant, child and adolescent populations within the family context. Therapeutic strategies about pediatric preventive care, behavioral health, common pediatric office-based procedures, pediatric prescribing practices, and the most common health problems managed in pediatric primary care will be developed.

**NURSE 6724 Foundations of Women's Health: 3 semester hours**

Prerequisites: NURSE 6518, NURSE 6520, NURSE 6524. This course provides a foundation for students to assume an advanced practice nursing role in health promotion, disease prevention, health maintenance, and the diagnosis and management of common conditions affecting women across the lifespan. Emphasis is placed on clinical assessment and decision making related to primary care management of reproductive growth and development, common acute and chronic primary health conditions, and behavioral health in gender-related populations.



***NURSE 6730 Nursing Administrative Leadership in Healthcare I: 3 semester hours***

Prerequisites: NURSE 6418, NURSE 6526, NURSE 6527. This course focuses on enhancing administrative practice skills through analysis of concepts appropriate to a variety of nursing and health care delivery systems. The focus will be on developing skills needed for nursing and health care administrative leadership practice in complex health care systems in the core domain of knowledge of the healthcare environment.

***NURSE 6731 Nursing Administrative Leadership in Healthcare II: 3 semester hours***

Prerequisites: NURSE 6418, NURSE 6526, NURSE 6527. This course focuses on enhancing administrative practice skills through analysis of concepts appropriate to a variety of nursing and health care delivery systems. The focus will be on developing skills needed for nursing and health care administrative leadership practice in complex health care systems in the core domains of communication and relationship building, leadership, professionalism, and business skills and principles for healthcare.

***NURSE 6737 Psychiatric Mental Health I: 4 semester hours***

Prerequisites: NURSE 6721. This course develops the advanced practice nursing role in caring for individuals with a mental health disorder, across the lifespan and within the family context. Strategies for the assessment, diagnosis and holistic management of common mental health disorders will be developed.

***NURSE 6738 Psychiatric Mental Health II: 4 semester hours***

Prerequisites: NURSE 6737. This course investigates the role of the psychiatric health mental nurse practitioner in the restoration and promotion of mental health. Strategies into the assessment, diagnosis and holistic management of individuals with complex mental health needs, including the application of advanced prescribing practices, psychotherapeutic care, and maintenance of overall healthcare needs will be developed.

***NURSE 6739 Adult Health I: 4 semester hours***

Prerequisites: NURSE 6722 or NURSE 6723. This course prepares students to assume an advanced practice nursing role when caring for adults across the lifespan within a family context. Strategies for the assessment, diagnosis, and holistic management of common acute, chronic, and behavioral health conditions addressed in a primary care setting for adults will be developed.

***NURSE 6740 Adult Health II: 4 semester hours***

Prerequisites: NURSE 6739. This course prepares students to assume an advanced practice nursing role in caring for adults across the lifespan within a family context. Strategies for the assessment, diagnosis, and holistic management of common acute, chronic, and reproductive health conditions addressed in a primary care setting will be developed.

***NURSE 6741 Family Health I: Diagnosis and Management of Advanced Practice Nursing: 4-5 semester hours***

Prerequisites: NURSE 6518, NURSE 6520, NURSE 6524 or consent of the Program Director. This course builds upon the advanced practice foundational courses of pathophysiology, pharmacology and advanced physical assessment to prepare students to assume roles in the advanced nursing care of individuals and families across the lifespan. Emphasis is placed on clinical assessment and decision-making in the provision of direct patient care within a defined scope of practice. Students will synthesize prior learning and apply primary prevention strategies into the diagnosis and holistic management of common acute, chronic and mental health problems in this population.

***NURSE 6742 Family Health II: Diagnosis and Management in Advanced Practice Nursing: 4-5 semester hours***

Prerequisites: NURSE 6741 or consent of Program Director. This course builds upon the advanced practice foundational courses of pathophysiology, pharmacology and advanced physical assessment to prepare students to assume roles in the advanced nursing care of individuals and families across the lifespan. Emphasis is placed on clinical assessment and decision-making in the provision of direct patient care within a defined scope of practice. Students will synthesize prior learning and apply primary prevention strategies into the diagnosis and holistic management of common acute, chronic and mental health problems in this population.

***NURSE 6743 Pediatric Health I: Acute and Chronic Care: 4 semester hours***

Prerequisites: NURSE 6723. This course prepares students for the advanced practice nursing role when caring for infants, children, and the adolescent populations within the family context. Strategies for the assessment, diagnosis and holistic management of common episodic complaints and chronic condition management in the pediatric primary and acute care settings will be developed.

***NURSE 6744 Pediatric Health II: Comprehensive Primary Care: 4 semester hours***

Prerequisites: NURSE 6743. This course prepares students for the role of the advanced practice nurse in the pediatric primary care setting and in the promotion of child health. Strategies for the assessment, diagnosis and holistic management of children with complex health needs in providing effective health promotion and health care services will be developed.

***NURSE 6745 Pediatric Health II: Complex Acute Care: 4 semester hours***

Prerequisites: NURSE 6743. This course prepares students for the role of the pediatric nurse practitioner in restoring a child's health when complex illness or injury occurs in the acute care setting. Strategies into the assessment, diagnosis and holistic management of children with complex health needs will be developed.

***NURSE 6746 Women's Health I: 4 semester hours***

Prerequisites: NURSE 6724. This course prepares students to assume roles in the advanced nursing care of women considering related gender issues across the lifespan with an emphasis on common acute and chronic gynecologic conditions. Strategies for the diagnosis and holistic management of common acute and chronic gynecologic health problems in gender-related populations will be developed.

***NURSE 6747 Women's Health II: 4 semester hours***

Prerequisites: NURSE 6746. This course prepares students to assume roles in the advanced nursing care of women with an emphasis on reproductive healthcare. Strategies for the diagnosis and holistic management of complex reproductive health conditions including preconception, obstetrical, and postpartum care as well as family planning and infertility will be developed.

**NURSE 6748 Neonatal Nursing I: 3 semester hours**

Prerequisites: NURSE 6525, NURSE 6528, NURSE 6517, or consent of instructor; NURSE 6749 may be taken concurrently. The first of two courses that integrate the physiologic, pharmacologic, and assessment skills and principles in determining appropriate care of the ill neonate. Current research and evidenced-based practices are used as the course framework. The effects of critical conditions on the growth and development of the neonate, including subsequent chronic health problems as well as the short and long term consequences to the child's family are emphasized. Disorders of the central nervous, pulmonary, and cardiovascular systems will be discussed. The use of specific interventions and diagnostic procedures are demonstrated and applied in laboratory/clinical settings during forty hours of required clinical activities.

**NURSE 6750 Acute Child Health I: Diagnosis and Management in Advanced Practice Nursing: 4 semester hours**

Prerequisites: NURSE 6529 or consent of the Program Director. This is the first of two courses in which the management of complex acute, critical, and chronically ill patients for urgent and emergent conditions is explored. The focus is on alterations in pathophysiology, advanced assessment, diagnosis, and collaborative management of infants, children and adolescents with selected episodic/chronic health problems in acute/critical care.

**NURSE 6751 Acute Child Health II: Diagnosis and Management in Advanced Practice Nursing: 4 semester hours**

Prerequisites: NURSE 6750. This is the second of two courses which builds upon prior acute care pediatric content and focuses on critical complex and end of life care. The emphasis is on evidenced based strategies to stabilize the patient's condition, assess the risk for and prevent complications, and restore maximum health and/or provide palliative care in the context of the patient's developmental, physical and psychosocial environment.

**NURSE 6870 Special Topics in Advanced Practice Nursing: 1-4 semester hours**

Prerequisites: Consent of instructor. Explore special topics for the advanced practice nurse in the areas of research, theory, education and administration. No more than three hours shall be applied toward the degree. This course is for graduate MSN or PhD levels.

**NURSE 6875 Special Study in Graduate Nursing: 1-3 semester hours**

Prerequisites: Admission to MSN program or consent of instructor. In-depth study of selected topics in nursing under the guidance of a specific instructor. No more than three hours may be applied to the master's program of study.

**NURSE 6934 Leadership in Population Health and Healthcare Systems Residency I: 2-4 semester hours**

Prerequisites: Consent of the instructor and graduate standing. This clinical course is designed to provide a theoretical and practical base for leadership development in population health and community health and organizational management. Emphasis is placed on clinical assessment and decision-making in the populations and community-level interventions to change health outcomes. The student is expected to clinically apply the concepts and theories discussed in class that address health disparities in underserved populations, infectious diseases, and community-level responses to chronic conditions. Clinical experiences are designed to enhance assessment and technical skills.

**NURSE 6935 Leadership in Population Health and Healthcare Systems Residency II: 2-4 semester hours**

Prerequisites: Consent of the instructor and graduate standing. This clinical course provides continued precepted experiences that allow students to develop the nurse practitioner role and clinical competencies within their specific emphasis area. Students integrate theory and clinical competencies to provide preventative care, health promotion, health education, health systems leadership, policy and evidence-based care populations.

**NURSE 6951 Advanced Intensive Clinical for the Nurse Educator: 2 semester hours**

Prerequisites: NURSE 6520, NURSE 6524, NURSE 6309. This course provides a concentrated opportunity to function in an advanced nursing role as a nurse educator incorporating an intensive clinical experience focusing on the student's chosen population.

**NURSE 6952 Synthesis Practicum: 3 semester hours**

Prerequisites: All required courses in the Nurse Educator or Nursing Leadership of Health Systems option or consent of instructor. This clinical course is a concentrated opportunity to function in an advanced nursing role as a nurse administrator, integrating clinical and functional role activities within a chosen setting. Emphasis includes educator or administrator nursing practice, functional role responsibilities, and activities with emphasis on their relationship to client outcomes.

**NURSE 6954 Advanced Practice Nursing: Residency I: 2-4 semester hours**

Prerequisites: NURSE 6738, NURSE 6740, NURSE 6742, NURSE 6744 or NURSE 6747. This clinical course provides precepted experiences that allow students to continue to develop the nurse practitioner role and clinical competencies within their specific emphasis area. Students integrate theory and clinical competencies to provide preventative care, health promotion, health education and evidence-based care for acute, chronic and mental health conditions for individuals and families.

**NURSE 6955 Advanced Practice Nursing: Residency II: 2-4 semester hours**

Prerequisites: NURSE 6954. This clinical course provides a continuation of precepted experiences that allow students to develop the nurse practitioner role and clinical competencies within their specific emphasis area. Students integrate theory and clinical competencies to provide preventative care, health promotion, health education and evidence-based care for acute, chronic and mental health conditions for individuals and families.

**NURSE 7200 State of the Science in Nursing Research and Practice: 3 semester hours**

Prerequisites: Consent of Program Director. This course examines the state of scientific knowledge in nursing research and practice. Gaps in the nursing research and practice are identified. Interrelationships between nursing science and scientific developments in other disciplines from the perspectives of health outcomes, population health indices, and policy implications of scientific progress are analyzed. Advances in biophysiological, psychosocial, sociocultural, health systems, and health economics research and the implications for translation to improve nursing science and practice are analyzed.

***NURSE 7209 Advanced Nursing Roles and the Role of the DNP: 3 semester hours***

Prerequisites: Consent of Program Director. This course provides students with the opportunity to synthesize and analyze knowledge of the advanced nursing role and the DNP role within a specified population focus and role. The overview of selected theories and frameworks that can be used to guide advanced practice nurses and nursing leaders in facilitating the use of evidence-based practice, understanding cultural aspects of care, and framing situational awareness. Emphasis includes sub-roles of the doctorally-prepared nurse including Advance Practice Registered Nurse (APRN), leader, consultant, expert, researcher, and educator.

***NURSE 7211 Biostatistics I: 3 semester hours***

Prerequisites: Consent of Program Director. This course provides a foundational understanding of the use of biostatistics in conducting research. Types of data, data description, logic of sampling and test statistics, hypothesis testing, type 1 and type 2 errors, covariates and confounding variables, and clinical versus statistical significance are included. Opportunities will be provided to gain skills conducting statistical analysis using SPSS, interpreting the results of analytic processes, and applying the results to common health and illness examples encountered in research publications.

***NURSE 7212 Biostatistics II: 3 semester hours***

Prerequisites: NURSE 7211 or permission of the instructor. This course emphasizes applications of inferential statistics including analysis of variance, simple and multiple linear and logistic regression models, tests of mediation and moderation, and repeated measures and an introduction to longitudinal analyses. The analytic methods and applications will be framed within the health science research field with emphases placed on designing and conducting studies and appropriate analyses using the techniques described above.

***NURSE 7213 Biostatistics III - Structural Equation Modeling: 3 semester hours***

Prerequisites: NURSE 7211 Biostatistics I (or its equivalent), NURSE 7212 Biostatistics II (or its equivalent). This course serves as an introduction to structural equation modeling (SEM). The overall objective is to develop a solid conceptual and theoretical understanding and ability to use SEM and its extensions correctly and effectively in independent research. Topics include factor analysis, path analysis, and basic principles of model building. Applications and extensions of SEM, such as scale construction and validation, mediation and moderation, multi-group analyses, and latent growth modeling are also included. Students will have the opportunity to work on projects tailored to their research interests and needs.

***NURSE 7215 Evidence-Based Practice For the DNP: 3 semester hours***

Prerequisites: NURSE 6130. This course examines the state of clinical inquiry and the implementation of evidence into practice. The relationship between clinical questions and the critical appraisal and synthesis of research and literature is explored. Models for implementing and sustaining change based on the evidence are examined.

***NURSE 7220 Leadership in Practice: 3 semester hours***

Prerequisites: Consent of Program Director. This course provides students with the opportunity to develop and refine critical leadership skills by focusing on improving the health of individuals and populations. The course uses a combination of didactic lectures, case-based learning and experiential exercises to explore leadership competencies including change management, strategy implementation, quality improvement, effective communication, team dynamics, and systems thinking. Emphasis is on using models and theories that facilitate inter-professional collaboration to achieve optimal health outcomes. The focus is effective communication and leadership methods necessary to establish successful inter-professional teams. Students will enhance skills in verbal, written and electronic communication; team leadership; and creating and sustaining health related initiatives. Through advanced understanding of the inter-professional dimension of healthcare, students will facilitate collaboration and remove barriers to providing safe, timely, effective, efficient, equitable and patient centered care in healthcare systems.

***NURSE 7230 Epidemiology: 3 semester hours***

Prerequisite: NURSE 7211 or Consent of Program Director. This course covers epidemiology, logistic modeling, and public health surveillance in primary healthcare. It provides an introduction into investigation of outbreaks. The course will enable the healthcare professional to develop a knowledge base to address issues of health and illness of a population.

***NURSE 7240 Health Informatics: 3 semester hours***

Prerequisites: Consent of the Program Director. This course explores information systems and computer technologies that can improve the health of individuals, families, communities, and populations by optimizing information management and communication. Focus areas include the electronic medical record, technologies to improve patient safety, standards for privacy and security, tele-health systems to improve healthcare access to underserved populations, use of web-enhanced technologies for research translation, and strategies to provide data for decision making and evidence-based databases. Emphasis is placed on developing competence in technology use for the purpose of program evaluation, establishing healthcare quality, and improving healthcare delivery to diverse populations in complex healthcare settings.

***NURSE 7251 Healthcare Economics: 3 semester hours***

Prerequisites: Consent of Program Director. This course introduces the student to the basic economic concepts and analytical methods used to understand, analyze, and evaluate economic aspects across various sectors of the healthcare system including clinics, underserved and rural populations, the role of government in the delivery of healthcare services, and the economic aspects of healthcare reform. The course applies tools of analysis to the behavior of households, healthcare providers, health insurance organizations, pharmaceutical industries, and not-for-profit and federally-funded clinics.

***NURSE 7260 Program Evaluation and Quality Management in Healthcare: 3 semester hours***

Prerequisite: None. This course introduces students to the principles and procedures for assessing the quality and effectiveness of programs, projects, and materials related to planned interventions and systems changes in health settings. An overview is provided of past and current strategies to define and assess the quality of healthcare delivery using tools required to examine, evaluate, and implement the key structures and processes of quality improvement programs in healthcare organizations. Practical applications that prepare the participants to use the theory and techniques of quality improvement in situations with complex clinical and managerial implications will be incorporated.

***NURSE 7291 DNP Capstone I: 2 semester hours***

Prerequisites: NURSE 7215. This course provides opportunities for development of practice expertise into a systems-level approach to create change in a targeted population within a healthcare or related environment. Students will develop their clinical scholarship project proposal.

***NURSE 7292 DNP Capstone II: 2 semester hours***

Prerequisites: NURSE 7291. This course provides opportunities to develop strategies to create change in a targeted population and complex healthcare environments. Students will implement evidence-based, clinical scholarship projects to improve health outcomes.

***NURSE 7293 DNP Capstone III: 2 semester hours***

Prerequisites: Consent of Program Director. This experience provides additional opportunities for the development of practice expertise to create change in a targeted population and complex healthcare environments. Students will develop skills to assess and diagnose healthcare systems and identify evidence-based strategies to improve health outcomes. This experience includes immersion in their population-focused scholarly project.

***NURSE 7299 DNP Seminar: 1-3 semester hours***

Prerequisites: All DNP required course work or Consent of Instructor. This seminar provides students with the opportunity to synthesize and analyze knowledge within the context of the emerging DNP role. Analysis of practice issues may include reflective practice, collaboration, health systems technology, ethics and policy.

***NURSE 7300 Prevention of Injury and Disability: 3 semester hours***

Prerequisites: Graduate status or consent of instructor. This course will examine trends in injury and disability nationally and internationally, relevant theories and conceptual models, the definition and measurement of key concepts, and analysis of interventions proposed for preventing injury and mitigating disability. The role of information and computer technologies in the management of disability will also be considered. Specific content will include age-related injury and disability, disability associated with cardiovascular and other chronic diseases, and the psychosocial contexts of disability, including traumatic stress and its outcomes.

***NURSE 7403 Development of the Nurse Scientist: 3 semester hours***

Prerequisite: Admission to doctoral study in nursing. This course addresses the role of the PhD-prepared nurse as scientist, leader, academician, and policy maker. Students will analyze strategies for lifelong learning and development as nurse scientists and will explore avenues for building their programs of scholarship, funding opportunities, and contributing to nursing science in policy and clinical practice. Students will examine ways to collaborate effectively in order to improve health care and health outcomes.

***NURSE 7443 Healthcare Policy and Economics: 3 semester hours***

Prerequisites: Graduate admission. This course introduces the student to economic and healthcare policy concepts using analytical methods to understand and evaluate the impact across various sectors of the healthcare system. The historical context of healthcare policy is explored.

***NURSE 7481 Development of Nursing Science and Theory: 3 semester hours***

Prerequisite: Admission to PhD Program. This course focuses on the discipline of nursing, including the evolution of the state of scientific inquiry and knowledge development in nursing. The course includes the aims of nursing science, the nature of nursing knowledge and scientific theories, and a discussion of relationships among theory, research, method, and practice. Students engage in constructive dialogue as they begin to conceptualize nursing phenomena in their area of interest.

***NURSE 7488 Introduction to Qualitative Research Methodologies and Methods: 3 semester hours***

Prerequisites: Admission to PhD program. This course introduces qualitative research methodologies and methods useful to healthcare and related sciences. Emphasis is placed on theoretical and philosophical perspectives, selection of appropriate methodologies, data collection and analysis methods, and critique. An overview of traditional and emerging designs, strengths and limitations of various methodologies, and ethical concerns will be addressed.

***NURSE 7490 Advanced Nursing Research Designs and Methods: 3 semester hours***

Prerequisite: Admission to the PhD program. This course focuses on development of the research plan including issues in sampling, design, and implementation nursing research. Students will evaluate research methods to answer research questions in their area of interest. Content includes design and analysis issues affecting validity, examination of measurement techniques for assessing validity, reliability, structure of data collection instruments, and criteria for instrument selection. A research proposal will be prepared.

***NURSE 7491 Advanced Nursing Theory Development and Validation: 3 semester hours***

Prerequisite: Admission to PhD program. This course focuses on a systematic study of contemporary nursing science and related theories in knowledge development, and the application of theory construction and validation strategies to specific nursing phenomena of interest. Students create and critically examine theoretical frameworks and models, with emphasis placed on constructing and testing theoretical statements.

***NURSE 7495 Mixed Methods Research in Health Care: 3 semester hours***

Prerequisites: NURSE 7490, NURSE 7488; or consent of the instructor. Emphasis will be on merging methods and addressing epistemological and paradigmatic issues. The value and use of the mixed methods approach, philosophical assumptions, types of designs, and approaches to designing and conducting mixed methods research in health care related disciplines will be emphasized.

***NURSE 7496 Seminar in Advanced Qualitative Research Methods: 3 semester hours***

Prerequisites: NURSE 7488 or consent of the instructor. This course is designed to engage nurse researchers in the applied collection and analysis of qualitative data and the dissemination of qualitative findings. This course explores congruent systematic analyses/interpretations based upon a variety of philosophical and/or theoretical stances, which could include phenomenology, hermeneutics, ethnography, grounded theory, case study, participatory action research, critical theory or other post-colonial and feminist approaches, textual analysis, aesthetic inquiry and others. Dissemination of findings will be emphasized as well as issues related to data management, rigor, and funding of qualitative proposals. Contemporary approaches to multiple methodology studies and innovative designs will be addressed. Students will be encouraged to practically engage in a methodology of choice in depth.

***NURSE 7497 Design, Implementation and Evaluation of Health Interventions: 3 semester hours***

Prerequisites: NURSE 7490 or consent of the instructor. This course focuses on developing skills in designing, delivering, and evaluating evidence-based health interventions that integrate relevant theoretical, research, social determinants, and biobehavioral variables with salient cultural variables for targeted groups. The course includes the application of research skills and empirical foundation for advanced research intervention design and evaluation related to a focal area of research interest.



***NURSE 7498 Doctoral Seminar: 1-12 semester hours***

Prerequisite: Consent of instructor. Presentation and discussion of pertinent methodological and clinical issues related to doctoral research.

***NURSE 7499 Dissertation Research: 1-12 semester hours***

Prerequisite: All required course work; successful completion of comprehensive examination. Investigation of an advanced nature culminating in successful defense of dissertation. Continuous registration is required.

***NURSE 7529 Special Topics in Qualitative Systematic Reviews: 3 semester hours***

Prerequisites: NURSE 7488 or equivalent. This course examines and carries out elements of qualitative systematic reviews, such as topic/problem identification, data collection, and analysis. Students will gain an understanding of how to limit threats to validity and maximize generalizability.

***NURSE 7530 Community Health and Infrastructure Assessment: 3 semester hours***

Prerequisites: Consent of the instructor and graduate standing. This course will introduce community health assessment and community infrastructure assessment. Participants will be introduced to the information and the resources available to secure and improve resilience in the community's healthcare and public health infrastructure. Participants will also be given an opportunity to work on a community-based health assessment project in conjunction with a community partner. Much of the experience will be practical and hands-on. Participants may be asked to work with a new project or join in an ongoing project.

***NURSE 7870 Special Topics in Scientific Foundations of Research: 1-3 semester hours***

Prerequisites: Consent of the instructor and graduate standing. Explore special topics related to PhD dissertation. This course can be a cognate, elective, or for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

***NURSE 7934 Leadership in Population Health and Healthcare Systems Residency III: 2-4 semester hours***

Prerequisites: Consent of the instructor and graduate standing. This clinical course provides continued precepted experiences that allow students to develop the leadership and population-focused role and clinical competencies within their specific emphasis area. Students integrate theory and clinical competencies to population preventative care, healthcare, health promotion, health education, health systems leadership, policy, and evidence-based care populations.

***NURSE 7954 Advanced Practice Nursing: Residency III: 2-4 semester hours***

Prerequisites: NURSE 6955; may be taken concurrently with DNP Capstone. This clinical course provides continued precepted experiences that allow students to develop the leadership and population-focused role and clinical competencies within their specific emphasis area. Students integrate theory and clinical competencies to population preventative care, healthcare, health promotion, health education, health systems leadership, policy, and evidence-based care populations.

***NURSE 7955 Research Topics in Nursing and Health: Psychometrics: 3 semester hours***

Prerequisites: Admission to the College of Nursing PhD Program. This course focuses on theoretical foundations of measurement, item construction, instrument design, item analysis, validity and reliability assessment. Basic methodologies and techniques for constructing, testing, and evaluating instruments will be discussed. This course is for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

***NURSE 7956 Participatory Approaches for Health and Health Systems: 3 semester hours***

Prerequisites: Admission to the College of Nursing PhD Program. This course will focus on the use of participatory approaches for the design of health and health-system interventions. This course is for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

***NURSE 7957 Research Topics in Nursing and Health: Hierarchical Linear Modeling: 3 semester hours***

Prerequisites: Admission to the College of Nursing PhD Program. This course is an extension of regression methods to situations where data has multiple layers of meaningful structure. It emphasizes ability to specify, evaluate, and estimate a multilevel model using SPSS and HLM. This course is for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

***NURSE 7958 Comparative Effectiveness Research: 3 semester hours***

Prerequisites: Admission to the College of Nursing PhD Program. This course provides evidence on the benefits and harms of treatment and prevention strategies, for which patients they work best, under which circumstances, and at what time. This advanced quantitative methods class presents a framework for analyzing observational studies and randomized trials for comparative effectiveness. This course is for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

***NURSE 7959 Research Topics in Nursing & Health: Structural Equation Modeling: 3 semester hours***

Prerequisites: Admission to the College of Nursing PhD Program. This course focuses on factor analysis, path analysis, basic principles of model building, as well as applications and extensions of SEM such as scale construction and validation, mediation and moderation, multi-group analyses, and latent growth modeling. This course is for students who are enrolling in one of the shared courses available through the UM-funded CARMA initiative (Collaborations for Advanced Research Methods and Analysis).

# Optometry

## Courses

### **OPTOM 8010 Anatomy, Physiology and Disease Processes I: 5 semester hours**

This course is the first in a two-semester course sequence that will detail the general anatomy of the human body along with the histology (microanatomy), physiology and disease processes of major organ systems. The course content will be presented in a modular format. Areas of discussion will include cardiovascular, respiratory, endocrine, digestive, reproductive, integumentary and peripheral and autonomic nervous systems. The laboratories will emphasize and augment important concepts introduced in the classroom environment.

### **OPTOM 8020 Basic and Clinical Optics I: 4 semester hours**

Prerequisites: Consent of instructor. The principles of geometrical optics as applied to refracting and reflecting surfaces, thin lenses, thick lenses, and lens systems. The optics of various ophthalmic instruments and techniques will be examined.

### **OPTOM 8030 Introduction to Optometry: 1 semester hour**

An introduction to the profession of optometry, including a consideration of the characteristics of a profession, the behaviors and attitudes of a professional, the history of optometry, the profession's legal basis, the major optometric organizations and sources and types of information available to optometrists. One hour of lecture per week.

### **OPTOM 8040 Neuroanatomy: 4 semester hours**

Prerequisites: Consent of instructor. Detailed gross and microscopic anatomy of human central nervous system with a special emphasis on the cranial nerves, nuclei, and the visual system.

### **OPTOM 8050 Basic and Applied Immunology: 2 semester hours**

This course will address the basic concepts of immunology including innate and adaptive immune responses. Mechanisms of hypersensitivity reactions and applications of immunology to ocular and systemic disease, transplantation, and treatment or prevention of cancer are included. Students must be concurrently enrolled in OPTOM 8010.

### **OPTOM 8060 Biochemistry: 2 semester hours**

Basic concepts of general and cellular biochemistry. Study of nomenclature, structure, and reactions of organic molecules. Some emphasis on visual system - tears, intraocular fluids, lens, and photochemistry.

### **OPTOM 8080 Clinical Optometry I: 2 semester hours**

Introduction to ocular assessment including case history and entrance examination procedures and theory.

### **OPTOM 8090 Case Based Discovery for the Developing Clinician: 1 semester hour**

Students acquire curricular competencies appropriate for the professional year in which they are enrolled via in depth individual and group discovery via case based presentations. The experience will provide students the opportunity to assimilate and recognize the relationships among diverse topics emphasized within the optometric curriculum. Participants work in groups of no more than 10.

### **OPTOM 8110 Anatomy, Physiology and Disease Processes II: 4 semester hours**

Prerequisites: OPTOM 8010, OPTOM 8060. Continuation of OPTOM 8010 Anatomy, Physiology and Disease Processes I.

### **OPTOM 8120 Basic and Clinical Optics II: 5 semester hours**

Prerequisite: OPTOM 8020. Radiometry and photometry, polarization, scattering, emmetropia, myopia, hyperopia, astigmatism, models of experimental myopia, accommodation, diffraction, retinal image size, entoptic phenomena, aberrations, lasers and the eye, apertures, and optical instruments.

### **OPTOM 8160 Anatomy and Physiology of the Eye: 5 semester hours**

Prerequisites: OPTOM 8040, OPTOM 8010 or consent of instructor. Vegetative anatomy and physiology of the eye, optic nerve, orbit, and adnexa will be discussed. This includes discussion of embryology and the dynamics of ocular fluids. Four lecture hours and a two-hour laboratory per week.

### **OPTOM 8180 Clinical Optometry II: 5 semester hours**

Prerequisites: OPTOM 8080. Continuation of Clinical Optometry I. Patient care instruction including entrance examination procedures, refraction, ophthalmoscopy and biomicroscopy.

### **OPTOM 8190 Introduction to Clinical Diagnostic Reasoning: 1 semester hour**

Prerequisite: OPTOM 8090. Introduction to clinical diagnostic reasoning by individual and group case-based learning. Scenarios give students an understanding of the relationship between basic and clinical sciences and provide an introduction to established best practices.

### **OPTOM 8220 Ophthalmic Optics: 4 semester hours**

Prerequisites: OPTOM 8120. Ophthalmic materials, physical characteristics of lenses and frames, paraxial optics of ophthalmic lenses, ophthalmic prisms, lens specifications, special lenses, multifocal lenses, unique designs, aniseikonic lenses, aberration theory and its application to lens design, lenses for low vision, protective eyewear.

### **OPTOM 8230 Interpersonal Communications: 1 semester hour**

Prerequisites: OPTOM 8030. This course covers the principles of human interpersonal relationships. The enhancement of listening and verbal skills will be provided. Emphasis will be on preparing the student to understand and manage the many human interpersonal relationships necessary in the practice of optometry.

### **OPTOM 8240 Ocular Motility: 2 semester hours**

Prerequisites: OPTOM 8040 or consent of instructor. The anatomy, physiology, neurology, measurement, characteristic, and control of the intra- and extraocular system.

### **OPTOM 8250 Monocular Sensory Processes: 5 semester hours**

Prerequisite: OPTOM 8160 or consent of instructor. Monocular sensory processes of vision: phototransduction, visual neurophysiology, spatial and temporal vision, acuity, light adaptation and discrimination, color, motion, objects and attention. Sensory processes are considered from both the psychophysical aspects and neurophysiological bases, including the changes during development, adulthood and aging. Four hours of lecture and two hours of laboratory per week.

### **OPTOM 8260 General and Ocular Pharmacology: 4 semester hours**

Prerequisites: OPTOM 8110, OPTOM 8160, OPTOM 8080, OPTOM 8180. This course establishes an understanding of both systemic and ocular pharmacology focusing on mechanisms of action, drug interactions within the body, and drug interactions with other medications. Attention is given to clinical cases relevant to optometric practice and a broad overview of general and ocular pharmacology as a whole.

### **OPTOM 8280 Clinical Optometry III: 4 semester hours**

Prerequisites: OPTOM 8080 and OPTOM 8180. Continuation of clinical optometry. Patient care in the areas of refraction, binocular integration, perimetry, and biomicroscopy.

**OPTOM 8320 Ophthalmic Dispensing: 1 semester hour**

Prerequisites: OPTOM 8220. Clinical experience in verification and dispensing of ophthalmic materials.

**OPTOM 8340 Binocular Vision and Space Perception: 4 semester hours**

Prerequisites: OPTOM 8240, OPTOM 8280 and OPTOM 8250 or consent of instructor. Binocular vision and space perception. Visual direction, theory of correspondence, fusion, rivalry, ocular dominance, and stereopsis. Developmental aspects and neurophysiological mechanisms.

**OPTOM 8370 Foundations of Ocular and Systemic Disease and Management I: 5 semester hours**

Prerequisite: OPTOM 8260. The first in the series of courses that address diseases of the eye, clinical diagnoses, and optometric and medical management of ocular and systemic disease. The laboratories emphasize diagnostic techniques and treatment skills, preparation for the initial clinic privileging examination and augment important concepts introduced in the classroom environment.

**OPTOM 8380 Clinical Optometry IV: 2 semester hours**

Prerequisites: OPTOM 8280. Continuation of Clinical Optometry III. Diagnosis, prognosis and management of visual problems. Emphasis on conducting comprehensive eye exams in preparation for the initial clinical privileging examination.

**OPTOM 8390 Specialty Clinic Laboratory: 1 semester hour**

Prerequisite: OPTOM 8280. Students acquire and practice skills for pediatric, binocular vision, low vision, and contact lens examinations. The course format is one 2-hour laboratory per week.

**OPTOM 8391 Clinical Topics in Contact Lenses: 1 semester hour**

Prerequisite: OPTOM 8280. This is the first in a series of 3 courses addressing contact lenses. The focus is on contact lens care and evaluation. The course format is one 50-minute lecture per week.

**OPTOM 8392 Clinical Topics in Binocular Vision and Pediatric Optometry: 1 semester hour**

Prerequisite: OPTOM 8240 and OPTOM 8280. This course presents clinical diagnostic and management skills for both pediatric patients and those with binocular vision anomalies. The course format is lecture.

**OPTOM 8393 Clinical Topics in Low Vision: 1 semester hour**

Prerequisite: OPTOM 8280. This course presents clinical diagnostic and management skills for patients with low vision. The course format is one 50-minute lecture per week.

**OPTOM 8400 Directed Readings: 1-3 semester hours**

Prerequisite: Consent of Instructor. Credit is given for independent literature review of a specific topic in any area of basic or clinical vision science guided by a full time faculty member with appropriate interests. Credit is awarded upon approval of a written paper regarding the selected topic. This elective may be repeated up to a total of 3 credit hours.

**OPTOM 8410 Directed Research: 1-3 semester hours**

Prerequisite: Consent of Instructor. Credit is given for independent research. Projects may be laboratory, library, or clinically based research in any area of vision science. Projects will be supervised by one or more full time faculty members. This elective may be repeated up to a total of 6 credit hours.

**OPTOM 8450 Introduction to Primary Care Clinic: 4 semester hours**

Prerequisites: OPTOM 8230, OPTOM 8320, OPTOM 8340, OPTOM 8370, OPTOM 8380, OPTOM 8390, OPTOM 8391, OPTOM 8392, OPTOM 8393, OPTOM 8560, and successful completion of the Clinical Proficiency Examination. The first in a series of adult primary care courses. Students perform comprehensive examinations, make diagnoses, and develop management plans with patient education under supervision of a faculty attending. Students participate in accompanying clinic seminar discussion groups.

**OPTOM 8460 Foundations of Ocular and Systemic Disease and Management III: 2 semester hours**

Prerequisites: OPTOM 8370. The third course in the foundation series that addresses ocular and systemic diseases and their management.

**OPTOM 8480 Pharmaceutical Management in Patient Care: 2 semester hours**

Prerequisites: OPTOM 8260; OPTOM 8370; OPTOM 8460. This course will discuss the clinician's responsibility in the treatment and management of ocular conditions and systemic complications of pharmaceutical use. Principles of ocular pharmacology in regards to specific management and treatment of ocular disease, trauma, and surgery by systemic, local, and topical therapy. In addition, simulated case studies are used to illustrate the basic and subtle clinical aspects of treating patients using pharmaceutical agents.

**OPTOM 8500 Primary Care Clinic I: 6 semester hours**

Prerequisites: OPTOM 8450. Continuation of Introduction to Primary Care Clinic. Weekly clinic seminar will supplement clinical experience with discussion of medical billing and coding, pharmacology, and patient case discussion and review.

**OPTOM 8520 Contact Lenses I: 3 semester hours**

Prerequisites: OPTOM 8380 and OPTOM 8391. Historical development of the contact lens and its use. Basic lens terminology, specifications, physiochemical characteristics, optics, fabrication, and verification. Preliminary patient evaluation, indications and contraindications for contact lenses. Basic fitting philosophies for all lens types. Lens care and patient education. Patient and practice management considerations.

**OPTOM 8540 Binocular Vision Anomalies: 4 semester hours**

Prerequisites: OPTOM 8340, OPTOM 8380 and OPTOM 8392 or consent of instructor. The etiology, epidemiology, symptoms, signs, and course sequelae of the obstacles to binocular vision-sensory, integrative, and motor. The detection, diagnosis, prognosis, and orthoptic treatment of such anomalies. Clinical care of aniseikonia.

**OPTOM 8550 Low Vision: 2 semester hours**

Prerequisite: OPTOM 8380 and OPTOM 8393. The etiology, epidemiology, symptoms, signs, course, and sequelae of low vision problems. Methods of testing, prognosis, selection of therapy, design of environmental and optical aids, problems of rehabilitation. Agencies, laws, public and social assistance for the partially sighted and blind. The course format is lecture and 1 two-hour laboratory per week.

**OPTOM 8560 Epidemiology and Public Health: 2 semester hours**

The essentials of epidemiological study procedures and a discussion of the epidemiology of vision disorders are discussed. The course reviews descriptive statistics, probability sampling, correlation, and prediction. The public health component includes a review of local, state, and federal organizations involved in health care, comprehensive health planning, new trends in health care delivery, and the assessment of the quality of health care delivery.



**OPTOM 8570 Advanced Topics in Ocular and Systemic Disease and Management: 6 semester hours**

Prerequisite: OPTOM 8370. The third semester of a comprehensive, systems based course sequence. Advanced topics in diagnoses as well as optometric and medical management of ocular and systemic disease will be discussed. The laboratories will emphasize and augment important concepts introduced in the classroom environment.

**OPTOM 8600 Primary Care Clinic II: 6 semester hours**

Prerequisites: OPTOM 8500, OPTOM 8520, OPTOM 8540, OPTOM 8550, OPTOM 8570, and OPTOM 8650. The final course in the adult primary care sequence. Students examine and care for patients under supervision of a faculty attending. Students are expected to function nearly independently in final preparation for the Externship Program.

**OPTOM 8620 Contact Lenses II: 2 semester hours**

Prerequisites: OPTOM 8520. Advanced contact lens fitting, theories, and clinical methods for astigmatic, presbyopic, keratoconic, and aphakic designs. Special considerations include the use of corneal topography, orthokeratology, disposable lenses, lenses for extended wear and lenses for color deficiencies. The course format is one lecture per week.

**OPTOM 8630 Practice Management I: 3 semester hours**

Prerequisites: OPTOM 8030 and OPTOM 8230. The development and management of an optometric practice from a patient and community service point of view - office design, office routine, patient care administration, personnel management, recall systems and the establishment, development and management of an optometric practice from a business point of view - legal developments, governmental regulations, legislation and the legislative process, malpractice, professional ethics, taxes, fee structures, insurance and accounting methods.

**OPTOM 8640 Pediatric Optometry: 2 semester hours**

Prerequisites: OPTOM 8380 and OPTOM 8540. Special examination and management considerations of the pediatric patient. Psychological, physiological, social, and demographic aspects of early visual development. Discussion of the optometric considerations of children with learning and reading disabilities. The course format is two lecture/discussions per week.

**OPTOM 8645 Neurologic Disorders of the Eye and Visual System: 2 semester hours**

Prerequisites: OPTOM 8570. Diagnosis, management and treatment of selected neurologic disorders of the eye and visual system. Emphasis is on diagnostic imaging of the visual system, diagnosis of central and peripheral disorders of eye movements, space occupying lesions, acquired brain injury, and optic nerve disease.

**OPTOM 8650 Geriatric Optometry: 2 semester hours**

Prerequisite: OPTOM 8380. Special examination and management considerations of the geriatric patient will be discussed. Psychological, physiological, social, and demographic aspects of aging, as well as ocular changes associated with the aging process will be taught.

**OPTOM 8660 Contact Lens Specialty Clinic: 1 semester hour**

Prerequisites: OPTOM 8391. The clinical examination and care of patients in the optometric specialty area of contact lenses.

**OPTOM 8670 Comprehensive Case Review and analysis: 1 semester hour**

Prerequisites: Enrollment in OPTOM 8500 or OPTOM 8600. Discussion of the diagnosis and management of common clinic patient encounters via Socratic teaching techniques. Interns are encouraged to present actual cases which have been particularly challenging for them. The course format is a weekly seminar.

**OPTOM 8680 Ophthalmic Lasers: 2 semester hours**

Prerequisites: OPTOM 8570. This course will review the principles and applications of lasers for the anterior segment. Topics will include the principles, physics, laser tissue interactions and safety concerns for ophthalmic lasers. The indications, contraindications and potential complications of lasers used for open angle glaucoma, closed angle glaucoma and posterior capsulotomy will be reviewed. In addition, the course will review epiluminescence microscopy, minor surgical procedures, suture techniques, office emergencies including anaphylaxis, chalazion management and radiofrequency surgery. An overview of the anatomy of eyelids, post-operative wound care, complications of surgical procedures, surgical instruments, asepsis and OSHA will be provided. The medicolegal aspects of anterior segment procedures will be discussed. Co-Management of patients who have corneal refractive surgery will also be covered.

**OPTOM 8690 Pediatric/Binocular Vision Specialty Clinic: 1 semester hour**

Prerequisites: OPTOM 8392. The clinical examination and care of patients in the optometric specialty areas of binocular vision and pediatric vision.

**OPTOM 8700 UM-St. Louis Pediatric/Binocular Vision Patient Care: 3 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of patients in pediatric/binocular vision clinic at the University of Missouri-St. Louis Center for Eyecare. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with OPTOM 8710 and OPTOM 8720.

**OPTOM 8710 UM-St. Louis Contact Lens Patient Care: 3 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework required Comprehensive clinical care in the contact lens clinic at the University of Missouri-St. Louis Center for Eyecare. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with OPTOM 8700 and OPTOM 8720.

**OPTOM 8720 UMSL Eye Health Management Patient Care: 1 semester hour**

Prerequisites: Successful completion of all first, second, and third year course work. Comprehensive clinical care in the eye health management clinic with ophthalmologists at the University of Missouri-St. Louis University Eye Center. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with OPTOM 8700 and OPTOM 8710.

**OPTOM 8730 Community Service Patient Care Rotation A: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of patients at St. Louis area community health centers. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8770 Community Service Patient Care Rotation C: 7 semester hours**

Prerequisites: Successful completion of all first, second, and third year coursework. Comprehensive clinical care of patients at St. Louis area community health centers. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8780 External Rotation in Institutional Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of primary care patients at external sites approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.



**OPTOM 8790 External Rotation in Ocular Disease Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of patients with ocular disease at external sites approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8800 External Rotation in Pediatric/Binocular Vision Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of pediatric/binocular vision patients at an external site approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8810 External Rotation in Contact Lens Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of contact lens patients at an external site approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8811 External Rotation in Ophthalmic Surgical Patient Care: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care of Ophthalmic Surgical Patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8812 External Rotation in Geriatric Patient Care: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care of Geriatric Patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8813 External Rotation in Ophthalmic Sports Vision: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care of Sports Vision Patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8814 External Rotation in Primary Care: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care of Primary Care Patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8815 External Rotation in Pathology and Treatment: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care in pathology and treatment of patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8816 External Rotation in Ophthalmic Laser Treatment: 7 semester hours**

Prerequisites: Successful Completion of all second and third year coursework. Comprehensive clinical care in ophthalmic laser treatment of patients at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8817 External Rotation in Rehabilitative Patient Care: 7 semester hours**

Prerequisites: Successful completion of all second and third year coursework. Comprehensive clinical care in Rehabilitative Patient Care at an external site approved by the College of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8820 External Rotation in Low Vision Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Comprehensive clinical care of low vision patients at an external site approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8830 External Rotation in General Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second, and third year coursework. Comprehensive clinical care of a general population of optometric patients at external sites approved by the School of Optometry's Externship Council. This course fulfills one of the clinic courses required for graduation.

**OPTOM 8840 External Supplementary Rotation in General Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second, and third year coursework. Comprehensive clinical care of general population of optometric patients at external site approved by the School of Optometry's Externship Council.

**OPTOM 8850 Supplementary Rotation in General Patient Care: 7 semester hours**

Prerequisites: Successful completion of all first, second, and third year coursework. Comprehensive clinical care of general population of optometric patients at the UM-St. Louis Center for Eye Care, UM-St. Louis Optometric Center, or the UM-St. Louis East St. Louis Eye Center.

**OPTOM 8870 Practice Management IV: 2 semester hours**

Prerequisites: Successful completion of all first, second and third year coursework. Further in-depth discussion in practice management.

**OPTOM 8880 Clinic Seminar: 1 semester hour**

Prerequisites: Successful completion of all first, second and third year coursework. Presentation and discussion of interesting clinical patients. Additional clinical testing techniques and concepts. Further discussion of patient data analysis-the process of determining diagnosis, prognosis, and therapy. Further discussions in the optometric specialties.

