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UM-ST. LOUIS BULLETIN

Undergraduate, Graduate and Professional Catalog

2001-2002

Volume 30
July 2001

a smart investment in your future

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Many departments offer courses in several subject areas. This list is provided for easy student reference.

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Astronomy  
Athletic coaching  
Biochemistry  
Biology  
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Chemistry  
Chinese  
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Clinical laboratory science  
Communication  
Communication theory and rhetoric  
Comparative politics  
Computer science  
Conservation biology  
Counselor education  
Creative writing  
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Cytotechnology  
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Hebrew  
History  
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International business  
International relations  
Italian  
Japanese  
Jazz studies  
Korean  
Latin American studies  
Latin  
Legal studies  
Logistics and operations management  
Management and organizational behavior  
Management information systems  
Management science  
Marketing  
Mass communication  
Mathematics  
Medical physics  
Middle school  
Music  
Music education  
Museum studies  
Nonprofit organization management and leadership  
Nursing  
Optometry  
Painting  
Philosophy  
Photographic studies  
Physical education  
Physics  
Physiological optics  
Pre-architecture  
Pre-engineering  
Pre-journalism  
Pre-law  
Pre-medicine  
Pre-optometry  
Pre-pharmacy  
Printmaking  
Probability and statistics  
Psychology  
Public administration  
Public affairs journalism  
Public law  
Radio and television  
Religions  
Reserve Officer Training Corps  
Secondary education  
Social work  
Sociology  
Spanish  
Special education  
Statistics  
Studio art  
Trauma studies  
Tropical ecology  
Urban politics  
Urban studies  
Women's and gender studies  
Writing
Preface

This Bulletin includes a description of undergraduate and graduate programs at the University of Missouri-St. Louis. 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 Commission on Institutions of Higher Education of the North Central Association of Colleges and Schools. This accreditation applies to all baccalaureate, masters, and doctoral levels.

The policies of the University of Missouri-St. Louis comply with the provisions under those laws which 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.

Demographic data is obtained by the University in order to determine the effect of efforts related to the provision of equal educational opportunity. Completion of this information is optional.

Information regarding the provision of auxiliary aids and services to qualified students with disabilities can be found in Admissions and Academic Policies of this Bulletin. Students considering such assistance should contact the Director of Disability Access Services at 516-5211 voice or 516-5212 TT for further details.

Address inquiries regarding admission to all divisions of the university to the Director of Admissions, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121-4499. For information concerning the University of Missouri-Columbia, the University of Missouri-Rolla, or the University of Missouri-Kansas City, write directly to the Director of Admissions at the appropriate campus.

Course Numbering

Each course bears a distinguishing number which identifies it within the department or academic unit and indicates, broadly, its rank. The numbering system is as follows:

Course Description Guide

- 1 to 99, primarily for freshmen and sophomores.
- 100 to 199, primarily for upperclassmen, no graduate credit.
- 200 to 299, for undergraduates and appropriate professional and graduate students, except those whose graduate majors are in the department in which the course is given.
- 300 to 399, for undergraduate, appropriate professional and graduate students without restriction as to students' graduate majors.
- 400 to 499, primarily for graduate and appropriate professional students in special programs; upper-class students admitted to courses in this series only with the approval of the graduate dean.
- 500 to 599, for professional optometry students. Other students admitted to courses in this series only with the approval of the Optometry Dean. In addition, these numbers are used for courses offered in the cooperative MSN program between UM-St. Louis and UM-Kansas City.

General Education Requirement Courses

Courses which fulfill the university's general education requirements, as outlined in the Academic Policy section of this Bulletin, are listed at the beginning of each departmental course section.