## Philosophy

### Courses

**PHIL 1021 Choice and Chance: 3 semester hours**

Same as MATH 1021. Prerequisites: A satisfactory score on the UMSL ALEKS Math Placement Examination, obtained at most one year prior to enrollment in this course. This course provides an introduction to inductive logic and the theory of probability in an organized and systematic way, so as to give students tools for more effective decision-making. We will introduce the probability calculus, basic concepts of utility theory, decision theory and different approaches to understanding probability. This course is designed to be accessible to students of all levels. Satisfies mathematics proficiency.

**PHIL 1030 Present Moral Problems: 3 semester hours**

This course will explore a range of ethical dilemmas with an eye towards living the best life. How should I live? What actions are right and wrong? How should I treat myself and others? In this class, we will consider these and other issues by investigating practical problems in daily life including: human rights, the environment, hunger and poverty, war and violence, racial and ethnic discrimination, gender roles and marriage, abortion, and euthanasia.

**PHIL 1050 Existentialism and Phenomenology: 3 semester hours**

The course will cover classic works by philosophers and writers in the existential and phenomenological traditions. Topics include free will, existential crisis, despair, anxiety, faith, the death of God, the origin of morals, authentic life, as well as the structure and content of conscious experience.

**PHIL 1091 Great Philosophers: 3 semester hours**

This online course introduces philosophy through a survey and examination of the ideas of fifteen of the most important figures in the history of the subject. From Socrates to Nietzsche, the questions, answers, and lives of the great philosophers are explored in a multimedia context. This course does not satisfy any of the requirements for philosophy major or minor.

**PHIL 1110 Western Philosophy I: Antiquity to the Renaissance: 3 semester hours**

Lectures and discussions tracing the development of western philosophy from its beginnings among the pre-Socratics through the Middle Ages and Renaissance. Philosophical ideas will be examined in the cultural and historical context: the Greek city-state, the rise of Christianity, etc.

**PHIL 1111 Western Philosophy II: Descartes to the Present: 3 semester hours**

Lectures and discussions on the development of western philosophy from Descartes (1596-1650) to the present. Philosophical ideas will be examined with an eye to their historical and cultural setting: the rise of modern science, the industrial revolution, the rise of capitalism, etc.

**PHIL 1120 Asian Philosophy: 3 semester hours**

Critical study of selected philosophical classics of India and China. This course fulfills the cultural diversity requirement.

**PHIL 1125 Islamic Philosophy: 3 semester hours**

An introduction to arabic philosophy in the islamic classical period (roughly from the mid-ninth through the twelfth centuries). We consider the philosophical and theological background, and then examine the thought of such notable Islamic philosophers as al-Kindi, Ibn Sina, al-Ghazali, and Ibn Rushd. Topics treated typically include proofs for the existence of God, whether the world is eternal or had a beginning, the nature of the soul and whether it is immortal, and the distinction between essence and existence. This course fulfills the cultural diversity requirement.

**PHIL 1130 Approaches to Ethics (MOTR PHIL 102): 3 semester hours**

A study and discussion of representative topics in moral philosophy such as moral skepticism, moral objectivity, theories of obligation and value, evaluation of social institutions and the relation between morality and science. Traditional and contemporary writers will be considered.

**PHIL 1150 Introduction to Philosophy (MOTR PHIL 100): 3 semester hours**

A study and discussion of representative topics in philosophy such as free will and determinism, concepts of mind and body, the basis of value judgments, knowledge and belief, and the possibility of constructing a world view.

**PHIL 1151 Love 101: 3 semester hours**

A critical review of what media personalities, philosophers, criminal justice experts, medical experts, neuroscientists, and psychologists have said about love and its place in our lives. Included will be such topics as the neuroscience of love, love across culture, love and commitment issues, marriage and the 'seven-year itch,' jealousy, domestic violence, and verbal abuse. Larger questions will include the role of love in the good life; the ethics of love; the psychological consequences of obsession, breakups and divorce; arranged marriages vs. freely chosen love; and the morality of laws that affect relationships between loving partners.

**PHIL 1159 Blind Spots: 3 semester hours**

This course provides a comprehensive introduction to cognitive biases, and to the strategies that can be used to address them. After an introductory unit devoted to the psychology of human reasoning, the course is structured around historical and contemporary case studies of particular biases, such as confirmation bias, negativity bias, and overconfidence.

**PHIL 1160 Critical Thinking (MOTR PHIL 101): 3 semester hours**

An introduction to the language and logical structure of arguments, the principles of sound reasoning, and application of these principles in a variety of contexts.

**PHIL 1180 Science vs. God: 3 semester hours**

This course examines whether religion and science are compatible, discusses the science-religion debate historically, and broaches philosophical issues surrounding belief, especially whether belief should be based in empirical evidence or in faith. Following these introductory course sessions, the class will discuss, in detail, topics in science and religion, including creation versus evolution; human nature (including abortion and stem cell research); the nature of sexuality and gender; the science of religion; morality; the environment from a religious perspective; meaningfulness in the universe; and finally, evidence for or against the afterlife, existence of a divinity, and divine providence.

**PHIL 1185 Philosophy of Religion: 3 semester hours**

A philosophical investigation of such problems as the nature of religious faith and experience, the relation of faith and reason, alternative concepts of deity and the problem of evil.

**PHIL 2185 Introduction to Religious Studies: 3 semester hours**

Same as HIST 2185. This course introduces students to the interdisciplinary study of religion. With an emphasis on research methods and perennial philosophical and historical topics, students will develop tools for investigating the various dimensions of worldview and gain exposure to many different religious traditions.

**PHIL 2249 Accounting Ethics: 3 semester hours**

Same as ACCTNG 2430. Prerequisites: ACCTNG 2400 and ACCTNG 2410 (may be taken concurrently). This course examines moral problems as they relate to the profession of accounting and the professional Codes of Conduct that govern the accounting profession. Students will apply the requirements of the Codes of Conduct to cases where ethical dilemmas or violations of professional standards may be present.

**PHIL 2251 Sexual Ethics: 3 semester hours**

A critical review of what philosophers, both classical and contemporary, have said about sexual experience and its place in our lives. Included will be such topics as sexual desire, sexual perversion, love and commitment, marriage and adultery, larger questions might include that role of sexual experience in the good life, issues of sexual privacy, and the morality of laws which regulate sexual activity.

**PHIL 2252 Crime and Punishment: 3 semester hours**

Same as CRIMIN 2252. This course will address fundamental conceptual, ethical, and moral issues that arise in the context of the legal system. Topics may include punishment, pre-trial detention, the death penalty, acquittal of persons who are legally guilty, plea bargaining, moral obligation to obey the law, and laws restricting civil liberties.

**PHIL 2253 Philosophy and Feminism: 3 semester hours**

Same as GS 2253. A critical examination of what various philosophers have said about issues of concern to women. Sample topics include oppression, racism, women's nature, femininity, marriage, motherhood, sexuality, pornography, the ethics of care.

**PHIL 2254 Business Ethics: 3 semester hours**

A critical survey from the perspective of moral theory of businesses and business practices. Topics vary but usually include some of the following: Whether the sole moral obligation of businesses is to make money; whether certain standard business practices, e.g., the creation of wants through advertising, are moral; whether businesses ought to be compelled, e.g., to protect the environment or participate in affirmative action programs.

**PHIL 2255 Environmental Ethics: 3 semester hours**

Examines such issues as the value of wilderness, our duties to animals and the natural world, pollution and development, environmental justice.

**PHIL 2256 Bioethics: 3 semester hours**

Same as GERON 2256. An examination of ethical issues in health care practice and clinical research and in public policies affecting health care. Topics include: abortion, euthanasia, health care, experimentation, informed consent and the right to health care.

**PHIL 2257 Happiness and the Meaning of Life: 3 semester hours**

This course is an accessible introduction to the historical and contemporary perspectives on happiness and the meaning of life in philosophy. It examines the nature of happiness by focusing on three major theories: happiness as pleasure, happiness as excellence and happiness as desire satisfaction. Other issues examined may include the relevance of virtue for happiness, the experience machine argument, the best way to pursue happiness as a personal or a policy goal, and other related topics.

**PHIL 2258 Medicine, Values, and Society: 3 semester hours**

Social, conceptual, and policy issues connected with medicine form the focus of the course. Topics may include: (1) role played by race & gender in design of research and distribution of care; (2) whether diseases are socially constructed categories reflecting the values of society; (3) development of social policies that offer universal access to health care; (4) the legitimacy of using psychotropic drugs to enhance life, rather than treat the disease. The course differs from Bioethics by emphasizing policy issues and their conceptual basis. Content of this course may vary.

**PHIL 2259 Engineering Ethics: 3 semester hours**

An examination of ethical issues in engineering using professional engineering codes as a starting point. The course will have a problem solving orientation, focusing on the analysis of particular cases. Actual high-profile cases such as the Challenger disaster will be considered, as well as hypothetical cases illustrating the more commonly encountered moral problems in engineering (such as accepting gifts from vendors). Topics include the engineer/manager relationship, engineers and the environment, honesty in engineering, and risk, safety, and liability.

**PHIL 2280 Minds, Brains, and Machines: 3 semester hours**

An introduction to basic philosophical issues in cognitive science. General topics include minds as computers; computers as minds, or the possibility of artificial intelligence that is truly intelligent; relationship between mental function and brain function. Some areas of current research, such as reasoning, vision, and emotion.

**PHIL 2380 Ethics in Science: 3 semester hours**

This course provides an overview of ethical issues in the practice of the sciences. Students will be introduced to basic concepts and theories of ethics and will apply them to contemporary and historical cases.

**PHIL 3286 International Business Ethics: 3 semester hours**

Same as INTL BUS 3286. The course will deal with moral issues that are raised by the increasing globalization of business. Apart from the general issue of whether this globalization is itself a good thing, we will discuss such issues as child labor, working conditions, safety standards, environmental policies, bribery and other 'corrupt' practices, respect for intellectual property, etc. Frequent short papers will be assigned.

**PHIL 3301 Ancient Philosophy: 3 semester hours**

Freshman admitted by consent of department. The principle philosophical doctrines of the ancient world, with special emphasis on the philosophies of Plato and Aristotle. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

**PHIL 3302 Medieval Philosophy: 3 semester hours**

A critical study of the important philosophies of the period from August to the Renaissance. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

**PHIL 3303 Early Modern Philosophy: 3 semester hours**

Principal figures in the development of rationalism, empiricism and skepticism in early modern Europe, from Descartes through Hume. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

**PHIL 3304 19th and 20th Century Philosophy: 3 semester hours**

This course covers major nineteenth and twentieth century philosophers. It may include such major figures as Hegel, Nietzsche, Mill, Pierce, James, Carnap, Wittgenstein, Russell and Sartre.

**PHIL 3320 Topics in Applied Ethics: 3 semester hours**

This course has variable content related to topics in applied ethics. Topics covered may include feminism, sexual ethics, environmental ethics, business ethics and bioethics. Philosophy majors should enroll in this course rather than any 2000-level applied ethics course. This course may be repeated for credit as long as the topic differs.

**PHIL 3327 Race and Racism: 3 semester hours**

This course will investigate the concepts of race and racism through an examination of metaphysical, psychological, ethical, and political problems associated with race.

**PHIL 3340 Knowledge and Reality: 3 semester hours**

This course introduces students to basic issues in contemporary metaphysics and theories of knowledge. Topics may include universals, causality, skepticism and truth.

**PHIL 3360 Formal Logic: 3 semester hours**

An introductory study of logical truth and deductive inference, with emphasis on the development and mastery of a formal system.

**PHIL 3378 Philosophy of Mind: 3 semester hours**

Prerequisites: Three hours of philosophy or consent of instructor. An introduction to philosophical issues pertaining to the mind. Topics may include how the mind relates to the body, how the mind represents the world, how the mind works, consciousness, and free will.

**PHIL 3380 Philosophy of Science: 3 semester hours**

An examination of science: what makes science special? Topics may include (but are not limited to): empiricism and of induction; paradigms and revolutions; explanation, causation and laws; realism versus instrumentalism; critiques of science such as those of feminism or postmodernism; and reductionism - ultimately is it all just physics?.

**PHIL 4401 Plato: 3 semester hours**

Prerequisites: Six hours of philosophy, a course in Ancient Philosophy recommended, graduate standing, or consent of instructor. A study of selected Platonic dialogues.

**PHIL 4402 Aristotle: 3 semester hours**

Prerequisites: Six hours of philosophy, a course in Ancient Philosophy recommended, graduate standing, or consent of instructor. A selective study of Aristotle's major works.

**PHIL 4407 Kant: 3 semester hours**

Prerequisites: Six hours of philosophy, PHIL 3304 or equivalent recommended, graduate standing or consent of instructor. A systematic study of the Critique of Pure Reason.

**PHIL 4410 Topics and Figures in the History of Philosophy: 3 semester hours**

Prerequisites: Nine hours of philosophy, graduate standing, or consent of instructor. In-depth examination of a particular topic, significant figure or philosophical movement from the history of philosophy. The philosopher or movement to be studied will be announced prior to registration. This is a variable content course and may be taken again for credit with the consent of the instructor and department chair.

**PHIL 4420 Topics in Non-Western Philosophy: 3 semester hours**

Prerequisites: PHIL 1120, graduate standing or consent of instructor. An extensive exploration of issues in some particular non-Western tradition (Islamic, Indian, or Chinese). This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 4421 The Analytic Tradition: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. PHIL 3305 and PHIL 3360 strongly recommended. Course studies in depth the development of analytic philosophy with a broad emphasis on its style and substance. Topics may include early writings that set the stage for this tradition (Frege, Moore, Russell), the basic texts of Logical Positivism (Carnap, Schlick, Neurath, Hempel), and later responses including reassessment of the doctrine, the revival of naturalism, and the "death" of philosophy (Wittgenstein, Quine, Sellars). This is a variable content course that may be taken again for credit with consent of the instructor and the department chair.

**PHIL 4430 Social and Political Philosophy: 3 semester hours**

Prerequisites: Six credit hours of philosophy required or consent of instructor. This course will cover several classic works of political theory, with a particular focus on the nature of justice, the proper extent of liberty, and social contract arguments for the legitimacy of state authority. Readings from Plato, Hobbes, Locke, Hume, Rousseau, Bentham, Mill, Marx and Rawls.

**PHIL 4435 Classical Ethical Theory: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. Significant contributions to moral philosophy from Plato and Aristotle to Bentham and Mill.

**PHIL 4437 Metaethics: 3 semester hours**

Prerequisites: Six credit hours of Philosophy. This course deals with questions regarding the foundations of ethics and the status of our ethical judgments about what's right and wrong, good and bad. The course will consider contemporary approaches to issues such as moral motivation, moral reasons, moral explanations, moral disagreement, moral knowledge, and moral supervenience, as well as various debates between realists and antirealists, and between cognitivists and expressivists.

**PHIL 4438 Recent Ethical Theory: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. A study of major contributions to twentieth-century ethics, including works by such writers as Moore, Dewey, Ross, Stevenson, Hare, and Rawls.

**PHIL 4440 Theories of Knowledge: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. An examination of concepts and problems involved in the characterization of knowledge. Specific topics will vary, but will usually include knowledge, belief, skepticism, evidence, certainty, perception, truth, and necessity.

**PHIL 4445 Metaphysics: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. An examination of selected metaphysical topics such as substance, universals, causality, necessity, space and time, free will, being, and identity.

**PHIL 4450 Special Readings in Philosophy: 1-3 semester hours**

Prerequisite: Consent of department. Independent study through readings, reports, and conferences. This is a content course and may be taken again up to a total of 6 credit hours with consent of instructor and department chair.

**PHIL 4451 Special Topics in Philosophy: 3 semester hours**

Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. A critical study of classical and/or contemporary contributions to a selected topic in philosophy. The topic to be considered will be announced prior to registration. This is a variable content course and can be taken again for credit with the consent of the instructor and the department chair.

**PHIL 4458 Ethics and the Computer: 3 semester hours**

Prerequisites: Six hours of coursework above the level of MATH 1030 in Math/Computer Science or at least six hours of philosophy or consent of instructor. An examination of ethical issues concerning the use of computers generally and software engineering in particular. Aims at developing awareness of these issues, and skills for ethical decision-making regarding them through careful, analytical methods. Typical issues include privacy, intellectual property, computer fraud, and others.

**PHIL 4460 Advanced Formal Logic: 3 semester hours**

Prerequisites: PHIL 3360, graduate standing, or consent of instructor. Rigorous study of major developments in contemporary logic. Emphasis is given to theoretical problems and some attention is devoted to philosophical issues arising from logic.



**PHIL 4465 Theory of Decisions and Games: 3 semester hours**

Same as POL SCI 4060. Prerequisites: Six hours of Philosophy and junior standing, or POL SCI 6401 (or the equivalent) or consent of the instructor. A study of rational decision-making, including games against nature, zero-sum games, and social choices. Topics will include the following: expected utility maximization, the Prisoner's Dilemma, Nash equilibria, and Arrow's theorem on the impossibility of a social welfare function. Parts of the course are technical in nature; a prior course in mathematics (e.g., finite mathematics, calculus, statistics or an economics course with a mathematical component), symbolic logic, or some other course with comparable mathematical content.

**PHIL 4474 Topics in Aesthetics: 3 semester hours**

Prerequisites: PHIL 3374, graduate standing or consent of instructor. Selected topics, such as vision and representation, musical aesthetics, and recent theorists. This is a variable content course that may be taken again for credit with the approval of the instructor and the department chair.

**PHIL 4478 Topics in Philosophy of Mind and Philosophy of Language: 3 semester hours**

Prerequisites: PHIL 3378 or six hours of other philosophy courses or consent of instructor. This course is an examination of selected topics at the interface of philosophical and psychological research. This is a variable content course and can be taken again for credit with the consent of the instructor and the department chair.

**PHIL 4479 Philosophy of Cognitive Science: 3 semester hours**

Prerequisites: PHIL 3378 or PHIL 4478 or nine hours of other philosophy courses or consent of instructor. An exploration of the philosophical foundations of cognitive science, a cooperative effort of philosophers, cognitive psychologists, brain scientists, computer scientists, and others to understand the relationship between the mind and the brain.

**PHIL 4480 Topics in Philosophy of Science: 3 semester hours**

Prerequisites: Consent of the instructor. An advanced introduction to the philosophy of science for advanced undergraduates in philosophy and graduate and professional students. Topics covered include scientific method, confirmation, explanation, the nature of theories, scientific progress, science criticism, ethics in science, and science and religion.

**PHIL 4487 Topics in Philosophy of Law: 3 semester hours**

Same as CRIMIN 4487. Prerequisites: CRIMIN 1100 and three hours of philosophy, graduate standing, or consent of instructor. An intensive study of recent philosophical debate about such issues as the authority of law, legal equality and justice, legal responsibility, self-determination and privacy, and legal punishment. This is a variable content course and may be taken again for credit with consent of the instructor and the department chair.

**PHIL 5400 Proseminar in Philosophy: 3 semester hours**

Prerequisites: Graduate standing. Required of all entering Graduate Students in the Fall Semester of the first full year of residency. Topics vary. Other graduate students may take this course with the permission of the instructor and the director of Graduate Studies in Philosophy. Students will be expected to write papers, give presentations, and join in class discussion.

**PHIL 5410 Seminar in Significant Figures in Philosophy: 3 semester hours**

Prerequisites: Graduate standing. In depth study of the work of a single philosopher. The philosopher selected will be announced prior to registration. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5478 Seminar in Philosophy of Mind: 3 semester hours**

Prerequisites: Graduate standing. Topics may include functionalism and physicalism; representation and the nature of propositional attitudes such as belief, desire, and the various emotions; folk psychology and knowledge of other minds; introspection and knowledge of one's own mind; conscious and unconscious mental states and processes. This is a variable content course and may be taken again for credit with consent of the instructor and the department chair.

**PHIL 5495 Thesis Research: 1-3 semester hours**

Prerequisites: Graduate standing or consent of instructor. May be repeated once for credit with the consent of the instructor and the department chair.

**PHIL 5521 Seminar in Analytic Philosophy: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. Intensive study of selected topics, texts, or individuals in historical or contemporary analytic philosophy. Topics may include, but are not limited to, Frege semantics, Russell's theory of definite descriptions, logical positivism, Wittgenstein's philosophy of language, Quine on the analytic/ synthetic distinction, Kripke possible-world semantics, theories of propositions, the analysis of knowledge, contextualism in epistemology and language, relative semantics, epistemic two-dimensionalism, conceivability vs. possibility, three-dimensionalism vs. four-dimensionalism, presentism vs. eternalism, and applications of core concepts in other areas of philosophy. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

**PHIL 5530 Seminar in Social and Political Philosophy: 3 semester hours**

An intensive study of contemporary philosophical debate about such issues such as civil liberty, economic justice, political decision-making, and state authority. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5533 Philosophy of Law: 3 semester hours**

Same as CRIMIN 5533. Prerequisite: Graduate standing or consent of instructor. Examination of origins of law and the basis for legal obligation. Specific consideration of the justification of punishment, morality and law, and legal reasoning.

**PHIL 5537 Seminar in Metaethics: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. The course deals with questions regarding the foundations of ethics and the status of our ethical judgements about what's right and wrong, good and bad. The course will consider contemporary approaches to issues such as moral motivation, moral reasons, moral explanations, moral disagreement, moral knowledge, and moral supervenience, as well as various debates between realists and antirealists, and between cognitivists and expressivists.

**PHIL 5538 Seminar in Ethical Theory: 3 semester hours**

Prerequisites: Graduate standing or consent of the instructor. In this course we will seek to answer questions from normative ethics or metaethics, which may include: What do all morally wrong actions have in common? What does the word 'wrong' mean? How, if at all, can we verify moral judgements? Are any moral judgements valid for all societies? Do we always have good reason to be moral?.

**PHIL 5540 Seminar in Epistemology: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. Close study of selected topics, texts, or individuals in epistemology. Topics may include (but are not limited to) theories of justification, naturalism in epistemology, and conceptions of knowledge. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5545 Seminar in Metaphysics: 3 semester hours**

Prerequisite: Graduate standing. Intensive study of a selected topic or problem area in metaphysics, e.g. mind-body identity, nature of the self, or conception of time. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5551 Special Readings in Philosophy: 1-3 semester hours**

Prerequisites: Graduate Standing, written consent of instructor. Independent study through readings, reports, and conferences. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5560 Seminar in Logic: 3 semester hours**

Prerequisites: Graduate standing. A focused study of topics in logic and/or its history. Representative topics include: Aristotelian logic, modal logic, the Gödel incompleteness theorems, relevance logic, paraconsistent logic, free logic. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5561 Graduate Formal Logic: 3 semester hours**

Prerequisite: Graduate standing; permission of the department. A rigorous introduction to formal logic that includes sentential calculus, predicate logic, and completeness proofs. May be taken for graduate credit only with permission of the graduate advisor and chair.

**PHIL 5579 Seminar in Philosophy of Cognitive Science: 3 semester hours**

Prerequisites: Graduate standing. General topics include the role of computation in cognitive science, the merits of symbolic computation and connectionism, the aims and methods of artificial intelligence, and the relationship between cognitive science and our everyday understanding of people. Specific topics may include perception, reasoning, consciousness, language, emotion, and will. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

**PHIL 5580 Seminar in Philosophy of Science: 3 semester hours**

Prerequisites: Graduate standing or consent of instructor. Focus is on recent issues and controversies. Topics may include: theories and observation, models of explanation, confirmation, realism and antirealism, empiricism & naturalism, 'social construction' and feminist views of science. This is a variable content course and may be taken again with the consent of the instructor and the department chair.

## Physical Education

### Courses

**PHY ED 1124 Principles and Practice in 1st Aid and Cardiopulmonary Resuscitation: 1 semester hour**

The course provides theory and supervised practice in first aid and cardiopulmonary resuscitation leading to American Red Cross certification in those areas.

**PHY ED 2134 Personal Physical Fitness: 3 semester hours**

Prerequisite: Consent of instructor. A study of the relationship between vigorous physical activity and individual well-being. Emphasis will be placed on an individualized analysis of health fitness, resulting in a prescribed program to develop optimal levels of physical fitness, including aerobic fitness, strength, muscular endurance, flexibility, body composition, and lifetime sports considerations.

**PHY ED 2136 Facilities Management: 3 semester hours**

This course will introduce the process of designing and maintaining facilities typically found in recreational environments. Emphasis will be placed on management theories, risk management, facility maintenance, operation and administration of various recreation facilities.

**PHY ED 3204 Special Topics in Physical Education: 1-3 semester hours**

Prerequisite: Consent of instructor. Independent study through readings, reports, field study or research.

**PHY ED 3261 Physical Activity for Diverse Learners: 3 semester hours**

Prerequisites: SPEC ED 3318. A study of the special physical activity and exercise needs, interests, and challenges of diverse learners in modifying physical education, with considerable emphasis on the development of methods and competencies.

**PHY ED 3267 Performance Analysis in Physical Education: 3 semester hours**

Prerequisite: College level math. A study of quantitative and qualitative approaches, processes and instruments used in assessing student progress in physical education activities. Emphasis will be given to the application of statistical methods to the results of evaluations of human motor performance and the interpretation of those results as well as to the construction and administration of measurement instruments.

**PHY ED 3282 Physical Growth and Motor Development: 3 semester hours**

Prerequisite: PSYCH 2270 and PHY ED 3465. An examination of the physical growth and aging, and motor development of the human being over the life span. Emphasis on evaluative tools, techniques and studies of research findings. Laboratory field experience for observing individuals. Attention is directed toward acquisition of basic skills, perceptual-motor development, fitness development, and age-related changes in information processing. A Required course for Physical Education majors; an elective course for early childhood, special, and Elementary Education majors.

**PHY ED 3283 Kinesiology: 3 semester hours**

Prerequisite: HLTH PE 3280 and math proficiency. Study of the biomechanics of human motion with particular application to performance in sport activities.

**PHY ED 3287 Seminar in Exercise Science: 1-3 semester hours**

Prerequisites: HLTH PE 3284 or consent of instructor. Study of current topics in the research and practice of exercise science, especially those required for certifications in the field. An emphasis will be placed on application of research to professional situations. Some field experience may be required. May be repeated as long as the topic is different for a maximum of 6 credit hours.

**PHY ED 3330 Designing Physical Activity Programs: 3 semester hours**

Prerequisite: HLTH PE 3284 or consent of instructor. Designing physical activity regimes for individualized and group programming based upon physical fitness assessment. Health, nutrition, age, physical fitness, and testing aspects are considered in developing specialized exercise programming based upon current research and best practices.

**PHY ED 3422 Teaching of Skills: Grades Pk-4: 4 semester hours**

Prerequisites: Completion of 15 hours of level II requirements. Study of developmental movement activities and appropriate learning experiences found in PK-4 grade level programs, with emphasis on developmental sequencing and the design of appropriate learning activities, materials, and effective pedagogical skills.

**PHY ED 3423 Teaching of Skills: Grades 5-9: 3 semester hours**

Prerequisites: Completion of 15 hours of Level II courses. Study of sports and physical activities commonly found in the curriculum for grades 5-9, with emphasis on critical cues analysis, developmental sequencing, and the design of appropriate learning activities, materials, and pedagogical skills.

**PHY ED 3424 Teaching of Skills: Grades 9-12: 3 semester hours**

Prerequisites: Completion of 15 hours of Level II requirements. Study of sport and physical activities predominately found in physical education programs at these grade levels, with emphasis given to critical cue analysis, developmental sequencing, and the design of appropriate learning activities, materials, and pedagogical skills.

**PHY ED 3425 Teaching Skills: Movement, Dance, and Rhythms: 3 semester hours**

Prerequisites: Completion of 15 credit hours of Level II requirements. Study of movement analysis and techniques of teaching fundamental movement skills, rhythmic activities, creative movement, and dance forms commonly taught in school settings. Emphasis will be given to developmental sequencing and the design of appropriate learning activities, materials, and pedagogical skills.

**PHY ED 3468 Curriculum and Methods of Teaching Physical Education: 3 semester hours**

This course Studies the scope and sequence of the school program in physical education with emphasis on planning processes, content selection, management procedures, instructional strategies, and program assessment.

**PHY ED 3931 Adult Exercise Leadership: 3 semester hours**

Prerequisites: HLTH PE 3284 or equivalent. Study of the roles, functions, and skills necessary for those entering careers that promote fitness and regular exercise in adults.

**PHY ED 4193 Clinical Experience in Youth Sport Programs: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. Supervised clinical experience in youth sport programs. Seminar precedes and accompanies clinical experience. Students must be enrolled in the B.S. Sport Management degree program.

**PHY ED 5380 Nutrition for Human Performance: 3 semester hours**

A study of human nutrition and its relationship to human performance. Consideration is given to nutrients - function, food source, health concerns, and implications to energy intake and expenditure; special considerations - body composition, including weight gain and loss, ergogenic aids, competitive athletes, older adults, children and teens, pregnant women, disease risk, fluid and electrolyte balance, and specific sport activities.

**PHY ED 6462 The Physical Education Curriculum: 3 semester hours**

Prerequisite: Consent of instructor. A study of current practices, problems, trends and research involved in the analysis and development of the physical education curriculum.

**PHY ED 6464 Analysis of Teaching in Physical Education: 3 semester hours**

Prerequisites: Graduate standing and consent of instructor. A study of trends and research relating to teaching methodology, supervision of instruction, and classroom management in physical education. Emphasis will be placed on the application of research in best instructional practices and teacher effectiveness in physical education.

**PHY ED 6475 Motor Learning and Control: 3 semester hours**

Prerequisites: HLTH PE 3275 and graduate standing. This course applies specific principles of learning, teaching motor skills, and control of movement in physical education and sport. It surveys neurological systems involved in perception and motor performance. It explores theoretical perspectives, including open vs. closed loop control, schema theory, information processing, and dynamic systems theory. Attention is given to efficiency of learning skills by accommodating transfer of training, utilizing feedback, manipulating practice schedules, and promoting retention.

**PHY ED 6478 Problems and Research in Physical Education: 3 semester hours**

A study of potential research problems and research processes in specific physical education subdisciplines. A research project will be completed in the student's physical education subdiscipline interest area.

**PHY ED 6485 Theory of Exercise and Cardiovascular Disease Risk Factor Management: 3 semester hours**

Prerequisites: Completion of PHY ED 6484 or equivalent. A study of the effects of exercise on the basic epidemiology, physiology, and management of unavoidable and avoidable cardiovascular risk factors. Special attention will be given to the examination of the effect of exercise in the management of cardiovascular disease risk.

**PHY ED 6497 Problems: 1-10 semester hours**

Selected problems to meet the needs of individual students.

**PHY ED 7492 Directed Readings in Curriculum and Instruction: 1-6 semester hours**

Prerequisites: Graduate Standing, one graduate course in Curriculum and Instruction, and consent of instructor. Independent study into the current research, literature, and issues in the areas of physical education curriculum and instruction.

**PHY ED 7494 Directed Readings in Motor Behavior: 1-6 semester hours**

Prerequisites: Graduate standing, one graduate course in motor behavior, and permission of the instructor. Independent study into the current research, literature, and issues in the area of motor behavior.

## Physics

### Courses

**PHYSICS 1001 How Things Work (MOTR PHYS 100): 3 semester hours**

Can baseball players hit home runs more easily when the weather is hot and humid? This course provides a practical introduction to understanding common life experiences by using physical intuition and basic ideas of physics. Powerful scientific principles are demonstrated through topics ranging from airplane wings to compact disk players, from lightning strikes to lasers.

**PHYSICS 1011 Basic Physics I: 3 semester hours**

Prerequisites: MATH 1030 and MATH 1035 required, MATH 1100 or MATH 1800 strongly recommended, concurrent enrollment in PHYSICS 1011L recommended. This course is specifically designed for students in health and life sciences covering the topics in classical mechanics such as kinematics, Newton's laws, energy, momentum and oscillations. This course will not fulfill the PHYSICS 2111 requirement for physics, chemistry, and engineering majors.

**PHYSICS 1011L Basic Physics I Laboratory: 1 semester hour**

Prerequisite: PHYSICS 1011 (may be taken concurrently). This laboratory course accompanies PHYSICS 1011, which is specifically designed for students in health and life sciences covering topics in classical mechanics such as kinematics, Newton's laws, energy, momentum and oscillations.

**PHYSICS 1012 Basic Physics II: 3 semester hours**

Prerequisites: PHYSICS 1011, concurrent enrollment in PHYSICS 1012L recommended. This continuation of PHYSICS 1011 is specifically designed for students in health and life sciences covering electricity, magnetism, light, optics and waves. This course will not fulfill the PHYSICS 2112 requirement for physics, chemistry, and engineering majors.

**PHYSICS 1012L Basic Physics II Laboratory: 1 semester hour**

Prerequisites: PHYSICS 1012 (may be taken concurrently). This laboratory course accompanies PHYSICS 1012, which is specifically designed for students in health and life sciences, covering electricity, magnetism, light, optics and waves.

**PHYSICS 1099 Windows on Physics: 1 semester hour**

A seminar designed to introduce physics majors to research areas in physics and physics-related fields in the Department of Physics and Astronomy. In addition to fundamental areas of physics, the areas of astrophysics, biophysics, materials science, and nanotechnology will be included. Career opportunities for students with physics degrees will be discussed and the physics curriculum will be reviewed. The course meets weekly and is required of all physics majors and minors who are transfer students.

**PHYSICS 2010 Introduction to Inquiry Approaches to STEM Education (STEP I): 1 semester hour**

Same as CHEM 2010, BIOL 2010, MATH 2010, and SEC ED 2010.

Prerequisites: Concurrent enrollment BIOL 1821, BIOL 1831, CHEM 1111, CHEM 1121, PHYSICS 2111, PHYSICS 2112, MATH 1800, or MATH 1900 or have a declared STEM major. Students who want to explore teaching careers become familiar with lesson plan development by writing, teaching and observing lessons in a local school class. Students build and practice inquiry-based lesson design skills and become familiar with and practice classroom management in the school setting. As a result of the STEP I experiences students should be able to decide whether to continue to explore teaching as a career and ultimately finishing the remainder of the WE TEACH MO curriculum leading to teacher certification. The classroom observations and teaching represent a major field component and requires at least one two hour block of free time during the school day once a week.

**PHYSICS 2011 Designing Inquiry-Based STEM Experiences (STEP II): 1 semester hour**

Same as CHEM 2011, BIOL 2011, MATH 2011, and SEC ED 2011.

Prerequisites: BIOL 2010, CHEM 2010, PHYSICS 2010, MATH 2010, or SEC ED 2010. Students explore teaching careers, become familiar with STEM school setting through observing and discussing the school environment and by developing and teaching inquiry-based lessons.

**PHYSICS 2111 Physics: Mechanics and Heat: 4 semester hours**

Prerequisites: MATH 1900 (may be taken concurrently). This course introduces students to the phenomena, concepts, and laws of mechanics and heat for physics majors and students in other departments. Three classroom hours and one hour discussion per week.

**PHYSICS 2111L Mechanics and Heat Laboratory: 1 semester hour**

Prerequisites: PHYSICS 2111 (may be taken concurrently). This laboratory course accompanies PHYSICS 2111, which covers the phenomena, concepts, and laws of mechanics and heat.

**PHYSICS 2112 Physics: Electricity, Magnetism, and Optics: 4 semester hours**

Prerequisites: PHYSICS 2111 and MATH 2000 (MATH 2000 may be taken concurrently). This course provides a phenomenological introduction to the concepts and laws of electricity and magnetism, electromagnetic waves, optics and electrical circuits for physics majors and students in other departments. Three hours of lecture and one hour of discussion per week.

**PHYSICS 2112L Electricity, Magnetism, and Optics Laboratory: 1 semester hour**

Prerequisites: PHYSICS 2112 (may be taken concurrently). This laboratory course accompanies PHYSICS 2112, which covers the phenomena, concepts and laws of electricity and magnetism, electromagnetic waves, optics and electrical circuits.

**PHYSICS 3200 Mathematical Methods of Theoretical Physics: 3 semester hours**

Prerequisites: PHYSICS 2112 and MATH 2000. Mathematical techniques specifically used in the study of mechanics, electricity, magnetism, and quantum physics are developed in the context of various physical problems. Course includes the topics of vector calculus, coordinate systems, the Laplace equation and its solutions, elementary Fourier analysis, & complex variables. Applications to electrostatics, mechanics, and fluid dynamics are emphasized. Three hours of lecture per week.

**PHYSICS 3221 Mechanics: 3 semester hours**

Prerequisites: PHYSICS 3200 and MATH 2020 (MATH 2020 may be taken concurrently). Advanced course covering single and many particle dynamics, rigid-body dynamics, and oscillations. Variational principles and Hamiltonian formulations of mechanics are covered. Three hours of lecture per week.

**PHYSICS 3223 Electricity and Magnetism: 3 semester hours**

Prerequisites: PHYSICS 3200 and MATH 2020 (MATH 2020 may be taken concurrently). Advanced course covering the rigorous development, from basic laws, of Maxwell's equations for electromagnetic fields along with applications of these equations. Topics covered are electrostatics and electrodynamics including currents, magnetic fields, motion of charged particles in fields and an introduction to electromagnetic waves. Three hours of lecture per week.

**PHYSICS 3231 Introduction to Modern Physics I: 3 semester hours**

Prerequisites: PHYSICS 2111, PHYSICS 2112, and MATH 2020 (may be taken concurrently) and PHYSICS 3200 strongly recommended. Photons and the wave nature of particles, wave mechanics, Schrodinger equation, with applications to atomic physics; and radiation; the physics of solids; elementary particles; special relativity; health physics. Three hours of lecture per week.

**PHYSICS 3281 Directed Readings in Physics: 1-5 semester hours**

Prerequisite: Consent of instructor. An independent study of special topics in physics. A paper may be required on an approved topic. Topics must be substantially different. Hours arranged.

**PHYSICS 3390 Research: 1-10 semester hours**

Prerequisite: Consent of department. Independent physics research projects arranged between student and instructor. Hours arranged.



**PHYSICS 4304 Introduction to Nanotechnology: 3 semester hours**

Prerequisites: PHYSICS 3231. This course presents a broad overview of the field of nanotechnology with an emphasis on physical phenomena involved with three main parts: Nanoscale Fabrication and Characterization (nano-lithography, self-assembly and self-organization, scanning probe microscopes); Nanomaterials and Nanostructures (low-dimensional materials, graphene, carbon nanotubes, quantum dots, nano-composites, etc); Select Applications (nanoscale and molecular electronics, nano-magnetism, nano-photonics, bio-inspired nano-materials). The goal is to lay a foundation for a research career in the rapidly growing area of nanotechnology and to enhance student's competitiveness in the job market.

**PHYSICS 4305 Bayesian Data Analysis for the Sciences: 3 semester hours**

Prerequisites: Consent of instructor. This is a cross-disciplinary course in two parts. Part one covers Bayesian inference as applied to data analysis in general, with a special focus on the mathematics of model-selection in the physical and life sciences. Part two concentrates specifically on the Bayesian use of log-probability (i.e. information) measures to track order-disorder transitions in thermodynamics, and to track the evolution of sub-system correlations (via both digital and analog means) in a wide variety of complex systems. Expect weekly empirical observation exercises, and opportunities for asynchronous as well as synchronous collaboration.

**PHYSICS 4306 Nanoscience Practicals: 1-3 semester hours**

Studies of Nanoscience characterization, synthesis, modeling techniques designed for clients of these tools, as well as for technical users interested in a current overview. Course consists of a set of 1/3 semester modules. Check with the instructor on more specialized modules, (e.g. on materials microscopy), if interested. Each module will cover instrumentation, current applications, weaknesses, and will involve lab visits for hands-on experience, weekly web interaction and classroom hours.

**PHYSICS 4310 Modern Electronics: 3 semester hours**

Prerequisite: PHYSICS 2112. This course is an integrated recitation/laboratory study of modern analog and digital electronics with emphasis on integrated circuits, which consist of active and passive electrical circuit elements integrated on a single semiconductor substrate. This course includes the study of the properties of the various specialized electronic devices that are constructed with integrated circuits along with a study of the various circuit elements. This course has four contact hours of lecture/laboratory per week.

**PHYSICS 4311 Advanced Physics Laboratory I: 3 semester hours**

Prerequisite: Advanced standing with at least nine completed hours of Physics at or above the 3000 level. Physics majors are introduced to the experimental techniques used in research. A student will choose and do several special problems during the semester. Six hours laboratory per week.

**PHYSICS 4323 Modern Optics: 3 semester hours**

Prerequisite: PHYSICS 3223. A study of modern optics including diffraction theory, polarization, light propagation in solids, quantum optics, and coherence.

**PHYSICS 4331 Intro to Quantum Mechanics: 3 semester hours**

Prerequisites: PHYSICS 3200 and PHYSICS 3231. Photons and the wave nature of particles; wave mechanics, Schroedinger equation, operator and matrix formulations, and Dirac notation; applications to single particle systems, atomic physics, and spectroscopy.

**PHYSICS 4341 Thermal and Statistical Physics: 3 semester hours**

Prerequisites: MATH 2000 and PHYSICS 3231. Introduction to statistical mechanics, classical thermodynamics, and kinetic theory.

**PHYSICS 4343 Selected Topics in Physics I: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, PHYSICS 3231, PHYSICS 4341. Topics include special phenomena for research areas such as physics of waves, biophysics, nonlinear physics, geophysical fluid dynamics and the atmospheric sciences treated by methods of advanced mechanics, electromagnetism, statistical mechanics, thermodynamics and quantum mechanics. Three hours of lecture per week.

**PHYSICS 4347 Introduction to Biophysics: 3 semester hours**

Prerequisites: PHYSICS 3231, BIOL 1821, and BIOL 1831; or permission of instructor. This course is an introduction to the application of physical principles to problems in biology. The course may cover topics such as molecular biophysics (e.g., ion transport, protein folding, molecular motors), collective dynamics and self-assembly of biological systems, nonlinear dynamics and electrophysiology in the heart and brain, and physics-based approaches to modeling gene networks and evolutionary dynamics. Students will complete a final project investigating a particular area of biophysics. Students may not receive credit for both PHYSICS 4347 and PHYSICS 5347.

**PHYSICS 4350 Computational Physics: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, PHYSICS 4331 and MATH 2450. This course explains how to solve physics-based problems using computational techniques. Mechanics, electrodynamics, and quantum physics problems are solved by (1) numerically solving ordinary and partial differential equations, (2) using Fourier analysis, and (3) solving eigenvalue problems.

**PHYSICS 4351 Elementary Solid State Physics: 3 semester hours**

Prerequisites: PHYSICS 4331. Theoretical and experimental aspects of solid state physics, including one-dimensional band theory of solids; electron emission from metals and semiconductors; electrical and thermal conductivity of solids.

**PHYSICS 4353 Physics of Fluids: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, and PHYSICS 4341, or consent of instructor. Dynamical theory of gases and liquids. Course covers the mathematical development of physical fluid dynamics with contemporary applications.

**PHYSICS 4358 Introduction to Global Geodynamics: 3 semester hours**

Prerequisites: PHYSICS 3221 and PHYSICS 3223. This advanced course covers the development, from basic laws, of equations describing the many geodynamic processes underpinning geological modeling and geological data. Topics covered are paleomagnetism, plate tectonics, viscoelastic media, heat transfer, gravity, fluid mechanics, rheology, faulting, and geochronology.

**PHYSICS 4370 Relativity and Cosmology: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223 and PHYSICS 3231. An introduction to Einstein's general theory of relativity. Topics will include special relativity in the formalism of Minkowski's four dimensional space-time, Principle of Equivalence, metric description of curved space, geodesic equation, Einstein Field Equation, black holes, and cosmology.

**PHYSICS 4381 Directed Readings in Physics: 1-10 semester hours**

Prerequisite: Consent of instructor. An independent study of special topics in physics for senior undergraduates or graduate students.

**PHYSICS 5306 Advanced Nanoscience Practicals: 1-3 semester hours**

Prerequisites: Graduate standing in physics or consent of instructor. Advanced studies of Nanoscience characterization, synthesis, and modeling techniques designed for clients of these tools, as well as for technical users interested in a current overview. The course consists of a set of 1/3 semester modules. Check with the instructor on more specialized modules, (e.g. on materials microscopy), if interested. Each module will cover instrumentation, current applications, and weaknesses and will involve lab visits for hands-on experience, weekly web interaction and classroom hours.

**PHYSICS 5345 Nonlinear Dynamics and Stochastic Processes: 3 semester hours**

Prerequisites: PHYSICS 3221 and PHYSICS 4341 and consent of instructor. Dynamical systems; theory of oscillations; introduction to bifurcation theory and chaos in dissipative systems with applications in physics and biology; introduction to stochastic processes with applications in physics, chemistry and biology; dynamics of nonlinear systems perturbed by noise; noise-induced phase transitions; linear and nonlinear time series analysis. Three classroom hours per week.

**PHYSICS 5347 Intermediate Biophysics: 3 semester hours**

Prerequisites: Graduate standing, PHYSICS 3231, BIOL 1821 and BIOL 1831 or permission of instructor. This course is applies physical principles to problems in biology. Topics may include molecular biophysics (e.g., ion transport, protein folding, molecular motors), collective dynamics and self-assembly of biological systems, nonlinear dynamics and electrophysiology in the heart and brain, and physics-based approaches to modeling gene networks and evolutionary dynamics. Students will complete a final project investigating a particular area of biophysics. Students will be expected to design projects containing a significant component of original research. Students may not receive credit for both PHYSICS 4347 and PHYSICS 5347.

**PHYSICS 5350 Intermediate Computational Physics: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, PHYSICS 4331 and MATH 2450; or graduate standing. This course explains how to solve physics-based, intermediate-level problems using computational techniques. Mechanics, electrodynamics, and quantum physics problems are solved by (1) numerically solving ordinary and partial differential equations, (2) using Fourier analysis, and (3) solving eigenvalue problems. Students may not receive credit for both PHYSICS 4350 and PHYSICS 5350.

**PHYSICS 5353 Intermediate Physics of Fluids: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, and PHYSICS 4341; or graduate standing. This course covers intermediate level dynamical theory of gases and liquids. This course examines mathematical fluid dynamics along with some contemporary applications. Students may not receive credit for both PHYSICS 4353 and PHYSICS 5353.

**PHYSICS 5357 Fundamental Particles and Forces: 3 semester hours**

Prerequisites: PHYSICS 3223, PHYSICS 3231, and PHYSICS 4331, may be taken concurrently Introduction to nuclear and particle physics. Nuclear phenomenology and models; high energy particle accelerators and detectors; phenomenology of strong, electromagnetic and weak interactions; symmetry principles; quark compositions of strongly interacting baryons and mesons; gauge theories and the standard model of particle interactions; grand unification.

**PHYSICS 5358 Intermediate Global Geodynamics: 3 semester hours**

Prerequisites: Graduate standing, PHYSICS 3221 and PHYSICS 3223 or permission of the Instructor. This course intermediate course covers the development of equations describing the many geodynamic processes underpinning geological modeling and geological data. Topics covered may include paleomagnetism, plate tectonics, viscoelastic media, heat transfer, gravity, fluid mechanics, rheology, faulting, and geochronology. Students will complete a final project investigating a particular area of geodynamics. Students will be expected to develop a more advanced project. Students may not receive credit for both PHYSICS 4358 and PHYSICS 5358.

**PHYSICS 5370 Intermediate Relativity and Cosmology: 3 semester hours**

Prerequisites: PHYSICS 3221, PHYSICS 3223, and PHYSICS 3231; or graduate standing. Topics will include special relativity in the formalism of Minkowski's four dimensional space-time, Principle of Equivalence, geodesic equation, Einstein Field Equation, black holes, and cosmology. Differential geometry from metric description to Riemann curvature tensor will be studied.

**PHYSICS 5402 Introduction to Mathematical Physics: 3 semester hours**

Prerequisites: Graduate standing in physics or consent of instructor A course covering mathematical techniques as applied in advanced theoretical physics including generalized vector spaces and their dual spaces, linear operators and functionals, generalized functions, spectral decomposition of operators, tensor analysis, and complex variables. Three hours of lecture per week.

**PHYSICS 5403 Principles of Mathematical Physics: 3 semester hours**

Prerequisites: Graduate standing in physics or consent of instructor. Boundary value problems; Sturm-Liouville theory and orthogonal functions; Green's function techniques; and introduction to group theory with emphasis on representations of Lie Algebras. Three hours of lecture per week.

**PHYSICS 6300 Master's Thesis: 3 semester hours**

Prerequisite: Consent of instructor. Thesis work under the supervision of a faculty member. The course is designed for those students intending to present a thesis as part of their M.S. program. Students who do not write a thesis cannot apply PHYSICS 6300 to a degree. This course transfers to the Cooperative Ph.D. program as three research credits.

**PHYSICS 6400 Special Problems: 1-5 semester hours**

Must have faculty mentor and approval of Department Chairperson. A study of special topics in physics for graduate students.

**PHYSICS 6401 Special Topics: 1-4 semester hours**

Prerequisite: Consent of instructor. This course is designed to give the department an opportunity to test a new course.

**PHYSICS 6409 Theoretical Mechanics I: 3 semester hours**

Prerequisite: PHYSICS 3221. Classical mechanics, methods of Newton, Lagrange, and Hamilton applied to motion of particles and rigid bodies, elasticity, hydrodynamics.

**PHYSICS 6410 Seminar: 1-3 semester hours**

Prerequisite: Approval of Department Chair. Discussion of current topics.

**PHYSICS 6411 Electrodynamics I: 3 semester hours**

Prerequisite: PHYSICS 3223. A rigorous development of the fundamentals of electromagnetic fields and waves. Electrostatics, magnetostatics, Maxwell's equations, Green's functions, boundary value problems, multipoles, conservation laws.

**PHYSICS 6413 Statistical Mechanics: 3 semester hours**

Prerequisite: PHYSICS 4331, PHYSICS 4341. A study of statistical ensembles; Maxwell-Boltzmann, Fermi-Dirac and Einstein-Bose distribution laws, application to some physical systems.

**PHYSICS 6423 Electrodynamics II: 3 semester hours**

Prerequisite: PHYSICS 6411. A continuation of PHYSICS 6411. Applications of time-dependent Maxwell's equations to such topics as plasmas, wave guides, cavities, radiation: fields of simple systems and multiples. Relativity: covariant formulation of Maxwell's equations and conservation laws, fields of uniformly moving and accelerated charges.

**PHYSICS 6461 Quantum Mechanics I: 3 semester hours**

Prerequisite: PHYSICS 4331. A study of the Schrodinger wave equation, operators and matrices, perturbation theory, collision and scattering problems.

**PHYSICS 6463 Quantum Mechanics II: 3 semester hours**

Prerequisite: PHYSICS 6461. Continuation of PHYSICS 6461. To include such topics as Pauli Spin-Operator Theory, classification of atomic states, introduction to field quantization, and Dirac Electron Theory.

**PHYSICS 6481 Physics of Solid State: 3 semester hours**

Prerequisite: PHYSICS 6461. Crystal symmetry, point and space groups, lattice vibrations, phonons, one-electron model, Hartee-Fock approximation, elementary energy band theory, transport properties, the Boltzmann equation, introduction to superconductivity, semiconductors and magnetism.

**PHYSICS 6490 Research: 1-10 semester hours**

Prerequisite: Must have a faculty mentor and approval of the department chair. Investigations of an advanced nature leading to the preparation of a thesis or dissertation.

**PHYSICS 6495 Continuous Registration: 1-6 semester hours**

Doctoral candidates who have completed all requirements for the degree except the dissertation, and are away from the campus must continue to enroll for at least one hour of credit each registration period until the degree is completed. Failure to do so may invalidate the candidacy.

## Political Science

### Courses

**POL SCI 1100 Introduction to American Politics (MOTR POSC 101): 3 semester hours**

Introduction to basic concepts of government and politics with special reference to the United States, but including comparative material from other systems. Course fulfills the state requirement.

**POL SCI 1200 Foundations of Law: An Introduction to Legal Studies: 3 semester hours**

Same as CRIMIN 1200. As a broad liberal-arts approach to the study of law, this course is designed to familiarize students with legal ideas, legal reasoning, and legal processes. It also provides comparative and historical perspectives on law that will help explain legal diversity and legal change. Finally, it offers opportunities to explore some of the persistent issues in law and legal theory: for example, issues about the sources of law, the responsibilities of the legal profession, or the relative merits of the adversary system.

**POL SCI 1450 Labor, Work, Society, and Politics: 3 semester hours**

This course explores the evolution of work in the United States, and how labor unions shaped and influenced society, politics, and the workplace. This course examines the role of workers, (past present and future) unions' organizational structure, the role of collective bargaining, labor and the media, and labors' political and social campaigns.

**POL SCI 1500 Introduction to Comparative Politics (MOTR POSC 202): 3 semester hours**

This course introduces students to western and non-western systems. It examines similarities and differences in the basic political ideologies, structures, economies, social institutions and governmental processes of developed and developing countries. It also provides frameworks for understanding the cultures of the world that are the basis for formal economic and political institutions. In addition, the course examines the role of non-state institutions, including trans-national ones, in shaping national policies. It uses case studies from Africa, Asia, Latin America, as well as Europe, to enhance student understanding of comparative politics. This course fulfills the cultural diversity requirement.

**POL SCI 1800 World Politics (MOTR POSC 201): 3 semester hours**

An introduction to the field of international relations, covering such topics as nationalism, power, foreign policymaking, diplomacy, war, terrorism, arms control and disarmament, economic interdependence, the regulation of conflict, and other aspects of politics among nations.

**POL SCI 1820 Global Issues: 3 semester hours**

A freshman and sophomore level course designed to introduce students to a range of global concerns, including population, hunger, trade, energy, and the environment. The worldwide implications of these and other problems will be considered, as well as their effects on local communities such as st louis.

**POL SCI 1901 Capitalism in American History: 3 semester hours**

Same as HIST 1901. This course offers students the opportunity to approach America's political economy with tools different from those offered by more quantitative economic constructs. Students will analyze market processes through a three dimensional approach that focuses not just on market competition but also on relationships of command—the exercise of power in firms, among nations, and between social groups—and on processes of historical change from the late colonial era through the twentieth century.

**POL SCI 2102 Introduction to Gender Studies: 3 semester hours**

Same as SOC WK 2102, SOC 2102, GS 2102, HIST 2102. This core class is required for all Gender Studies Certificate earners. This class introduces students to cultural, political and historical issues that shape gender. Through a variety of disciplinary perspectives in the humanities, social sciences, and natural sciences, the course familiarizes students with diverse female and male experiences and gendered power relationships.

**POL SCI 2260 Law, Politics and Society: 3 semester hours**

Prerequisites: POL SCI 1100 or POL SCI 1200 or consent of instructor. This course examines the ways in which law in America connects with politics and society. The course will cover the litigation process, access to the courts, how and why individuals and groups bring litigation to pursue political and policy goals, and how lawyers, judges and other political actors use law to solve policy problems. Attention will be placed on current legal policy issues facing American society.

**POL SCI 2280 Judicial Politics: 3 semester hours**

Prerequisites: POL SCI 1100 or POL SCI 1200 or consent of instructor. This course is an examination of the American state and federal legal systems. Topics examined in this course include an analysis of the structure, organization and foundation of courts. Emphasis will be placed on the role of juries, judges, attorneys, litigants, and interest groups in the judicial system. The objective of the course is to evaluate courts as political institutions and analyze the policy-making role of judges.



**POL SCI 2290 Gender and the Law: 3 semester hours**

Same as GS 2290. This course examines the ways in which laws and interpretations of the laws affect gender equality in the United States. Emphasizing how traditional roles impact both women and men historically and currently, the course highlights major pieces of legislation and court rulings related to employment, economics, education, sexual harassment, pornography, rape, reproductive rights, and domestic relations. The course stresses the impact of federal and state institutions and non-governmental influences on equality. It also addresses gender representation in the legal profession and its effect on judicial decisions. (This course satisfies State requirements in American History and Government).

**POL SCI 2300 State Politics: 3 semester hours**

Prerequisite: POL SCI 1100 or consent of instructor. An examination of contemporary state politics in the U.S. Covers social, economic and political determinants of policies; federal-state-local relations, elections, interest groups and participation; executive legislative and judicial institutions and processes, policies and their impact.

**POL SCI 2320 African Americans and the Political System: 3 semester hours**

Prerequisites: POL SCI 1100 or consent of instructor. Examination of the status of African Americans in the context of the American political system. The course will focus on a number of issues, including: attitudes of various publics toward racial concerns; nature of problems in specific policy areas (e.g., unemployment, school desegregation, housing, poverty); representation of African Americans in governmental institutions and the private sector; and the role of African American leadership and civil rights groups in the political process. Course fulfills the state requirement.

**POL SCI 2330 The American Presidency: 3 semester hours**

Prerequisite: POL SCI 1100 or consent of instructor. This course studies the constitutional, political, legislative, and administrative roles played by the American chief executive in the development of public policy.

**POL SCI 2331 Congressional Politics: 3 semester hours**

Prerequisites: POL SCI 1100 or consent of instructor. This course examines the Congress of the United States, its history and evolution, its contemporary politics, and its role in the national policy-making process. Topics may include candidate recruitment, campaigns and elections, representation, committees, legislative leadership, roles and norms, voting alignments, lobbyists and interest groups, oversight of administration, and House-Senate comparisons. The course may also introduce students to the role of Congress in foreign policy, economic policy, and social-welfare policy.

**POL SCI 2350 Introduction to Urban Politics: 3 semester hours**

Prerequisite: POL SCI 1100 or consent of instructor. Examination of structure and process of politics in the urban community, with emphasis on their relationships to community power structures.

**POL SCI 2370 The Politics of Identity and Social Justice: 3 semester hours**

Examines the meaning of social justice at the intersections of identities linked to race, ethnicity, class, gender, sexuality, age, ability, religion, and citizenship in the United States. We will dissect how the social construction of 'difference' within systems of power has resulted in social policies that marginalize some groups more than others. We will also discuss how oppression linked to delineations of difference can be challenged and socially reconstructed, and ultimately used as a source of political empowerment.

**POL SCI 2380 The Politics of Gender in the United States: 3 semester hours**

Same As GS 2380. Prerequisites: POL SCI 1100 or consent of instructor. This course examines the role of gender in political institutions, practices and policy in the United States, past for political equality, the relationship between gender and political participation, vote choice, and public opinion, and how legislative, executive, and judicial offices are gendered at the national, state, and local levels.

**POL SCI 2400 Public Administration: 3 semester hours**

Prerequisite: POL SCI 1100 or consent of instructor. Survey of Public Administration, with reference to organization, financial administration, personnel management, judicial control of the administrative process.

**POL SCI 2420 Introduction to Public Policy: 3 semester hours**

Prerequisite: POL SCI 1100 or consent of instructor. Study of differing approaches to understanding the public policy process. Course surveys the application of social science to public issues and problems.

**POL SCI 2430 Public and Nonprofit Organizational Behavior: 3 semester hours**

This course examines behavior in public and nonprofit organizations, including theory about how organizations work and how groups and individuals behave within organizations. Theories will be applied in an attempt to explain and predict behavior in an organizational context. Topics include motivation, leadership, goal complexity and ambiguity, organizational structure, culture, and communication in public and nonprofit organizations, as well as the relationship between public and private organizations.

**POL SCI 2500 Comparing Different Worlds: 3 semester hours**

This course focuses on the role of political institutions, economic structures and social groups in explaining differences in forms of government and levels of socio-economic development. It explores in detail one or more of these themes in cases drawn from developing and developed nations.

**POL SCI 2510 The Politics of European Union: 3 semester hours**

Prerequisite: POL SCI 1500 or consent of instructor. The European Union has become the driving force in European economic and social development. This course assesses the changing nature of national identity and national sovereignty in Europe. It compares and contrasts key public policies, (single market, welfare, migration, gender mainstreaming, 'democratic deficits'), along with core EU actors and institutions, and includes participation in the annual Midwest Model EU.

**POL SCI 2530 Political Systems of South America: 3 semester hours**

Prerequisites: POL SCI 1500 or consent of instructor. An introduction to the study of the political systems of South America. Examination of the cultural context that has shaped the political, economic, and social development of states in the region. This course satisfies the Cultural Diversity requirement.

**POL SCI 2540 Political Systems of Mexico, Central America and the Caribbean: 3 semester hours**

Prerequisites: POL SCI 1500 or consent of instructor. An introduction to the study of the political systems of Mexico, Central America, and the Caribbean. Examination of the cultural context that has shaped the political, economic, and social development of these countries. This course satisfies the Cultural Diversity requirement.



***POL SCI 2551 National Security Policy and Practice: 3 semester hours***

Same as MVS 2850. This simulation-driven course focuses on national security policies and the processes that put these policies into practice. It examines the elements that underpin national security policy and the processes employed by the US government for integrating and synchronizing those instruments in the pursuit of national security objectives.

***POL SCI 2580 African Politics: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. An introduction to the nature of societies, governments, and international relations in Africa. The course deals with forms of governance on the continent, regional groupings of states, and persistent conflicts within and among states. Problems of economic underdevelopment, food supplies, health and population trends, and cultural change are analyzed, along with the role of outside major power intervention. Fulfills the Cultural Diversity requirement.

***POL SCI 2590 Globalization: Prospects and Problems: 3 semester hours***

Globalization is a multidimensional construct, which calls for its study from a multidisciplinary perspective: i.e., economics, political science, history, and anthropology. The course will explore the forces undergirding economic globalization, as well as the factors that are giving rise to a global democratic dispensation. It will also examine previous forms of globalization including archaic globalization, proto-globalization, and modern globalization as well as so-called deviant globalization - the trade in illicit goods and services, which are also highly lucrative: e.g., human trafficking, prostitution, endangered species, narcotics, organ transplants, small arms, etc. Finally, the course will explore cultural globalization and the rise of a global 'pop culture.' The course will include a comparative analysis of the impacts of globalization in all of its manifestations on social groups (e.g., men and women, ethnic and racial minorities, young and old, classes), countries, and regions.

***POL SCI 2800 21st Century International Relations: 3 semester hours***

This course will provide a foundation for an informed discourse on theoretical perspectives that shape rapidly changing relations among nations in the 21st century. Students will utilize international political theory to examine methodologies of conflict resolution, peacekeeping, diplomacy, foreign policymaking, international security, global trade and immigration, and also consider current and future impacts of digital technology and cyber security.

***POL SCI 2820 United States Foreign Policy: 3 semester hours***

Prerequisites: POL SCI 1100 or POL SCI 1500, or consent of Instructor. Examination of the factors influencing the formation and the execution of American foreign policy, with a focus on specific contemporary foreign policy issues.

***POL SCI 2850 Gender, Power and International Politics: 3 semester hours***

This course provides an overview of key topics on the intersection of gender and international politics, including the emergence of international norms, and laws associated with gendered rights, sexuality, masculinity, and intersectionality. In particular, the course examines: 1) the influence of global social media activism and transnational migrations on international policy-making; 2) transnational advocacy movements and the emergence of new international laws guaranteeing a spectrum of gender rights.

***POL SCI 2860 Understanding Terrorism in the 21st Century: 3 semester hours***

Same as MVS 2860. This course seeks to provide insight into the use of terrorism, as a means to achieve a political end, in our current globalized environment. It will review various facets of terrorism including societal disturbances that allow terrorist organizations to flourish, various types of domestic and international non-state actors that use terrorism, terrorism as the next generation of warfare, and the global response to the threat of terrorism. Students will exit the course with a more complete understanding of the multi-faceted threat terrorism poses to our increasingly globalized society.

***POL SCI 2900 Studies in Political Science: 1-6 semester hours***

Selected topics in political science.

***POL SCI 3000 Political Analysis: 3 semester hours***

Prerequisites: MATH 1020 or higher. This course provides an introduction to political analysis, emphasizing both the logic of inquiry and practical methods. Students will learn about the construction and evaluation of theories that relate to real-world politics. Students will also have an opportunity for hands-on experience with qualitative and quantitative methods including graphics, descriptive statistics, cross-tabular and correlational analysis, hypothesis testing, and computer applications.

***POL SCI 3200 Constitutional Law: 3 semester hours***

Prerequisites: POL SCI 1100 or POL SCI 1200 or consent of the instructor. This course examines major U.S. Supreme Court cases on the constitutional structure of American government. Topics covered may include judicial review, separation of powers, federal-state relations commerce clause, and economic liberties. The course explores how the Supreme Court has interpreted these constitutional conflicts in light of changing times and emerging issues.

***POL SCI 3210 Civil Liberties: 3 semester hours***

Prerequisites: POL SCI 1100 or POL SCI 1200 or consent of instructor. This course examines major U.S. Supreme Court cases in the areas of civil liberties and civil rights. Topics covered may include the incorporation of the Bill of Rights into the Fourteenth Amendment, freedom of religion, freedom of speech, freedom of the press, freedom of association, the right to protest, discrimination in the contexts of race, gender and sexual orientation, and the right to privacy. The course explores how the Supreme Court has interpreted these fundamental rights in light of changing times and emerging issues.

***POL SCI 3220 Labor and Employment Law: 3 semester hours***

This course examines the primary labor and employment laws that govern employment relationships in the United States. Topics may include laws that govern private-sector employment relationships, including the National Labor Relations Act, the Fair Labor Standards Act, the Family, and Medical Leave Act, and parallel issues found in state and other federal laws.

***POL SCI 3260 The Supreme Court: 3 semester hours***

Prerequisites: POL SCI 1100, or POL SCI 1200 or consent of the instructor. An examination of the role, function and assertion of power by the U.S. Supreme Court in our constitutional democracy. Topics include an historical overview of the Supreme court, the process of selecting Supreme Court Justices, life in the Court, Supreme Court decision making, Supreme Court policymaking, implementation and impact of Court decisions and the role of the Supreme Court as a national policymaker.

***POL SCI 3330 Public Opinion and Political Participation: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. This course links Americans' political attitudes to their political participation (defined broadly) and explores how governmental institutions, the media, and social group affiliations affect political behavior. It also connects trends in public opinion and participation to the state of American democracy.

***POL SCI 3350 Political Parties and Elections: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. Development, organization, functions, activities of major and minor political parties, pressure groups, election administration, especially in the United States.

***POL SCI 3390 Studies in American Politics: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. Selected topics in American politics. May be repeated.

***POL SCI 3420 Public and NonProfit Personnel Management: 3 semester hours***

Prerequisite: POL SCI 1100, POL SCI 2400 or consent of instructor. A study of personnel practices in the public and nonprofit sectors, including recruitment, job development, labor relations, and administration of equal employment/ affirmative action programs.

***POL SCI 3430 Labor and Community Leadership: 3 semester hours***

This course examines leadership development principles through the lens of labor and social action leadership. Topics may include a variety of leadership theories as well as the intersection of race, gender, and multiculturalism with leadership and the resultant challenges and opportunities within social organizations and labor unions.

***POL SCI 3440 Public and NonProfit Budgeting: 3 semester hours***

Prerequisite: POL SCI 1100, POL SCI 2400; or consent of instructor. Budgeting is the study of 'who gets what' and who pays for it. This course examines the administration and politics of federal, state, and local government budgets. Students gain experience in interpreting budget documents and making budget choices, using electronic and other resources.

***POL SCI 3450 Urban Administration: 3 semester hours***

Prerequisites: POL SCI 1100 or consent of instructor. Study of administrative machinery and practices of metropolitan government, how metropolitan areas organize themselves to provide services, how urban policies are made and implemented, how budgeting and personnel recruitment processes operate, and how these relate to urban policies.

***POL SCI 3455 Metropolitan Planning: 3 semester hours***

Prerequisites: POL SCI 1100, POL SCI 2400, or consent of instructor. Why do metropolitan areas look the way they do? How much of this was 'planned?' Can/should metropolitan development be planned? Who should decide, and how? This course will examine the political processes in metropolitan areas as they relate to planning. We will look at a series of urban plans and see what they have (and have not) accomplished, and look at a range of alternative views of how planning might be done.

***POL SCI 3460 The Politics of Poverty and Welfare: 3 semester hours***

Prerequisite: POL SCI 1100 or consent of instructor. An examination of the structure of income inequality in the U.S. and public policies designed to redistribute wealth and to treat poverty. The history of welfare programs, the growth of the welfare state, and attempts to cut social spending are closely examined.

***POL SCI 3470 Negotiation, Collective Bargaining, and Dispute Resolution: 3 semester hours***

This course explores the process of collective bargaining (contract negotiations). Topics include the origins of the laws that govern the process, terminology, and basic strategies. In this course, students will take a close look at the legal constraints on the process, the economic factors influencing the power dynamics, the strategies and techniques of bargaining, and the dispute resolution processes.

***POL SCI 3480 Environmental Policy: 3 semester hours***

Prerequisites: POL SCI 1100 or consent of instructor. This course examines the process of environmental policy-making and key environmental issues. Topics include national and international policies toward land, air, and water pollution; energy use; solid and toxic waste disposal; climate change; population; biodiversity; conservation; and sustainability.

***POL SCI 3500 The Politics of the Middle East: International and National Dynamics: 3 semester hours***

Prerequisite: POL SCI 1100, POL SCI 1500 or consent of instructor. Survey of political movements, governments, and international conflicts in the Middle East. Islam, nationalism, ideologies and economic systems will be studied. The effect of oil and the military will also be considered. This course fulfills the cultural diversity requirement.

***POL SCI 3595 Studies in Comparative Politics: 3 semester hours***

Prerequisites: POL SCI 1500 or consent of instructor. Selected topics in comparative politics. May be repeated.

***POL SCI 3700 NonProfit Organizations and Public Policy: 3 semester hours***

Prerequisites: POL SCI 1100; Recommended: POL SCI 2420. This course explores the roles of nonprofit organizations in public policy issues through citizen advocacy and political participation. The course begins with an overview of the scope of the nonprofit sector and then examines its political and legal foundations in the U.S. Theories about civic engagement and the rights of association are considered. Students will gain practical knowledge about direct and grassroots lobbying by nonprofit organizations. Discussion and analysis of actual advocacy campaigns carried out through nonprofit effort will be included. The course also investigates the formation of nonprofit political action committees (PACs) and other so-called 527 organizations, as well as ethical abuses of the nonprofit form for political purposes.

***POL SCI 3710 NonProfits, Civil Society and Volunteerism: 3 semester hours***

Prerequisites: POL SCI 1100 and junior standing. This course introduces basic concepts about the role of voluntary action in democratic society, especially in the context of organizations in the nonprofit sector. Theories of civil society and social capital are explored. Selected approaches to leadership are considered, in addition to the variety of motivations for giving time and resources to the pursuit of social and political change. Students will gain practical skill development in the recruitment, training and utilization of volunteers. Through study of recent case examples, students will develop an appreciation for the characteristics of effective leadership and strategic use of volunteers. In addition, the course includes an overview of new technologies that are being used by voluntary organizations to enlist participation and strengthen commitment of supporters.

***POL SCI 3800 Media, Film, and International Politics: 3 semester hours***

Prerequisites: Junior level standing or consent of instructor. This course engages students in critical analysis of the role of media, film, and popular culture in shaping international public opinion and policy. Using digital media, film, and interdisciplinary texts, students will analyze how international politics is an integral part of popular culture in shaping norms of wars of intervention, digital violence, and global migration. This course fulfills the cultural diversity requirement.

***POL SCI 3830 International Political Economy: 3 semester hours***

Prerequisite: POL SCI 1100 or POL SCI 1500, or consent of instructor. This course provides an introduction to international political economy. In particular, it will focus on the politics of international trade, finance, and investment. It will analyze the relationships between developed and developing countries and it will assess the relative usefulness of alternative frameworks for studying international political economy.

***POL SCI 3850 International Organizations and Global Problem-Solving: 3 semester hours***

Prerequisites: POL SCI 1100, POL SCI 1200; or consent of the instructor. An introduction to the study of international organizations, this course focuses on relationships between nation-states and 'nonstate' actors in world politics, including global intergovernmental organizations such as the United Nations and non-governmental organizations such as multinational corporations. Students examine the roles of international institutions in economic development, resource management, and control of violence across national boundaries.

***POL SCI 3860 Studies in War and Peace: 3 semester hours***

Prerequisite: POL SCI 1100, POL SCI 1500, or consent of instructor. Exploration, development, and testing of theories about the causes and consequences of war, peace, and conflict among nations. A broad range of literature on war and peace will be reviewed, and applied to crisis situations in the international system.

***POL SCI 3880 Diaspora Politics, Transnational Remittances, and Global Citizenship: 3 semester hours***

Prerequisites: Instructor consent. This course examines how new and old global diaspora(s) from Europe, Asia, Africa and Latin America shape international relations and global commerce and will examine the impact of evolving international laws dealing with immigration, global remittances, trans-border commerce and citizenship.

***POL SCI 3890 Studies in International Relations: 3 semester hours***

Prerequisite: POL SCI 1100, POL SCI 1500, or consent of instructor. Selected topics in international relations. May be repeated.

***POL SCI 3900 Special Readings: 1-10 semester hours***

Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences. May be repeated.

***POL SCI 3940 Public Affairs Internship: 1-6 semester hours***

Prerequisite: Junior standing and consent of instructor. Independent study involving work with an appropriate public or private agency. A maximum of six credit hours may be earned.

***POL SCI 4040 Survey Research Practicum in Political Science: 3 semester hours***

Prerequisite: Junior standing and consent of the instructor. The execution of a sample survey, including establishing study objectives, sampling, questionnaire construction, interviewing, coding, data analysis, and presentation of results.

***POL SCI 4060 Theory of Decisions and Games: 3 semester hours***

Same as PHIL 4465. Prerequisites: Six hours of Philosophy and junior standing, or POL SCI 6401 (or the equivalent, or consent of the instructor). A study of rational decision-making, including games against nature, zero-sum games, and social choices. Topics will include the following: expected utility maximization, the Prisoner's Dilemma, Nash equilibria, and Arrow's theorem on the impossibility of a social welfare function. Parts of the course are technical in nature; a prior course in mathematics (e.g., finite mathematics, calculus, statistics or an economics course with a mathematical component), symbolic logic, or some other course with comparable mathematical content.

***POL SCI 4090 American Government for the Secondary Classroom: 3 semester hours***

Same as: SEC ED 4090. Prerequisites: Admission to the Teacher Education Program. TCH ED 3310 or the consent of the instructor. Adapts the themes and subject matter of American Government to the secondary classroom and trains teachers in techniques particularly designed to maximize the use of primary sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting methods of inquiry for use in an interactive classroom. Can be counted towards the Political Science major requirement, but not the American Politics subgroup. Counts towards Social Studies certification. Not available for graduate credit.

***POL SCI 4345 War Crimes, Genocide, and Justice in the 20th and 21st Centuries: 3 semester hours***

Same as SOC 4345, CRIMIN 4345, and MVS 4345. Prerequisite: ENGL 3100. This course provides advanced undergraduate and Master's level students a comprehensive overview of the subject of war crimes, crimes against humanity, genocide and legal responses to these crimes in the modern era. The goal of this course is to engage students in sustained, critical thought about these issues and to foster a deeper understanding of both the causes and consequences—legal, social and human—of these egregious crimes.

***POL SCI 4520 Mega-Cities and Diasporas: Understanding Global Migration: 3 semester hours***

Prerequisites: POL SCI 1500 or consent of instructor. This course examines the causes, dynamics and effects of mega-city development and migrating diasporas in a variety of national settings. Case studies include cities based in Europe, South America, China, India, Turkey, and parts of Africa, fostering global awareness, as well as an understanding of the 'interconnectedness' of politics, economics and climate change across the planet. This course fulfills the cultural diversity requirement.

***POL SCI 4850 International Law: 3 semester hours***

Prerequisite: POL SCI 1100, POL SCI 1500, or consent of instructor. Study of the international legal system, including the content and operation of the laws of war and peace, how law is created and enforced with regard to the oceans and other parts of the globe, and the relationship between international law and international politics.

***POL SCI 4900 Topics in Political Science: 3 semester hours***

Prerequisites: POL SCI 1100 or consent of instructor. Selected topics in Political Science.



***POL SCI 4901 Designing Surveys to Study Human Behavior and Attitudes: 1-3 semester hours***

Prerequisites: POL SCI 3000 or POL SCI 6401 or P P ADM 6010 or consent of instructor. The course allows students to apply research methods to designing a survey to study people's attitudes and behaviors with a focus on developing online surveys. The course may count toward an elective in the Policy Research and Analysis, Local Government Management, Non-Profit Management and Leadership, or Individualized Emphasis Areas for a Master of Public Policy Administration.

***POL SCI 4950 Senior Seminar in Political Science: 3 semester hours***

Prerequisites: POL SCI 3000 and senior standing. This course provides the integrative capstone experience required of all political science majors in their last year of coursework. The course emphasizes student-faculty interaction in a seminar format designed to engage upper-level students in a critical examination of a broad theme in political science, leading to the production of a major research paper. The course may be repeated for credit so long as the topic varies. This course is not available for graduate student credit.

***POL SCI 6300 Leadership and Management in NonProfit Organizations: 3 semester hours***

Same as P P ADM 6300 and SOC WK 6300. Prerequisites: Graduate standing required. Addresses the role and scope of the independent sector in the United States, as well as the leadership and management of nonprofit organizations within that sector. Topics include the economic and political scope of the independent sector, the role of volunteerism in a democratic society, and the role and scope of philanthropy. Topics in voluntary organization management and leadership include the dynamics, functions and membership structure of NPOs, especially staff-board and other volunteer relations; governance and management of NPOs; resource mobilization; and program development management and evaluation.

***POL SCI 6401 Introduction to Policy Research: 3 semester hours***

Procedures for testing explanations, including research design, principles of measurement, probability sampling, methods of data collection, and techniques for analyzing data.

***POL SCI 6402 Intermediate Techniques in Policy Research: 3 semester hours***

Prerequisite: Graduate standing and POL SCI 6401. Elementary distribution theory, statistical inference, and introduction to multiple regression. Emphasis on practical applications.

***POL SCI 6403 Advanced Techniques in Policy Research: 3 semester hours***

Prerequisite: Graduate standing and POL SCI 6402. Selected topics in policy research emphasizing forecasting, modeling and estimation.

***POL SCI 6404 Multi-Method Research Design: 3 semester hours***

Prerequisite: POL SCI 6403 or consent of instructor. Develops policy research skills that combine qualitative and quantitative social science tools and applies an appropriate mix of these tools to specific policy problems. Topics include alternative approaches to causal analysis, levels of analysis, triangulation from a variety of qualitative and quantitative research techniques, building contextual effects into multiple research projects, techniques for assessing alternative program theories and clarifying implicit assumptions, and meta-analysis of secondary data sources.

***POL SCI 6405 Directed Readings in Research Methods: 1-10 semester hours***

Independent study through readings, reports, research projects, and conferences.

***POL SCI 6410 Introduction to Policy Analysis: 3 semester hours***

Same as P P ADM 6000. Systematic development of a critical/analytic base for dealing with public policy.

***POL SCI 6415 Directed Readings and Research in Public Policy: 1-10 semester hours***

Same as P P ADM 6150. Prerequisite: Consent of instructor. Independent study through readings, reports, research projects, and conferences. May be repeated for credit, provided the subject matter is different.

***POL SCI 6418 Social and Economic Development Policy: 3 semester hours***

Same as SOC WK 6250. Prerequisites: SOC WK 5200 or equivalent, or consent of instructor. This course examines the economic and political urban processes that planners, policy makers, service organizations and advocates seek to influence. In this course students will develop skills in policy analysis and development. The course provides an introduction to three models of modern political economy, then seeks to deepen these broad analytic approaches by examining more recent policy developments in cities like St. Louis. This course also focuses on recent strategies to address issues such as employment, wages, housing, education, taxes and social services.

***POL SCI 6420 Proseminar in Public Law: 3 semester hours***

Study of judicial systems and processes (judges, courts, litigants, and juries) and evaluation of legal policies (Compliance, impact and deterrence).

***POL SCI 6422 Law, Courts and Public Policy: 3 semester hours***

Same as CRIMIN 6422. Prerequisites: Graduate standing. An analysis of the role of courts as policymaking institutions and the law as policy. We will explore the role of judges as policymakers, consider the attributes of courts, (both trial and appellate) that make them appropriate yet limited targets for advocates of reform, and the implementation and impact of court decisions. We will consider recent examples of judicial involvement in state and national policymaking. In addition, we will examine the role of lawyers and interest groups in selecting litigation rather than alternative political processes for policy change.

***POL SCI 6425 Directed Readings and Research in Public Law: 1-10 semester hours***

Independent study through readings, reports, research projects, and conferences.

***POL SCI 6430 Proseminar in American Politics: 3 semester hours***

Study of individual and group political behavior including socialization, participation, consensus formation, representation, legislative and judicial behavior.

***POL SCI 6431 Seminar in American Politics: 3 semester hours***

Research problems and design in American political process and behavior. May be repeated for credit when the subject matter is different.

***POL SCI 6435 Directed Readings and Research in American Politics: 1-10 semester hours***

Independent study through readings, reports, research projects, and conferences.

***POL SCI 6440 Public Administration: Theory & Practice: 3 semester hours***

Same as P P ADM 6400. The course examines major approaches to analyzing public policies and their administration with emphasis on the effects of administrative organization and procedures on policy decisions and their impact. Specific topics may include administrative accountability, inter-governmental relations, public private interaction, implementation processes, bureaucratic expertise, the legal environment of public administration, and public service and merit issue.



**POL SCI 6442 The Policy Process: 3 semester hours**

Prerequisite: Graduate standing. This course will examine how public policies are made in the United States. It will cover different theories of the policy process, including how political actors get the government to focus on certain problems, form coalitions to enact policies, and generate support for their implementation. Finally, the course will examine how well various policy models apply to different policy domains.

**POL SCI 6443 Health Care Policy: 3 semester hours**

Same as P P ADM 6430, GERON 6443, and SOC WK 6443.

Prerequisites: Graduate Standing or consent of instructor. Survey course examining current issues in health policy that face the nation. Policies are placed in a historical context to show how issues have been influenced by different political and economic conditions. Secondary consequences and limitations of current trends in health policy are explored.

**POL SCI 6444 Seminar in Public Policy and Aging: 3 semester hours**

Same as GERON 6444 and P P ADM 6444. Prerequisites: Consent of instructor. The study of specialized issues and methods related to federal, state, and local policies that affect the elderly. Potential policy areas to be covered include: housing, taxation, mental health, transportation, etc. May be repeated for credit, provided the subject matter is different.

**POL SCI 6445 Directed Readings and Research in Public Administration: 1-10 semester hours**

Independent study through readings, reports, research projects, and conferences.

**POL SCI 6448 Political Economy and Public Policy: 3 semester hours**

Prerequisite: Graduate standing. This course examines political economy in its contemporary manifestations as public choice and as the study of the ways in which institutional power shapes economic policies and performance. The course explores the origins and major concepts of political economy, the institutions of economic policymaking and economic policies in the U. S. It emphasizes the consequences of budget constraints inflation, unemployment and sectoral decline on the design and administration of public programs at all levels of government.

**POL SCI 6449 Human Resources in the Public Sector: 3 semester hours**

Same as SOC WK 6449 and P P ADM 6490. This course presents an overview of personnel and labor relations in the public sector. It places particular emphasis on issues which are unique to the public sector, such as the merit system, the questions of representative bureaucracy, and the constraints of personnel in the nonprofit sector. Course topics may include personnel reforms in the federal sector, equal employment and affirmative action policies, testing, selection, hiring, comparable worth, job evaluation and labor relations, including grievance arbitration and collective bargaining.

**POL SCI 6450 Proseminar in Comparative Politics: 3 semester hours**

Classification and typology of political systems; structural-functional analysis; political culture, ideology, affiliation and participation; decision-making processes; political roles; organization of authority.

**POL SCI 6451 Seminar in Comparative Politics: 3 semester hours**

Research problems and design in comparative politics. May be repeated for credit when the subject matter is different.

**POL SCI 6452 Public Policy of Conservation and Sustainable Development: 3 semester hours**

Same as BIOL 6250. Prerequisites: Graduate standing in Political Science or Biology and consent of instructor. Prior course in ecology is recommended. This course will introduce the student to concepts and techniques for formulating, implementing, and analyzing public policy with an emphasis on environmental concerns, conservation, and sustainable development. The course will be team taught by a political scientist and a biologist. Course materials will include case studies that demonstrate the special problems of environmental policymaking in developing and developed economies.

**POL SCI 6455 Directed Readings and Research in Comparative Politics: 1-10 semester hours**

Independent study through readings, reports, research projects, and conferences.

**POL SCI 6465 Directed Readings and Research in Political Theory: 1-10 semester hours**

Independent study through readings, reports, research projects, and conferences.

**POL SCI 6470 Proseminar in Urban Politics: 3 semester hours**

Same as: P P ADM 6470. Examination of the relationship between the social, economic and political systems of urban areas. Urban political structure, patterns of influence, political participation and communication and political change. Special attention to problems of access to and control of urban political systems.

**POL SCI 6471 Seminar in Urban Politics: 3 semester hours**

Research problems and design in urban and regional politics. May be repeated for credit when the subject matter is different.

**POL SCI 6475 Directed Readings and Research in Urban Politics: 1-10 semester hours**

Independent study through readings, reports and conferences.

**POL SCI 6480 Proseminar in International Relations: 3 semester hours**

Examination of various approaches to the study of international politics and foreign policy, focusing on studies of conflict, decision-making, international political economy, and related topics. Included are realist, idealist, and Marxist perspectives.

**POL SCI 6481 Seminar in International Relations: 3 semester hours**

Research problems and design in international politics. May be repeated for credit when the subject matter is different.

**POL SCI 6482 International Political Economy: 3 semester hours**

Prerequisite: Graduate standing. This course will examine the theoretical and policy issues of international political economy. In particular, it will focus on the politics of international trade, finance and investment. It will also analyze the themes of interdependence, hegemony, and dependency, as well as consider relations between developed and developing countries. Finally, the relative usefulness of liberal, Realist and Marxist approaches to the study of international political economy will be weighed.

**POL SCI 6485 Directed Readings and Research in International Relations: 1-10 semester hours**

Independent study through readings, reports, research projects, and conferences.

**POL SCI 6488 Studies in International Relations: 1-6 semester hours**

Prerequisites: Graduate standing or permission of instructor. Selected topics in international studies. May be repeated for credit provided the topic of the course is different each time.

***POL SCI 6490 Strategic and Program Planning for Nonprofit Organizations: 3 semester hours***

Same as P P ADM 6550 and SOC WK 6491. Prerequisites: Graduate standing or consent of instructor. Strategic and program planning enable an organization to concentrate on efforts and set priorities guided by a mission, a vision, and an understanding of its environment. Focus is on preparing a strategic plan and a program plan for a nonprofit organization and analyzing an organization's ability to deliver goods and/or services to its constituents in today's economic, social and political climate.

***POL SCI 6494 Thesis Research: 1-10 semester hours******POL SCI 6495 Internship: 1-6 semester hours***

Independent study involving work with an appropriate public or private agency.

***POL SCI 6499 Directed Dissertation Proposal Research: 3 semester hours***

Prerequisites: Consent of instructor. Supervised study through readings and research leading to the preparation of a dissertation proposal plan. Open to doctoral students who have completed at least 42 hours of course work. The proposal plan will indicate the following: statement of research question, importance of the problem, literature review and research design.

***POL SCI 7499 Dissertation Research: 1-10 semester hours***

## Psychology

### Courses

***PSYCH 1000 Choosing a Career in Psychology: 1 semester hour***

Prerequisite: Psychology Major or consent of instructor. This course is an orientation to the field of psychology for majors and for students who are considering declaring the major. This course is to be completed by native and transfer Psychology majors during their first semester of study at UMSL. Students will be engaged in activities that will help them to develop and identify their professional goals, learn about the various specialties and careers available within the field of psychology, understand the education and skills necessary for various careers, learn the requirements for a psychology major, become familiar with minors that are available at UMSL, think about a possible choice of minor or certificate, and become acquainted with the interest areas of UMSL faculty in Psychology and related fields. All Psychology majors must complete this course during the first semester at UMSL with a grade of C- or higher.

***PSYCH 1003 General Psychology (MOTR PSYC 100): 3 semester hours***

A survey of the basic concepts, theories, and pivotal findings over the past 100 years in the science of Psychology, with special emphasis on contemporary concepts and findings that focus on the relation of the brain to normal and pathological behaviors. All Psychology majors must complete this course with a grade of C- or higher.

***PSYCH 2040 Attraction: An Evolutionary Approach: 3 semester hours***

Prerequisites: PSYCH 1003. This course examines the topics of interpersonal and sexual attraction in a scientific context through the milieu of popular media outlets as well as published empirical literature from the fields of Psychology, Anthropology, Ecology, Economics, and Gender Studies. Specific topics include attraction cues, jealousy, monogamy, infidelity, the economics of sex, and the long-term and short-term mating strategies of men and women. We will also investigate the technological and media manipulation of sexual cues, as well as conflicts between the sexes, religion and sex, the peopling of the earth, the fundamentals of evolved psychological mechanisms, identifying adaptive problems and potential solutions, gender roles, parental investment, issues of kinship, and inter- and intra-sexual competition.

***PSYCH 2200 Drugs and Behavior: 3 semester hours***

Prerequisite: PSYCH 1003. The course is an introduction to psychopharmacology and the relationship among drugs, and how these impact the brain and behavior. The emphasis is on physiological mechanisms underlying the behavioral responses to psychotherapeutic substances, illicit psychoactive drugs, commonly used substances (alcohol, nicotine, caffeine), and drug-like substances produced naturally in the body.

***PSYCH 2201 Psychological Statistics: 4 semester hours***

Prerequisites: PSYCH 1003 and satisfaction of the University's mathematical skills requirement. (With Laboratory) This course serves as an introduction to statistical concepts and methods used in Psychological measurement and the analysis and interpretation of social sciences data. Topics include descriptive statistics, frequency distributions centrality, variability, and correlational measures; as well as an introduction to statistical inference, sampling fundamentals, significance testing and effect size, t-test, and analysis of variance. All Psychology majors must complete this course with a grade of C- or higher before registering for PSYCH 2219.

***PSYCH 2205 Human Sexuality: Psychological Perspectives: 3 semester hours***

Prerequisites: PSYCH 1003. This course is a comprehensive overview of human sexuality from the standpoint of the behavioral science of Psychology. This course includes a study of sexual anatomy and physiology, intersex classifications, sex and gender differences, sexual orientation, interpersonal and interpersonal aspects of human sexuality, classification and treatment of sexual dysfunction and sexual disorders, sexual victimization, and the methods employed for the scientific examination of human sexual behavior.

***PSYCH 2211 Introduction to Biological Psychology: 3 semester hours***

Prerequisites: PSYCH 1003 and 3 hours of BIOL chosen from either BIOL 1012, or BIOL 1102, or BIOL 1831. Students with career goals that include graduate study in Psychology are urged to complete the BIOL 1831 prerequisite for this course. This course introduces psychology students to behavioral neuroscience and neuropsychology. Course topics include basic neuroanatomy and neurophysiology, neurodevelopment, sensory and motor systems, and the integration of subcortical and cortical networks. All are covered with an emphasis on behavioral outcomes of normal and pathological functioning of the brain. All psychology majors must complete this course with a grade of C- or higher.

**PSYCH 2219 Research Methods in Psychological Science: 3 semester hours**

Prerequisites: PSYCH 2201 and ENGL 3100. This course is a comprehensive overview of research methods in the psychological sciences. Topics may include technical scientific writing in current APA format, critical evaluation of research literature, the application of statistical methods, and mastery of the ethical principles guiding psychological sciences research. Course and laboratory work involve designing and evaluating research questions, formulating research hypotheses, designing and conducting original research studies, and presenting research results. All psychology majors must complete this course with a grade of C- or higher.

**PSYCH 2230 Psychology of Gender: 3 semester hours**

Same as GS 2230. Prerequisite: PSYCH 1003. Evaluation of psychological theories and research regarding physiological, cognitive, and personality gender differences and similarities, gender related problems in adjustment, and gender specific clinical interventions.

**PSYCH 2245 Abnormal Psychology: 3 semester hours**

Prerequisite: PSYCH 1003. This course examines the historical views and current perspectives on the possible antecedents, symptoms, and treatments of major psychological disorders, including anxiety, dissociative, mood, somatoform, eating, schizophrenia and substance-related disorders. Major diagnostic categories and criteria, individual and social factors of maladaptive behavior, methods of clinical assessment, research strategies, and types of therapy will also be covered. All psychology majors must complete this course with a grade of C- or higher.

**PSYCH 2250 Social Psychological Science: 3 semester hours**

Prerequisite: PSYCH 1003. This course examines the scientific study of the way people think, feel, and behave in social situations. The content focuses on understanding how people influence, and are influenced by, real or imagined others. Specific topics may include the self, social judgments, attitudes and persuasion, helping behavior, prejudice, aggression, attraction, conformity and obedience, and group processes.

**PSYCH 2268 Lifespan Developmental Psychology (MOTR PSYC 200): 3 semester hours**

Prerequisites: PSYCH 1003. This survey course examines development over the lifespan with an emphasis on the developmental tasks and challenges of each age period.

**PSYCH 2270 Developmental Psychology: Infancy, Childhood and Adolescence: 3 semester hours**

Prerequisites: PSYCH 1003. This course systematically examines theories and research concerning the physical, social, emotional, and cognitive development of children from conception through adolescence. It will provide students with a basic knowledge of infant, child, and adolescent development; its subject matter; its approaches to gathering and evaluating evidence about the causes of behavior; and the ways in which our knowledge is applied to enhance the development and the quality of life of children. It is intended for Psychology majors and students with career interests in research, education, and/or the treatment of children. All Psychology majors taking this course instead of PSYCH 2160, must complete it with a grade of C- or higher.

**PSYCH 2285 American Culture and Minority Mental Health: 3 semester hours**

Prerequisites: PSYCH 1003. Provides an examination of the relationship between American culture and mental health. The focus is on the lives of American minority groups, with specific attention given to how racism, prejudice, and minority status currently reveal themselves within a mental health framework. An eclectic, multidisciplinary approach that draws from clinical and social psychology will be utilized.

**PSYCH 2299 Directed Readings in Psychology: 3 semester hours**

Prerequisites: PSYCH 1003 or SOC 1010, or consent of instructor. This course will provide an intellectual forum for discussing classic and contemporary theories and research in psychology on a selected topic. Students can retake the course as long as the topic is different.

**PSYCH 2500 Human Motivation: 3 semester hours**

Prerequisite: PSYCH 1003. This course approaches human motivation through a biopsychosocial perspective, including theories of motivation, individual motivation, and how motivation differs. Application will include real-life workplace and educational psychology contexts.

**PSYCH 3200 Sports Psychology: 3 semester hours**

Prerequisites: PSYCH 1003. This course examines psychological, biological, and social aspects of sport and human performance. Course topics may include performance enhancement, mental skills training, motivation, group dynamics, as well as physiological responses to stress and anxiety in sport.

**PSYCH 3205 Evolutionary Psychology: 3 semester hours**

Prerequisites: PSYCH 2211. Evolutionary Psychology refers to a fundamentally unique approach to studying and thinking about human and animal behavior through considerations of 1. The challenges and stressors encountered in ancestral environments, 2. The proximate physical, psychological, and anatomical methods that evolved to meet these adaptive problems, and 3. How adaptive or maladaptive these mechanisms are in current environments. Special emphasis will be placed on the evolution of brain structures, cognitive processes, and social behaviors. The content for this course is not new; Evolutionary Psychology involves looking at the science of Psychology through a unique lens, shaped by its tenets. Although appreciation for this approach to psychological research is increasing, it remains controversial in psychology circles. We will discuss the state of this aspect of Psychology as well.

**PSYCH 3232 Psychology of Trauma: 3 semester hours**

Same as GS 3232. Prerequisites: PSYCH 1003. This course examines responses to potentially traumatic events (e.g., child abuse and neglect, physical and sexual assault, intimate partner violence, community and gun violence, war, natural disasters). Trauma exposure, posttraumatic growth, the development of trauma-related difficulties including PTSD, assessment and intervention are examined with attention to gender, cultural, and lifespan issues.

**PSYCH 3280 Psychology of Death and Dying: 3 semester hours**

Same as GERON 3280. Prerequisite: PSYCH 1003 or consent of the instructor. An exploration of end-of-life issues integrating the scholarly, social, and individual dimensions of death and dying. This course provides a solid grounding in theory and research, as well as practical application to students' lives.

**PSYCH 3290 Traumatic Stress in Childhood and Adolescence: 3 semester hours**

Same as CAST 3290. Prerequisites: PSYCH 2270 (majors) or PSYCH 2268 or ED PSY 2212 or approval from the instructor. This course is an exploration of the biopsychosocial impact of community, family, and individual trauma and stressors experienced during infancy, childhood, and adolescence. It introduces students to relevant theoretical frameworks, cultural considerations, and advocacy strategies.

**PSYCH 3295 Selected Projects in Field Placement: 3 semester hours**

Prerequisites: 15 credit hours of psychology and consent of instructor. This course provides for selected options in field work placement experiences on campus or in various local agencies with training and supervision by faculty. It may be repeated once for credit.



**PSYCH 3318 Industrial and Organizational Psychology: 3 semester hours**

Same as MGMT 3623. Prerequisites: PSYCH 2201 or MATH 1105 (or equivalent). This course introduces students to psychological research and theories pertaining to human behavior in the work setting. Topics covered may include: selection, performance appraisal, training, leadership, motivation, job satisfaction, and organizational design.

**PSYCH 3340 Clinical Problems of Childhood: 3 semester hours**

Prerequisites: PSYCH 2245 or PSYCH 2270. This course will address the clinical disorders and difficulties of children, as well as the causes and the treatment of these disorders. Topics addressed may include autism, childhood schizophrenia, conduct disorders, learning disabilities, ADHD, mood disorders, health-related disorders, anxiety disorders, and child maltreatment. Treatments designed for specific use with children, including behavioral, drug and community mental health approaches will be addressed. This course is recommended for those going on to graduate work in psychology.

**PSYCH 3346 Introduction to Clinical Psychology: 3 semester hours**

Prerequisite: PSYCH 1003, PSYCH 2245; and three additional hours of Psychology. This course provides a conceptual framework for research, description and understanding of clinical phenomena. Assessment, interviewing, the clinical use of tests and psychological approaches to treatment are also addressed.

**PSYCH 3390 Directed Studies: 1-6 semester hours**

Prerequisite: Consent of instructor. Directed reading and research. May be repeated for a maximum total of ten hours.

**PSYCH 3500 Health Psychology: 3 semester hours**

Prerequisite: PSYCH 1003 and three additional hours of Psychology. Health Psychology involves the discipline and principles of psychology and behavior in understanding how the mind, body, and behavior interact in health and disease. Class topics include theoretical foundations of health and illness, health promotion and primary prevention of illness, health enhancing and health damaging behaviors, psychosomatic illness, stress and coping, pain management, and a variety of specific behavior-related medical illnesses (e.g., heart disease, eating disorders, cancer, AIDS).

**PSYCH 3820 Cross-Cultural Psychology: 3 semester hours**

Prerequisites: PSYCH 1003 and 9 hours of Psychology. The purpose of this course is to present students with a broad theoretical and applied overview of cross-cultural psychology. To this end, the course presents an orientation to the definitions, concepts, theories, and methodologies of crosscultural psychology. Included is an examination of cultural and ecological factors and their influences on perceptual and cognitive processes, personality, language, and other psychological variables.

**PSYCH 3995 Undergraduate Teaching Internship in Psychology: 1 semester hour**

Prerequisites: PSYCH 1003 and 6 additional credits in Psychological Sciences (9 credits minimum), and instructor consent. This course prepares students to work as learning assistants, tutors, or peer mentors for courses within the Department of Psychological Sciences. Students will develop general pedagogical skills. Specific teaching assistant duties will be determined by the instructor of record for the associated course. This course may be repeated for up to 3 total credit hours.

**PSYCH 4250 Stereotyping, Prejudice, and Discrimination: 3 semester hours**

Prerequisites: PSYCH 2219 and PSYCH 2250, or consent of instructor. This course will provide an intellectual forum for discussing classic and contemporary theories and methodologies focused on understanding stereotyping, prejudice, and discrimination. Using a social psychological framework, students will assess psychology's current understanding of why people use and apply stereotypes in their everyday thinking and behavior. Students will also explore such topics as social categorization, stereotype activation, contemporary forms of prejudice, the social context of prejudice, the consequences of prejudice and discrimination, the stigmatized target's perspective, coping with prejudice, and techniques for reducing prejudice and discrimination.

**PSYCH 4300 Introduction to Psychopharmacology: Drugs and Mental Illness: 3 semester hours**

Prerequisites: PSYCH 1003, PSYCH 2211 or PSYCH 2200; PSYCH 2245. The course is designed to provide an introduction to drugs used to treat anxiety disorders, major depression, schizophrenia, and other psychopathologies. The emphasis will be on understanding neural mechanisms related to psychological disorders and to the effectiveness of current drug treatments.

**PSYCH 4305 Developmental Psychology: Cognitive Development of Children: 3 semester hours**

Prerequisites: PSYCH 1003, PSYCH 2270, and Junior standing, or consent of instructor. Data and theory concerned with how children's thinking changes over time. Discussion will include domain-general versus domain-specific theories, social and cultural influences on cognition, gains in memory, attention, problem solving, and metacognition, conceptual development, children's naive theories, schooling, and various definitions and measures of intelligence.

**PSYCH 4311 Psychology of Nonverbal Behavior: 3 semester hours**

Prerequisites: PSYCH 2250 and ENGL 3100. This writing-intensive course examines the psychological perspective on the role of nonverbal behavior in social settings. Primary concerns of the course will include an analysis of the functions of nonverbal behavior (e.g., providing information, regulating interaction, expressing intimacy, exercising influence, and managing impressions), factors influencing nonverbal expression (e.g., culture, personality, relationships), and various theoretical views on nonverbal communication. Applications to various problems and settings in everyday life will also be pursued.

**PSYCH 4314 Behavioral Neuroscience: 3 semester hours**

Prerequisites: PSYCH 2211 or BIOL 1831 or consent of instructor. This neuroscience course focuses on behavioral outcomes of brain function and dysfunction. Course emphasis will be on modern research methods with animal models and humans. Topics discussed may include the classic findings in the field, but the emphasis will be on recent findings from human neuropsychology, neuroimaging, cognitive neuroscience, neuropharmacology, and neuroendocrinology.

**PSYCH 4316 Developmental Psychology: Social Development of Children and Adolescents: 3 semester hours**

Prerequisites: PSYCH 1003, PSYCH 2270, and junior standing, or consent of instructor. This course examines data and theory concerned with social behavior in infants, preschoolers, and school-aged children. Discussion will include emotional regulation; measurement and nature of temperament; the formation and maintenance of attachment relationships; sex-role development; and theories of aggression and the effects of socializing agents such as family, peers, media, and culture on development.



**PSYCH 4330 Hormones, The Brain and Behavior: 3 semester hours**

Prerequisites: 9 hours of psychology or biology, including at least one of the following: PSYCH 2200, PSYCH 2211, or PSYCH 4300 or consent of instructor. Historically, hormones have been studied for their role in reproduction, including reproductive physiology and sexual behaviors. It is now clear, however, that the endocrine system actively interacts with brain regions unrelated to reproduction with the result that sex hormones and neuropeptide hormones influence a wide range of behaviors including mood, anxiety, stress responses, cognition, memory, violence, attachment, aging, weight control and athletic prowess. Emphasis of the class is on hormonal contribution both to reproductive and non-reproductive behaviors with special attention paid to gender behavioral differences. This course may be taken for graduate credit with permission of the instructor.

**PSYCH 4340 Introduction to Human Neuroanatomy: 3 semester hours**

Prerequisites: Grade of B- or above in PSYCH 2211, and nine hours of psychology or biology or consent of instructor. This course is an intensive introduction to brain anatomy. It will explore the structure and function of the human nervous system with the goal of preparing students for advanced study in neuroscience-related fields. Topics will include a review of core concepts from cellular neuroscience, neuroimaging and neuroanatomical techniques, sensory and motor systems, and the anatomical basis of cognitive functions. Based on an understanding of typical brain structure and function, the anatomical and physiological basis of various neurological disorders is explored.

**PSYCH 4349 Human Learning and Memory: 3 semester hours**

Prerequisites: PSYCH 2211 and six additional hours of psychology; or consent of instructor. This course focuses on the basic forms of learning and memory such as habituation, sensitization, conditioning, and skill/procedural memory, as well as more complex forms of learning and memory such as semantic memory, episodic/autobiographical memory, short-term and working memory, and social learning. Students will learn about the neurobiological basis of learning and memory on both cellular and system levels. In addition, students will study how factors such as emotion and age affect learning and memory as well as the relevance of learning and memory for clinical and legal environments.

**PSYCH 4350 Emotions and the Brain: 3 semester hours**

Prerequisites: PSYCH 2211 and six additional hours of psychology; or consent of instructor. Emotions play an important role in everyday life. But what exactly is an emotion? And what happens in your body when you experience an emotion? More specifically, what happens in your brain? Doesn't the limbic system have something to do with emotions? What are the differences and similarities between emotions (such as anger) and motivations (such as hunger)? What happens in your body and brain when you fall in love? And how do emotions influence cognition, such as attention and memory? Conversely, does cognition influence our emotions as well? These are some of the questions that we will answer in this course. Given that many mental disorders involve emotional disturbances, this course is not only relevant for students who are interested in the fundamental knowledge of emotions, but also for students who are interested in clinical psychology.

**PSYCH 4356 Cognitive Processes: 3 semester hours**

Prerequisite: Nine hours of psychology or consent of instructor. This course is an overview of the major topics in cognitive psychology, including perception, visual imagery, attention, memory, knowledge representation and retrieval, language, problem solving, reasoning, judgment, decision making, and intelligence.

**PSYCH 4365 Psychological Testing and Assessment: 3 semester hours**

Prerequisites: Grade of C- or above in PSYCH 2201, or consent of instructor. This course covers the uses, construction, and evaluation of psychological tests and assessments. Students will learn about tests designed to measure personality, intelligence, and other individual differences, including issues related to test use in specific settings. Examination of professionally-developed tests and hands-on learning exercises will be key aspects of the course.

**PSYCH 4372 Introduction to Social Neuroscience: 3 semester hours**

Prerequisites: PSYCH 2250 and PSYCH 2211, or consent of instructor. This course introduces current theory and research in social neuroscience with a focus on mechanisms underlying mind and behavior interactions using a multi-level integrative analysis. It examines how organismic processes are shaped, modulated, and modified by social factors and vice versa. This course may be taken for graduate credit with permission of the instructor.

**PSYCH 4374 Introduction to Clinical Neuropsychology: 3 semester hours**

Prerequisites: PSYCH 2211 and PSYCH 2245, or consent of instructor. This course is an introduction to current theory and practice of clinical neuropsychology with a focus on neuropsychological findings concerning relationships between the brain and behavior. Particular attention is devoted to function, neuroanatomy, neurological syndromes, patterns of brain impairment associated with various medical diseases, and methods of neuropsychological assessment and intervention.

**PSYCH 4376 Mental Health and Aging: 3 semester hours**

Same as GERON 4376. Prerequisites: PSYCH 2245 or consent of instructor. This course provides a survey of theory and research in mental health issues for older populations, focusing on psychological and social aspects of mental health and functioning. The course details approaches to understanding healthy aging, along with the prevalence, etiology, assessment and treatment of psychological disorders in older adults. The course also provides an overview of health care and community-based delivery systems for behavioral health, and allows students to explore information about careers in aging.

**PSYCH 4392 Selected Topics in Psychology: 1-3 semester hours**

Prerequisite: Twelve hours of psychology and consent of instructor. A seminar of selected issues and methods in psychology. May be repeated once for credit.

**PSYCH 4398 Child Maltreatment: A Multidisciplinary Approach: 3 semester hours**

Same as SOC WK 4398 and CAST 4398. Prerequisites: CAST 3290 or PSYCH 3290 (may be taken concurrently), or consent of instructor. This course, with its interdisciplinary emphasis, focuses on the systemic response to the primary domains of child maltreatment by multidisciplinary teams and child advocacy centers. Risk factors, cultural considerations, and mandated reporting of child abuse and neglect are emphasized. Students will begin to develop professional skills pertaining to child maltreatment, using a variety of experiential learning modalities.

**PSYCH 4500 Physiology & Pharmacology of Aging: 3 semester hours**

Same as GERON 4500. Prerequisites: Junior/senior undergraduate or graduate standing, or consent of the instructor or program director. This course examines functional health in advancing age and the impacts of common disease processes on the aging body. Symptom presentations, diagnostic considerations, treatment and management issues are discussed. A special emphasis is placed on pharmacology, especially how the aging body responds to different medication types, risks for drug-drug interactions, and challenges associated with polypharmacy. The course emphasizes a "whole person" approach to health and well-being, and targets the learning needs of those wishing to work with older adults in health, social and community service settings.

**PSYCH 4999 Integrated Psychology: 2 semester hours**

Prerequisites: Consent of instructor. This capstone course serves as a review of the primary sub-fields of psychology. An advanced general psychology textbook will guide the class through important contemporary topics in behavioral neuroscience, learning and memory, cognition, psychopathologies and their treatments, and developmental and social psychology. The Major Field Aptitude Test in Psychology will serve as the final exam for the course. This course is restricted to Psychology majors and must be taken during majors' final semester of study. Students are expected to have already completed their application to graduate. All Psychology majors must complete this course with a grade of C- or higher.

**PSYCH 5001 Neuropsychological Assessment: 3 semester hours**

Prerequisites: Admission to Psychology graduate program, or consent of instructor. This graduate level course will review neuroanatomical systems that mediate primary cognitive networks and methods of assessments and interpretation of data. The course will also review common neurological and psychiatric conditions that result in neuropsychological compromise.

**PSYCH 5340 Human Neuroanatomy: 3 semester hours**

Prerequisites: Admission to graduate program in psychology or consent of instructor. This course provides an overview of brain anatomy for graduate students in psychology and related disciplines. It explores the structure and function of the human nervous system both in health and disease. The course will cover core concepts from cellular neuroscience, neuroimaging and neuroanatomical techniques, sensory and motor systems, and the anatomical basis of cognitive functions.

**PSYCH 5400 Seminar: Special Topics in Behavioral Neuroscience: 1 semester hour**

Prerequisites: Admission to the graduate program in behavioral neuroscience or consent of the instructor. A seminar of selected contemporary topics in behavioral neuroscience. The class will meet weekly to discuss a journal article in the field with special focus on the methodologies used in neuroscience research. May be repeated for a total of 3 credit hours, provided the subject matter is different.

**PSYCH 5407 Psychopharmacology: 3 semester hours**

Prerequisite: 12 units of graduate-level. An examination of the effects of drugs on the brain and on behavior. Primary emphasis is on those drugs used in the treatment of affective disorders, schizophrenia and anxiety.

**PSYCH 5465 Seminar: Behavioral Neuroscience: 3 semester hours**

Prerequisites: Graduate standing or permission of instructor. Behavioral neuroscience is the study of the relation of the brain to behavior. The field has emerged as the new face of psychology; there are few subfields in psychology that have not been influenced by findings from animal labs, and from human studies employing physiological recordings, neuroimaging and psychotherapeutic drugs. This course will serve as an introduction for graduate students in psychology of brain morphology and function with an emphasis on normal and pathological behaviors.

**PSYCH 5468 Seminar: Cognitive Processes: 3 semester hours**

Prerequisites: Admission to the Graduate Program in Psychology or consent of instructor. This course is an introduction to classic and contemporary theories, methodologies, and theoretical perspectives used in the field of cognitive psychology. The emphasis is on basic research in the field of cognitive psychology but some applications of these experiments are discussed as well. The class will read and discuss chapters from cognitive psychology textbooks as well as classic and contemporary empirical journal articles in cognitive Psychology.

**PSYCH 6410 Gender, Sexuality, and Mental Health: 3 semester hours**

Same as GS 6410. Prerequisites: Admission to the doctoral program in Clinical Psychology or consent of instructor. This course will focus on contemporary theory and research on gender and sexuality as they pertain to mental health issues. Gender differences and similarities in the presentation, etiology, and treatment of sexual health problems and other mental illnesses will be discussed.

**PSYCH 6415 Seminar in Health Psychology & Behavioral Medicine: 3 semester hours**

Prerequisites: Consent of instructor. This course analyzes research, theory, and clinical applications in the interrelationships of behavior, psychological states, physical health and disease. Discussion includes theoretical foundations of health and illness, biopsychosocial factors affecting health and illness, diagnostic issues, prevention, interdisciplinary treatment applications, health and public policy, and research issues. Critical evaluation of theory and empirical support for clinical applications will be discussed.

**PSYCH 6441 Aging and Health Behavior: 3 semester hours**

Same as GERON 6441. Prerequisite: Graduate standing. This course examines sociocultural influences on health care practices of older adults. The role of social support and other social resources in the health behavior of older adults is emphasized. Topics include self care decisions, formal service utilization, family caregiving, and planned interventions for older adults.

**PSYCH 6448 Multicultural Issues in Clinical Psychology: 3 semester hours**

Prerequisites: Admission to the doctoral program in Clinical Psychology or consent of instructor. A survey of theoretical perspectives utilized in the treatment of various cultural groups. Their relationship to and implications for the treatment of members of various cultural groups will be explored. Strategies and ethical concerns in diagnosis, test interpretation, and treatment are considered.

**PSYCH 6466 Seminar: Developmental Psychology: 1-3 semester hours**

Prerequisites: Admission to the doctoral program in Clinical Psychology or consent of instructor. A critical examination of contemporary problems in developmental psychology.

**PSYCH 7403 Psychopathology: 3 semester hours**

Prerequisite: Admission to clinical psychology program or permission of instructor. A critical examination of the clinical-experimental literature in psychopathology. Etiologies of cognitive/affective functions and dysfunctions are explored, and implications for therapeutic interventions are considered.

**PSYCH 7404 Introduction to Clinical Assessment I: 4 semester hours**

Prerequisites: Admission to Clinical Psychology program. Fundamentals of clinical assessment with emphasis on interviewing and the measurement of cognitive functioning. This course includes a laboratory.

**PSYCH 7406 Introduction to Clinical Assessment II: 4 semester hours**

Prerequisites: PSYCH 7404. This course addresses theory and techniques of personality assessment including clinical interviewing, objective and projective assessment, and integrative report writing.

**PSYCH 7412 Social Psychology: 3 semester hours**

Prerequisites: Admittance to psychology doctoral program or consent of instructor. A review of key areas in contemporary theory and research in social psychology.

**PSYCH 7421 Quantitative Methods I: 4 semester hours**

Prerequisites: Admission to the Graduate Program in Psychology or consent of instructor. A comprehensive study of univariate statistical concepts and analyses used in psychological research. Topics include descriptive statistics, normal distributions, z, t, F, chi-square statistics, and distributions. Correlation, simple and multiple regression, factorial and repeated measures analysis of variance, significance testing and effect size are also examined.

**PSYCH 7422 Quantitative Methods II: 4 semester hours**

Prerequisites: PSYCH 7421 and consent of instructor. (With laboratory) A comprehensive study of the use of multivariate statistics in data analysis. Topics include the general linear model, multiple regression, factor analysis, and multivariate analysis of variance.

**PSYCH 7423 Quantitative Methods III: 3 semester hours**

Prerequisites: PSYCH 7422 and PSYCH 7429 and consent of instructor. A selective study of the use of multivariate statistics in data analysis. Topics include structural equation modeling, multilevel modeling, and analysis of longitudinal data.

**PSYCH 7429 Psychometric Theory: 3 semester hours**

Prerequisites: PSYCH 7421, PSYCH 7422 and consent of instructor. A consideration of classical and modern theories of psychological testing. Topics include test reliability, validity and construction.

**PSYCH 7430 Introduction to Clinical Skills: 1 semester hour**

Prerequisites: Admission to doctoral program in clinical psychology. An introduction to processes and procedures involved in psychotherapy.

**PSYCH 7431 Clinical Supervision: 1-3 semester hours**

Prerequisite: Admission to Clinical Psychology Program. Supervised experience in clinical practice. May be repeated six times for credit.

**PSYCH 7432 Ethics and Professional Issues: 3 semester hours**

Prerequisites: Admission to Clinical Psychology program. A study of issues in professional development, clinical supervision, risk management, and ethical standards as they relate to teaching, research, and professional practice.

**PSYCH 7433 Clerkship in Clinical Psychology: 1 semester hour**

Prerequisites: Admission to the doctoral program in Clinical Psychology. Supervised training in an affiliated agency or organization following completion of two years of course work. (May be repeated 3 times).

**PSYCH 7434 Foundations of Clinical Interventions: 3 semester hours**

Prerequisites: Admittance to Clinical Psychology program. This course focuses on conceptual and methodological issues that are central to the development, evaluation and application of interventions in clinical psychology. Topics include efficacy and effectiveness research, introduction to theories of behavior change, and applications with specific populations.

**PSYCH 7439 Summer Supervision: 1 semester hour**

Prerequisites: PSYCH 7431. Supervised experience in clinical practice at all graduate year levels during the summer months. Can be repeated for credit.

**PSYCH 7442 Seminar: Cognitive and Behavioral Interventions: 3 semester hours**

Prerequisites: PSYCH 7434. This course focuses on the theory and practice of cognitive-behavioral interventions in the field of clinical psychology.

**PSYCH 7447 Trauma and Recovery: 3 semester hours**

Prerequisites: Graduate Trauma Studies Certificate. A comprehensive seminar on the psychological effects associated with exposure to potentially traumatic events. The course will include information on the history of trauma studies; definitions of stressful and traumatic events; common responses to these events; theoretical models for conceptualizing traumatic responses; information on specific types of traumatic events; and issues in treatment.

**PSYCH 7449 Research Methods and Project Development in Applied Psychology: 1-3 semester hours**

Prerequisite: Admission to the Graduate Program in Psychology or consent of instructor. This course focuses on the basics of conducting research in Industrial-Organizational Psychology. Topics include: philosophy of science; reliability and validity; experimental, quasi-experimental, and non-experimental designs; power; meta-analysis; survey/item analyses; and cross-cultural methods. In addition, the course includes group supervision of initial research that leads to thesis or dissertation proposals. Can be taken up to three times for a total of 6 credit hours.

**PSYCH 7450 Clinical Internship I: 1-9 semester hours**

Prerequisite: Consent of advisor. Formal, one year, full-time internship providing student with in-depth supervised training within a site approved by the American Psychological Association. This course is repeated in the fall and spring semesters of the internship year.

**PSYCH 7451 Clinical Internship II: 1-9 semester hours**

Prerequisite: PSYCH 7450 and consent of advisor. Formal, one-year, full-time internship providing student with in-depth supervised training within a site approved by the American Psychological Association. (Taken in the final summer of the internship).

**PSYCH 7454 Seminar: Personnel Psychology: 3 semester hours**

An analysis of theories and research in personnel and industrial psychology. Topics include testing, assessment centers, performance appraisal, and interviewing.

**PSYCH 7455 Seminar: Organizational Psychology: 3 semester hours**

An analysis of theories and research in organizational psychology. Topics include theories of motivation, leadership, job design, group process decision-making, organizational effectiveness, and the relation between organizations and their environment.

**PSYCH 7457 Seminar: Special Topics in Industrial Psychology: 3 semester hours**

A seminar of selected issues and methods in personnel psychology.

**PSYCH 7458 Seminar: Special Topics in Organizational Psychology: 3 semester hours**

A seminar of selected issues and methods in organizational psychology.

**PSYCH 7459 Practicum in Industrial/Organizational Psychology: 1-4 semester hours**

Supervised experience in personnel or human resource management.

**PSYCH 7461 Summer Research in I/O Psychology: 1 semester hour**

Prerequisites: Admission to I/O program. Supervised experience on research topics in I/O psychology at all graduate year levels during the summer months. Can be repeated for credit.



**PSYCH 7465 Applied Issues in Organizational Psychology: 3 semester hours**

Prerequisites: PSYCH 7455 or consent of instructor. Course focuses on the application of psychological theory and principles to organizational development consulting. While such consulting is ultimately intended to enhance organizational level functioning, applications of this approach begin with learning at the individual and small group levels. In this course, students work through real-world cases that address real organizational problems. In addition to this casework, the readings and class discussions will address the theoretical and practical links between individual/team learning and organizational development.

**PSYCH 7466 Seminar Series in Industrial/Organizational Psychology: 1 semester hour**

Prerequisites: Open only to students in the I/O Psychology Graduate Program. A seminar series involving speakers, presentations, and discussions focusing on applied and theoretical perspectives, techniques, and research in the field of Industrial/Organizational Psychology. May be taken up to 6 times for credit.

**PSYCH 7469 I/O Professional Issues and Ethics: 3 semester hours**

Prerequisite: Consent of Instructor. In this course students learn the ethical standards as they relate to teaching, research and professional practice in industrial organizational psychology. Other professional and career issues are also discussed.

**PSYCH 7472 Special Topics in Psychology: 1-3 semester hours****PSYCH 7474 Clinical Research in Applied Settings: 3 semester hours**

Prerequisites: PSYCH 7421 and PSYCH 7422. This course provides information on the design and implementation of research in applied settings (e.g., human service agencies). Topics include program evaluation, consultation models, risk factor analysis, presentation and health promotion, and quality control.

**PSYCH 7476 Seminar in Developmental Psychopathology: 2 semester hours**

Prerequisites: Admission to the doctoral program in Clinical Psychology or consent of instructor. Introduction to principles, theory, and methods of study in the field of clinical child psychology. Emotional and behavioral dysfunctions are considered from developmental and socialization perspectives.

**PSYCH 7478 Directed Research in Industrial/Organizational Psychology: 1-4 semester hours**

Independent study of an issue in industrial/organizational psychology through the application of research techniques.

**PSYCH 7479 Directed Readings in Industrial/Organizational Psychology: 1-4 semester hours**

Independent literature review of a topic in industrial/organizational psychology.

**PSYCH 7483 Directed Research: 1-10 semester hours****PSYCH 7484 Directed Readings: 1-10 semester hours****PSYCH 7485 Seminar in Clinical Science: 1-3 semester hours**

Prerequisites: Graduate standing in Clinical Psychology. This course discusses professional identity as a clinical scientist and development of programmatic research. Readings include theories and methodologies within clinical psychology, with group supervision of proposals for program research milestones. May be repeated once for credit.

**PSYCH 7486 Research Team II: 2 semester hours**

Prerequisites: Completion of Independent Research Project or third year standing in doctoral program in clinical psychology. Group supervision of advanced research related to dissertation proposal and program's comprehensive examination required for doctoral candidacy.

**PSYCH 7487 Thesis Research Project: 1-6 semester hours**

Prerequisites: Admission to the doctoral program in clinical psychology. Supervised original research project of a clinically-related topic.

**PSYCH 7488 Specialty Examination Research: 1-6 semester hours**

Prerequisites: Admission to the doctoral program in Clinical Psychology. Supervised original review and analysis of a clinically related topic.

**PSYCH 7491 MA Thesis Research: 1-10 semester hours**

Prerequisite: Graduate standing and consent of instructor.

**PSYCH 7492 Ph D Thesis Research: 1-10 semester hours**

Prerequisite: Graduate standing and consent of instructor.

## Public Policy Administration

### Courses

**P P ADM 6000 Introduction to Policy Analysis: 3 semester hours**

Same as POL SCI 6410. Systematic development of a critical/analytic base for dealing with public policy.

**P P ADM 6010 Introduction to Policy Research: 3 semester hours**

Same as POL SCI 6401. Procedures for testing explanations, including research design, principles of measurement, probability sampling, methods of data collection, and techniques for analyzing data.

**P P ADM 6150 Directed Readings and Research in Public Policy: 1-10 semester hours**

Same as POL SCI 6415. Prerequisite: Consent of instructor. Independent study through readings, reports, research projects, and conferences. May be repeated for credit, provided the subject matter is different.

**P P ADM 6180 Governmental Budgeting and Financial Control: 3 semester hours**

Same as BUS AD 5450. Prerequisite: ACCTNG 5400. A study of municipal and federal financial control and budgeting procedures with emphasis on public policy. The impact of financial control on top management decisions and the effect of budget strategies on the allocations of public funds.

**P P ADM 6300 Leadership and Management in Nonprofit Organizations: 3 semester hours**

Same as POL SCI 6300 and SOC WK 6300. Prerequisites: Graduate standing required. Addresses the role and scope of the independent sector in the United States, as well as the leadership and management of nonprofit organizations within that sector. Topics include the economic and political scope of the independent sector, the role of volunteerism in a democratic society, and the role and scope of philanthropy. Topics in voluntary organization management and leadership include the dynamics, functions and membership structure of NPOs, especially staff-board and other volunteer relations; governance and management of NPOs; resource mobilization; and program development management and evaluation.



***P P ADM 6310 American Philanthropy and Nonprofit Resources Development: 3 semester hours***

Same as SOC WK 6310. Prerequisites: Graduate standing required. This course addresses the history, philosophy, roles and scope of philanthropy in the United States, including its role in the nonprofit, voluntary sector. It further examines the contemporary forces which impact philanthropy and charitable giving, both by institutions and individuals. The course examines the effective planning and management of development programs (e.g., annual giving), fundraising vehicles (e.g., mail solicitations) and the fund raising process, from planning through donor relations.

***P P ADM 6311 Staff Management Issues in Nonprofit Organizations: 1 semester hour***

Same as SOC WK 6311. Prerequisites: Graduate standing required. This course addresses issues involved in managing staff in nonprofit organizations. The course will cover the following topics: fundamentals of staff supervision; balancing supervisory processes with counseling and coaching; selecting, hiring, evaluating, and terminating staff; legal issues that affect these processes.

***P P ADM 6312 Legal Issues in Managing Nonprofit Organizations: 1 semester hour***

Same as SOC WK 6312. Prerequisites: Graduate standing required. This course addresses legal issues involved in managing and governing nonprofit organizations. The course will cover the following topics: The Board as steward of the organization; Director and officer liability; tax laws concerning charitable giving; legal issues in managing staff and volunteers (e.g., hiring, evaluating, and terminating employees); Missouri nonprofit law.

***P P ADM 6313 Financial Issues in Managing Nonprofit Organizations: 1 semester hour***

Same as SOC WK 6313. Prerequisite: Graduate standing required. This course addresses financial issues involved in governing and managing nonprofit organizations. The course will cover the following topics: Cash flow analysis; budgeting; fund accounting; cost accounting (determining costs for programs and services); understanding and using standard financial statements, including balance sheets, cash flow statements, statements of activity, and operating and capital budgets.

***P P ADM 6340 Seminar in City Administration: 3 semester hours***

This course provides an overview of the working environment of a city administrator and is jointly sponsored by the local city managers association. Professional city personnel make presentations to the students on six major topics: political structure, organizational structure, service delivery, finance, personnel policies and practices, and leadership. The course provides direct observation of city council meetings, visits to various city facilities, exposure to different philosophies and styles of city management, and provides students a chance to assemble facts, evaluate options, and present policy recommendations for real problems that local administrators face.

***P P ADM 6350 Issues in Urban Management: 3 semester hours***

Designed to evaluate management issues that confront managers in local government from a political perspective. The format will include an intense review and discussion of original case studies from actual local government situations. The specific focus of this course will vary. Course may be repeated.

***P P ADM 6400 Public Administration: Theory & Practice: 3 semester hours***

Same as POL SCI 6440. The course examines major approaches to analyzing public policies and their administration with emphasis on the effects of administrative organization and procedures on policy decisions and their impact. Specific topics may include administrative accountability, inter-governmental relations, public private interaction, implementation processes, bureaucratic expertise, the legal environment of public administration, and public service and merit issue.

***P P ADM 6430 Health Care Policy: 3 semester hours***

Same as GERON 6443, POL SCI 6443, and SOC WK 6443. Prerequisites: Graduate standing or consent of instructor. Survey course examining current issues in health policy that face the nation. Policies are placed in a historical context to show how issues have been influenced by different political and economic conditions. Secondary consequences and limitations of current trends in health policy are explored.

***P P ADM 6444 Seminar in Public Policy and Aging: 3 semester hours***

Same as GERON 6444 and POL SCI 6444. Prerequisites: Consent of instructor. The study of specialized issues and methods related to federal, state, and local policies that affect the elderly. Potential policy areas to be covered include housing, taxation, mental health, transportation, etc. May be repeated for credit, provided the subject matter is different.

***P P ADM 6470 Proseminar in Urban Politics: 3 semester hours***

Same as: POL SCI 6470. Examination of the relationship between the social, economic and political systems of urban areas. Urban political structure, patterns of influence, political participation and communication and political change. Special attention to problems of access to and control of urban political systems.

***P P ADM 6471 Seminar in Urban Politics: 3 semester hours***

Same as: POL SCI 6471. Research problems and design in urban and regional politics. May be repeated for credit when the subject matter is different.

***P P ADM 6490 Human Resources in the Public Sector: 3 semester hours***

Same as POL SCI 6449 and SOC WK 6449. This course presents an overview of personnel and labor relations in the public sector. It places particular emphasis on issues which are unique to the public sector, such as the merit system, the questions of representative bureaucracy, and the constraints of personnel in the nonprofit sector. Course topics may include personnel reforms in the federal sector, equal employment and affirmative action policies, testing, selection, hiring, comparable worth, job evaluation and labor relations, including grievance arbitration and collective bargaining.

***P P ADM 6500 Selected Topics in Public Policy Administration: 3 semester hours***

Prerequisites: Graduate Standing. Permission of instructor may be required. A seminar of selected issues and methods relating to public policy administration. May be repeated for credit, provided the subject matter is different.

***P P ADM 6501 Selected Topics in Nonprofit Management and Leadership: 3 semester hours***

Prerequisites: Graduate standing. Permission of instructor may be required. A seminar of selected issues and methods relating to nonprofit management and leadership. May be repeated for credit, provided the subject matter is different.

***P P ADM 6550 Strategic and Program Planning for Nonprofit Organizations: 3 semester hours***

Same as POL SCI 6490 and SOC WK 6491. Prerequisite: Graduate standing or consent of instructor. Strategic and program planning enable an organization to concentrate on efforts and set priorities guided by a mission, vision, and an understanding of its environment. Focus is on preparing a strategic plan and a program plan for a nonprofit organization and analyzing an organization's ability to deliver goods and/or services to its constituents in today's economic, social and political climate.

***P P ADM 6600 Managing People in Organizations: 3 semester hours***

Same as MGMT 5600. Prerequisites: Graduate standing or consent of instructor. The theoretical and research contribution of the behavioral sciences to management and administration are examined and applied to selected organizational situations. Areas to be considered from the standpoint of both individual and organizational performance are communication, motivation, conflict, decision-making, goal setting, leadership, organizational design, climate, development and control. Utilizing a systems perspective, the course attempts to develop in each student an ability to analyze and solve organizational problems.

***P P ADM 6750 Applied Research Design: 3 semester hours***

Prerequisites: At least one course in research design and statistics at the graduate level. The course offers a comparative study of research strategies with regard to data sources, data collection, and modes of analysis that are appropriate for program evaluation research. Attention is given to observational, survey, and quasi-experimental methodologies.

***P P ADM 6751 Applied Evaluation Project: 3 semester hours***

Prerequisites: P P ADM 6000, P P ADM 6010 or equivalents, P P ADM 6750 or equivalents. Independent study involving an evaluation project with an appropriate public or private or nonprofit agency.

***P P ADM 6800 Management Information Systems: 3 semester hours***

Same as INFSYS 5800. Prerequisites: Graduate standing. This course provides an overview of issues related to the management of information systems within organizations. Course topics may include the role of the Chief Information Officer, business value from emergent information technologies (IT), enterprise systems, the impact of IT on organizational competitiveness, managing IT-enabled projects, extracting business intelligence from big data, sourcing IT, cybersecurity, ethics, intellectual property rights, and societal impacts of IT.

***P P ADM 6850 E-Governance in the Public Sector: 1 semester hour***

Prerequisite: Graduate standing. This course addresses information technology in the public sector from a managerial perspective. Students will examine basic hardware, software, data, and information management issues from a managerial perspective. These topics may include web portal design, geographic information systems, database management, e-government, strategic design, and the use of information technology to address public policy questions.

***P P ADM 6900 Cases in Public Policy Administration: 3 semester hours***

Prerequisites: 24 hours of public policy administration courses, at least 15 of which are in core courses. This capstone course intensively analyzes public policy administration cases drawn from a variety of issues and settings.

***P P ADM 6950 Internship: 3 semester hours***

Independent study involving work with an appropriate public or private or nonprofit agency.

## Secondary Education

### Courses

***SEC ED 2010 Introduction to Inquiry Approaches to STEM Education (STEP I): 1 semester hour***

Same as CHEM 2010, PHYSICS 2010, MATH 2010, and BIOL 2010. Prerequisites: Concurrent enrollment BIOL 1821, BIOL 1831, CHEM 1111, CHEM 1121, PHYSICS 2111, PHYSICS 2112, MATH 1800, or MATH 1900 or have a declared STEM major. Students who want to explore teaching careers become familiar with lesson plan development by writing, teaching and observing lessons in a local school class. Students build and practice inquiry-based lesson design skills and become familiar with and practice classroom management in the school setting. As a result of the STEP I experiences students should be able to decide whether to continue to explore teaching as a career and ultimately finishing the remainder of the WE TEACH MO curriculum leading to teacher certification. The classroom observations and teaching represent a major field component and requires at least one two hour block of free time during the school day once a week.

***SEC ED 2011 Designing Inquiry-Based STEM Experiences (STEP II): 1 semester hour***

Same as CHEM 2011, PHYSICS 2011, MATH 2011, and BIOL 2011. Prerequisites: BIOL 2010, CHEM 2010, PHYSICS 2010, MATH 2010, or SEC ED 2010. Students explore teaching careers, become familiar with STEM school setting through observing and discussing the school environment and by developing and teaching inquiry-based lessons.

***SEC ED 4011 The Curriculum and Methods of Teaching History and Social Studies: 3 semester hours***

Prerequisites: Admission to the Teacher Education Program and completion of Level II requirements. A study of the scope and sequence of history and social studies courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. May not count toward history hours required for history major. Must be completed prior to student teaching. This course must be completed in residence. Not available for graduate credit. Concurrent enrollment in SEC ED 4989 is required.

***SEC ED 4012 Social Studies Teaching Seminar: 1 semester hour***

Prerequisites: SEC ED 4989. Addresses the application of teaching strategies and instructional technology in the classroom setting. Concurrent enrollment in SEC ED 4990 is required. Not available for graduate credit.

***SEC ED 4013 United States History for the Secondary Classroom: 3 semester hours***

Prerequisites: Admission to the Teacher Education Program. TCH ED 3310 or consent of the instructor. This course is required for Social Studies certification. Adapts the themes and subject matter of American history to the secondary classroom and trains teachers in techniques particularly designed to maximize the use of primary sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting themes of American history, on expanding bibliography, and on choosing methods of inquiry for use in an interactive classroom. Cannot be counted towards the minimum 39-hour history major requirement, but can be counted towards the 45 hour maximum and for Social Studies certification. Not available for graduate credit.

**SEC ED 4090 American Government for the Secondary Classroom: 3 semester hours**

Same as POL SCI 4090. Prerequisites: POL SCI 4090/ SEC ED 4090 must be taken concurrently with SEC ED 4011 except with special consent of the School Studies Coordinator. Adapts the themes and subject matter of American Government to the secondary classroom and trains teachers in techniques particularly designed to maximize the use of primary sources, foster critical inquiry, and encourage knowledge of subject matter. Particular emphasis will be placed on defining the broad and connecting methods of inquiry for use in an interactive classroom. Can be counted towards the Political Science major requirement, but not the American Politics subgroup. Counts towards Social Studies certification. Not available for graduate credit.

**SEC ED 4240 Curriculum and Methods of Teaching Physical Sciences: 3 semester hours**

Prerequisites: TCH ED 3310 or TCH ED 5310 and a near major in the subject area. A study of the scope and sequence of the physical science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of science. Concurrent enrollment in SEC ED 4989 is required. This course must be completed in residence.

**SEC ED 4589 Curriculum and Methods of Teaching Foreign Languages: 3 semester hours**

Same as FGN LANG 4589. This course is a study of the scope and sequence of the foreign language courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. The course emphasizes second language acquisition and socio-cultural theories of learning which undergird the approach, examination and analysis of foreign language teaching practices. Attention is also directed toward learning the techniques and research of the scholar in the field of foreign language. To be taken concurrently with Practicum I, SEC ED 4989.

**SEC ED 4590 Foreign Language Teaching Seminar: 2 semester hours**

Same as FGN LANG 4589. Prerequisite: Concurrent enrollment in SEC ED 4990 or consent of instructor. A practicum course in the teaching of foreign languages. Review and explanation of drills, dialogues, and a variety of classroom techniques, oral and written. A continuation of SEC ED 4589, Curriculum & Methods, with an emphasis on specific practical skills. Concurrent enrollment in SEC ED 4989 is required. Not available for graduate credit.

**SEC ED 4646 The Curriculum and Methods of Teaching Math: 3 semester hours**

Prerequisites: Admission to the Teacher Education Program and completion of Level II requirements. Must be taken concurrently with SEC ED 4989. A study of the scope and sequence of the mathematics courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of mathematics. To be taken prior to student teaching. This course must be completed in residence. Not available for graduate credit.

**SEC ED 4880 Writing for Teachers: 3 semester hours**

Prerequisite: ENGL 3090 or junior level English. Same as ENGL 4880. Writing for Teachers is an English-education course that supports writing across the curriculum for both pre-service English and content area teachers. Teacher candidates learn writing theories and literacy strategies to help their future students construct meaning from their discipline. The course works best for those who are completing level II or beginning level III education courses. The course counts toward the Certificate in Writing.

**SEC ED 4885 The Curriculum and Methods of Teaching English: 3 semester hours**

Prerequisites: Completion of Level II requirements and a near major in English. A study of the scope and sequence of the English courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. The course prepares students for reflective teaching by relating course readings to field experiences and theory to practice. To be taken prior to student teaching and concurrently with Practicum I, SEC ED 4989.

**SEC ED 4984 Practicum I/TESOL: Site-based Experience: 3 semester hours**

Prerequisites: Completion of Level I and Level II requirements. This course is an intensive professional development experience (2 days per week) working in a secondary school setting with the English learners and other students. Activities on site include partnering with the classroom teacher in the areas of designated content instruction, assessment, and classroom management. Particular emphasis will be given to impacting student achievement for linguistically and culturally diverse populations and differentiated instruction with language anchors. Practicum I/TESOL is taken in the semester immediately preceding Practicum II. This course must be taken in conjunction with methods of instruction course in specific content area. The assignments from the methods course(s) may be completed in the Practicum setting, and experiences in the school guide the methods course activities and discussions.

**SEC ED 4985 Curriculum and Methods of Teaching Life Sciences: 3 semester hours**

Prerequisites: TCH ED 3310 (undergraduate students) or TCH ED 5310 (graduate students). This course studies the scope and sequence of the life science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. The analysis of teaching and learning in secondary school classrooms will be integrated into classroom activities and discussions. Concurrent enrollment in SEC ED 4989 is required. Admission to the Teacher Education Program is required.

**SEC ED 4989 Practicum I: Site-Based Experience: 3 semester hours**

Prerequisites: Completion of Level II requirements and successful practicum application. This course is a one-day per week intensive, collaborative professional experience in diverse K-12 settings with students, emphasizing improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Course includes mandatory on-site and on-campus seminars, which could be scheduled outside of normal class time. Concurrent Level III methods course assignments may be completed in Practicum I. Taking the Missouri Content Exam (MOCA) is required during Practicum I. Not available for graduate credit.

**SEC ED 4990 Practicum II: Site-Based Experience: 12 semester hours**

Prerequisites: SEC ED 4989, appropriate curriculum and methods content course, and taking of the Missouri Content Exam (MOCA). This course is a five-day per week intensive, collaborative professional experience in diverse K-12 settings with students, emphasizing improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Course includes mandatory on-site and on-campus seminars, which could be scheduled outside of normal class time. Certification requirements are successful completion of the Missouri Content Exam (MOCA) and the Missouri Pre-service Teacher Assessment (MOPTA).



**SEC ED 4992 Practicum I: Site-Based Experience in Music: 3 semester hours**

Prerequisites: Accepted Practicum application. This course is a one-day per week (or equivalent) intensive, collaborative professional experience in a K-12 music classroom setting. This course emphasizes improving student learning and musicianship, data-driven instruction, classroom management, and reflection. Practicum I includes regular, mandatory Music Department seminar attendance outside of normal class time on campus. Students are required to take the appropriate DESE-mandated content exam during Practicum I.

**SEC ED 4993 Practicum II: 12-Week Site-Based Experience in Music: 9 semester hours**

Prerequisites: Successful completion of Practicum I and approval of the Coordinator of Music Education. This course is a five-day per week intensive, collaborative professional experience in diverse K-12 settings with students, emphasizing improving student learning and musicianship, data-driven instruction, classroom management, and reflection. This course includes weekly, mandatory Music Department seminar attendance outside of normal class time on campus. This course must be taken concurrently with SEC ED 4994.

**SEC ED 4994 Practicum II: 4-Week Site-Based Experience in Music: 3 semester hours**

Prerequisites: Successful completion of Practicum I and approval of the Coordinator of Music Education. This course is a five-day per week intensive, collaborative professional experience in diverse K-12 settings with students, emphasizing improving student learning and musicianship, data-driven instruction, classroom management, and reflection. This course includes weekly, mandatory Music Department seminar attendance outside of normal class time on campus. This course must be taken concurrently with SEC ED 4993.

**SEC ED 4995 Practicum I: Site-Based Experience in Art: 3 semester hours**

Prerequisites: Accepted Practicum application. This course is a two-day per week intensive, collaborative professional experience in a K-12 art classroom setting. This course emphasizes improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Practicum I includes mandatory on-site and on-campus seminars which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum I.

**SEC ED 4996 Practicum II: 12-Week Site-Based Experience in Art: 9 semester hours**

Prerequisites: Successful completion of Practicum I requirements. This course is a four-day per week intensive, collaborative professional experience in inclusive K-12 settings with emphasis in art classrooms. This course emphasizes improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Practicum II includes mandatory on-site and on-campus seminars which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum II. This course must be taken concurrently with SEC ED 4997.

**SEC ED 4997 Practicum II: 4-Week Site-Based Experience in Art: 3 semester hours**

Prerequisites: Successful completion of Practicum I requirements. This course is a four-day-per-week intensive, collaborative professional experience in inclusive K-12 settings with emphasis in art classrooms. This course emphasizes improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. Practicum II includes mandatory on-site and on-campus seminars which could be scheduled outside of normal class time. Students are required to take the appropriate DESE-mandated content exam during Practicum II. This course must be taken concurrently with SEC ED 4996.

**SEC ED 4999 Biology Science Teaching Seminar: 3 semester hours**

Prerequisites: SEC ED 4985 and SEC ED 4986. The application of Educational philosophy, science curriculum, teaching strategies and instructional technology in the classroom setting. Offered concurrently with Secondary School Student Teaching, SEC ED 4990. Not available for graduate credit.

**SEC ED 5000 Teacher Practicum Research: 1 semester hour**

Prerequisites: Admission into Student Teaching. Students conduct research on their own teaching in order to modify their instruction, curriculum and assessment practices. Concurrent enrollment in SEC ED 4990 is required.

**SEC ED 5989 Practicum I: Site-Based Experience: 2-3 semester hours**

Prerequisites: Graduate standing and completion of Level I and Level II requirements. This course is a one or two days per week, intensive, collaborative professional experience in diverse K-12 settings with students. There is an emphasis on improving student learning outcomes, data-driven instruction, classroom management, and video use and analysis. The course includes mandatory on-site and on-campus seminars, which could be scheduled outside of normal class time. Concurrent Level III methods course assignments may be completed in Practicum I. Taking the Missouri Content Exam (MOCA) is required during Practicum I.

**SEC ED 5990 Practicum II: Site Based Experience: 8 semester hours**

Prerequisites: SEC ED 5989 with a B- or better and appropriate curriculum and methods course in the teaching field. Teacher candidates spend time in schools engaged in various capacities to improve student learning within small group instruction, whole class teaching, lesson planning and special programs to demonstrate proficiency on all MoSPE standards. Teacher candidates collect data for a research project.

**SEC ED 5992 Practicum I: Graduate Site-Based Experience in Music: 2 semester hours**

Prerequisite: Coordinator of Music Education approval. This course provides clinical experience in the elementary general music classroom setting. Students gain first-hand experience in preparing and teaching lessons, classroom management, and receiving mentoring from the clinical teachers.

**SEC ED 5993 Practicum II: Graduate Site-Based Experience in Music, 12 Week Placement: 6 semester hours**

Prerequisite: Coordinator of Music Education approval. This course provides a twelve-week intensive clinical teaching experience in music. The clinical experience takes place 5 days per week for a minimum of 12 weeks at one location, under university supervision. This course includes a mandatory weekly Music Department seminar and must be taken concurrently with SEC ED 5994.



**SEC ED 5994 Practicum II: Graduate Site-Based Experience in Music, 4 Week Placement: 2 semester hours**

Prerequisite: Coordinator of Music Education approval. This course provides a four-week intensive clinical teaching experience in music. The clinical experience takes place 5 days per week for a minimum of 4 weeks at one location, under university supervision. This course includes a mandatory weekly Music Department seminar and must be taken concurrently with SEC ED 5993.

**SEC ED 5995 Practicum I: Site-Based Experience in Art: 2 semester hours**

Prerequisites: ART ED 5260 and ART ED 5228. A professional development experience (1 day per week for 14 weeks) working in diverse K-12 settings with students, emphasizing improving student learning outcomes, data-driven instruction, classroom management, behavior management strategies, and video use and analysis. Activities on site include assisting the classroom teacher in all areas of instruction, assessment, and classroom management. This course is to be taken during the semester immediately preceding Practicum II (student teaching). Concurrent enrollment in ART ED 5273 is required. Assignments from the methods course(s) may be completed in the Practicum setting, and experiences in the school guide the methods course activities and discussions. Activities to acquire research skills will be included.

**SEC ED 5996 Practicum II: Site-Based Experience in Art: 8 semester hours**

Prerequisites: ART ED 5273 and SEC ED 5995. Intensive clinical teaching experience under university and school supervision 5 days per week for a minimum of 12 weeks at one location and an additional 4 weeks at a second location, with seminar included. Teacher candidates spend time in schools engaged in various capacities to improve student learning within small group instruction, whole class teaching, lesson planning and special programs to demonstrate proficiency on all MoSPE standards. Teacher candidates collect data for a research project. An elementary and a secondary placement are required.

**SEC ED 6404 Seminar: 1-10 semester hours****SEC ED 6415 Curriculum Leadership in Education: 3 semester hours**

Prerequisites: ED PSY 6030 or consent of instructor. Strategies for developing and implementing up-to-date curriculum. Using current research of innovative programs and new approaches, students will develop skills in analyzing and evaluating content area curriculum according to Common Core and national content standards in order to lead curriculum development in an educational setting.

**SEC ED 6416 Curriculum Design for Educational Programs: 3 semester hours**

Prerequisites: ED PSY 6030, SEC ED 6415 or consent of instructor. Principles of curriculum design and development for a formal or informal educational setting. Students may choose to develop an integrated or differentiated curriculum using the Common Core or national content standards. Compare and contrast curriculum design approaches while connecting curriculum and instruction practices to learner performance.

**SEC ED 6420 Improving Teaching and Learning: 3 semester hours**

Prerequisites: ED PSY 6030, or consent of instructor. Students will learn to improve their teaching effectiveness through the use of various models of instruction that are based on current learning theories and research in teaching methodology to improve the achievement of diverse learners. Focus on inquiry models that prepare educators for effectively teaching the Common Core standards. Prior instructional experience is recommended.

**SEC ED 6431 STEM Instruction in Secondary Education: 3 semester hours**

Prerequisites: TCH ED 6010 and TCH ED 6020; or consent of instructor. This course will integrate related Science, Technology, Engineering and Math (STEM) disciplines through examination, analysis and application of the national science standards (NGSS) for secondary education and scholarly readings. In the course, students will develop STEM curriculum and instruction teaching units that facilitate the learners' construction of scientific understandings.

**SEC ED 6490 Internship: 1-10 semester hours**

Prerequisite: Consent of instructor. Closely supervised experience in a field setting under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional role must be demonstrated by the intern. The internship will include planning, research, evaluation, and related professional activities.

**SEC ED 6497 Problems: 1-10 semester hours**

## Social Work

### Courses

**SOC WK 2000 Social Work and Social Issues: 3 semester hours**

Prerequisites: SOC 1010 or PSYCH 1003. Examination of the network of social programs and services developed in response to social problems in modern urban communities and the various roles and functions performed by the helping professions. Students will be introduced to basic values, skills, and training involved in a helping relationship as well as the characteristics of clients seeking help and professionals engaged in the helping process.

**SOC WK 2001 Social Work and Social Issues Lab: 1 semester hour**

The lab session will be used for field trips to social agencies which will allow students to better understand the many roles social workers are involved in. This course is required for social work majors. Concurrent enrollment in SOC WK 2000 is required.

**SOC WK 2102 Introduction to Gender Studies: 3 semester hours**

Same as HIST 2102, SOC 2102, POL SCI 2102 and GS 2102. This core class is required for all Gender Studies Certificate earners. This class introduces students to cultural, political and historical issues that shape gender. Through a variety of disciplinary perspectives in the humanities, social sciences, and natural sciences, the course familiarizes students with diverse female and male experiences and gendered power relationships.

**SOC WK 2200 Social Welfare as a Social Institution: 3 semester hours**

Prerequisites: SOC WK 2000 or consent of instructor. This course 1) examines the development of social welfare service and philosophies underlying existing practices and systems; 2) analyzes social welfare programs with particular emphasis given to public income maintenance provisions; 3) presents issues surrounding special needs of minority and diverse populations; and 4) provides an overview of the development of social work as a profession.

**SOC WK 2330 Asians in Migration: 3 semester hours**

This course is a comparative analysis of the social and cultural diversity of the peoples of East, South, and Southeast Asia. Study focuses on their reasons for migration and the extent and quality of the social and cultural connections they maintain to their homelands. Implications of these cultures for students in a variety of disciplines are explored. This course satisfies the cultural diversity requirement.

**SOC WK 3100 Introduction to Strategies for Social Work Practice: 3 semester hours**

Prerequisites: SOC WK 2200, SOC 1010 and PSYCH 1003 or consent of instructor. A presentation of basic knowledge, skills, and theory used for entry-level professional practice, such as problem assessment, interviewing skills, crisis intervention and referral procedures. The course objectives will also be to teach students how to help clients negotiate systems effectively, and to use resources, services, and opportunities.

**SOC WK 3210 Social Issues and Social Policy Development: 3 semester hours**

Prerequisites: SOC WK 2200, POL SCI 1100, and ECON 1000. The identification of issues concerning governmental provisions to meet contemporary social needs, with analysis of the principles and values underlying alternative solutions. A study of the processes by which citizen opinions and public policies evolve and are implemented in areas such as income maintenance, crime and delinquency, employment, family and child welfare, and public mental health.

**SOC WK 3410 Research Design in Social Work: 3 semester hours**

Prerequisites: Satisfaction of Math Proficiency requirement and either SOC 3220, CRIMIN 2220, or PSYCH 2201. Students explore research concepts and procedures (hypothesis testing, sampling, measurement, and design) emphasizing issues in social work research. Students learn to collect, analyze and present data.

**SOC WK 3510 Human Behavior in the Social Environment: 3 semester hours**

Prerequisites: BIOL 1012 and SOC 2160 or PSYCH 2250 or consent of instructor. This course will focus on the normative stages in the life span, and specifically, how human development is affected by the physical environment and social status characteristics. Empirical information and theoretical views on human development will be included. Human development will be viewed as a complex interaction of individual developmental stages with family, social, and community systems.

**SOC WK 3700 Diversity and Social Justice: 3 semester hours**

Same as GS 3700. Prerequisites: PSYCH 2250 or SOC 2160; and SOC WK 3100 (may be taken concurrently). Analyzes the structure, dynamics, and consequences of social and economic injustice, and the impact on diverse groups in American society. Examines theoretical models and practice principles for work with diverse groups.

**SOC WK 4110 Social Work Practice with Individuals, Families, and Groups: 3 semester hours**

Prerequisites: SOC WK 3100, SOC WK 3510, and SOC WK 3700 taken prior to or concurrently. This course continues the presentation of basic knowledge and practice skills for entry level professional practice begun in SOC WK 3100. It builds on the generalized helping model, incorporating specialized skills for working with specific groups of clients (e.g., children, older adults, and people with mental illnesses and/or disabilities), with families, and small groups.

**SOC WK 4300 Social Work Practice with Communities: 3 semester hours**

Prerequisites: SOC WK 3210 (may be taken concurrently), senior standing. Continuation of basic practice skills with emphasis given to analysis and intervention at the community level. Includes assessment of community assets and needs and the development of community-level interventions. Emphasis is also placed on helping the practitioner evaluate the impact of intervention.

**SOC WK 4350 Human Service Organizations: 3 semester hours**

Prerequisite: POL SCI 1100; PSYCH 2250 or SOC 2160 and admission to the BSW program or consent from instructor. This course seeks to help develop knowledge of organizational functioning and an understanding of organizational history, principles and philosophy of effective administration. Students develop theoretical and empirical understanding of groups and organizations, including concepts such as power and authority, organizational structure, goals, membership, leadership, motivation, technology and organizational culture. They will learn to develop a budget and to submit proposals for grant funding. Using a systemic perspective with organizations as settings for practice students learn to function in and through organizations.

**SOC WK 4376 Mental Health and Aging: 3 semester hours**

Same as GERON 4376 and PSYCH 4376. Prerequisites: 9 hours of psychology, graduate standing, or consent of instructor or program director. This course provides a survey of theory and research in mental health issues for older populations, focusing on psychological and social aspects of mental health and impairment. The course details approaches to understanding prevalence, etiology, assessment, and treatment of the psychological disorders most commonly experienced by older adults, including anxiety, depression, delirium, and dementia, among others.

**SOC WK 4398 Child Maltreatment: A Multidisciplinary Approach: 3 semester hours**

Same as PSYCH 4398 and CAST 4398. Prerequisites: CAST 3290 or PSYCH 3290 (may be taken concurrently), or consent of instructor. This course, with its interdisciplinary emphasis, focuses on the systemic response to the primary domains of child maltreatment by multidisciplinary teams and child advocacy centers. Risk factors, cultural considerations, and mandated reporting of child abuse and neglect are emphasized. Students will begin to develop professional skills pertaining to child maltreatment, using a variety of experiential learning modalities.

**SOC WK 4604 Introduction to Motivational Interviewing: 1 semester hour**

Prerequisites: SOC WK 4110 or SOC WK 5100, or consent of instructor and admission to the BSW or MSW program. This course focuses on skill development in Motivational Interviewing (MI), a specific style of interaction used to help clients/patients increase internal motivation to change behavior. The course will include theoretical underpinnings of MI, including a review of research establishing MI as an evidence-based intervention for a number of behavior areas. The course will also review a model of learning MI and provide specific opportunities for students to practice the skill. The broad objective of this course is to provide social work students an overview of Motivational Interviewing and its application to various domains of social work.

**SOC WK 4610 Intimate Partner Violence: 3 semester hours**

Same as GS 4610. Prerequisites: SOC WK 3510. Focuses on theoretical and empirical understanding of domestic violence in US society and social work practice with battered women and their families. Addresses direct services, community organizing, and public policy changes to help end violence against women. Relationships between violence against women and other forms of oppression (e.g., racism, economic exploitation, heterosexism and social class) are explored.

**SOC WK 4620 Substance-Related and Addictive Disorders: 3 semester hours**

Prerequisites: SOC WK 4110 or SOC WK 5100 or equivalent, (or taking concurrently), or consent of instructor. This class examines the interface of psychological, physical, social, and spiritual aspects of addiction. This practice class is designed to deepen students' abilities to address clients' issues related to addictions and addictive behaviors, including: prevention, assessment, and intervention. It builds on the generalized helping model within a systems perspective, and it introduces specialized skills for working with individuals, with specific groups of clients, with families, and with small groups.

**SOC WK 4641 Crisis Intervention: 1 semester hour**

Prerequisites: SOC WK 4110 or SOC WK 5100 or equivalent (or are taking concurrently), or consent of instructor. This course introduces students to the theoretical framework as well as the skills needed to understand and engage in effective crisis intervention. Students will learn a specialized model for assessment and intervention with people in crisis and will have an opportunity to apply this model to a variety of case situations.

**SOC WK 4642 Safety Strategies for Social Workers: 1 semester hour**

Prerequisites: SOC WK 4110 or SOC WK 5100, and at least senior or graduate standing, and admission to the BSW or MSW program; or consent of instructor. Social Workers can find themselves in situations where their physical safety may be threatened. This hands-on interactive course introduces students to an escape and evasion curriculum. Students learn the principles of avoidance, escape, and evasion as well as the impact of the sympathetic nervous system on survival. In addition, students become familiar with techniques for avoiding aggression by learning to identify threat cues. Strategies for countering and escaping from escalating levels of physical threats are reviewed. Under the supervision of a trained campus police officer student learn to refine physical techniques for staying safe.

**SOC WK 4670 Cross Cultural Perspectives on Social Policy: 3 semester hours**

Prerequisites: SOC WK 3210 or equivalent. This course examines social policies in different countries, which may include social insurance, social assistance, health care, and social services. Using a comparative framework, the course examines the nature of government involvement, and public and private sector relations. It examines adequacy, equity, inclusiveness, comprehensiveness, effectiveness, and efficiency of social policies in the countries being studied.

**SOC WK 4680 Introduction to Gerontological Practice: 3 semester hours**

Same as GERON 4680. Prerequisites: Junior/senior undergraduate or graduate standing, or permission of the instructor or program director. This course introduces key concepts and practices in the evaluation and care of older adults. It is intended for students considering aging-focused careers in the social service or healthcare fields. Topics include developmental and health-related theories of aging, functional and psychosocial aspects of aging, working with older adults in various service settings, multi and interdisciplinary team approaches, and basic standards of professional conduct that apply across professions.

**SOC WK 4751 Skills for Healing Racism: Facilitating Dialogue for Institutional Change: 1 semester hour**

Prerequisites: BSW senior standing or graduate standing. This course will enable students to explore the social structures, institutions and patterns of thinking and behavior that perpetuate racism. In this very interactive format, participants will develop facilitation skills necessary to attempt institutional change in their agency, school or community. Students will explore their roles, both as the oppressed and the oppressor, in the dynamics of race relations and societal change.

**SOC WK 4800 Supervised Field Experience in Social Work I: 4 semester hours**

Prerequisite: SOC WK 3100, SOC WK 4110. SOC WK 4110 must be taken prior to or concurrently with SOC WK 4801; consent of instructor. This course provides students practice experience in social service agencies. Students work at the agencies approximately 20 hours per week. The purpose of this experience is to familiarize students with agency operations. Selection of the agency is based on student education needs.

**SOC WK 4801 Integrative Field Experience Seminar I: 2 semester hours**

Prerequisite: Consent of instructor. This seminar provides an opportunity for students to integrate previous course work with their experience in social work agencies. Classroom discussion will emphasize direct practice issues. Concurrent enrollment in SOC WK 4800 is required.

**SOC WK 4850 Supervised Field Experience in Social Work II: 4 semester hours**

Prerequisite: SOC WK 4800, SOC WK 4801 and consent of instructor. This is a continuation of agency practice experience. Students work at the agency approximately 20 hours per week and continue at the same agency as SOC WK 4800 or change agencies with the consent of the instructor.

**SOC WK 4851 Integrative Field Seminar II: 2 semester hours**

Prerequisites: Consent of instructor and concurrent registration in SOC WK 4850. This seminar is a continuation of SOC WK 4801. Classroom discussion will emphasize administration and community organization issues.

**SOC WK 4900 Special Study: 1-10 semester hours**

Prerequisite: Consent of instructor. Independent study through advanced readings in method and philosophy on a topic of particular interest, or field research in an agency.

**SOC WK 5100 Generalist Social Work Practice: 3 semester hours**

Prerequisites: SOC WK 4110 or equivalent or admission to MSW program. Using a problem-solving approach, students develop theoretical and empirical understanding and practical application of generalist social work methods. Students gain knowledge and skills that include interviewing, assessment, crisis and short term intervention, contracting, resource development, and case documentation needed for competent direct practice with diverse populations.

**SOC WK 5200 Social Policy and Social Services: 3 semester hours**

Prerequisites: SOC WK 3210 or POL SCI 2420 or POL SCI 3460 or equivalent or admission to the MSW program. Covers the history and development of social welfare policies, legislative processes, and existing social welfare programs. Examines frameworks for social policy analysis, analyzes how social and economic conditions impact the process of social policy development and implementation, and introduces policy practice in social work.



**SOC WK 5300 Community Practice and Social Change: 3 semester hours**

Prerequisites: SOC WK 3300, or SOC 3344, or equivalent or admission to the MSW program. Focuses on economic, social, and political theory and research on communities and social change. Examines conceptual models of community practice within the generalist model and develops skills in organizing, advocacy, and planning.

**SOC WK 5350 Social Work and Human Service Organizations: 3 semester hours**

Prerequisites: SOC WK 3510 and SOC WK 4300 or PSYCH 3318 or MGMT 3611 or equivalent or admission to the MSW program. Students develop theoretical and empirical understanding of groups and organizations, including concepts such as power and authority, structure, goals, membership, leadership, motivation, technology and organizational culture. Using organizations as settings for social work practice and as targets for change, students learn strategies and skills for assessment and intervention.

**SOC WK 5410 Critical Thinking and Analysis: 3 semester hours**

Prerequisites: Admission to MSW program. This course will require students to think critically about social work practice and analyze the evidence base. It is the first of a two-course sequence designed to provide students with the knowledge base and skills for using the scientific method ethically to advance social work practice, knowledge, and theory. It focuses on understanding a variety of methods for critical analysis and synthesis of academic literature. Students learn the importance of critically assessing quantitative and qualitative research methods and how to apply an ethical decision making model to resolve ethical dilemmas including the use of research results to inform practice.

**SOC WK 5450 Social Work Research Methods and Analysis II: 3 semester hours**

Prerequisites: SOC WK 5410 or equivalent and an approved statistics course. Advanced course, focusing on analysis of qualitative and quantitative data to advanced social work practice, knowledge, and theory. Students learn to use and interpret various statistical procedures for analyzing quantitative data, including bivariate and multivariate analysis, and content and statistical analysis for qualitative data. Students apply these analytic techniques to social work case material using computer software applications.

**SOC WK 5500 Foundations of Human Behavior in the Social Environment: 3 semester hours**

Same as GS 5500. Prerequisites: SOC WK 3510 or equivalent or admission to the MSW program. Focuses on theoretical and empirical understanding of human behavior in the social environment using a life-span perspective. Introduces biological, behavioral, cognitive, and sociocultural theories of individuals, families, and small groups, and their implications for the professional social worker's understanding of socioeconomic status, gender, disability, ethnicity, race, and sexual orientation.

**SOC WK 5635 Social Work Practice with LGBT Populations: Deconstructing the Alphabet Soup: 3 semester hours**

Same as GS 5635. Prerequisites: SOC WK 5100 and SOC WK 5500 or consent of instructor. This advanced-practice course focuses on developing the knowledge and skills necessary for effective social work practice with LGBT persons, families, and communities. The goal of this course is to facilitate deeper understanding of LGBT identities, relationships, health and mental health challenges, and issues of race, age, religion, spirituality, and class and how these intersect. The course treats lesbian women, gay men, bisexual, and transgender persons as four distinct communities.

**SOC WK 5700 Diversity and Social Justice for Social Work: 3 semester hours**

Same as GS 5700. Prerequisite: Graduate standing. Analyzes the structure, dynamics, and consequences of social and economic injustice, and the impact on diverse groups in American society. Examines theoretical models and practice principles for work with diverse groups.

**SOC WK 5800 Graduate Field Practicum I: 4 semester hours**

Prerequisites: Graduate standing and consent of academic advisor. Provides integrative field experience in generalist social work practice.

**SOC WK 5801 Foundation Field Practicum Seminar: 2 semester hours**

Prerequisite: Graduate standing and consent of instructor. Integrates academic content from foundation course work and experiential learning in field placements. Goals are to conceptualize the problem solving process in field practice, synthesize theory into a social work approach that encourages creative use of self, and underscore ethics and service to diverse groups in practices.

**SOC WK 6120 Theory and Practice with Older Adults: 3 semester hours**

Same as GERON 6120. Prerequisites: Graduate standing. This course examines theory and empirically-based assessment and intervention models for work with older adults. Topics include the differences between life circumstances of older adults and younger adult populations; how ethnicity, gender, social class, and sexual orientation intersect with age and create special intervention issues; discussion of ethical and value issues (e.g. client autonomy, rationing of health care); examination of family and community resources in providing care; interventions with older adults with physical and mental disabilities; and older adults in residential settings.

**SOC WK 6150 Theory and Practice with Families: 3 semester hours**

Prerequisites: SOC WK 5100 or equivalent, graduate standing and departmental approval. This course will examine theoretical approaches to social work with families, including the impact of the social environment. Skills will include assessment and multi-disciplinary intervention with multi-problem families. Special emphasis will be given to poverty, chemical dependency, intra-familial violence, physical and mental illnesses, and working with family members of diverse cultures, socioeconomic backgrounds, races, sexual orientation, and ability. Values and ethics will be emphasized.

**SOC WK 6160 Advanced Social Work Practice Across the Life Span: 3 semester hours**

Prerequisites: SOC WK 5100 or equivalent or consent of instructor. Examines theory and empirically-based assessment and intervention strategies for diverse populations across the life span. Students will gain basic mastery of behavioral, cognitive-behavioral, brief therapeutic and supportive psychotherapeutic techniques and their appropriate use with children, adolescents, and young, middle and older adults. The course will also consider the effects of family, peers, and societal context (e.g. poverty, racism, and ageism) in understanding psycho-social stressors particular to each life era, including academic failure and delinquency, substance abuse, physical and mental illness, family disruption and instability, and grief and loss issues.



**SOC WK 6200 Family Policy: 3 semester hours**

Prerequisites: SOC WK 5200 or equivalent or consent of instructor and graduate standing. Examines policy development, implementation and impact of social policies on children, youth, and families. International, national, and state policies that affect basic family needs will be the focus, including topics such as economic support, health care, child care and protection, and child and youth development. Intended and unintended consequences of existing policies on the family will be examined as well as future policy directions.

**SOC WK 6220 Social Policy and Military Veterans: 3 semester hours**

Same as MVS 6220. Prerequisites: SOC WK 5200 or its equivalent or consent of the instructor and graduate standing. This course provides an overview of public policy towards military veterans, with an emphasis on social work. The course focuses on political theory and public policy and reviews the various methodological approaches to studying public policy, the pertinent theories related to public policy analysis, an introduction to military culture and current issues facing veterans. The main focus of the course will be on understanding the current issues facing veterans and how public policy affects these issues.

**SOC WK 6250 Social and Economic Development Policy: 3 semester hours**

Same as POL SCI 6418. Prerequisites: SOC WK 5200 or equivalent, or consent of instructor. This course examines the economic and political urban processes that planners, policy makers, service organizations and advocates seek to influence. In this course students will develop skills in policy analysis and development. The course provides an introduction to three models of modern political economy, then seeks to deepen these broad analytic approaches by examining more recent policy developments in cities like St. Louis. This course also focuses on recent strategies to address issues such as employment, wages, housing, education, taxes and social services.

**SOC WK 6300 Leadership and Management in Nonprofit Organizations: 3 semester hours**

Same as P P ADM 6300 and POL SCI 6300. Prerequisite: Graduate standing required. Addresses the role and scope of the independent sector in the United States, as well as the leadership and management of nonprofit organizations within that sector. Topics include the economic and political scope of the independent sector, the role of volunteerism in a democratic society, and the role and scope of philanthropy. Topics in voluntary organization management and leadership include the dynamics, functions, and membership structure of NPOs, especially staff-board and other volunteer relations; governance and management of NPOs; resource mobilization; and program development management and evaluation.

**SOC WK 6310 American Philanthropy and Nonprofit Resource Development: 3 semester hours**

Same as P P ADM 6310. Prerequisite: Graduate standing. This course addresses the history, philosophy, roles and scope of philanthropy in the United States, including its role in the nonprofit, voluntary sector. It further examines the contemporary forces which impact philanthropy and charitable giving, both by institutions and individuals. The course examines the effective planning and management of development programs (e.g., annual giving), fund raising vehicles (e.g., mail solicitations) and the fund raising process, form planning through donor relations.

**SOC WK 6311 Staff Management Issues in Nonprofit Organizations: 1 semester hour**

Same as P P ADM 6311. Prerequisites: Graduate standing required. This course addresses issues involved in managing staff in nonprofit organizations. The course will cover the following topics: fundamentals of staff supervision; balancing supervisory processes with counseling and coaching; selecting, hiring, evaluating, and terminating staff, and legal issues that affect these processes.

**SOC WK 6312 Legal Issues in Managing Nonprofit Organizations: 1 semester hour**

Same as P P ADM 6312. Prerequisite: Graduate standing. This course addresses legal issues involved in managing and governing nonprofit organizations. The course will cover the following topics: The Board as steward of the organization; Director and officer liability; tax laws concerning charitable giving; legal issues in managing staff and volunteers (e.g., hiring, evaluating, and terminating employees); Missouri nonprofit law.

**SOC WK 6313 Financial Issues in Managing Nonprofit Organizations: 1 semester hour**

Same as P P ADM 6313. This course addresses financial issues involved in governing and managing nonprofit organizations. The course will cover the following topics: cash flow analysis; budgeting; fund accounting; cost accounting (determining costs for programs and services); understanding and using standard financial statements, including balance sheets, cash flow statements, statements of activity, and operating and capital budgets.

**SOC WK 6380 Advanced Community Development Theory & Practice: 3 semester hours**

Prerequisites: SOC WK 5200 and SOC WK 5300. In this advanced community practice course, students examine concepts, theories, and models of macro level practice and gain skills for addressing complex community building challenges. Course content focuses on theories of social change, empowerment, and promotion of social and economic justice for culturally diverse and at-risk communities. The roles of community organizer, community developer, and social planner are emphasized in this course to help students understand and apply mezzo-macro social work interventions in urban settings.

**SOC WK 6400 Practice and Program Evaluation: 3 semester hours**

Prerequisites: SOC WK 5410 and SOC WK 5450 or equivalent or consent of instructor. Provides specialized knowledge in the use of qualitative and quantitative research skills to evaluate the effectiveness of social work practice. Topics will include single system design, group designs, and program evaluation. Students will design and conduct a research project associated with their advanced social work practicum. Results will be presented to the class and the agency. Value and ethical issues, particularly those relevant to client race and gender will be emphasized as students develop and conduct their research.

**SOC WK 6443 Health Care Policy: 3 semester hours**

Same as POL SCI 6443, P P ADM 6430, GERON 6443. Prerequisites: Graduate Standing and consent of instructor. (MSW students will normally take the social policy foundation course prior to enrolling in this course.) Survey course examining current issues in health care policy that face the nation. Policies are placed in a historical context to show how issues have been influenced by different political and economic conditions. Secondary consequences and limitations of current trends in health policy are explored.

**SOC WK 6444 Integrated Health Care: 3 semester hours**

Prerequisites: SOC WK 5500 or its equivalent. This course will introduce students to the essential practice skills needed to effectively address the challenges of integrating services, care and support for persons with health, mental health, and substance use problems.

**SOC WK 6449 Human Resources in the Public Sector: 3 semester hours**

Same as POL SCI 6449 and P P ADM 6490. This course presents an overview of personnel and labor relations in the public sector. It places particular emphasis on issues which are unique to the public sector, such as the merit system, the questions of representative bureaucracy, and the constraints of personnel in the nonprofit sector. Course topics may include personnel reforms in the federal sector, equal employment and affirmative action policies, testing, selection, hiring, comparable worth, job evaluation and labor relations, including grievance arbitration and collective bargaining.

**SOC WK 6450 Gerontological Assessment: 3 semester hours**

Same as GERON 6450. Prerequisite: Graduate standing. This course provides an overview of psychosocial assessment with older adults and their family caregivers. Major areas of gerontological assessment practice are considered, including dementia, mood disorders, suicide, grief, alcoholism, elder abuse/neglect, family caregiving, and interdisciplinary team issues.

**SOC WK 6491 Strategic and Program Planning for Nonprofit Organizations: 3 semester hours**

Same as POL SCI 6490 and P P ADM 6550. Prerequisites: Graduate standing or consent of Instructor. Strategic and program planning enable an organization to concentrate on efforts and set priorities guided by a mission, vision, and an understanding of its environment. Focus is on preparing a strategic plan and a program plan for a nonprofit organization and analyzing an organization's ability to deliver goods and/or services to its constituents in today's economic, social and political climate.

**SOC WK 6601 Evid Bsd Approaches in Direct SW Practice: Cog & Rational Emotive Behavioral Therapy Models: 1 semester hour**

Prerequisites: SOC WK 5100 or advanced standing, and graduate standing. This course examines theory and evidence based practices through use of the Cognitive Behavioral and Rational Emotive Behavioral therapy models. Students will use these theories to conduct hands-on intervention practices of assessment, treatment planning, interventive strategies, and termination when working within a family or direct practice setting. Student-conducted interventions through the use of role-plays will be videotaped and viewed by the instructor and classmates at each stage of the therapeutic process. This course will include integration and application of the Diagnostic and Statistical Manual of Mental Disorders through the psychotherapeutic process.

**SOC WK 6603 Evid Bsd Approaches in Dir SWork Practice: Play and Interactive Models: 1 semester hour**

Prerequisites: SOC WK 5100 or advanced standing status, and graduate standing. This course examines theory and evidence-based practices through use of the Play and Interactive therapy models. Students will use these theories to conduct hands-on intervention practices of assessment, treatment planning, interventive strategies, and termination when working within a family or direct practice setting. Student-conducted interventions through the use of role-plays will be videotaped and viewed by the instructor and classmates at each stage of the therapeutic process. This course will include integration and application of the Diagnostic and Statistical Manual of Mental Disorders through the psychotherapeutic process.

**SOC WK 6605 Screening, Brief Intervention, and Referral to Treatment: 1 semester hour**

Prerequisites: SOC WK 5100 and SOC WK 5500; or their equivalents. This course will include in depth information on screening tools to identify high risk substance use, application of SBIRT and specific motivational interviewing techniques, referral procedures that include how and to whom to refer patients for further treatment and how best to communicate with specialty providers, procedures for following patients after referral, use of electronic health records, and how to integrate SBIRT into established systems of care.

**SOC WK 6606 Evidence-Based Approaches in Direct Social Work Practice: Dialectical Behavior Therapy: 1 semester hour**

Prerequisites: SOC WK 5100 or advanced standing status, and graduate standing. This course examines theory and evidence-based practices through the Dialectical Behavior Therapy (DBT) model. DBT combines cognitive and behavioral theories in individual and group treatment. Students will use these theories to understand the DBT skills of Mindfulness, Emotion Regulation, Interpersonal Effectiveness, and Distress Tolerance. Students will engage in role playing while learning the four components of DBT: DBT skills training, DBT individual therapy, DBT phone coaching, and DBT therapist consultation team meeting. This course will include integration and application of the DSM-5.

**SOC WK 6630 Diagnosis and Related Pharmacology for Social Work Practice: 3 semester hours**

Prerequisites: SOC WK 5100 or equivalent or consent of instructor. Course is designed for social work students, and will provide an overview of the development and treatment of selected mental health disorders classified by Diagnostic and Statistical Manual of Mental Disorders. In particular, the course will examine, from a systems perspective, the psychological and neuropsychological etiologies of mood, psychotic, personality and other disorders and their preferred pharmacological treatment.

**SOC WK 6640 School Social Work Practice in Public Schools: 3 semester hours**

Prerequisites: SOC WK 5100 or equivalent or graduate standing and consent of instructor. Examines the role of the social worker in school settings and includes work with youth, families, and communities in relation to the child or adolescent's functioning in school.

**SOC WK 6645 Social Work in Healthcare Settings: 3 semester hours**

Prerequisites: SOC WK 5100 and SOC WK 5500 or equivalent. This course focuses on the key issues and practices of providing social work services in varying healthcare settings including hospital and primary care clinics. Practice issues will include admission, treatment and discharge planning (housing, transportation, insurance and finances, medications and social/community supports) with a focus on cultural competence, health literacy, and medical terminology. The course will also review inpatient medicine, inpatient psychiatry, forensic social work, emergency department social work, transplant social work and clinic social work. Course discussions will integrate information concerning current health care economics.

**SOC WK 6800 Graduate Field Practicum II: 3 semester hours**

Prerequisites: SOC WK 5800 and SOC WK 5801 and consent of academic advisor. Provides integrative field experience in student's graduate social work practice concentration. May be taken concurrently with SOC WK 6850 with special permission.

**SOC WK 6850 Graduate Field Practicum III: 3 semester hours**

Prerequisites: SOC WK 6800. Provides advanced integrative field experience in students' graduate social work concentration.

**SOC WK 6900 Directed Study in Professional Social Work: 1-10 semester hours**

Prerequisite: Graduate standing and consent of instructor. Independent graduate-level study on a topic of particular interest through readings, reports, and field work under faculty supervision.

# Sociology

## Courses

**SOC 1010 Introduction to Sociology (MOTR SOCI 101): 3 semester hours**

An introduction to sociological approaches to human behavior including types of social organizations, patterns of social interaction, and social influences on individual conduct.

**SOC 1040 Social Problems: 3 semester hours**

Conditions defined by society as social problems, as well as potential solutions, are examined from various sociological perspectives. Emphasis is given to problem issues prevalent in metropolitan settings. Analyses focus on victims and beneficiaries of both problem conditions and alternative solutions.

**SOC 1091 Introductory Topics in Sociology: 3 semester hours**

This course features special and current topics at the introductory level in the field of sociology. Examines the basic concepts and provides an understanding of the development of new trends and areas of study. May be repeated provided topic is different.

**SOC 1241 Globalization and Social Change: 3 semester hours**

Introduces sociological approaches to globalization. Covers sociological concepts such as modernization, Westernization, global capitalism, and the information society. Themes include global governance and transnational society, the global diffusion of American popular culture and consumer culture, and the role of new media. Also discusses the anti-globalization movement and forms of social resistance.

**SOC 2003 Careers in Health and Medicine: 1 semester hour**

Same as ANTHRO 2003, GERON 2003, INTDSC 2003. In this course, students will learn about occupations in such fields as medicine, the allied health professions, health non-profit organizations, and global healthcare delivery. Students will understand the education and skills necessary for various careers and for application to medical, professional, and graduate schools, and will become familiar with majors, certificates and minors that are available at UMSL. They will learn about employment opportunities in the healthcare industry in the St. Louis metropolitan area, and will be introduced to members of the local community who give guest lectures. Students will gain practical experience by shadowing a healthcare professional in their job.

**SOC 2102 Introduction to Gender Studies: 3 semester hours**

Same as GS 2102, SOC WK 2102, POL SCI 2102, and HIST 2102. This core class is required for all Gender Studies Certificate earners. This class introduces students to cultural, political and historical issues that shape gender. Through a variety of disciplinary perspectives in the humanities, social sciences, and natural sciences, the course familiarizes students with diverse female and male experiences and gendered power relationships.

**SOC 2103 Gender Roles in Society: 3 semester hours**

Prerequisite: SOC 1010. The study of social processes through which gender roles are developed and acquired; the impact of gender roles on personal identity and social conduct; the relationship between gender roles and social inequality; and individual and social consequences of changing gender roles in contemporary society.

**SOC 2160 Social Psychology: 3 semester hours**

Prerequisite: PSYCH 1003 or SOC 1010. This course examines the behavior, thoughts, and feelings of individuals in their social environments. The content focuses not only on how people relate to one another, but also on the processes affecting their interactions with others. Specific topics include the self, social judgments, attitudes and persuasion, helping behavior, prejudice, aggression, attraction, conformity and obedience, and group processes. All Psychology majors taking this course instead of PSYCH 2270 must complete it with a grade of C- or higher.

**SOC 2170 Aging in America: Concepts & Controversies: 3 semester hours**

Same as GERON 2170. This course examines the major theoretical and service issues connected to the study of older adults and their families, using multidisciplinary perspectives. Students are provided with an introduction to the field of aging through an examination of current social issues and controversies. This course emphasizes student involvement through class discussion and applied activities, and is appropriate for students in the arts and sciences, business, communication, education, and nursing.

**SOC 2180 Alcohol, Drugs and Society: 3 semester hours**

Same as CRIMIN 2180. Prerequisite: SOC 1010 or PSYCH 1003. This course examines the medical, legal and social aspects of alcohol and drug use. Medical aspects considered include treatment approaches and the role of physicians in controlling such behavior. In the legal realm, past and present alcohol and drug laws are explored. Cultural and social influences on alcohol and drug use are discussed.

**SOC 2192 Special Topics in Sociology: 3 semester hours**

This course focuses on a specific society or group of societies utilizing sociological approaches. Examines environmental, economic, social, political, ethnic, religious, linguistic and/or cultural domains. Students are exposed to basic sociological concepts for understanding diverse societies in their historical and/or contemporary contexts. May be repeated provided topic is different.

**SOC 2200 Languages and World View: 3 semester hours**

Same as FGN LANG 2100 and ANTHRO 2100. Prerequisites: Completion of two semesters of one foreign language at the college level. This course investigates the extent to which peoples' linguistic and cultural background informs their understanding of the world. Experts on a variety of major Western and non-Western languages will introduce students to differences in ideas about time, space, human relationships, and other issues based on language. The course will also analyze common cultural misunderstandings among native speakers of English and speakers of other languages.

**SOC 2202 Urban Sociology: 3 semester hours**

Covers classical works and contemporary theories in urban sociology from the nineteenth to the twenty-first centuries. Examines urbanism and community, forms and functions of cities, inequality and social difference, gender and sexuality, globalization and urban change, immigration and its impact on cities, and urban exclusion/social resistance. Includes reading well-known ethnographic works on such topics as sex work, homelessness, drug users and crackhouses, life in corner bars, gang members, and other alternative subcultures.



**SOC 2203 *The City*: 3 semester hours**

This course explores the central role of cities in the modern world. It covers processes of urbanization such as immigration, segregation and ghettoization, suburbanization, and sprawl. It explores the consequences of urban inequality and issues related to race and ethnicity, class, and gender in an urban context. The course also covers urban landscapes, demographics, lifestyles, and cities as centers of music and other forms of popular culture.

**SOC 2280 *Technology and Society*: 3 semester hours**

Examines the role of technology in the development of today's industrial and post-industrial societies. Topics include the social and cultural origins of technological innovation; the connection between technology and urbanization; and the impact of technological change on beliefs and values. Outlines the transition from industrial society to the post-industrial "information society," and the role of technology in globalization.

**SOC 2338 *Health and Society*: 3 semester hours**

Exploration of social dimensions and issues related to health and illness such as access to the health care delivery system; factors influencing prevention, utilization and compliance; changing relationships among health care providers and consumers; health care costs, trends, and cross-cultural variations.

**SOC 2801 *Veterans in American Society*: 3 semester hours**

Same as MVS 2100. Prerequisite: ENGL 1100. This survey course will focus on the American veteran experience and explore basic concepts, ideas and research into veterans and veteran institutions. In a multidisciplinary manner, students will examine military culture, the unique status of veterans in our society, and veteran institutions. Students will also study the successes, challenges and obligations our society faces related to its veteran community.

**SOC 2802 *Gender and the Military*: 3 semester hours**

Same as MVS 2130 and GS 2130. This course investigates how the military treats gender difference, explores how military culture is defined, and how gender is a socially constructed concept. Topics may include military culture, gender construction, and how gender and sexuality issues affect military readiness and effectiveness.

**SOC 3210 *Sociological Theory*: 3 semester hours**

Prerequisite: SOC 1010 or consent of instructor. The nature of sociological theory. An investigation of theory from Comte through contemporary developments. Contributions made by theorists in related disciplines.

**SOC 3212 *Medical Anthropology*: 3 semester hours**

Same as ANTHRO 3212 and GERON 3212. Prerequisites: ANTHRO 1011 or GERON 2170 or PSYCH 1003 or SOC 1010 or consent of instructor or program director. An examination of the growing interaction between anthropology and medicine, and the increasing use of anthropologists in medical and health-care settings. In addition to teaching current theory in medical anthropology, the course focuses on anthropologically-based skills essential to those working in health-related fields.

**SOC 3220 *Quantitative Data Analysis in Social Science Research*: 3 semester hours**

Same as ANTHRO 3220. Prerequisites: SOC 1010 or ANTHRO 1011, and MATH 1030 (or higher). This course examines issues and techniques of statistical analysis relevant to quantitative sociological research, such as elementary probability, measurements of central tendency and dispersion, measures of relationships including linear regression and correlation, inferential and nonparametric statistics. The course includes an introduction to computer-based statistical analysis.

**SOC 3221 *Qualitative Methods in Social Research*: 3 semester hours**

Prerequisites: SOC 1010, SOC 3230, and junior standing; or consent of instructor. This course is devoted to qualitative methods including participant observation, ethnographic fieldwork, intensive interview, content analysis, and oral history. It considers the place of these kinds of techniques in social research, as well as the issues raised by them. It also involves participation in individual or group research projects using one or more of the methods learned.

**SOC 3224 *Families in Global Perspective*: 3 semester hours**

Same as GS 3224. Prerequisites: SOC 1010 or consent of instructor. This course presents research from the fields of demography, sociology, economics, and public policy in order to develop a broader understanding of the causes and consequences of population aging, one of the major demographic changes faced by social institutions worldwide. Attention to the global diversity of human experiences by age, gender, socioeconomic status, and health.

**SOC 3230 *Research Methods*: 3 semester hours**

Prerequisites: SOC 1010 and satisfaction of mathematics proficiency requirement or consent of instructor. Research planning and interpretation, principles of research design, measurement, and sampling. Techniques for the collection, analysis, and presentation of data. The course also includes an introduction to the Statistical Package for the Social Sciences (SPSS) and lab exercises.

**SOC 3243 *Marriage, Family, and Kinship*: 3 semester hours**

Same as ANTHRO 3243 and GS 3243. Prerequisites: ANTHRO 1019, SOC 1010, or consent of the instructor. This course will examine will examine the construction of kinship systems, marriages, families and other forms of intimate relationships from anthropological and sociological perspectives. The cross-cultural structure of this class will incorporate global case studies, including U.S. and European marriage and family structures. Students will have the opportunity to explore topics including love, dating, cohabitation, kinship calculation, alternative lifestyles, and divorce.

**SOC 3291 *Current Issues in Sociology*: 3 semester hours**

Prerequisite: SOC 1010 or ANTHRO 1011; or consent of instructor. Selected topics in sociology, with emphasis on current issues and trends in the field. May be repeated provided topic is different.

**SOC 3300 *The Social Construction of Aging and Ageism*: 3 semester hours**

Same as GERON 3300 and GS 3300. This course examines perspectives of age, aging, and ageism using several perspectives: the theory of social construction and the frameworks of essentialism and intersectionality. The materials, discussions, and assignments in this course will familiarize and provide students with tools to investigate age and ageism in a complex, multidimensional manner. The overarching focus of this course is located in the tension with the "nature versus nurture" debate, paralleling nature with essentialist ideas and nurture with social constructionism. Ideas, conceptions, attitudes, and understandings of age within the media, family, medical community, and other institutions will be investigated as biological and/or a development of society in effort to perpetuate social control, organization, and power dynamics. Through research, fiction and non-fiction work, creative assignments, and theoretical texts, students will approach the following questions: How do we value lived-experiences? How might situated knowledge affect social constructions of aging and ageism? What evidence is provided toward age and/or ageism as an essential or socially constructed outline within society? How are socially constructed ideas developed and perpetuated? How might one affect change in an essentialist and/or socially constructed society?.



**SOC 3344 Problems of Urban Community: 3 semester hours**

Prerequisite: SOC 1010, junior standing or consent of instructor. Issues of inequality and identity in cities, with emphasis on the consequences of urban growth; processes of class, racial, and ethnic group formation; and urban poverty. Also covers local community organization and politics, and the role of popular culture and religion in community identities.

**SOC 3400 Environment, Society, and Aging: 3 semester hours**

Same as GERON 3400. This course examines the intersection of the environment and human society with an emphasis on aging. Drawing from research in environmental sociology, medical sociology, and gerontology, this course will address the following topics: climate change, natural disasters, community development, food production and distribution, waste and pollution, illness and disease epidemiology, and health and well-being.

**SOC 3600 Management and Organizational Behavior: 3 semester hours**

Same as MGMT 3600. Prerequisites: Junior standing and a 2.0 campus GPA. This course involves the study of the behavior of individuals and groups in an organizational setting. Specific topics examined include: motivation, leadership, organizational design, and conflict resolution, as well as basic coverage of management principles. In covering these topics, both classic and current perspectives are provided.

**SOC 3801 Military Sociology: 3 semester hours**

Prerequisites: SOC 1010; SOC 2801 or MVS 2100. This course examines the sociological sub-field of Military Sociology. It examines issues such as military recruiting, race and gender representation in the military, combat, military families, military social organization, war and peace, and the military as welfare. Other topics may include basis of service, social representation, military organizations and bureaucracies, and the sociology of combat.

**SOC 3802 Veteran Social Policy: 3 semester hours**

Same as MVS 3300. Prerequisite: SOC 1010. This course provides an overview of American public policy towards military veterans. Students will research, design, and propose policy changes using various written products and presentations.

**SOC 4015 Data Analytics in the Social Sciences: 3 semester hours**

Same as ANTHRO 4015. Prerequisites: MATH 1020 or higher. This course integrates traditional statistical methods with new software and original datasets relevant to students of the social sciences. Students will learn to load, clean, and describe datasets using common software packages and programming languages employed in data science and data analytics. Students will also learn basic descriptive and inferential statistics as well as the visualization tools to successfully graph outputs and present findings. Students with no background in statistics, data analytics, or programming are welcome in the course.

**SOC 4040 Survey Research Practicum for Sociology: 3 semester hours**

Prerequisites: SOC 3210, SOC 3220, SOC 3230, junior standing. This course focuses on the execution of a sample survey, including establishing study objectives, sampling, constructing a questionnaire, interviewing, coding, data analysis, and presenting the results. It may be repeated provided the course topic is different.

**SOC 4100 Introduction to Feminist and Gender Theory: 3 semester hours**

Same as GS 4100. Prerequisites: GS 2102. This class serves as an initial intellectual investigation into gendered ideologies (such as the effects of race, ethnicity, nationality, socioeconomic class, sexuality, and religion) and functions as a bridge to later advanced gender theory and methods courses. Topics include interdisciplinary feminist theories (with a focus on gender equality), including masculinity theory, queer theory, muted group theory, and other evolving frameworks.

**SOC 4300 Communities and Crime: 3 semester hours**

Same as CRIMIN 4300. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an analysis of the sources, consequences, and control of crime within communities. There is emphasis on social and ecological theories of crime, and on population instability, family structure, and the concentration of poverty as causes of crime.

**SOC 4307 Community-Based Research in Sociology: 3 semester hours**

Prerequisites: SOC 3210, SOC 3221, SOC 3230, and completion of junior-level writing requirement. This course is an advanced examination of qualitative/ethnographic modes of inquiry and builds upon research and analytical skills learned in previous courses. Some quantitative methods may supplement the research when appropriate. Students will experience the process of discovery, representation, presentation, and justification based on fieldwork and/or archival research. The focus is on applying sociological knowledge to practical issues faced by communities and institutions in the St. Louis area.

**SOC 4312 Sociology of Wealth and Poverty: 3 semester hours**

Prerequisite: SOC 1010, junior standing or consent of instructor. Theory and research on social stratification and inequality in contemporary societies.

**SOC 4320 Forms of Criminal Behavior: 3 semester hours**

Same as CRIMIN 4320. Prerequisites: ENGL 3100 (may be taken concurrently) or consent of instructor. This course provides an examination of major types of criminal behavior including violent, property, public order, and organizational offenses. There is emphasis on theories of and responses to these crimes.

**SOC 4325 Gender, Crime and Justice: 3 semester hours**

Same as CRIMIN 4325 and GS 4325. Prerequisites: CRIMIN 1110, CRIMIN 1120, CRIMIN 2130, CRIMIN 2210, CRIMIN 2220, ENGL 3100 or consent of instructor. Analysis of the role of gender in crime and in the justice system. Emphasis on gender differences in crime commission, criminal processing, and the employment of women in criminal justice agencies. Fulfills Criminology diversity requirement.

**SOC 4340 Race, Crime, and Justice: 3 semester hours**

Same as CRIMIN 4340. Prerequisites: CRIMIN 1110, CRIMIN 1120, CRIMIN 2130, CRIMIN 2210, CRIMIN 2220, ENGL 3100 or consent of instructor. Analysis of the involvement of racial minorities in crime and the criminal justice system. Emphasis on group differences in offending, processing, victimization, and employment in criminal justice agencies. Fulfills Criminology diversity requirement.

**SOC 4345 War Crimes, Genocide, and Justice in the 20th and 21st Centuries: 3 semester hours**

Same as CRIMIN 4345, POL SCI 4345, and MVS 4345. Prerequisite: ENGL 3100. This course provides advanced undergraduate and Master's level students a comprehensive overview of the subject of war crimes, crimes against humanity, genocide and legal responses to these crimes in the modern era. The goal of this course is to engage students in sustained, critical thought about these issues and to foster a deeper understanding of both the causes and consequences—legal, social and human—of these egregious crimes.

**SOC 4350 Special Study: 1-10 semester hours**

Prerequisite: Consent of instructor. Independent study through readings, reports, and field work.

**SOC 4354 Sociology of Business and Work Settings: 3 semester hours**

Prerequisite: SOC 1010, junior standing or consent of instructor. The sociology of work and occupations in America, Europe, and Asia; organization structures and worker participation; worker attitude, behaviors, and commitment; the socialization of the worker; determinants of worker behavior; social problems of work and business; and the impact of community on the work place and business behavior.

**SOC 4356 Sociology of Education: 3 semester hours**

Prerequisite: SOC 1010 and junior standing, or consent of instructor. Education as a social institution, its role as an agent of socialization, and its effect upon the processes of social change and social mobility. The relationship between the school and its community.

**SOC 4360 Sociology of Minority Groups: 3 semester hours**

Same as GS 4360. Prerequisites: SOC 1010 and junior standing or consent of instructor. The study of dominant-subordinate group relations. Religion, ethnicity, race, and gender as factors in the unequal distribution of power.

**SOC 4361 Social Gerontology: 3 semester hours**

Same as GERON 4361. Prerequisites: Junior standing or consent of instructor. This course examines a variety of topics related to gerontology including sociological theories of aging, technological and social change and its effects on the environment of older people, and prejudice and discrimination against the elderly.

**SOC 4362 Sociology of Law: 3 semester hours**

Same as CRIMIN 4360. Prerequisites: CRIMIN 1120, CRIMIN 2130, CRIMIN 2210, CRIMIN 2220, and ENGL 3100, or consent of instructor. The interaction of legal, political and social forces in the US is explored. Course examines historical developments in law and politics in the US, including law and economics, crime policy, socioeconomic inequality, race relations, and state sanctioned punishment. The course considers how America's federalist structure shapes law, politics and social relations. Examines how legal and political institutions establish and shape power relations between social groups.

**SOC 4378 Selected Topics in Social Psychology: 1-3 semester hours**

Prerequisite: PSYCH 2250 or SOC 2160 or consent of instructor. Focused examination of selected issues, concepts and methods in the study of social interaction. May be taken twice for credit.

**SOC 4380 Advanced Topics in Sociology: 1-3 semester hours**

Prerequisites: SOC 1010 and junior standing or consent of instructor. Examination of a specific sociological topic of current relevance in the community. May be repeated provided the topic is different.

**SOC 4385 Internship in Sociology: 1-6 semester hours**

Prerequisites: Junior standing and consent of instructor. Students participate in supervised placements in positions related to the profession of Sociology.

**SOC 4400 Social and Community Services for an Aging Population: 3 semester hours**

Same as GERON 4400. Prerequisites: GERON 2170 / SOC 2170 or consent of the instructor. This service-learning course is designed for students interested in working with and for the benefit of older adults in various settings. Students attend classes on campus and participate in defined volunteer placements with local agencies (e.g., St. Louis County Older Residents Program).

**SOC 4430 Ethnicity, Dementia and Caregiving: 3 semester hours**

Same as GERON 4430. Prerequisites: GERON 2170 or SOC 2170 or 3000 level GERON, SOC, PSYCH or ANTHRO course or consent of instructor. This course examines the interaction between sociocultural factors and the experience of dementia, both for the person who has dementia and their family caregivers. Students will focus on the importance of cultural competence in the provision of health and social services to dementia patients and family caregivers from diverse national and ethnic backgrounds.

**SOC 4485 Internship in Urban Studies: 1-6 semester hours**

Prerequisites: Junior standing, consent of the instructor. Students will participate in supervised placements in positions related to the field of Urban Studies. May be repeated for a maximum of 6 credit hours.

**SOC 4600 Masculinities: 3 semester hours**

Same as GS 4600. Prerequisites: SOC 2102 or consent of instructor. This course examines men and masculinities through a critical lens, looking carefully at an institutionalized system of gender relations and practices that is assumed to be a natural phenomenon that is culturally universal. The course explores various masculine behaviors, myths, ideologies, and experiences so that students can consider the relationship between masculine practice and social power and delineate choices for future directions. The course is necessarily interdisciplinary and may utilize tools and methods from the social sciences and the humanities. Satisfies WGS gender theory requirement.

**SOC 4720 Ageless Arts: Creativity in Later Life: 3 semester hours**

Same as GERON 4720. Prerequisites: Junior/senior undergraduate or graduate standing, or permission of the instructor or program director. This course examines how the lives of older adults are enriched through engagement in artistic, creative activities. Key approaches to creative aging are explored, with emphasis on benefits to physical health, emotional well-being, and interpersonal connection. Influencing factors are examined, including ageism, generativity, family and personal networks, environmental resources, sensory and cognitive deficits, and other health and physical changes of aging. The works of historical and current artists — painters, novelists, filmmakers, playwrights, musicians and others — are surveyed with an emphasis on products from later in the life course. Finally, the therapeutic benefits of creativity are examined through evidence-based research and the personal narratives of successful senior artists.

# Spanish

## Courses

### ***SPANISH 1001 Spanish Language and Culture I (MOTR LANG 103): 5 semester hours***

This first Spanish course is designed to encourage the development of communicative proficiency through an integrated approach to the teaching of all four language skills - listening and understanding, reading, writing, and speaking. It encourages development of communicative proficiency through an interactive task-based approach, provides students with an active and rewarding learning experience as they develop their language skills and cultural competency, and fosters awareness of the Spanish-speaking world through authentic cultural materials and information. SPANISH 1001, SPANISH 1002, and SPANISH 2101 together form the introductory Spanish language sequence. Note: Intended for students with no previous Spanish experience. Students with previous Spanish experience are expected to contact the department for placement advising.

### ***SPANISH 1002 Spanish Language and Culture II (MOTR LANG 104): 5 semester hours***

Prerequisite: SPANISH 1001 or equivalent. This second Spanish course is designed to continue the development of communicative proficiency through an integrated approach to the teaching of all four language skills - listening and understanding, reading, writing, and speaking. It encourages development of communicative proficiency through an interactive task-based approach, provides students with an active and rewarding learning experience as they strengthen their language skills and cultural competency, and fosters awareness of the Spanish-speaking world through authentic cultural materials and information. SPANISH 1001, SPANISH 1002, and SPANISH 2101 together form the introductory Spanish language sequence.

### ***SPANISH 1199 Special Topics: Language Immersion: Spanish: 1-3 semester hours***

Prerequisites: SPANISH 1002 or equivalent. Faculty-led experience designed specifically to enhance acquisition of the target language and culture. This course may be repeated, provided the topics vary, for a maximum of 3 credits.

### ***SPANISH 2101 Spanish Language and Culture III: 3 semester hours***

Prerequisites: SPANISH 1002 or equivalent. This third Spanish course is designed to further develop communicative proficiency through an integrated approach to the teaching of all four language skills - listening and understanding, reading, writing, and speaking. It continues the development of communicative proficiency through an interactive task-based approach, provides students with an active and rewarding learning experience as they strengthen their language skills and cultural competency, and fosters awareness of the Spanish-speaking world through authentic cultural materials and information. Students will complete a final project that demonstrates the knowledge acquired through the basic language sequence. SPANISH 1001, SPANISH 1002, and SPANISH 2101 together form the introductory Spanish language sequence. Successful completion fulfills the foreign language requirement for Bachelor of Arts candidates. Students who have successfully completed this course may advance to SPANISH 2172/ SPANISH 2172A or SPANISH 2180/ SPANISH 2180A.

### ***SPANISH 2115A Intensive Spanish Language and Culture A: 5 semester hours***

Prerequisite: Special consent required. This course is an intensive study of Spanish language and culture. Students will develop communicative skills, including listening, speaking, reading, and writing. Completion of the course with a grade of C- or better will satisfy the foreign language requirement of the B.A. degree. SPANISH 2115A, SPANISH 2115B and SPANISH 2115C are co-requisites and must be taken concurrently. All three must be completed with a grade of C- or better to satisfy the foreign language requirement.

### ***SPANISH 2115B Intensive Spanish Language and Culture B: 5 semester hours***

Prerequisite: Special consent required. This course is an intensive study of Spanish language and culture. Students will develop communicative skills, including listening, speaking, reading, and writing. Completion of the course with a grade of C- or better will satisfy the foreign language requirement of the B.A. degree. SPANISH 2115A, SPANISH 2115B, and SPANISH 2115C are co-requisites and must be taken concurrently. All three must be completed with a grade of C- or better to satisfy the foreign language requirement.

### ***SPANISH 2115C Intensive Spanish Language and Culture C: 3 semester hours***

Prerequisite: Special consent required. This course is an intensive study of Spanish language and culture. Students will develop communicative skills, including listening, speaking, reading, and writing. Completion of the course with a grade of C- or better will satisfy the foreign language requirement of the B.A. degree. SPANISH 2115A, SPANISH 2115B and SPANISH 2115C are co-requisites and must be taken concurrently. All three must be completed with a grade of C- or better to satisfy the foreign language requirement.

### ***SPANISH 2172 Spanish Composition: 4 semester hours***

Prerequisites: SPANISH 2101 or SPANISH 1199 or equivalent. This course will develop students' ability to communicate effectively in Spanish with an emphasis on the processes of writing and drafting, revising, and editing through collaborative activities. It prepares students for the kind of reading, writing, and oral discourse required in upper-level Spanish courses.

### ***SPANISH 2180 Readings in Spanish: 4 semester hours***

Prerequisites: SPANISH 1199 and SPANISH 2101, or equivalent. This course is intended to improve students' reading skills in Spanish through an assortment of written texts of various literary genres and non-fiction works from Latin America and Spain. Students collaborate in the activities of verifying comprehension, analyzing texts, and stating and defending a position. Selected aspects of Spanish grammar are reviewed. This course includes an online component.

### ***SPANISH 2190 Special Readings: 1-3 semester hours***

Prerequisite: SPANISH 2101 and consent of department. Independent study through readings, reports and conferences.

### ***SPANISH 2199 Special Topics: Language Immersion: Spanish: 1-3 semester hours***

Prerequisite: SPANISH 2101 or equivalent. Faculty-led experience designed specifically to enhance acquisition of the target language and culture. This course may be repeated for credit if the topics vary, for a maximum of 3 credits.

**SPANISH 3199 Special Topics: Language Immersion: Spanish: 1-3 semester hours**

Prerequisites: 2 of the following 3 courses: SPANISH 2172, SPANISH 2180, SPANISH 2199; or equivalent. Faculty-led experience designed specifically to enhance acquisition of the target language and culture. This course may be repeated for credit if the topics vary for a maximum of 3 credits.

**SPANISH 3212 Hispanic Cultures and Civilizations: Spain, Spanish America, and the United States: 3 semester hours**

Prerequisites: 2 of the following 3 courses: SPANISH 2172, SPANISH 2180, SPANISH 2199; or equivalent. This course explores key events and themes of the cultures and civilizations of the Spanish speaking communities of Spain, Latin America and the United States.

**SPANISH 3220 Introduction to Spanish Translation and Interpreting: 3 semester hours**

Prerequisites: 2 of the following 3 courses: SPANISH 2172, SPANISH 2180, SPANISH 2199; or equivalent. This course introduces students to the theory and practice of translation and interpreting in professional settings. It combines translation/interpretation theory with hands-on practice using a variety of activities from specialized areas, including medical and legal professions. This course has a community-based component.

**SPANISH 3261 Spanish for the Professions: 3 semester hours**

Prerequisites: 2 of the following 3 courses: SPANISH 2172, SPANISH 2180, SPANISH 2199. This course explores different professions in the Hispanic world, including health, law, media, and business. Students focus on vocabulary and specific professional skills culturally appropriate for the Hispanic communities in Latin America, Spain, and the United States. Emphasis is placed on both the acquisition of professional language as well as intercultural competence.

**SPANISH 3271 Advanced Spanish Conversation: 3 semester hours**

Prerequisites: 2 of the following 3 courses: SPANISH 2172, SPANISH 2180, SPANISH 2199; or equivalent. This course helps students develop their oral skills in Spanish at the advanced level.

**SPANISH 3282 Introduction to Hispanic Literature: A Survey Course: 3 semester hours**

Prerequisites: 2 of the following 3 courses: SPANISH 2172, SPANISH 2180, SPANISH 2199; or equivalent. This course surveys major contexts, movements and styles of Peninsular and Spanish American literatures. Writings from the early Hispano-Arabic period through the modern Peninsular period and pre-Conquest through contemporary Spanish American literature will be studied.

**SPANISH 3290 Special Readings: Spanish: 1-3 semester hours**

Prerequisite: Consent of department. Independent study through readings, reports and conferences.

**SPANISH 3311 Introduction to Special Topics in Hispanic Culture: 3 semester hours**

Prerequisites: 2 of the following 3 courses: SPANISH 2172, SPANISH 2180, SPANISH 2199; or equivalent. Selected topics in Hispanic culture taught in Spanish. This course may be repeated twice for credit provided that the topic is different each time.

**SPANISH 3326 Introduction to Hispanic Linguistics: 3 semester hours**

Prerequisites: 2 of the following 3 courses: SPANISH 2172, SPANISH 2180, SPANISH 2199; or the equivalent. Students will develop an understanding of the basic aspects and tools of analysis in the primary areas of linguistics as applied to the Spanish language, including phonetics and phonology, morphology, syntax, semantics, pragmatics, and sociolinguistics.

**SPANISH 4172 Introduction to Creative Writing in Spanish: 3 semester hours**

Prerequisites: At least two Spanish courses at the 3000 level or consent of instructor. This course will be presented in two parts. First, students will read literature samples and discuss theory for creative writing; and second, they will explore their own creativity by writing poetry, essays and short stories through exercises and examples given by the instructor.

**SPANISH 4173 Special Topics in Creative Writing: 3 semester hours**

Prerequisites: At least two Spanish courses at the 3000 level or consent of instructor, SPANISH 4172 is recommended but not required. This course will focus on one specific genre of creative writing per semester. The genre will vary from semester to semester, and will include, but not be limited to, poetry, essays, memoirs, and fiction. A variety of Hispanic authors' works will be explored in order to familiarize students with diverse styles and voices. This course may be repeated for credit if the topics vary.

**SPANISH 4199 Special Topics: Language Immersion: 1-3 semester hours**

Prerequisites: At least two Spanish courses at the 3000 level or consent of instructor. This course is a faculty-led experience designed specifically to enhance acquisition of the target language and culture. It may be repeated for credit if the topics vary, for a maximum of 3 credits.

**SPANISH 4311 Special Topics in Hispanic Culture: 3 semester hours**

Prerequisites: At least two Spanish courses at the 3000 level or consent of instructor. This course examines selected topics in Hispanic culture and is taught in Spanish. It may be repeated for credit provided the topic is different each time.

**SPANISH 4312 Special Topics in Hispanic Literature: 3 semester hours**

Prerequisites: At least two Spanish courses at the 3000 level or consent of instructor. This course examines selected topics in Hispanic literature and is taught in Spanish. It may be repeated for credit provided that the topic is different each time.

**SPANISH 4324 Spanish Sociolinguistics: 3 semester hours**

Prerequisites: At least two Spanish courses at the 3000 level or consent of instructor, SPANISH 3326 is recommended but not required. This course examines how Spanish is used within its social context. Key theoretical and methodological concepts from the field of sociolinguistics are discussed as applied to the Spanish language. Topics may include language and identity, speech style, gender and language use, language attitudes, languages in context, bilingualism, and language change. Students will be introduced to phonological, morphosyntactic, and discursive features subject to sociolinguistic variation across the Spanish-speaking world. The course is taught in Spanish.

**SPANISH 4329 History of the Spanish Language: 3 semester hours**

Prerequisites: At least two SPANISH courses at the 3000 level; SPANISH 3326 is recommended. This course will serve as an introduction to the history of the Spanish language. Students will study the transformation of the language as it spread across the globe throughout history.



**SPANISH 4390 Special Readings: 1-3 semester hours**

Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.

**SPANISH 4394 Advanced Internship in Spanish: 1-3 semester hours**

Prerequisites: FGN LANG 2100, completion of at least two 3000-level classes in Spanish, and consent of the Internship Coordinator in Spanish. This internship course gives students of Spanish the opportunity to use their unique and advanced language skills at an appropriate agency, organization, or business in the St. Louis region and beyond. This course may be repeated for a maximum of 3 credit hours.

**SPANISH 4500 Spanish for the Sciences: 3 semester hours**

Prerequisites: Two Spanish courses at the 3000 level or consent of instructor. This course will focus on scientific and environmental questions, debates, and discourses in the Spanish-speaking world. Students will work with a variety of socio-historical situations to help frame issues such as biodiversity, water scarcity, oil spills, wildfires and ecotourism. While the course will largely focus on scientific and environmental writing, another component will be the consideration of cultural responses to scientific and environmental problems, including documentaries, podcasts, poetry and visual art. The course will offer students a broad range of voices currently participating in scientific and environmental discourses in order to think comparatively about some of the most pressing issues facing humanity today. All course work will be conducted in Spanish.

**SPANISH 5172 Introduction to Creative Writing in Spanish: 3 semester hours**

Prerequisites: Graduate Standing or permission of instructor. This course will be presented in two parts. First, students will read literature samples and receive theory for creative writing; and second, they will explore their own creativity by writing poetry, essays and short stories through exercises and examples given by the instructor.

**SPANISH 5173 Advanced Special Topics in Creative Writing: 3 semester hours**

Prerequisites: Advanced proficiency in Spanish and graduate status; SPANISH 5172 is recommended but not required. This course will focus on one specific genre of creative writing per semester. The genre will vary from semester to semester, and will include, but not be limited to, poetry, essays, memoirs, and fiction. A variety of Hispanic authors' works will be explored in order to familiarize students with diverse styles and voices. This course may be repeated for credit if the topics vary.

**SPANISH 5199 Intensive Advanced Immersion Experience: 1-3 semester hours**

Prerequisites: In-service teacher of target language or enrollment in post degree completion program. Designed for in-service and pre-service/post baccalaureate foreign language teachers, this course focuses specifically on enhancing oral proficiency in the target language and enriching cultural knowledge for purposes of classroom language instruction. The course may simulate a study abroad immersion experience or may be taught within the context of a study abroad program. This course may be repeated, provided the topics vary, for a maximum of 3 credits.

**SPANISH 5311 Advanced Topics in Spanish Culture: 3 semester hours**

Prerequisites: Graduate standing or permission of instructor. Selected topics in Spanish culture; may be repeated for credit with a different topic. Students will be expected to conduct an independent research project. Language of instruction is Spanish.

**SPANISH 5312 Advanced Topics in Hispanic Literature: 3 semester hours**

Prerequisites: Graduate standing or permission of instructor. Selected topics in Hispanic literature taught in Spanish. This course may be repeated for credit provided that the topic is different each time.

**SPANISH 5324 Advanced Spanish Sociolinguistics: 3 semester hours**

Prerequisites: Graduate standing or consent of the instructor, and advanced proficiency in Spanish. This advanced course in Spanish linguistics examines how Spanish is used within its social context. Key theoretical and methodological concepts from the field of sociolinguistics are discussed as applied to the Spanish language. Topics include language and identity, speech style, gender and language use, language attitudes, languages in contact, bilingualism, and language change. The social context and implications of Spanish in the United States are also addressed. Students will complete a sociolinguistic research study design and presentation. Course taught in Spanish.

**SPANISH 5329 Advanced History of the Spanish Language: 3 semester hours**

Prerequisites: Advanced proficiency in Spanish and graduate standing. This course will explore the history of the Spanish language. Students will study the transformation of the language as it spread across the globe throughout history. Students will be responsible for completing a research project.

**SPANISH 5500 Advanced Spanish for the Sciences: 3 semester hours**

Prerequisites: Graduate standing and advanced proficiency in Spanish, or permission of the instructor. This course will focus on scientific and environmental questions, debates, and discourses in the Spanish-speaking world. Students will work with a variety of socio-historical situations to help frame issues such as biodiversity, water scarcity, oil spills, wildfires and ecotourism. While the course will largely focus on scientific and environmental writing, another component will be the consideration of cultural responses to scientific and environmental problems, including documentaries, podcasts, poetry and visual art. All course work will be in Spanish. This course will offer students a broad range of voices currently participating in scientific and environmental discourses in order to think comparatively about some of the most pressing issues facing humanity today. Students will lead a class discussion about a particular theme relevant to their field of study.

## Special Education

### Courses

**SPEC ED 3318 Inclusive Classrooms: 3 semester hours**

Prerequisites: Completion of Level I requirements. This class is an introductory overview of inclusive education, the characteristics of special populations in diverse classrooms, and issues related to compliance with state and federal law in serving students with varying needs. In addition, Individualized Education Plans (IEPs) and the eligibility process will be emphasized. Applicable strategies for the successful inclusion of all students that enhance collaboration among relevant stakeholders will be provided.

***SPEC ED 3346 Literacy Assessment and Reading for Students with Special Needs: 3 semester hours***

Prerequisites: Admission to the Teacher Education Program, completion of all Level II education courses. Must be taken during the same semester as SPEC ED 4989. Examination of current research and issues specific to educating students with disabilities in the area of reading. Topics include historical and contemporary perspectives on reading instruction and assessment, and implementation of evidence-based practice to improve phonological awareness, decoding, word recognition, fluency, comprehension, and vocabulary. Written language will also be addressed as it pertains to reading instruction.

***SPEC ED 3349 Cross-Categorical Special Education: 3 semester hours***

Prerequisites: Admission to the Teacher Education Program, completion of all Level II education courses. Study of research-based instructional, behavior, and IEP writing strategies used to assist students with cross-categorical disabilities. Students take this during the same semester as their Practicum I course.

***SPEC ED 4315 Language and Communication of Children with Special Needs: 3 semester hours***

Prerequisites: SPEC ED 3318 and admission to the Teacher Education Program. This course focuses on language acquisition of children with special needs and the techniques employed by classroom teachers. Emphasis on meaningful culturally responsive strategies to support children's language and communication development. Focus on use of assistive technology and alternative and augmentative communication. Clinical hours required to complete course assignments.

***SPEC ED 4323 Classroom Management and Positive Behavioral Supports in Inclusive Educational Settings: 3 semester hours***

Prerequisites: Admission to Teacher Education Program or consent of instructor. This course establishes healthy and culturally appropriate teacher-student relationships that build successful classroom community and enhance student learning. Teacher candidates develop a culturally appropriate classroom management plan that includes rules, procedures, and expected behaviors and uses problem-solving strategies to resolve behavior problems. In addition, teacher candidates will develop skills to assess, design and implement extensive, individualized, positive behavioral supports. Emphasis is on the candidates developing the social competence of PreK-12 students within diverse inclusive classrooms and engaging families in supportive interactions.

***SPEC ED 4342 Transition Issues and Planning: 3 semester hours***

Prerequisites: SPEC ED 3318 and admission to the Teacher Education Program; or consent of the instructor. This course provides information to teachers and human service professionals who work closely with adolescents and young adults with disabilities. Emphasis is placed on understanding and planning for the transition from school to adult life for students with disabilities. Transition outcomes include employment, residential options, and other developmental concerns. Topics include self-determination, career education and planning, interagency collaboration, vocational and residential issues and resources, and family support and involvement.

***SPEC ED 4989 Special Education Professional Internship: 3 semester hours***

Prerequisites: ELE ED 4989 and completion of Level I and Level II requirements. This course is an intensive professional development experience (9 hours per week for 14 weeks) working in a school setting with students with disabilities. Activities on site include assisting the classroom teacher in all areas of instruction, assessment, and classroom management. This course is to be taken during the semester immediately preceding student teaching. This course is to be taken in conjunction with SPEC ED 3349. Assignments from this course are carried out in the Internship, and Internship experiences inform the activities and discussions in this course. Not available for graduate credit.

***SPEC ED 6315 Understanding/Implementing Speech and Language Interventions that Assist Children with Special Needs: 3 semester hours***

Prerequisites: Graduate standing. Study of speech and language development for students with exceptional needs and the techniques employed by classroom teachers to support their learning.

***SPEC ED 6315A Understanding/Implementing Speech & Language Interventions for Special Needs A: 1 semester hour***

Prerequisites: Admission to Teach For America or Alternative Certification program and must be a practicing teacher with Bachelor Degree. Study of speech and language development for students with exceptional needs and the techniques employed by classroom teachers to support their learning.

***SPEC ED 6315B Understanding/Implementing Speech & Language Interventions for Special Needs B: 1 semester hour***

Prerequisites: Admission to Teach For America or Alternative Certification program. Must be practicing teacher with Bachelor Degree. Study of speech and language development for students with exceptional needs and the techniques employed by classroom teachers to support their learning.

***SPEC ED 6325 Advanced Studies in Classroom & Behavior Management: 3 semester hours***

Prerequisite: Graduate standing. Advanced study of classroom management and applied behavior analysis strategies. Focus on teacher as decision maker in the design, implementation, and evaluation of individual and group management programs with emphasis on functional assessment and positive behavior support.

***SPEC ED 6342 Transition Education for Adult Life: 3 semester hours***

Prerequisites: Graduate standing and completion of Level I and Level II requirements. Educators who may work closely with adolescents and young adults with disabilities will learn about planning for the transition from school to adult life for students with disabilities. Transition outcomes may include employment, residential options, and postsecondary education. Advanced topics include self-determination, self-advocacy, career education and planning, interagency collaboration, vocational and residential issues and resources, postsecondary education options and family support and collaboration.

***SPEC ED 6345 Characteristics and Education of Students with High-Incidence Disabilities: 3 semester hours***

Prerequisites: TCH ED 3313 or an equivalent course in psychology of the exceptional child. Advanced study of characteristics of students with high-incidence and cross categorical disabilities and other pertinent issues including inclusion, assessment, and evaluation practices.

***SPEC ED 6346 Reading Instruction and Intervention in Special Education: 3 semester hours***

Prerequisites: Graduate standing. This course examines current research and issues specific to educating students with disabilities in the area of reading. Topics will include historical and contemporary perspectives on reading instruction and assessment, and implementation of evidence-based practice to improve phonological awareness, decoding, word recognition, fluency, comprehension, and vocabulary. Written language will also be addressed as it pertains to reading instruction. (No credit earned if credit previously earned from SPEC ED 3346).

***SPEC ED 6372 Screening and Diagnosis of Developmental Delays: Birth to 5 Years: 3 semester hours***

Prerequisite: Graduate standing. This course addresses the content, techniques, and special problems related to the assessment of children at risk for developmental delays in the birth to five year age range. Students gain experience in construction, administration and interpretation of assessment tools used with young children.

***SPEC ED 6412 Psychology of Exceptional Children: 3 semester hours***

An in-depth analysis of the unique psychological problems of exceptional children and youth. Current psychological theories and research emphasized.

***SPEC ED 6412A Psychology of Exceptional Children: Legislation: 1 semester hour***

Prerequisites: Must hold a completed Bachelor Degree. Students will learn the laws governing Special Education including use of the Individual Education Plan (IEP).

***SPEC ED 6412B Psychology of Exceptional Children: Inclusive Classrooms: 1 semester hour***

Prerequisites: SPEC ED 6412A. This class is an introductory overview of inclusive education, the characteristics of special populations in diverse classrooms, and issues related to compliance with state and federal law in serving students with varying needs. Applicable strategies for the successful inclusion of all students that enhance collaboration among relevant stakeholders will be provided.

***SPEC ED 6415 The Law and Special Education: 3 semester hours***

Prerequisite: Graduate standing. Special education is governed by an elaborate and extensive body of statutes, regulations, and court decisions. This course will focus on the requirements, history, and evolution of laws impacting special education services; current legal requirements in providing a free appropriate public education (FAPE) to students with disabilities and the procedures to obtain legal information in law libraries and on the Internet; and how to conduct legal research using a variety of sources.

***SPEC ED 6430 Characteristics and Education of Individuals with Low-Incidence Disabilities: 3 semester hours***

Prerequisites: TCH ED 3313 or equivalent course in psychology of the exceptional child; graduate standing. An advanced study of the theoretical and methodological problems related to autism and developmental (low-incidence) disabilities. Particular emphasis on the application of current research findings to issues confronting individuals with autism and developmental disabilities, and family-and community-systems dynamics. Required course for concentration area: Autism and Development Disabilities.

***SPEC ED 6437 Applied Behavior Analysis: Functional Assessment and Interventions: 3 semester hours***

Prerequisites: SPEC ED 6620 with a grade of B or better (or as a co-requisite) or consent of instructor. Study of the evidence-based, best practice principles and interventions of applied behavior analysis strategies. Exploration of approaches that prove effective when designing and implementing functional behavior assessments, positive behavior support techniques, and behavior intervention plans.

***SPEC ED 6443 Characteristics and Education of Students with Learning Disabilities: 3 semester hours***

Prerequisites: TCH ED 3313 or an equivalent course in psychology of exceptional children; graduate standing. Advanced study of the theoretical and methodological problems related to learning disabilities. Particular emphasis on the application of current research findings to the problems confronting learners with learning disabilities.

***SPEC ED 6450 Characteristics and Education of Students with Emotional/Behavioral Disorders: 3 semester hours***

Prerequisites: TCH ED 3313 or an equivalent course in psychology of exceptional children; graduate standing. Advanced study of the problems and characteristics of learners with emotional/behavioral disorders. Particular emphasis on the application of current research findings to problems confronting learners with emotional/behavioral disorders.

***SPEC ED 6462 Introduction to Early Childhood Special Education: 3 semester hours***

Prerequisites: SPEC ED 3313 or equivalent. Study of issues and concepts central to special education of young children with disabilities, and at-risk for disabilities, and their families. Focus on program models, screening and assessment procedures, and curriculum concepts. An ecological perspective is emphasized.

***SPEC ED 6463 Curriculum, Methods, and Materials for Early Childhood Special Ed: 3 semester hours***

Prerequisites: SPEC ED 6462. In-depth study of integrated assessment-based curriculum development for learners in early childhood special education. Emphasis on individualized educational planning and implementation for learners and their families.

***SPEC ED 6492 Practicum in Special Education: 3-6 semester hours***

Prerequisites: Two courses in the area of concentration (developmental disabilities, early childhood special education, emotional/behavioral disorders, or learning disabilities). Supervised experience in the education of learners with disabilities in a school or other appropriate setting.

***SPEC ED 6497 Problems: 1-10 semester hours***

Prerequisites: TCH ED 3313 or equivalent and consent of instructor. Investigation of a selected problem related to the education of learners with disabilities. To be conducted under the direction of a graduate faculty member.

***SPEC ED 6610 Foundations of Autism Spectrum Disorder: Research to Practice: 3 semester hours***

Prerequisites: SPEC ED 6437 with a grade of B or higher and a teaching certificate or consent of instructor. The course focuses on characteristics of children and youth with autism spectrum disorders (ASD); trends and issues connected with ASD; and effective practices and strategies for structuring, managing, and promoting functional/behavioral skills development and interaction among children and youth with ASD.

***SPEC ED 6620 Assessment and Interventions for Children and Youth with Autism Spectrum Disorder: 3 semester hours***

Prerequisites: SPEC ED 6610 with a grade of B or higher and teaching certificate, or consent of instructor. The course reviews functions of behavior as a foundation for understanding and completing functional behavior assessments; entails interpreting and graphing collected data; and incorporates intervention practice and applied curriculum modifications.

***SPEC ED 6641 Basic Principles and Concepts of Behavior Analysis: 3 semester hours***

Prerequisites: Graduate standing. This course provides an overview of the basic principles and concepts of behavior analysis and an introduction to the functional approach of human behavior in the context of applied behavior analysis.

***SPEC ED 6642 Behavior Assessment: 3 semester hours***

Prerequisites: SPEC ED 6641 with minimum grade of B or consent of instructor. This course provides instruction on the diverse methods of behavior assessment employed in behavior analytical applications, the considerations when selecting and prioritizing behavior goals for intervention, and the expectations when writing behavior intervention plans.

***SPEC ED 6643 Research Methods in Applied Behavior Analysis: 3 semester hours***

Prerequisites: SPEC ED 6641 with minimum grade of B or consent of instructor. This course provides instruction on research-based, single-case design in applied behavior analysis, measurement procedures in behavior analytical practice and research, and evaluation of research designs.

***SPEC ED 6644 Behavior Interventions in Applied Behavior Analysis: 3 semester hours***

Prerequisites: SPEC ED 6641 and SPEC ED 6642 with minimum grade of B or consent of instructor. This course provides instructions related to behavior-change procedures for the acquisition of basic to complex skills and reduction of maladaptive behavior, as well as the methods for identifying evidence-based behavior interventions.

***SPEC ED 6645 Ethics and Professionalism in Applied Behavior Analysis: 3 semester hours***

Prerequisites: SPEC ED 6641 with minimum grade of B or consent of instructor. This course prepares students for the ethical and professional practice of applied behavior analysis. Students learn the foundations of professional and ethical behavior needed to ensure a high quality of practice in behavior analysis.

***SPEC ED 6647 Advanced Concepts and Principles in Behavior Analysis: 3 semester hours***

Prerequisites: SPEC ED 6641 with minimum grade of B or consent of instructor. This course provides a detailed look at the theories, philosophy, and principles of applied behavior analysis. The course focuses on the philosophical basis of applied behavior analysis and introduces advanced concepts and special topics in behavior analysis.

***SPEC ED 6648 Behavior-Based Consultation and Supervision: 2 semester hours***

Prerequisites: SPEC ED 6644 with minimum grade of B or consent of instructor. This course provides instruction on evidence-based, best practice interventions in professionalism, staff training, monitoring, supervision, and the behavior analytical approach to staff management.

***SPEC ED 6651 Practicum I in Applied Behavior Analysis: 2 semester hours***

Prerequisites: SPEC ED 6641 and SPEC ED 6642 with minimum grade of B in both courses, or consent of instructor. This course provides students with opportunities to use principles and standards of behavior analysis in applied settings. Students develop skills in the areas of behavior observation and measurement in clinical settings.

***SPEC ED 6653 Practicum III in Applied Behavior Analysis: 2 semester hours***

Prerequisites: SPEC ED 6644 and SPEC ED 6652 with minimum grade of B in both courses. This course provides students with opportunities to use principles and standards of behavior analysis in applied settings. Students develop skills in the areas of behavior intervention to decrease maladaptive behavior and increase functional skills.

***SPEC ED 6654 Practicum IV in Applied Behavior Analysis: 2 semester hours***

Prerequisites: SPEC ED 6646 and SPEC ED 6653 with minimum grade of B in both courses. This course provides students with opportunities to use principles and standards of behavior analysis in applied settings. Students develop skills in the areas of behavior interventions to increase functional and communication skills.

***SPEC ED 6655 Practicum V in Applied Behavior Analysis: 2 semester hours***

Prerequisites: SPEC ED 6648 and SPEC ED 6654 with minimum grade of B in both courses. This course provides students with opportunities to use principles and standards of behavior analysis in applied settings. Students develop skills in the areas of staff performance assessment and training.

***SPEC ED 6661 Capstone I in Applied Behavior Analysis: 3 semester hours***

Prerequisites: SPEC ED 6643 and SPEC ED 6644 with minimum grade of B in both courses. This course provides students with opportunities to integrate knowledge through developing, completing, and publicly presenting an action research project. Students replicate studies already published in the literature and develop a proposal for a new research project.

***SPEC ED 6662 Capstone II in Applied Behavior Analysis: 3 semester hours***

Prerequisites: SPEC ED 6661 with minimum grade of B. This course provides students with opportunities to integrate knowledge through developing, completing, and publicly presenting an action research project. Students implement a proposed research project and present on the process and results of the project.

***SPEC ED 6670 Practicum II in Applied Behavior Analysis: 3 semester hours***

Prerequisites: SPEC ED 6647, SPEC ED 6651, and SPEC ED 6643. Provides the opportunity for students to practically apply the principles and standards of ABA in applied settings. Focus is on students actively demonstrating skills in the areas of behavior assessment, behavior intervention development, and implementation, consultation, ongoing evaluation, and training others in a variety of settings with a variety of clients. Access to field site required. Partially meets requirements of national Board Certified Behavior Analyst licensure exam preparation.



**SPEC ED 6685 Analysis of Verbal Behavior: 3 semester hours**

Prerequisites: SPEC ED 6670 with minimum grade of B. Provides a detailed look at B.F. Skinner's analysis of verbal behavior and the behavior analytic and functional approach to teaching language. Focuses on the behavior analytic view of speaking, thinking, writing, feeling, reading, and other verbal behavior. In addition, provides information on how to assess and teach verbal behavior to individuals with developmental disabilities.

## Sport Management

### Courses

**SPMGT 1113 Introduction to Sport Management and Administration: 3 semester hours**

This course emphasizes basic management principles as they relate to sports teams, facilities, businesses and enterprises. Students will explore techniques and approaches to allow them develop effective and comprehensive sports management plans. The course addresses issues in sports that relate to ethical requirements, gambling, performance enhancement substances and other ethical issues. It allows learners to study the complexities involved in the administration and leadership of sports programs including theories of management and administration, which will provide the students with effective leadership and supervision skills necessary in various sports programs and entities. This course will also address issues of sports governance, policy and leadership.

**SPMGT 2200 Legal and Ethical Issues in Sports: 3 semester hours**

Prerequisites: SPMGT 1113 or equivalent. This course covers amateur and professional sports law issues and Title IX. In addition, legal issues in other related areas in various sports will be explored. Emphasis is placed on relationships between players and agents, professional sports contracts, salaries, and intellectual property issues related to sports teams and professional athletes.

**SPMGT 3285 Sports Medicine: 3 semester hours**

This course studies prevention and care of athletic/sport participation injuries. Emphasis is given to proper conditioning and training of the sport participant, safety education, care of injuries, preventative taping, and emergency responses, including CPR instruction/certification.

**SPMGT 3380 Sports Nutrition: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course studies human nutrition and its relationship to healthy lifestyles and exercise performance. It includes the study of nutrients, food sources, healthy weight and body composition, energy intake and expenditure, fluid and electrolyte balance, and ergogenic aids.

**SPMGT 3731 Sports Media and Technology: 3 semester hours**

This course examines and analyzes the current and emerging trends of media and technology in sports businesses. Students will identify ways in which various sports organizations are using social media to increase the size of their fan base and enhance their experience.

**SPMGT 4113 Educational and Community Athletics: 3 semester hours**

This course introduces students to the structure, membership, leadership and governance of educational and community athletic programs. Emphasis will be placed on the college athletics in NJCAA, NAIA and NCAA. In addition, the course explores high school, community and other recreational athletic activities.

**SPMGT 4213 Athletic Compliance: 3 semester hours**

Prerequisites: SPMGT 4113 or equivalent. This course covers compliance requirements for athletic and sports programs in collegiate and professional sports organizations.

**SPMGT 4990 Sport Management Field Experience: 1-6 semester hours**

Prerequisites: Junior standing, admission to the Sport Management Program, or consent of instructor. Supervised field experience in an approved sports-related setting that provides opportunities for planning, research, evaluation, and other professional activities. Course may be repeated for up to 6 total hours of credit (42 hours in the field per 1 hour of credit).

**SPMGT 4999 Sport Management Internship: 1-6 semester hours**

Prerequisites: Senior standing and consent of instructor. The Sport Management Internship provides a capstone experience in Sport Management via placement with sports clubs, sports facilities, or business organizations associated with sports. Students will develop professional skills as they apply knowledge gained throughout the program. May be repeated for credit up to a total of 6 credits (degree requires 300 contact hours with 50 hours per credit).

## Studio Art

### Courses

**ST ART 1020 Expanded Artforms: 3 semester hours**

A practical and theoretical exploration of contemporary art practices organized around structured assignments that will explore various modes of working in art. This course is designed to assist studio students in developing a personal, non-medium specific approach to art making and problem solving. Lab fee required. Basic computer lab equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 1130 Ceramics II: 3 semester hours**

Prerequisite: ST ART 1030. A continuation of ST ART 1030. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1140 Drawing I (MOTR PERF 105D): 3 semester hours**

An introduction to drawing through the study of figure, object, and environment. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1142 Figure Drawing I: 3 semester hours**

Basic studies of the human form and anatomy from the model in a variety of drawing media. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1143 Figure Drawing II: 3 semester hours**

Prerequisite: ST ART 1142. Continuation of Figure Drawing I. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1150 2D Design: Surface: 3 semester hours**

This course uses tactile and digital methods to introduce students to imaging in black and white, color, and principles of 2D pictorial space. Using a variety of media, students will explore and understand the foundations of visual thinking. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1151 3D Design: Space: 3 semester hours**

Prerequisites: ST ART 1150 or consent of instructor. This course introduces students to the fundamentals and technical principles of working three dimensionally. Students will experiment with a number of construction methods and materials used to create, represent, respond to, and reflect on form and space. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1181 Painting II: 3 semester hours**

Prerequisite: ST ART 1180 or consent of instructor. Continuation of basic studio problems in painting media. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 1210 Graphic Design I: 3 semester hours**

Prerequisite: None. Introduction to graphic design with an emphasis on fundamentals of space, emotion, shape, form, and concept. Projects in design, layout and typography will be addressed. The course is recommended to be taken concurrently with ST ART 1150, Design I. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 1220 Graphic Design II: 3 semester hours**

Prerequisites: ST ART 1150 and ST ART 1210. Continuing introduction to graphic design, focusing on developing concepts and design process, typographic systems and layout systems. The course is recommended to be taken concurrently with ST ART 2220, Computer Design I. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2160 Photography II: 3 semester hours**

Prerequisite: ST ART 1060. An introduction to the techniques and aesthetics of black and white photography and the darkroom. Students must provide a film camera with adjustable speeds and aperture. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2210 Typography: 3 semester hours**

Prerequisites: ST ART 1220 or consent of instructor. Course intends to instill a sense of responsibility relative to typographic and production design, while developing the student's capacity for critical thinking and general typographic rules, visual hierarchy of typographic elements, classical typographic tradition, book design, awareness of typographic aesthetic.

**ST ART 2212 Image Making for Graphic Design: 3 semester hours**

Prerequisites: ST ART 1220 or consent of instructor. This course teaches skills of making images and custom type for use in visual communication. Topics covered include a survey of traditional and experimental illustration techniques with an emphasis on creation of original imagery. The class will discuss how hand images are further developed and combined on the computer for use in design. Creativity, discovery, and craft are highly emphasized. Lab fee required.

**ST ART 2220 Computer Design I: 3 semester hours**

Prerequisites: ST ART 1150 and ST ART 2205, concurrent enrollment in ST ART 3305 recommended. This course introduces students to the use of computer graphics for the creation of artwork applicable to the graphic design industry. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2221 Computer Design II: 3 semester hours**

Prerequisite: ST ART 2220. Designed to familiarize students with the methods processes, software, and computer functions used in graphic design and illustration. The course is recommended to be taken concurrently with ST ART 3310, Graphic Design III. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2230 Drawing II: 3 semester hours**

Prerequisites: ST ART 1140 or consent of the instructor. This course facilitates the development of drawing skills though continued observation and problems of invention. Student will explore and use varied drawing materials and techniques including graphite, charcoal, conte crayon, and inks. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2235 Comics and Cartoon Illustration: 3 semester hours**

This is a course in creating and appreciating the world of comics and cartoons. Students will investigate and learn the tools and techniques for creating cartoons and cartoon illustrations to create their own cartoons through the use of traditional media and computers. While designed for beginners, experienced artists will be encouraged to perfect their personal styles. The class will create and print its own comic book. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2240 Drawing III: 3 semester hours**

Prerequisites: ST ART 1140 and ST ART 1141. This course offers studio problems designed to further the development of drawing skills in various media. Limited color will also be introduced. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2245 Painting I: 3 semester hours**

Prerequisites: ST ART 1140 and ST ART 1150, or consent of instructor. This course is an introduction to the use of oil and/or acrylic painting media. Students will address studio problems to develop technical and expressive skills on various surfaces. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2252 Printmaking I: 3 semester hours**

Prerequisites: ST ART 1150 and ST ART 2230, or consent of instructor. This course provides an introduction to printmaking techniques, materials, and theories. The course will include work in a variety of print materials. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2260 Photography I: 3 semester hours**

This course is an introduction to the techniques and aesthetics of digital photography, along with photo editing software and printing techniques. Students must provide a digital camera. A lab fee is required. Basic computer lab equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2263 Digital Color Process: 3 semester hours**

Prerequisites: ST ART 1060. An extended study in the process of digital printing. The class will help students refine their techniques using digital color management and explore various techniques to assure the closest relationship between the image on the monitor and the resulting print. Hands-on training with different digital printers, digital media and scanning techniques will be offered. This class will involve both learning exercises and the creation of original computer-aided photographic art. Lab fee required. Students must provide a digital camera. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2264 Non-Silver Photography: 3 semester hours**

Prerequisites: ST ART 1060 and ST ART 2160. An introduction to the aesthetics and techniques of nontraditional photographic processes. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2269 Commercial Application in Photo: Photojournalism, Documentary, and Public Relations Photography: 3 semester hours**

Prerequisite: ST ART 2263 or consent of instructor. Exploration of issues and applications within the field of photojournalism, documentary, and public relations photography. The class will concentrate on a variety of photographic applications focusing on news and editorial imagemaking, as well as training the student in public relations assignments. This class will involve both learning exercises and the creation of original computer-aided photographic art. Students must provide a digital camera. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2270 Ceramics I: 3 semester hours**

This course is an introduction to the basic methods and theory of ceramics including work with hand-built construction, wheel techniques and glazing. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2271 Printmaking II: 3 semester hours**

Prerequisite: ST ART 1170 or consent of instructor. A continuation of ST ART 1170. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2273 Printmaking: Etching: 3 semester hours**

Prerequisites: ST ART 1150 and ST ART 1141 or consent of instructor. An introduction to printmaking skills and theory of contemporary etching practices. Development of skills and aesthetic judgements in the media using non-toxic etching processes. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2275 Sculpture I: 3 semester hours**

This course is an introduction to traditional and contemporary materials, aesthetics, and theories of three-dimensional art. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2278 Introduction to Fibers and Textiles: 3 semester hours**

This course provides an exploration of a variety of on- and off-loom weaving and other fiber and textile media and techniques. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 2280 Painting III: 3 semester hours**

Prerequisite: ST ART 1181 or consent of instructor. Advanced studio problems in painting media. Attention paid to individual development of theory, expression, and technique. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2283 Watercolor Painting: 3 semester hours**

Prerequisites: ST ART 1150 and ST ART 1141. Beginning problems in watercolor painting. Includes the study of traditional and contemporary approaches to color, color techniques, and treatment of papers. May be repeated for credit. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 2285 Entrepreneurship for the Visual Arts: 3 semester hours**

Prerequisites: ST ART 1150 or consent of the instructor. In this course, students will explore ways of establishing, promoting, and sustaining a creative practice. The basics of arts entrepreneurship, which may include marketing, branding, portfolio development, valuing work, and routes to market, are investigated through case studies and practice.

**ST ART 2290 Special Study: 1-10 semester hours**

Prerequisites: Junior/Senior standing and consent of department and instructor. Independent study through readings, reports or field research. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3074 Special Topics in Studio Art: 3 semester hours**

Prerequisites: Minimum completion of 18 hours in Studio Art. Selected topics in studio studies. May be repeated for credit with a change of topic. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3260 Photography III: 3 semester hours**

Prerequisite: ST ART 2160. An exploration into contemporary theories and trends in photography. Advanced projects, portfolios and techniques will be expected from those enrolled. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3310 Graphic Design III: 3 semester hours**

Prerequisite: ST ART 1220 and ST ART 2220. Advanced studio problems to further the understanding of design and its relationship to typographic elements, illustration, and communication. The course will encourage both conceptual and technical development of the designer. The course is recommended to be taken concurrently with ST ART 2221, Computer Design II. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3311 Graphic Design IV: 3 semester hours**

Prerequisite: ST ART 3310 and ST ART 2221. Further studio problems in the graphic arts. The course is recommended to be taken concurrently with ST ART 2210, Typography. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3312 Advanced Topics in Graphic Design: 3 semester hours**

Prerequisites: ST ART 3311 or permission of instructor. Studies of selected topics, which will vary. May be repeated for credit with a different topic, for a maximum of 9 credit hours. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3313 Introduction to Motion: 3 semester hours**

Prerequisites: ST ART 2220 and basic knowledge of Photoshop and Illustrator. This course explores the fundamentals of motion design for the graphic designer. Students will learn the basics of animating, using After Effects software. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3317 Art of 3D Animation II: 3 semester hours**

Prerequisites: ST ART 3316. In this production course, students will work on advanced techniques of animation and the mechanics of spatial graphics software, and will study the storytelling and visual techniques central to creating a successful animated presentation. Each student will produce an animated video presentation during the class. A lab fee is required. Basic computer lab equipment will be provided, though students will need to supply some personal equipment and supplies.



**ST ART 3323 Fundamentals of Researching User Experience: 3 semester hours**

Prerequisites: ST ART 3322. In this course, students will discover in greater detail the methods for researching user experiences within interactive systems. This will include basic tools like interviews, surveys, and usability studies. The course will demonstrate how to translate user research into personas, use-case scenarios, and functional requirements for software and other uses, such as implementation in marketing and product design. Course work will include readings, research papers, and user research. A lab fee is required. Basic equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3350 Studio Art Internship: 1-6 semester hours**

Prerequisites: Junior/Senior standing in studio art and consent of the faculty advisor. The internship provides experience in design firms, professional art studios, or comparable settings. Students will assist professionals in the diverse duties associated with studio art activities. Course assignments may include research assignments and/or reports to be reviewed by the faculty advisor and/or supervisor. May be repeated for credit, up to a maximum of 6 credit hours.

**ST ART 3352 Printmaking: Screenprinting: 3 semester hours**

Prerequisites: ST ART 2252 or consent of instructor. This course provides an introduction to the techniques, methods, and aesthetics of screenprinting. Studio problems involving uses and approaches will be emphasized. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3354 Printmaking: Lithography: 3 semester hours**

Prerequisites: ST ART 2252 or consent of instructor. This course provides an introduction to printmaking skills and theory in stone and plate lithography and examines studio problems in the use of materials and equipment. Attention will be given to students' individual development. A lab fee is required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3366 Commercial Applications in Photography: 3 semester hours**

Prerequisites: ST ART 3362 or consent of instructor. This course explores of issues and applications within the field of photography. Techniques of lighting, posing, and studio equipment are discussed. This class involves both learning exercises and the creation of original computer-aided photographic art. Students must provide a digital camera. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3372 Advanced Lithography: 3 semester hours**

Prerequisite: ST ART 1173. Continuing problems in lithography with problems in black and white, photolithography, and/or color. May be repeated for credit. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3382 Advanced 2D Practices: 3 semester hours**

Prerequisites: ST ART 1150 and two 2000 level courses in 2D art practice. This course will afford students the opportunity to continue to explore and develop advanced technical and conceptual strategies in two-dimensional media. This course may be offered with varying themes, and may be repeated for credit with a different topic. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3383 Advanced Problems in Graphic Design I: 3 semester hours**

Prerequisite: ST ART 3311 and ST ART 2210. This course is focused on professional-level art and portfolio production. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 3384 Advanced Problems in Graphic Design II: 3 semester hours**

Prerequisite: ST ART 3383. A continuation of ST ART 3383. The course includes the preparation of a faculty-reviewed portfolio. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3385 Advanced 3D Practices: 3 semester hours**

Prerequisites: ST ART 1151 and two 2000 level courses in studio art, one of which must be in 3D practice. This course will afford students the opportunity to continue to explore and develop advanced technical and conceptual strategies in three-dimensional media. This course may be offered with varying themes, and may be repeated for credit with a different topic. A lab fee is required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 3390 Special Study: 1-10 semester hours**

Prerequisite: Junior/senior standing and consent of department chairperson and instructor. Independent study through readings, reports, or field research. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

**ST ART 4495 Senior Studio Seminar: 3 semester hours**

Prerequisites: Senior standing and ST ART 3381, ST ART 3341, ST ART 3392 or ST ART 3371. Weekly critiques and discussions of technical and professional issues. Will instruct students in methods of portfolio display, documentation, gallery representation, grant writing, and professional preparation. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies. Offered only during Fall Semester.

**ST ART 4496 Senior Studio Seminar: 3 semester hours**

Prerequisites: Senior standing and ST ART 4495. Weekly critiques and discussions of technical and professional issues. Will instruct students in methods of portfolio display, documentation, gallery representation, grant writing, and professional preparation. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies. Offered only during Winter Semester.

**ST ART 4497 Senior Seminar in Graphic Design I: 3 semester hours**

Prerequisites: Senior standing and ST ART 3384. Students must pass the junior portfolio review. Weekly critiques and discussions of technical and professional issues. Will instruct students in the methods of professional preparation. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

**ST ART 4498 Senior Seminar in Graphic Design II: 3 semester hours**

Prerequisites: ST ART 4497. Continuation of ST ART 4497. Will instruct students in the methods of professional preparation. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.



**ST ART 5590 Special Study: 1-6 semester hours**

Prerequisites: Graduate standing and consent of instructor. Independent study through art making, readings, reports, or field research. Studio Art fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies. May be retaken for credit with consent of instructor.

# Supply Chain and Analytics

## Courses

**SCMA 3300 Business Analytics and Statistics: 3 semester hours**

Prerequisites: MATH 1105, INFSYS 1800 and a 2.0 campus GPA. This course covers basic statistical analysis (descriptive and predictive analytics) for business management. Tools include matched sample tests, chi-square tests, rank sum tests, simple linear regression and correlation, multiple linear regression, and extrapolative techniques such as moving averages and exponential smoothing. Emphasis is placed on problem definition, construction of statistical models, analysis of data, and interpretation of results.

**SCMA 3301 Introduction to Supply Chain Management: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0. This course provides an understanding of fundamental concepts of supply chain management. All functional areas of supply chain management are explored in an integrated view of procurement, manufacturing and operations management, transportation and logistics, inventory and warehousing, demand planning, scheduling, network design, collaboration and performance measurement. Topics also cover supply chain financial metrics, strategy and change management for demand driven value networks.

**SCMA 3320 Advanced Supply Chain and Operations Management: 3 semester hours**

Prerequisites: SCMA 3301 or MATH 1320 and a 2.0 campus GPA. This course covers supply chain management with special focus on understanding manufacturing and service operations. Emphasis is on the application of quantitative methods to the solution of strategic, tactical and operational problems. Topics include demand planning, capacity, new product design and launch, process selection, facility layout, production planning, scheduling, inventory, process control, waiting lines, lean production, etc.

**SCMA 3321 Procurement: 3 semester hours**

Prerequisites: SCMA 3301 and a 2.0 campus GPA. This course covers procurement processes and supplier management, with emphasis on managing a supplier base for both products and services. Topics include the strategic role of procurement in supply chains, sourcing options, identification and evaluation of requirements, the role of product design, make-versus-buy decisions, and supplier selection and evaluation.

**SCMA 3345 Predictive Analytics and Data Mining: 3 semester hours**

Prerequisites: SCMA 3300 and a minimum campus GPA of 2.0. This course focuses on predictive analytics in business settings. Topics may include applications of multivariate analyses to problems in marketing, finance, transportation and logistics. The course covers use of decision trees, regression and logistic regression to explain phenomena and predict future outcomes. Students acquire experience in the use of modern tools for data mining.

**SCMA 3370 Introduction to Transportation: 3 semester hours**

Same as MKTG 3770. Prerequisites: A minimum campus GPA of 2.0. This course provides an overview of the transportation sector, including history, providers, users, government regulation, and the central role of transportation in supply chain management. The course covers the importance of domestic and global transportation, the operational aspects of the various transportation modes (rail, water, motor, air, and pipeline), the role of transportation intermediaries, the demand and supply of transportation, and the managerial aspects of transport in both the commercial and urban environment.

**SCMA 3371 Traffic and Transportation Management: 3 semester hours**

Same as MKTG 3771. Prerequisites: SCMA 3370 or MKTG 3770, and a minimum campus GPA of 2.0. This course focuses on transportation management as a function of a firm's logistics and supply chain strategy. The course covers the management of the various transportation modes (rail, motor, air, water, and pipeline), strategic use of transportation intermediaries such as 3PL's, and linkages between transportation and warehousing. This course is designed to provide a basic understanding of the issues and work performed by transportation managers, including costing and pricing, transportation procurement, transportation technology, and cross border trade management.

**SCMA 3376 Transportation Security and Risk: 3 semester hours**

Same as MKTG 3776. Prerequisites: SCMA 3370 or MKTG 3770 and a minimum campus GPA of 2.0. This course emphasizes risk and security issues related to transportation systems and supply chains, including highway, aviation, pipeline, waterway, transit, and rail networks, as well as port facilities. This course also provides an overview of transportation safety issues including passenger and employee safety, and hazardous materials. It addresses transportation and supply chain risk management and continuity strategies to prepare for, and respond to, disruptions as from terrorism events or natural disasters.

**SCMA 3390 Internship in Supply Chain and Analytics: 1-3 semester hours**

Prerequisites: Minimum business GPA of 2.5, minimum campus GPA of 2.0, completed and/or currently enrolled in at least 6 credit hours of departmental electives, consent of supervising instructor, and consent of department chair. Students are employed in the field where they apply the knowledge and skills learned in the classroom. Professional development and obtaining specialized work experience are the primary goals. A departmental faculty member will monitor the student's program with the student providing a formal written report at the end of the project. Students cannot receive credit towards the emphasis for both SCMA 3390 and SCMA 4389. Repeatable for a maximum of 9 credit hours.

**SCMA 3398 Seminar in Supply Chain Management and Analytics: 1-3 semester hours**

Prerequisites: To be determined each time the course is offered and to include a minimum 2.0 campus GPA. This course is a selected special topic in the fields of supply chain management and analytics. May be repeated for credit with different topics.

**SCMA 3399 Independent Study in Supply Chain and Analytics: 1-3 semester hours**

Prerequisites: Minimum campus GPA of 2.0 and approval by the supervising professor and the department chair. Special individual study in supply chain and analytics under the supervision of a full-time faculty member of the department.

**SCMA 4322 Lean Production in Manufacturing and Service****Operations: 3 semester hours**

Prerequisites: A minimum campus GPA of 2.0 or graduate standing; also SCMA 3320. Study of Lean Production philosophy and techniques in manufacturing and service operations. Topics include process analysis and continuous improvement techniques, quick set-ups, total productive maintenance, kanban scheduling, cellular production, team organization of workers, supplier relations, quality management, and the environmental aspects of production.

**SCMA 4325 Environmental Sustainability in Business Operations: 3 semester hours**

Same as BUS AD 4325. Prerequisites: SCMA 3301 or permission of instructor. This course studies the environmental impacts of business operations, and it focuses especially on the principles and methods of 'lean and green' operations, i.e., ways in which organizations can reduce their costs and increase profits, while reducing their environmental impacts. Specific topics include energy efficiency, resource reduction, waste reduction, design for the environment, externalities and internal pricing mechanisms, environmental technologies, life-cycle assessment, recycling, re-use, and re-manufacturing, as well as national and global environmental issues.

**SCMA 4330 Business Logistics: 3 semester hours**

Prerequisites: SCMA 3320 and a minimum campus GPA of 2.0. This course addresses the analysis of business logistics systems, their design, and operation in light of cost and service tradeoffs. Topics include performance measures and management, logistics and supply chain network design, facility location, transportation, vehicle routing, storage and handling, capacity planning, inventory management, customer service and the role of technology.

**SCMA 4331 Applied Supply Chain Modeling: 3 semester hours**

Prerequisites: SCMA 3320 and a 2.0 minimum campus GPA. This course introduces applied models and technology for supply chain management through hands-on experience using state-of-the-art software and tools for the design and operation of supply chains. The course covers the economic tradeoffs involved in such decisions, data requirements, operating parameters, application of software packages and performance management and analytics.

**SCMA 4347 Introduction to Project Management: 3 semester hours**

Prerequisites: SCMA 3301 and a minimum campus GPA of 2.0. This course introduces the concepts and practices of Project Management with a focus on supply chain and analytics related projects. It covers conventional aspects of project management, such as the project evaluation, planning, roles, responsibilities, scheduling, and tracking. In addition, this class introduces agile project management as applicable to projects where there is not the specificity of goals or solutions to be applicable to traditional project management.

**SCMA 4350 Prescriptive Analytics and Optimization: 3 semester hours**

Same as ACCTNG 4450. Prerequisites: MATH 1105 and a minimum campus GPA of 2.0. This course covers the construction and application of prescriptive analytical models for optimizing business decisions in a wide range of areas such as manufacturing, service, supply chains, logistics and finance. Topics include performance metrics, linear programming, integer programming, network optimization, simulation, and implementation using Excel.

**SCMA 4381 Global Supply Chain Management: 3 semester hours**

Same as INTL BUS 4381. Prerequisites: SCMA 3301 and a minimum campus GPA of 2.0. This course covers business logistics and supply chain strategies involving shipments across national boundaries. Topics may include the effects of international agreements and regional trading blocks on supply chain strategies, the design of global logistics networks, managerial processes and systems for international production and distribution, and risk management for international logistics.

**SCMA 4389 Supply Chain Management Practicum: 3 semester hours**

Prerequisites: SCMA 3320. This course engages students with local organizations to provide practical experience in critical thinking, analysis, and communication in a supply chain context. This allows students to integrate, synthesize and apply supply chain management knowledge and skills in a real business/organization through projects jointly supervised by a faculty member and a supervisor from the organization. Students cannot receive credit towards the emphasis for both SCMA 3390 and SCMA 4389.

**SCMA 4398 Advanced Topics in Supply Chain and Analytics: 1-3 semester hours**

Prerequisites: SCMA 3301 or permission of the instructor and a minimum 2.0 campus GPA. An intensive study of a specific aspect, problem or technique in the areas of supply chain management, analytics, logistics, or operations management. Different topics may be offered under this course number, so the course (with different topics) can be repeated for credit.

**SCMA 5300 Statistical Analysis for Management Decisions: 3 semester hours**

Prerequisites: MATH 1030 and spreadsheet modeling or equivalent competency. Probability and probability distributions are studied as a basis of statistical inference. An introduction to multivariate analysis is provided, which includes analysis of variance and regression methods.

**SCMA 5310 Supply Chain Strategies: 3 semester hours**

Prerequisites: Graduate standing. This course addresses supply chain management and its implications, with a focus on what firms can do to maintain competitiveness in the quickly changing business landscape. Topics may include fundamentals of supply chain management, value chain analyses, supply chain analytics, procurement, production, logistics, inventory management, and marketing business-to-business.

**SCMA 5320 Production and Operations Management: 3 semester hours**

Prerequisites: SCMA 5300. This course discusses issues related to the creation and delivery of goods and services. Topics include the design of production processes, the layout and location of facilities, forecasting, scheduling, inventory control, queuing, materials planning, and quality control. Analytical techniques such as linear programming are used in studying these problems.

**SCMA 5322 Lean Production: 3 semester hours**

Prerequisites: SCMA 5310. This course covers the study of Lean Production philosophy and techniques in manufacturing and service operations. Topics include process analysis and continuous improvement, set-up reduction, total productive maintenance, kanban scheduling, cellular production, work teams, supplier relations, quality management, and the environmental aspects of production. Cases and a course project will be used to integrate and apply the course material.

**SCMA 5325 Environmental Analysis and Sustainability in Business Operations: 3 semester hours**

Same as BUS AD 5325. Prerequisites: SCMA 5310 or consent of instructor. This course analyzes the environmental impacts of business operations, and it focuses especially on the principles and methods of 'lean and green' operations, i.e., ways in which organizations can reduce their costs and increase profit, while reducing their environmental impacts. Specific topics include energy efficiency, resource reduction, waste reduction, design for the environment, externalities and internal pricing mechanisms, environmental technologies, life-cycle assessment, recycling, re-use, and re-manufacturing, as well as national and global environmental issues.

**SCMA 5334 Internship in Logistics and Supply Chain Management: 1 semester hour**

Prerequisite: Consent of instructor. Students receive practical experience in the area of logistics or supply chain management. The internship is supervised by a professional in the host organization in consultation with a faculty member.

**SCMA 5354 Simulation for Managerial Decision Making: 3 semester hours**

Prerequisites: SCMA 5300. This course is an introduction to simulation as a managerial decision-making aid. The applications of simulations to a number of management science-oriented problems are covered using a simulation language.

**SCMA 5381 Global Supply Chain Management: 3 semester hours**

Same as INTL BUS 5381. Prerequisites: SCMA 5310 (may be taken concurrently). This course covers global supply chain management strategy, planning and operations. Topics include issues in global trade, global network design and facility location strategies, international logistics, import-export operations, and global supply chain risk management.

**SCMA 5389 Supply Chain Management Practicum: 3 semester hours**

Prerequisites: SCMA 5300 or equivalent; SCMA 5310 or equivalent (may be taken concurrently). This course engages students with local organizations to provide practical experience in critical thinking, analysis, and communication in a supply chain context. This allows students to integrate, synthesize and apply supply chain management knowledge and skills in a real business/organization through projects jointly supervised by a faculty member and a supervisor from the organization. Students may not count both SCMA 5398 and an internship toward the SCMA emphasis.

**SCMA 5399 Individual Research in Logistics and Operations Management: 1-3 semester hours**

Prerequisites: Consent of instructor and graduate director. Special individual research topics in Logistics and Operations Management under the guidance of a specific professor.

**SCMA 6321 Strategic Sourcing: 3 semester hours**

Prerequisites: SCMA 5310 (may be taken concurrently). This course provides a strategic focus on the acquisition of goods and services and management of suppliers in business-to-business transactions. The course covers the strategic sourcing process, including categorizing the buy, conducting a market analysis, developing a supply strategy, analyzing prices and cost, developing bids, selecting suppliers, negotiating, and managing the supply base.

**SCMA 6330 Business Logistics Systems: 3 semester hours**

Prerequisites: SCMA 5310 (may be taken concurrently). This course focuses on analysis of business logistics systems and their role in supply chain management. It covers design and operation of logistics systems and their components. Topics include network design, facility location, transportation, vehicle routing, inventory management, customer service, sustainability, and reverse logistics.

**SCMA 6331 Supply Chain Modeling: 3 semester hours**

Prerequisites: SCMA 5310 (may be taken concurrently). This course introduces model-building techniques for data-driven decision-making in supply chains. It covers math programming (linear and integer programming), network optimization, and constraint programming, with their applications in production planning, MRP, transportation, network design and configuration. It provides hands-on experience by using state-of-the-art optimization tools and commercial software.

**SCMA 6338 Business Processes: Design, Management and Integration: 3 semester hours**

Prerequisites: SCMA 5310. This course presents the concepts and state of the art, and state of the practice of business process design and business process management. Issues related to characteristics, goals, benefits and costs of enterprise-wide design and to the role of information technology during the design process are discussed. Topics include the history and development of process focused businesses and the impacts on processes caused by just-in-time and total quality management philosophies, organizational learning, strategy mapping, the exploitation of core competencies, and changing business scenarios such as globalization and electronic-commerce.

**SCMA 6345 Business Analytics and Data Mining: 3 semester hours**

Same as ACCTNG 5444. Prerequisites: SCMA 5300 and INFSYS 5800. This course concentrates on methods for converting data into business intelligence. It provides knowledge of the principles and techniques for business analytics and data mining. Topics include clustering, pattern recognition, visualization of relationships, predictive modeling, optimization techniques and simulation.

**SCMA 6347 LOM Project Management: 3 semester hours**

Prerequisites: SCMA 5320. This course addresses the concepts and processes of project management as applicable to Logistics and Operations Management. Students study organizational design, project specification, integrated project planning, risk management and project control; students will come to understand how globalization, environmental and sustainability issues, quality control (including industry standard initiatives such as the Continuing Integration Improvement Model and the International Standards Organization model), and cultural factors drive project management. NOTE: Credit may not be earned for both SCMA 6347 and INFSYS 6847.

**SCMA 6350 Management Science Methods: 3 semester hours**

Prerequisites: SCMA 5310. This course provides comprehensive coverage of management science and operations research methodologies. It introduces data-driven optimization approaches to solving business problems, construction of mathematical models, and sensitivity analysis for managerial decision-making. Topics include linear programming, integer programming, network optimization, and simulation.

**SCMA 6360 Supply Chain Integration: 3 semester hours**

Prerequisites: SCMA 5310 (may be taken concurrently). The course covers the connections between supply chain capabilities and corporate competitiveness, the management of business relationships with customers and suppliers, collaboration and coordination approaches, the role of technology, and the link between supply chain performance and overall financial measures. Students will learn how to leverage the competitiveness of a firm by integrating and coordinating strategies, business relationships and key supply chain processes across the network of suppliers and customers in the supply chain and among the various departments within a firm.

**SCMA 6395 Seminar in Logistics and Operations Management: 3 semester hours**

Prerequisites: SCMA 5310. This course covers topics of current interest in logistics and operations management. Topics may include just-in-time and lean production, quality management, manufacturing and service systems, transportation and logistics, quantitative management tools, etc.

**SCMA 7381 International Supply Chain Management: 3 semester hours**

Prerequisites: SCMA 5320. Admittance into the Ph.D. Program. A comprehensive examination of international logistics and supply chain management strategies, planning and operations from the firm's perspective. Topics may include multinational logistics and supply chain issues and management strategies, multinational sourcing and network design, transportation issues in international supply chains, multinational distribution and operations, legal and financial issues in import and export, risk identification and management in international supply chains, and the relationship of supply chain management to other activities of international firms.

**SCMA 7390 Research Seminar in LSCM: 3 semester hours**

Prerequisites: SCMA 6330. Admittance into the Ph.D. Program. Analysis of research approaches, and findings in Logistics and Supply Chain Management. May be repeated for credit when the subject matter is different.

**SCMA 7393 Special Topics in LSCM: 3 semester hours**

Prerequisites: Consent of instructor. Admittance into the Ph.D. Program. In-depth analysis of special topics in Logistics and Supply Chain Management research. May be repeated for credit when the subject matter is different.

## Teacher Education

### Courses

**TCH ED 1000 Building Community, Culture, and Learning in Education: 1 semester hour**

This course provides an introduction to college life, scholarly endeavors and opportunities for growth available during undergraduate study. It is designed to nurture future educators, support them to be successful in the college environment, and initiate relationships which will continue through their academic and professional careers.

**TCH ED 1001 Early Clinical Experience: Community Agency: 1 semester hour**

Prerequisites: Current and clear background check and current and clear TB screening. This course involves education candidates in active and purposeful early clinical experiences with regional community agencies. Candidates are required to participate at agencies to meet organization goals and course objectives. Professionalism and effective communication are emphasized as program standards to build relationships, support learners' intellectual development and academic learning goals. Readings on research and analysis of informal learning, cultural competency in instruction, and curriculum and achievement are required. Completion of this course partially fulfills early clinical requirement for teacher certification. Thirty (30) clock hours outside class time are required.

**TCH ED 2000 Becoming a Professional Educator: 1 semester hour**

The course serves to ground candidates in the education profession, including its diverse career options and programs offered in the College of Education. Content includes introduction to, and applications of, the performance assessment system utilized throughout all curricular programs and essential to learning to evaluate one's experiences, impact, and coursework.

**TCH ED 2001 Early Clinical Experience: Schools: 1 semester hour**

Prerequisites: Current and clear background check and current and clear TB screening required. This course requires clinical experiences in schools for education candidates to observe and analyze a variety of school and classroom environments. Special emphasis focuses on aligning instructional processes and content knowledge. This course must be taken concurrently with TCH ED 2209. Completion of this course partially fulfills early clinical requirement for teacher certification.

**TCH ED 2209 Foundations of Teaching in American Schools: 2 semester hours**

Students explore the multiple roles and functions of professional teaching including communication, leadership, management skills, use of technology, identification of needs of diverse populations and an examination of ethics, law, and other selected concepts and philosophies underlying American public education. This course must be taken concurrently with TCH ED 2001.

**TCH ED 3001 Mid-Level Clinical Experience: Diverse Learners: 1 semester hour**

Prerequisites: Current and clear background check, current and clear TB screening, and admission into the Teacher Education Program. This course involves education candidates in active and purposeful mid-level clinical experiences with regional community agencies that include and support individuals with disabilities and their families. Candidates are required to participate at agencies to meet organization goals and course objectives. This course requires the study of research and analysis of cultural competency in instruction, curriculum and achievement. Completion of this course partially fulfills mid-level clinical requirement for teacher certification. 20 clock hours outside class time are required.

**TCH ED 3210 General Linguistics in Teaching English to Speakers of Other Languages: 3 semester hours**

Prerequisites: Completion of Level I requirements. An introduction to the historical, legal and pedagogical frameworks relating to Teaching English to Speakers of Other Languages (TESOL), and bilingualism. Students explore principles of language systems including English and the function of language in social and academic settings.



**TCH ED 3211 Basic Principles of Second and Foreign Language****Acquisition: 3 semester hours**

Prerequisites: TCH ED 3210. Covers the principles of language acquisition and the factors which influence learning. Students investigate first and second language acquisition processes including socio-cultural and cognitive factors in relation to second language acquisition (SLA). The course analyzes phonology, morphology, syntax, semantics, and discourse, within a communicative framework, which directly relates to instructional strategies.

**TCH ED 3212 Sociolinguistics and Communication in the Classroom: 3 semester hours**

Prerequisites: Admission to Teacher Education Program. Students explore the impact of culture and society on English learners' academic language acquisition. Topics covered in this course include verbal and non-verbal communication, learning styles, and second language acquisition strategies. The course introduces concepts relating to the acculturation process, cross-cultural and intra- and inter-cultural communication and its impact on accommodating the coping strategies for the English learners academic achievement. Students develop strategies to enhance home, school and community relations and impact of culture on perceptions, communication, behaviors, and most importantly, academic learning.

**TCH ED 3213 Performance-based Assessment for TESOL: 3 semester hours**

Prerequisite: TCH ED 3210. By exploring the role of assessment in culturally and linguistically diverse classrooms, this course provides an overview of identifying and placing students at the district and school level. Formal and informal models of assessment are examined as students reflect on the administration and interpretation of equitable measurement strategies and how assessment can reinforce instruction.

**TCH ED 3214 Material Development and Methods for TESOL: 3 semester hours**

Prerequisites: TCH ED 3211, TCH ED 3212, TCH ED 3213, TCH ED 3224, and TCH ED 4391. This course integrates knowledge of second language acquisition research in instructional methodologies. Students incorporate theories of linguistics, assessment models, and instructional technology into their material development to meet the needs of diverse English language learners.

**TCH ED 3215 Field Experiences in TESOL: 3 semester hours**

Prerequisites: TCH ED 3210, TCH ED 3212, and TCH ED 3214 (may be taken concurrently). Students observe and reflect on actual classroom practices as well as complete a student's needs analysis and placement tests. The students implement the strategies for advocating an collaborating on behalf of students from diverse language backgrounds. This is a supervised field experience.

**TCH ED 3224 Curriculum Development for Content Teaching of English Language Learners: 3 semester hours**

Prerequisites: TCH ED 3210 required; TCH ED 3211, TCH ED 3212, and TCH ED 3213 recommended. This course explores teachers' first, second, and/or dual language acquisition as well as language structures, learning styles, and the effects of cross-culture competencies on English learners' (ELs) content areas (English Language Arts, Science, Mathematics, Social Studies, etc.). Linguistically and culturally responsive teaching (LCRT) strategies will be covered. Standards-based integrated curriculum and instructional materials with assessment strategies will be developed and analyzed along with World-Class Instructional Design and Assessment (WIDA) descriptors based on ELs' language proficiency levels to ensure success.

**TCH ED 3310 Introduction to Methods of Teaching: 3 semester hours**

Prerequisite: Admission to Teacher Education Program. Students will create curriculum to inform instruction through use of various teaching methods and educational technologies. This course emphasizes planning and assessment while reflecting on practice.

**TCH ED 4299 Linguistically and Culturally-Responsive Teaching Strategies for EFL Students: 3 semester hours**

Prerequisites: Senior standing in Undergraduate Program or consent of instructor. This course will lead the senior teacher candidates to learn, explore, develop, and reflect the linguistically and culturally responsive teaching strategies for English as a foreign language (EFL) learners who may not use English as a daily communication media. This is an interactive and reflective course in which the students create their instructional materials that are culturally and academically relevant to the EFL learners. All of the instructional materials need to incorporate the four language domains, i.e., listening, speaking, writing, and reading.

**TCH ED 4391 Literacy for Adolescent Learners in Content Areas: 3 semester hours**

Prerequisites: Current and clear background check, current and clear TB screening, and admission to the Teacher Education Program. Examines the teaching of multiple literacies including reading, writing, speaking and critical thinking in the content areas. Implications of diverse cultures and languages and their relationship to reading will be explored. Twenty (20) clinical hours required to complete course assignments.

**TCH ED 5000 Advanced Early Clinical Experience: 1 semester hour**

Prerequisites: Graduate Standing and current and clear background and TB screening required. This course requires clinical experiences for those wishing to explore teaching as a career. Includes regularly scheduled on-site teaching as outlined by instructor. Required for secondary candidates seeking accelerated entry into teacher certification program and must be taken prior to Practicum 1. Completion of this course partially fulfills early clinical requirement for teacher certification.

**TCH ED 5001 Advanced Mid-Level Clinical Experience: Diverse Learners: 1 semester hour**

Prerequisites: Admission into the Teacher Education Program and graduate standing. This course involves education candidates in active and purposeful advanced mid-level clinical experiences with regional community agencies that include and support individuals with disabilities and their families. Candidates are required to participate at agencies to meet organization goals and course objectives. This course requires the study of research and analysis of cultural competency in instruction, curriculum and student learning outcomes. Completion of this course partially fulfills mid-level clinical requirement for teacher certification. Current and clear background and TB screening required. 20 clock hours outside class time are required.

**TCH ED 5310 Instructional Design: 3 semester hours**

Prerequisites: Graduate standing. This course emphasizes the importance of reflective practice, planning for diverse learners, student engagement, and the use of technology. Candidates will produce evidence of learning through the development of instructional materials that encompasses both daily and unit planning. They will learn the components of effective instructional design, including learning standards, objectives, assessment, instructional strategies, and lesson planning.

**TCH ED 5310A Instructional Design: Lesson Planning for Teachers: 2 semester hours**

Prerequisites: Graduate standing. This course emphasizes effective lesson planning that implements various research-based instructional models. Candidates will produce evidence of learning through the development of instructional materials. Candidates will learn the components of effective instructional design, including learning standards, objectives, assessment, instructional strategies, and lesson planning.

**TCH ED 5310B Instructional Design: High-Yield Instructional Strategies: 1 semester hour**

Prerequisites: Graduate standing. Educators will develop skills in planning teaching units, instructing lessons, selecting content and using various teaching methods appropriate for use in classrooms. Students will learn to use high yield instructional strategies appropriately matched to learning goals.

**TCH ED 5310C Instructional Design: Instructional Models: 1 semester hour**

Prerequisites: Graduate standing. Educators will develop skills in planning teaching units, instructing lessons, selecting content, and using various teaching methods appropriate for use in classrooms. Students will learn various models for teaching and apply each model selectively based on instructional goals and learner characteristics.

**TCH ED 5311 Foundations of Education: 3 semester hours**

Prerequisite: Graduate standing. Students will learn the history of public education, the role of the teacher as a change agent, the influence of technology, and the impact of diversity of American classrooms. Ten clock hours of field work required.

**TCH ED 5312 Teaching Reading in the Content Areas: 3 semester hours**

Prerequisites: Graduate standing. Explores differentiated instruction as an approach to meeting the diverse literacy needs of all students in the classroom-including identifying students with reading difficulties and supporting their literacy in the content areas. This differentiated instruction approach will be used to enhance literacy developments of adolescent learners in functional literacy, content literacy, technological literacy and creative/innovative literacy.

**TCH ED 5800 Building Excellence in STEM Talent Professional Seminar: 1 semester hour**

Prerequisites: Special consent required. A weekly professional seminar for the purpose of exploring how STEM content and pedagogical knowledge can embody the principles of instructional creativity. The seminar will use best practices engineering to produce a series of STEM lessons that use knowledge of subject concepts and project-based instruction relevant to students in local high-need schools. These lesson prototypes will be developed through the process of a cross-disciplinary InnoLab and improved upon during the internships in the schools. The seminar will take place in the ED Collabitat and be attended by a series of academic, community, and corporate resources. Repeatable up to 4 credit hours.

**TCH ED 5850 Topics in the Teaching of Writing: 1-3 semester hours**

Same as ENGL 4850. Prerequisite: ENGL 3100 or equivalent.

**TCH ED 5880 Writing in the Content Areas: 3 semester hours**

Same as ENGL 5880. Prerequisites: Graduate standing. This course emphasizes the importance of integrating writing instruction in classrooms across subject areas. Theories of writing and writing instruction will be explored, and students will discuss how to put the theories into practice in their classrooms. Students will learn to explore their own writing process while learning strategies that will help them to teach writing rather than just assign writing. The course examines the tools pre-service and in-service teachers will need to work with diverse learning communities, to utilize best practice in the teaching of writing, and to use writing as a tool for student learning in any content area. Students in this class will be held to professional writing and speaking standards. The course counts toward the Certificate in Writing.

**TCH ED 6010 Examining History, Community and Social Justice in Education: 3 semester hours**

Addresses the issues of equity and social justice from the context of personal and educational history. Students will develop a cultural understanding of their own previous school, community and family experiences and generalize those findings to their current work as educators. They will develop an understanding of the historical foundations of American education and the role of the teacher to be a catalyst for change. Curriculum, instruction and learning will be examined through a variety of lenses including race, class, gender, ability, sexual orientation and religion to become culturally responsive teachers.

**TCH ED 6010A Examining History, Community and Social Justice in Education: Culture and Context: 1 semester hour**

Prerequisite: Graduate standing. Addresses the issues of equity and social justice from the context of personal and educational history. Students will develop a cultural understanding of their own previous school, community and family experiences and generalize those findings to their current work as educators.

**TCH ED 6010B Examining History, Community and Social Justice in Education: Historical Foundations: 1 semester hour**

Prerequisite: Graduate standing. Addresses the issues of equity and social justice from the context of personal and educational history. Students will develop an understanding of the historical foundations of United States education and the role of the teacher as a catalyst for change.

**TCH ED 6010C Examining History, Community and Social Justice in Education: Socio-Cultural Framework: 1 semester hour**

Prerequisites: Graduate standing. Addresses the issues of equity and social justice from the context of personal and educational history. Students will examine curriculum, instruction, and learning through a variety of lenses including race, class, gender, ability, sexual orientation and religion to become culturally responsive teachers.

**TCH ED 6020 Teacher Action, Advocacy and Leadership: 3 semester hours**

Investigates the relationships among students, general and special education teachers, counselors, principals, parents, and other support and specialist personnel typically present in schools in Missouri and the changing roles of all these individuals as a consequence of general and special education reform initiatives. Develop systemic action plans and become advocates and leaders within the school and larger community for children, families, and the profession. Assists teachers to analyze and improve their management, planning and record keeping systems and professional development planning.

**TCH ED 6115 Historical Thinking in Research and Practice: 3 semester hours**

Same as HIST 6115. Prerequisites: Graduate standing or consent of instructor. In this hands-on course, students examine current research and effective teaching strategies that facilitate historical thinking while also broadening content knowledge. Students further design, implement, and assess educational materials and practices that foster historical thinking, reading, and writing.

**TCH ED 6116 Historical Thinking in Theory and Practice II: 3 semester hours**

Same as HIST 6116. Prerequisites: HIST 6115 / TCH ED 6115 or consent of instructor. Building upon HIST 6115/ TCH ED 6115, this course emphasizes the design, implementation, and assessment of teaching materials and practices that foster historical thinking and reading. In this hands-on, action research course, students will focus on their own teaching materials and practices to improve their capacity to teach and assess students' historical thinking.

**TCH ED 6200 Building Character and Competence with Diverse Learners: 3 semester hours**

Prerequisites: Graduate standing. This course introduces theories and offers research-based strategies, materials, and resources designed to meet the needs of diverse learners in elementary school settings, including those with special needs and English language learners. Students will also learn ways to promote character and citizenship development, cross-cultural communication, and positive behavior supports.

**TCH ED 6210 Foundations of Teaching English to Speakers of Other Languages: 3 semester hours**

Prerequisites: Graduate standing. This course is an introduction to the historical, legal and pedagogical frameworks relating to Teaching English to speakers of Other Languages (TESOL) and bilingualism. Students explore current issues, trends and influential factors in second language acquisition (SLA) instructional and assessment models.

**TCH ED 6220 Principles of Second/Foreign Language Acquisition: 3 semester hours**

Prerequisite: TCH ED 6210. This course is a research-based study of language acquisition and the factors which influence learning. Students investigate first and second language acquisition processes including socio-cultural and cognitive factors, as well as linguistic research about second language acquisition (SLA). The course analyzes phonology, morphology, syntax, semantics and discourse, within a communicative framework, which directly relates to instructional strategies.

**TCH ED 6224 Integrated Curriculum Development for Content Teaching of English Language Learners: 3 semester hours**

Prerequisites: TCH ED 6210 required; TCH ED 6220, TCH ED 6230, and TCH ED 6240 recommended. Explores research-based first, second, and/or dual language acquisition as well as language structures, learning styles, and the effects of cross-culture competencies on English Learners' (ELs') content areas. Linguistically and culturally responsive teaching strategies will be covered. Standards-based integrated curriculum and instructional materials with assessment strategies will be developed and analyzed along with World-Class Instructional Design and Assessment (WIDA) descriptors based on ELs' language proficiency levels to ensure success.

**TCH ED 6230 Cross-Cultural Communication in the Classroom: 3 semester hours**

Prerequisite: TCH ED 6210. Students explore the impact of culture and society on verbal and non-verbal communication, learning styles, and second language acquisition. The course introduces concepts relating to the acculturation process, cross-cultural and intra-cultural communication. Within this theoretical context, students recognize their own socio-cultural identity and its impact on teaching models. Students develop strategies to enhance home, school and community relations.

**TCH ED 6240 Assessment for Teaching English to Speakers of Other Languages: 3 semester hours**

Prerequisites: TCH ED 6210 and TCH ED 6220 are recommended. By exploring the role of assessment in culturally and linguistically diverse classrooms, this course provides an overview of identifying and placing students at the district and school level. Formal and informal models of assessment are examined as students reflect on the administration and interpretation of equitable measurement strategies and how assessment can inform instruction.

**TCH ED 6250 Methods and Materials for Teaching English to Speakers of Other Languages: 3 semester hours**

Prerequisites: TCH ED 6220, TCH ED 6224, TCH ED 6230, and TCH ED 6240 or consent from instructor. This course requires students to integrate knowledge of second language acquisition research in instructional methodologies, linguistics, assessment models, and awareness of socio-cultural dynamics. Students use this knowledge to design and critique a unit plan, including instructional materials and technology support.

**TCH ED 6260 Practicum in Teaching English to Speakers of Other Languages: 3 semester hours**

Prerequisites: TCH ED 6250 (may be taken concurrently). This course teaches students to observe and reflect on classroom practices related to teaching English to speakers of other languages. Students complete a student's needs analysis and placement test, and implement a unit plan in the classroom with reflection. This is a supervised field experience.

**TCH ED 6271 Teaching and Learning of Number and Operations from an Advanced Perspective: 3 semester hours**

This course will promote understanding of learning and teaching pre-number concepts, counting and cardinality, numbers and operations in base ten. Emphasis will be given to how children think about and learn these concepts and how they fit into the elementary school curriculum. Concurrently enrollment in TCH ED 6281 is required.

**TCH ED 6272 Teaching and Learning Rational Numbers from an Advanced Perspective: 3 semester hours**

The course is designed to develop an understanding of the learning and teaching of rational numbers and the ratio and proportional relationships. Emphasis will be given to how students think about and learn these concepts and how they fit into the elementary school curriculum. Concurrent enrollment in TCH ED 6282 is required.

**TCH ED 6273 Geometry and Measurement for Elementary Mathematics Specialists: 3 semester hours**

This course is designed to develop an understanding of the teaching and learning of geometry and measurement. Emphasis will be given to how children think about and learn these concepts and how they fit into an elementary mathematics curriculum. Concurrent enrollment in TCH ED 6283 is required.

**TCH ED 6274 Algebraic Reasoning for Elementary Mathematics Specialists: 3 semester hours**

Course focuses on the content and complexities of teaching and assessing algebraic reasoning in grades 1-6. Includes examinations of representation and analysis of mathematical situations and structures. Attention is given to patterns, functions, and the transition from arithmetic to algebra. Concurrent enrollment in TCH ED 6284 is required.

**TCH ED 6276 Data and Probability for Elementary Mathematics Specialists: 3 semester hours**

The course is designed to develop understanding or probabilistic and statistical reasoning and the collection, exploration, and analysis of data. Emphasis will be given to how children think and learn about these concepts and how they fit into the elementary school curriculum. Concurrent enrollment in TCH ED 6277 is required.

**TCH ED 6277 Foundations of Mathematics Leadership for Elementary Mathematics Specialists: 2 semester hours**

This course provides opportunities for participants to develop knowledge and understanding of leadership principles and roles of mathematics education leaders. Focus on leadership styles; roles, and responsibilities of elementary mathematics specialists; major historical events, documents, and policies that have influenced mathematics education; and research related to effective teaching and learning of mathematics. Concurrent enrollment in TCH ED 6276 is required.

**TCH ED 6278 Mathematical Leadership for Elementary Schools Advanced: 3 semester hours**

Prerequisites: Successful completion of Elementary Mathematics Specialist certification coursework or consent of instructor. This advanced leadership course focuses on research and practice related to teamwork, interaction, communication, conflict resolution, and leadership in elementary schools. Candidates will examine effective strategies for influencing and facilitating school/district improvement.

**TCH ED 6281 Internship - Number and Operations in Elementary Schools: 1 semester hour**

A supervised mathematics teaching practicum with online seminars in which the candidate acquires experience working with a range of students and adult learners (parents and teachers) on number and operations concepts. Concurrent enrollment in TCH ED 6271 is required.

**TCH ED 6282 Internship - Rational Numbers in Elementary Schools: 1 semester hour**

A supervised mathematics teaching internship with online seminars in which the candidate acquires experience working with students and adult learners (teachers and parents) on rational number and proportional thinking concepts. Concurrent enrollment in TCH ED 6272 is required.

**TCH ED 6283 Internship-Geometry/Measurement in Elementary Schools: 1 semester hour**

A supervised mathematics teaching practicum with online seminars in which the candidate acquires experience working with students and adult learners (teachers and parents) on geometry and measurement concepts appropriate for K-5 students. Concurrent enrollment in TCH ED 6273 is required.

**TCH ED 6350 Gender, Language and Identity: 3 semester hours**

Same as GS 6350. Prerequisites: Graduate standing. An interdisciplinary look at the ways gendered and racial identities are developed and shaped through language and culture. Readings will address the complex, yet sometimes invisible, ways that identity, language and gender intersect, creating and assigning roles, responsibilities, and possible selves to individuals and groups in a global world.

**TCH ED 6440 Innovation in Education: 3 semester hours**

Prerequisites: Graduate standing. Addresses facets of community education beginning with the theoretical background. Reflection will be examined as a key component of community education and reflective questioning techniques developed and practiced. Students will develop an understanding of community education.

**TCH ED 6444 Environmental Education: 3 semester hours**

Activity-oriented coursework in developing environmental awareness, field and/or laboratory skills and techniques, and the use of environmental curricula. Materials and activities appropriate for a variety of educational settings, including outdoor locales, will be developed. This course is designed to give educators experience in developing and implementing environmental education curricula, especially in an outdoor setting.

**TCH ED 6565 Enriching Learning through Multicultural Arts, Music, Physical Education and Health: 1-2 semester hours**

Prerequisite: Graduate standing. This course surveys the association between academic achievement and student participation in art, music, health, and physical education. Review research pertaining to the relationship between participation in the arts and physical education and language development, memory, creativity and learning in other subject areas.

**TCH ED 6566 Cross-Curricular Connections with Multicultural Arts, Music, Physical Education and Health: 1-2 semester hours**

Prerequisites: Graduate standing. This course surveys research-based methods and strategies for implementing cross-curricular learning activities between the core subject areas and the arts, health, and physical education.

**TCH ED 6880 Gateway Writing Project: 6 semester hours**

Same as ENGL 6880. Prerequisite: Graduate standing. An intensive course in the writing process and the writing curriculum, designed for experienced teachers. Readings of current theory and research will be related to participants' experience as writers and as teachers. May be repeated for credit, but no more than 6 hours may be applied toward the M.Ed. Counts toward the Graduate Certificate in Teaching Writing.

**TCH ED 6890 Seminar in Professional Writing for Teachers: 3 semester hours**

Same as ENGL 6890. Prerequisites: Prerequisites: TCH ED 6880 and consent of instructor. Capstone seminar for the Graduate Certificate in the Teaching of Writing. Participants will pursue the dual role of writer/ writing teacher by designing individual projects with one of these emphases: (1) research writing based on a classroom inquiry into the teaching of writing; (2) expository and creative writing based on an inquiry into the teacher's own evolution as a writer.

**TCH ED 6909 Teacher Action Research I: 3 semester hours**

Prerequisites: Graduate standing and a minimum of 21 hours of MEd coursework completed. Students learn the knowledge, skills and tools for systematic reflective practice in preparation for completing the Masters Capstone Action Research project in TCH ED 6910.

**TCH ED 6910 Teacher Action Research Capstone: 3 semester hours**

Prerequisites: TCH ED 6909 for teachers and all but 6 hours of the MEd program. This course teaches students to apply research knowledge and skills in the form of an Action Research project. Students identify focused questions, collect and analyze data, using both analytic and practice tools, and review the literature. The project will be shared in a public forum as a capstone for the M.Ed.



**TCH ED 7200 Historical and Theoretical Foundations of Curriculum and Instruction: 3 semester hours**

Prerequisites: Admission to the doctoral program. Examines foundational, theoretical and historical work in the field of Curriculum and Instruction. Students will read and analyze key texts, engage in discussions with peers and divisional faculty, build coherent and well-informed arguments, and apply new understandings to problems of practice.

**TCH ED 7210 Issues and Trends in Content and Language Acquisition for English Language Learners: 3 semester hours**

Prerequisites: Doctoral standing. Analysis of current issues on simultaneous development of academic content and English language learning. Current trends in teaching English to Speakers of Other Languages (TESOL) include Sheltered Instruction Observation Protocol (SIOP), Teaching and Learning Cycle, Teaching Proficiency through Reading and Story Telling (TPRS), and English as an international language. Students will identify an area of inquiry, and design and complete a research project.

## Theatre

### Courses

**THEATR 1010 Hip Hop Dance: 3 semester hours**

This course will focus on the foundations and techniques of Hip Hop dance styles. Through the introduction of foundational vocabularies of specific dances and their social and cultural contexts, students will develop proficiency in a few core techniques.

**THEATR 1023 Fundamentals of Dance: 3 semester hours**

This course provides an introductory exploration of movement through various styles of dance, emphasizing movement vocabulary, stretching, strengthening, body alignment, and creative expression. Prior dance experience is not required. Dance attire and shoes will be required.

**THEATR 1060 Theatre Workshop: 1-2 semester hours**

Prerequisites: THEATR 1900 and Consent of Instructor. Course provides practical application of technical theatre practices through 45 hours of lab work within the areas of scenery, lighting, properties, and sound in conjunction with departmental productions. Personal safety equipment and basic tools will be required. Course may be repeated for up to 8 credit hours.

**THEATR 1070 Introduction to Cinema: 3 semester hours**

Same As MEDIA ST 1070. This course provides an overview of American cinema from the early beginnings of D.W. Griffith and his contemporaries to the present day. The course will discuss both the Hollywood studio system and today's independent movement. Genre, film theory, criticism, and aesthetics are also covered.

**THEATR 1080 Introduction to World Cinema: 3 semester hours**

An introduction to the history, rhetoric, and aesthetics of world cinema. International film theory and criticism will be studied as well as major genres, authors, and artists.

**THEATR 1210 Fundamentals of Acting: 3 semester hours**

Course develops personal communication and presentational skills through vocal, physical, and emotional exercises designed for the beginning actor. Course emphasizes relaxation, concentration, improvisation, script analysis, characterization and scene work exercises to develop elementary performance skills.

**THEATR 1600 Voice Ad Diction/Vocal Performance: 3 semester hours**

This course promotes development of clear, distinct enunciation and correct pronunciation for mass media communication, public address, theatre, and oral interpretation. It also includes development of oral-presentational and self promotional skills for voice acting/voice-over in contemporary theatre and media.

**THEATR 1800 Introduction to Theatre (MOTR THEA 100A): 3 semester hours**

A study of Theatre as an art form, emphasizing the audience's appreciation of the art of the playwright, actor, director, designers, and technicians. Major periods, genres, and dramatic forms from classical to modern to the avant garde as well as performance art will be covered. Students will attend performances and learn about how theatre functions as an art and an industry in today's world. Attendance at several live theatrical (theatre, play, musical, opera, and dance) performances, will be required.

**THEATR 1850 Introduction to Non-Western Theatre: 3 semester hours**

Survey of theatre forms of the non-European world in which primary attention is concentrated on analysis of traditional dance drama and puppet theatres of East Asia, South Asia, the Middle East and Africa. Similar forms of European theatre will be included for comparative purposes. Focus on the development of world theatre from a visual point of view, from earliest storytelling rituals through international stage development to contemporary theatrical forms, with a view to understanding the global perspective. Course will survey visual media and writings on dance and theatre traditions found around the non-Western World. (Satisfies the Cultural Diversity requirement).

**THEATR 1900 Introduction to Theatre Technology: 3 semester hours**

Introductory course covering the basic theories and techniques of theatre technology including stage equipment and safety, scenery, lighting, costuming, properties, sound and box office. Course includes practical application through a minimum of 25 hours of lab work in conjunction with a departmental production.

**THEATR 1910 Introduction to Theatrical Design: 3 semester hours**

Prerequisites: THEATR 1900 or consent of instructor. Introductory course covering the elements and principles of design in the areas of scenery, lighting, and costumes. Course will include various creative projects in two and three dimensions. Some graphic materials will be required.

**THEATR 2020 Acting for the Camera: 3 semester hours**

An acting course that prepares the actor for work in front of a camera. Working with broadcast quality cameras, students will learn the art of language and expression. Students will learn the art and skill of communicating to an audience. Students also acquire the skills for working with other actors on camera, close-ups, working with props, continuity and hitting your mark.

**THEATR 2195 Practicum in Performance Studies: 1-3 semester hours**

Prerequisite: Consent of instructor. Provides practical experience in acting, directing, or dramaturgy through rehearsal and performance in conjunction with department productions, or other approved independent study projects. Laboratory time will be scheduled and may include evening and weekend rehearsals and performances. Course may be repeated for up to 8 credit hours.

**THEATR 2196 Practicum in Scenery/Lighting/Sound in Theatre Production: 1-3 semester hours**

Prerequisites: THEATR 1900 and Consent of Instructor. Course provides practical experience in scenery, lighting, sound, and properties implementation and/or running crew work in conjunction with departmental productions or other approved independent study projects. Running crew work will involve evening, weekend and daytime hours according to assignment. Credit hours are determined based on the scope of the project. Course may be repeated for up to 6 credit hours.

**THEATR 2197 Practicum in Costume: 1-3 semester hours**

Practicum in costume construction, cutting, draping, millinery, fabric dyeing/painting, distressing, crafts including wardrobe and makeup running crews, in conjunction with the theatre and dance department productions, or other approved independent study projects. In addition to daytime lab hours, occasional weekend and/or evening laboratory time will be required. Appropriate clothing, personal safety and sewing equipment will be required. Course may be repeated for up to 8 credit hours.

**THEATR 2210 Ensemble Acting: 3 semester hours**

Prerequisites: THEATR 1210. A Laboratory acting course providing an 'outside-in' starting point for theatrical creation and study, balancing and countering the 'inside-out' approach of Stanislavsky-based actor training. Emphasis is paid to ensemble creations, physical characterization, cooperative methods and object performance. May involve practices and theories of Jerzy Grotowski, Augusto Boal, Jacques Lecoq, and/or Tadashi Suzuki.

**THEATR 2214 Screenwriting: 3 semester hours**

Prerequisites: THEATR 1070 or consent of the department. Writing fiction film narratives with particular emphasis on plot structure, theme, and character development.

**THEATR 2241 Argumentation and Debate: 3 semester hours**

Prerequisite: COMM 1040, or COMM 1041, or consent of instructor. Principles of argumentation and debate with practice in preparing briefs and in delivering spoken arguments in formal debate. Emphasis on analysis of issues, logical reasoning, and audience analysis.

**THEATR 2244 Introduction to Directing: 3 semester hours**

Prerequisite: TH DAN 2105. An overview of the analytical and creative processes that inform the director's work. Students engage in a close examination of texts, key concepts, and directorial choices in staged performances, opera, films, and video. Students will learn how to articulate responses to theatrical/film work, create and present projects, understand the history and role of the director, and unlock the imagination as an interpretive artist.

**THEATR 2250 Scenic Fabrication: 3 semester hours**

Prerequisites: THEATR 1900 or consent of instructor. A survey of the theories, terminology, and practices of professional methods and equipment of scenic and properties fabrication, painting, and rigging. Students will learn current professional techniques in wood, metal, and plastic fabrication including the operation and programming of CNC production machinery. Course includes practical application through 45 hours of lab work in conjunction with department productions. Personal safety equipment will be required.

**THEATR 2252 Costume Design I: 3 semester hours**

Prerequisites: THEATR 1910 or consent of the instructor. Introduces students to the costume design process including researching costumes, techniques in rendering and painting for costume design, required paperwork for the costume designer, and the understanding of fabrics. Students will use introductory skills to create practical costume design projects.

**THEATR 2260 Introduction to Theatrical Costume Production: 3 semester hours**

A survey of the theory, practices and vocabulary of theatrical costuming; the visualization and realization of the costume through the arts of pattern cutting; the construction techniques; draping; dyeing, painting, and distressing. Course includes practical application of techniques through required 45 hours of lab work in conjunction with current department productions.

**THEATR 2271 History of American Film: 3 semester hours**

Prerequisites: THEATR 1070 or MEDIA ST 1070; or consent of the instructor. This course explores the history of American film from the late nineteenth century to the present.

**THEATR 2272 Contemporary Cinema: 3 semester hours**

Prerequisites: THEATR 1070 or MEDIA ST 1070; or consent of instructor. This course explores the history of World Cinema from the 1940s to the present day.

**THEATR 2273 Survey of Film Genres: 3 semester hours**

Prerequisites: THEATR 1080 or MEDIA ST 1070; or consent of instructor. This course explores the historical and aesthetic significance of film varieties. Analysis of genres may include the western, horror, science fiction, musical, detective, war, romantic comedy, and other films by type.

**THEATR 2274 African-American Cinema: 3 semester hours**

Prerequisites: THEATR 1070 or MEDIA ST 1070; or equivalent. This course studies the impact of cinema and the entertainment industry on the social perceptions of African-Americans and on African-American culture. The history of African-American films from Oscar Micheaux in the 1920's through 1970's Blaxploitation to present directors and producers will be examined. African-American experiences and roles in films will also be discussed.

**THEATR 2290 2D and 3D CAD for Live Performance: 3 semester hours**

Prerequisites: THEATR 1900 or consent of instructor. Survey course covering the fundamental techniques of two- and three-dimensional computer aided drafting and rendering.

**THEATR 2300 Stage Management: 3 semester hours**

Prerequisite: Consent of instructor. Course develops fundamental stage management skills needed to supervise all operative aspects of play production from auditions through performance. These skills include: interpersonal and leadership skills, conflict resolution techniques, venue and staff management/scheduling, and technical script analysis. Course includes production experience.

**THEATR 2800 History of Costumes: 3 semester hours**

Prerequisites: THEATR 1800 or consent of instructor. Survey of the Western history of costumes through the cultural, historical, and political influences on fashion from primitive times to the present.

**THEATR 2810 History of World Theatre and Drama through the Restoration: 3 semester hours**

Prerequisites: THEATR 1800 or consent of instructor. Survey of the history of influence of different cultures, traditions, and technologies on development of theatre as a social institution. History of Theatre and drama from ancient cultures to the Restoration period. Ritual and religious drama. Study of the origins of the theatre and drama from oral tradition, myth, storytelling, Shamanism and collective ritual, Greek festival drama, and cloister drama of different cultures. Rise of secular drama, the traditions of classical Greek theatre. Study of the Renaissance, and drama in Europe, Asia, Africa, and the New World.

**THEATR 2820 History Of World Theatre & Drama from 18Th C To Contemporary Time: 3 semester hours**

Prerequisites: THEATR 1800 or consent of instructor. History of theatre from 18th century to contemporary times. Survey of history of influence of different cultures, traditions, and technologies on the development of theatre as a social institution. Study of realism and subsequent departures from realism in theatre, drama and performance.

**THEATR 3060 Advanced Theatre Workshop: 1-2 semester hours**

Prerequisites: THEATR 1060, THEATR 1900 and Consent of instructor. Practical application of technical theatre practices through 45 hours of lab work within the areas of scenery, lighting, properties, and sound in conjunction with departmental productions. Personal safety equipment and basic tools will be required. Course may be repeated for up to 8 credit hours.

**THEATR 3070 International Cinema: 3 semester hours**

Prerequisites: THEATR 1070 or MEDIA ST 1070. This course promotes an understanding of the art and history of international cinema and helps students to better understand film and filmmakers' intentions as well as the culture in which the film was produced. Films from Europe, Asia, South America, Africa and Australia will be examined. The artistic, technical, historical and social significance of these films, as well as their impact upon American cinema, will also be studied.

**THEATR 3195 Advanced Practicum in Performance Studies: 1-3 semester hours**

Prerequisite: Consent of instructor. Course provides advanced practical experience in acting, directing, or dramaturgy through rehearsal and performance in conjunction with department productions, or other approved independent study projects. Laboratory time will be scheduled and may include evening and weekend rehearsals and performances. Course may be repeated for up to 8 credit hours.

**THEATR 3196 Advanced Theatre Practicum: Scenery/Lighting/Sound in Theatre Production: 1-3 semester hours**

Prerequisite: Consent of instructor. Course provides advanced practical experience in scenery, lighting, sound, and properties implementation and/or running crew work in conjunction with departmental productions, or other approved independent study projects. Running crew work may involve evening and weekend assigned times. Additional daytime hours will vary according to assignment. Credit hours are determined based on the scope of the project. Course may be repeated for up to 6 credit hours.

**THEATR 3197 Advanced Practicum in Costume: 1-3 semester hours**

This course provides advanced practical experience in costume construction, cutting, draping, millinery, fabric dyeing/ painting, distressing, crafts including wardrobe and makeup running crews, in conjunction with the theatre and dance department productions, or other approved independent study projects. In addition to daytime Lab hours, occasional weekend and/or evening laboratory time may be required. Appropriate clothing and personal safety equipment will be required. Personal equipment will be required. Course may be repeated for up to 8 credit hours.

**THEATR 3240 Movement For Musical Theatre: 3 semester hours**

Prerequisite: THEATR 2240 or consent of instructor. Specialized training in movement and dance techniques for musical theatre.

**THEATR 3250 Costume Crafts: 3 semester hours**

Prerequisites: THEATR 2260 or Consent of the Instructor. Develop the skills and techniques needed to execute crafts used in costume design including millinery, mask making, fabric painting and dyeing, wig manipulation, armor, and other craft work. Course may be repeated for up to 6 credit hours.

**THEATR 3252 Costume Design II: 3 semester hours**

Prerequisites: THEATR 2252 and THEATR 2260, or consent of instructor. Content of course includes study of theories, styles, visualization of ideas, and techniques of costume design; discussion of principles of design, script analysis, the collaborative roles of designers in the theatrical production; research, and exploration of character representation; study of the human figure, drawing, and rendering techniques.

**THEATR 3254 Costume Production and Construction Techniques: 3 semester hours**

Prerequisites: TH DAN 1900, TH DAN 2260 or Consent of instructor. Study of theory and application of pattern making, fitting, construction techniques for costumes and undergarments to achieve authentic-appearing costumes using contemporary methods. Provides practical experience in costume construction, as well as wardrobe and makeup. Participation in running crews, in conjunction with the theatre and dance department productions, or other approved independent study projects may be required. Personal equipment will be required. Weekend and evenings may be required. Appropriate clothing and personal safety equipment required. Course may be repeated for up to 8 credit hours.

**THEATR 3257 Makeup for Theatrical Productions: 2 semester hours**

Prerequisites: THEATR 1800, THEATR 1910, or consent of instructor. The art of makeup and its relation to production. Overview of European history and tradition of makeup. Theory, history and the practice of makeup traditions for theatre, dance and performance will be included.

**THEATR 3260 Design for Stage and Screen: 3 semester hours**

Same as MEDIA ST 3260. Prerequisites: Consent of instructor. This course surveys the professional theories and practices used in the field of design for stage and screen. It emphasizes a digital design process and collaboration.

**THEATR 3261 Lighting for Stage and Screen: 3 semester hours**

Same as MEDIA ST 3261. Prerequisite: Consent of instructor. This course surveys the theories and techniques used in digital lighting design and production for the stage and screen. It emphasizes professional practices and applications of lighting for both stage and screen.

**THEATR 3263 Techniques in Scenic Finishes: 3 semester hours**

Prerequisites: THEATR 1900, THEATR 1910, or consent of instructor. Survey of theories, materials, and professional techniques used in finishing fabricated scenery. This course will focus on traditional scenic painting, faux finishing techniques, digital graphics production and application, and design and production of digitally printed and cut drops. Course includes practical application through 45 hours of lab work in conjunction with departmental productions and class projects.

**THEATR 3305 Writing for Performance: 3 semester hours**

Prerequisite: Consent of instructor. Introduction to writing for performance, including playwriting and dramatic adaptation. Students' particular interests will determine course content: ranging from sketch comedy or adaptation of literature for the stage, to full-length comic or dramatic plays. This course is writing intensive and may require additional laboratory hours.

**THEATR 3362 Storytelling: 3 semester hours**

Prerequisites: Junior standing or consent of instructor. This course gives an overview of the history of storytelling, types of tales, and appropriate uses for storytelling. The primary emphasis of the course is in developing storytelling skills through preparation, performances, and evaluation.

**THEATR 3370 Documentary Film: 3 semester hours**

Prerequisites: THEATR 1070 or MEDIA ST 1070. This course considers the history, theory, and criticism of nonfiction film and includes screening of representative documentary films.



**THEATR 3380 Feature Film Screenwriting: 3 semester hours**

This course involves a careful examination and execution of the art and craft of feature film screenwriting from concept through completion and marketing. Students will learn aspects of proper screenplay format, developing dramatic characters, theme, and plot, with emphasis on visual storytelling.

**THEATR 3399 Stage Combat: 3 semester hours**

Prerequisites: Junior or Senior standing, or consent of instructor. This is a movement course designed to expand the acting student's awareness of the body as a vehicle for the communication of emotion, action, and drama on the state. It will introduce the skills and techniques necessary for the creation of safe and effective illusions of violence for the stage.

**THEATR 4020 Directing for the Camera: 3 semester hours**

Prerequisites: THEATR 2020. This directing course prepares the student director to work with both the actors and the cinematographer to achieve the directorial concept. The director will work with actors and a cinematographer to produce a short-length film/video from a prepared script. The creation of shooting scripts, story boards, and a shooting schedule are covered in the course.

**THEATR 4040 Special Topics in Theatre: 1-6 semester hours**

Prerequisites: Junior, Senior, or consent of instructor. Special topics with subject matter dealing with current issues (theoretical or applied) in the discipline of Theatre. Course may be repeated for up to 12 credit hours, provided the topic is different.

**THEATR 4220 Directing for the Theatre: 3 semester hours**

Prerequisites: THEATR 1210 or consent of instructor. A survey of the theories and practices of theatrical directing, beginning with the theories and techniques of accomplished directors. The stage director's role in performance development will be studied through script analysis, production planning, and the rehearsal process, culminating with a live performance. Final projects are laboratory scenes or a short one-act play.

**THEATR 4261 Advanced Projects in Design and Technology: 1-3 semester hours**

Prerequisites: THEATR 1910 and consent of instructor. Provides opportunities for supervised advanced projects in theatre design or technology in conjunction with departmental productions, or other independent study projects. Credit assigned based on scope of project. Course may be repeated for up to 6 credit hours.

**THEATR 4270 Feature Film Writing: 3 semester hours**

Prerequisites: THEATR 1070 or MEDIA ST 1070; or consent of instructor. This course will include story conceptualization, development, and drafting a feature film script ready for production. Characterization, dramatic structure, thematic subtext, and visual storytelling will be emphasized.

**THEATR 4271 Feature Film Production: 3 semester hours**

Prerequisites: MEDIA ST 2210 or consent of Instructor. This course will emphasize production techniques applicable to a wide variety of audio, film, and video-based media. Students will be involved in feature film production assignments on location in addition to regularly scheduled classes.

**THEATR 4272 Feature Film Post Production: 3 semester hours**

Prerequisites: MEDIA ST 2210 or consent of instructor. This course will provide instruction in editing techniques and motivation, as well as continuity, rhythmic, graphic, and temporal editing principles. Students will work on feature film segments in addition to regularly scheduled classes.

**THEATR 4390 Theatre Internship: 1-3 semester hours**

Prerequisites: Junior level with consent of instructor. Provides opportunities for supervised projects in conjunction with off-campus professional theatre and/or dance companies in performance, management, design or technology. Credit based on scope of assignment. Course may be repeated for up to 6 credit hours.

**THEATR 4886 The Curriculum and Methods of Teaching Speech and Theatre: 3 semester hours**

Same as SEC ED 4886. Prerequisites: TCH ED 3310 or TCH ED 5310; students must be within three hours of completing a major in either Communication or Theatre, with 15-18 hours completed in the other subject area. A study in the scope and sequence of the Speech and Theatre courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. The course prepares students for reflective teaching by relating course readings to field experience and theory to practice. To be taken prior to student teaching and concurrently with SEC ED 4989: Secondary Professional Internship. This course must be completed in residence. Not available for graduate credit.

**THEATR 4900 Senior Project: 3 semester hours**

The capstone experience requires seniors to produce an original research project, a representative portfolio, or an intrinsic case study, which exemplifies their undergraduate study. Students will present their work to the instructor supervising the course, as well as program related-faculty.

## Theory and Composition

### Courses

**THRY COM 1190 Fundamentals of Music: 3 semester hours**

This course provides basic music vocabulary: scales, intervals, and chords, and systematic instruction in the melodic, rhythmic, and harmonic aspects of music. This course will not apply toward requirements for a music major.

**THRY COM 1300 Introduction to Music Theory: 1 semester hour**

This course introduces the basic vocabulary of music notation and theory and rudimentary skills of ear training and sight singing. This course must be taken concurrently with THRY COM 1301, but may be waived on the basis of a successful score on the Theory Placement Exam.

**THRY COM 1301 Theory of Music I: 3 semester hours**

Prerequisite: Consent of department. This course introduces the basic materials of music as well as species counterpoint and diatonic harmony. Concurrent registration in THRY COM 1300 is required unless waived on the basis of a successful score on the Theory Placement Exam. Concurrent registration in THRY COM 1302 is required for music majors and minors.

**THRY COM 1302 Aural Training I: 2 semester hours**

Prerequisite: Consent of instructor. Systematic instruction in ear training and sight singing of all material covered in THRY COM 1301. Includes diatonic melodic and rhythmic dictation, chord quality recognition, sight singing of diatonic melodies, and the reading of units and divisions of units in simple and compound meters. Concurrent registration in THRY COM 1301 is required for music majors and minors.



**THRY COM 1311 Theory of Music II: 3 semester hours**

Prerequisites: THRY COM 1300, THRY COM 1301, and THRY COM 1302 or consent of department. This course continues the study of diatonic harmony begun in THRY COM 1301. Harmonic function, phrase structure, harmonic sequences, secondary dominants, and simple modulation. Concurrent registration in THRY COM 1312 is required for music majors and minors.

**THRY COM 1312 Aural Training II: 2 semester hours**

Prerequisites: THRY COM 1301 and THRY COM 1302 or consent of instructor. The systematic instruction in ear training and sight singing begun in THRY COM 1302 is continued. This course provides instruction in the performance and aural recognition of all musical devices introduced in THRY COM 1311. Concurrent registration in THRY COM 1311 is required for music majors and minors.

**THRY COM 2301 Theory of Music III: 3 semester hours**

Prerequisites: THRY COM 1311 and THRY COM 1312 or consent of department. This course begins the study of chromatic harmony and form in music of the eighteenth and nineteenth centuries. Concurrent registration in THRY COM 2302 is required for music majors and minors.

**THRY COM 2302 Aural Training III: 2 semester hours**

Prerequisites: THRY COM 1311 and THRY COM 1312 or consent of instructor. Systematic instruction in ear training and sight singing of THRY COM 1312 is continued. This course provides instruction in the performance and aural recognition of all musical devices introduced in THRY COM 2301. Concurrent registration in THRY COM 2301 is required for music majors and minors.

**THRY COM 2311 Theory of Music IV: 3 semester hours**

Prerequisites: THRY COM 2301 and THRY COM 2302 or consent of department. This course continues the study of chromatic harmony of late nineteenth-century music, as well as the analysis of larger musical forms. Additionally, this course focuses on developing the ability to communicate analytical observations effectively in both written and spoken formats. Concurrent enrollment in THRY COM 2312 is required for all music majors and minors.

**THRY COM 2312 Aural Training IV: 2 semester hours**

Prerequisite: THRY COM 2301 and THRY COM 2302 or consent of instructor. The systematic instruction in ear training and sight singing of THRY COM 2302 is continued. This course provides instruction in the performance and aural recognition of all musical devices introduced in THRY COM 2311. Concurrent enrollment in THRY COM 2311 is required for all music majors and minors.

**THRY COM 2313 Jazz Theory: 3 semester hours**

Prerequisites: THRY COM 2301 and THRY COM 2302. This course addresses the basics of jazz harmony. Students will be introduced to topics such as: jazz scales and modes; chords (7th through 13th) with all of their frequent jazz alterations; reharmonization; voice leading and dissonance treatment; melody, transcription, analysis, and the study of form.

**THRY COM 2314 Jazz Aural Training: 1 semester hour**

Prerequisites: THRY COM 2301 and THRY COM 2302. This course provides instruction in developing aural skills necessary for jazz musicians. Students will develop proficiency in both the translation of hearing into writing and the performance of reading into performing in the jazz idiom. Methods involved will include practice in singing, aural recognition, and transcription of recordings.

**THRY COM 3110 Analysis of Music from 1900 to Present: 2 semester hours**

Prerequisites: THRY COM 2311 and THRY COM 2312 or consent of department. This course primarily provides a study of compositional devices in atonal and serial music since 1900.

**THRY COM 3120 Tonal Counterpoint: 2 semester hours**

Prerequisites: THRY COM 2311 and THRY COM 2312; or consent of department. Study of tonal counterpoint with emphasis on the eighteenth century style. Composition in two and three parts.

**THRY COM 3130 Advanced Analytical Techniques: 2 semester hours**

Prerequisites: THRY COM 2311 and THRY COM 2312. Close analysis, seminar discussion, and focused theoretical/analytical study of selected compositions. Repertoire studied changes from year to year at discretion of instructor.

**THRY COM 3140 Readings in Music Theory: 2 semester hours**

Prerequisites: THRY COM 2311 and THRY COM 2312. An introduction to the primary areas of research in the field of music theory. This seminar-style course will include readings and discussion of a number of important writings in music theoretical areas including, but not limited to the following: tonal theory, post-tonal theory, mathematics and music, music cognition, and the history of music theory.

**THRY COM 3300 Seminar in Composition: 1 semester hour**

Prerequisites: THRY COM 1311 or consent of instructor. This course provides an introduction to the study of composition in theory and practice.

**THRY COM 3310 Studio Composition: 1 semester hour**

Prerequisites: THRY COM 2311 and THRY COM 2312, or consent of department. Individual lessons in music composition. Course may be repeated for credit.

**THRY COM 3410 Orchestration: 3 semester hours**

Prerequisites: THRY COM 2311 or consent of instructor. Study of the instruments of the brass, woodwind, percussion, and string families; scoring, transcription, and arranging for various instrumental ensembles.

**THRY COM 3411 Jazz Arranging: 3 semester hours**

Prerequisites: THRY COM 2313 and THRY COM 2314. This class provides instruction in scoring and arranging for jazz instruments in ensembles of various sizes. Study of arrangements in various styles will be used in application to the creation of original student arrangements.

**THRY COM 3420 Choral Arranging: 2 semester hours**

Prerequisites: THRY COM 2311 or consent of department. Study of vocal ranges, characteristics and capabilities at various ages and scoring for choral ensembles comprised of singers in these varying stages of vocal development.

**THRY COM 4000 Directed Studies: Variable Topic: 1-5 semester hours**

Prerequisite: Consent of instructor. Directed independent study of selected topics in music. May be repeated, but no more than 5 hours may be applied toward a degree.

**THRY COM 5110 Scoring and Arranging: 3 semester hours**

Prerequisite: Graduate standing in music. Experience in scoring and arranging music for a variety of ensembles.

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