Each list of course numbers also is identified by one of the following breadth of study areas:

[H] Humanities requirement
[SM] Natural sciences and mathematics requirement
[SS] Social sciences requirement.
Programs and Offices

Academic Advising Center
225 Millennium Student Center, 516-5300

Academic Affairs, Vice Chancellor
401 Woods, 516-5371

Administrative Services, Vice Chancellor
243 General Services Bldg., 516-6100

Admissions
351 Millennium Student Center, 516-5451

Alumni Relations
7592 Natural Bridge, 516-5833

Alumni Center
7956 Natural Bridge, 516-5722

Anthropology Department
507 Clark, 516-6020

Art and Art History Department
590 Lucas, 516-5975

Arts and Sciences, College of
305 Lucas, 516-5501

Athletics Office
225 Mark Twain, 516-5661

Biology Department
223 Research Bldg., 516-6200

Bookstore
209 Millennium Student Center, 516-5763

Bridge Program
201 WEB Education Library, 516-5196

Business Administration, College of
487 SSB, 516-5888

Cable TV Studio (ITC Control Room)
113 Lucas, 516-6171

Cafeteria
Millennium Student Center

Career Services
371 Millennium Student Center, 516-5111

Cashier's Office
284B Millennium Student Center, 516-5151

Center for Academic Development (CAD)
507 Tower, 516-5194

Center for Business and Industrial Studies
461 SSB, 516-5857 or 6108

Center for Entrepreneurship and Economic Education
306 Tower, 516-5248

Center for Humanities
406 Lucas, 516-5699

Center for International Studies
366 SSB Bldg., 516-5753

Center for Metropolitan Studies
362 SSB Bldg., 516-5273

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229 CME, 516-5019

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333 Benton, 516-6150

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315 Benton, 516-5311

Child Development Center
130 South Campus Classroom Bldg., 516-5658

Communication Department
590 Lucas, 516-5485

Computing, Office of
451 CCB, 516-6000

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201 J.C. Penney; Credit and Noncredit Courses, 516-5961

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469 Marillac Hall, 516-5782

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427 SSB Bldg., 516-5711

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494 Lucas, 516-5031

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261A Millennium Student Center, 516-6814

Development Office
426 Woods, 516-5664

Disability Access Services
146 Millennium Student Center, 516-6554

Dispute Resolution Program
362 SSB Bldg., 516-6040

Economics Department
408 SSB, 516-5351

Education, College of
201 Education Administration Bldg., 516-5109;
Graduate Studies in Education
201 WEB Library, 516-5483

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217 Millennium Student Center, 516-5161

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Financial Aid
278 Millennium Student Center, 516-5526

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204 Fine Arts, 516-6967

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210 Lucas, 516-5976

Gerontology
406 SSB Bldg., 516-5280

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427 SSB, 516-5730
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222 GSB, 516-5804
Instructional Technology Center
113 Lucas, 516-6171
KWMU 90.7 FM Radio
104 Lucas, 516-5968
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347 SSB, 516-5521
Printing Services
261 General Services Bldg., 516-5233
Psychology Department
325 Stadler, 516-5391
Public Policy Administration
406 Tower, 516-5145
Public Policy Research Centers
362 SSB Bldg., 516-5273; The James T. Bush Sr. Center; Metropolitan Studies; Public Policy, Extension/Survey, and Applied Research 362 SSB, 516-5273
Purchasing
201 General Services Bldg., 516-5366
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273 Millennium Student Center, 516-5676
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338 Woods, 516-5897
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123 South Campus Residence Hall, 516-6877
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Washington University, 935-5546
Social Work Department
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Sociology Department
707 Tower, 516-5634
Sports Information
225 Mark Twain, 516-5660
Student Activities Office
366 Millennium Student Center, 516-5291
Student Affairs, Vice Chancellor
301 Woods, 516-5211
Student Employment Program: Career Services
371 Millennium Student Center, 516-5111
Student Government Office
375 Millennium Student Center, 516-5105
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1 Mark Twain Drive, 679-1400
Tutorial Referral Services
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607 Tower, 516-5581
Administration

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School of Optometry
Larry Davis, Dean (Interim)
David W. Davidson, M.S., O.D., Associate Dean for Academic and Student Affairs
Gerald A. Franzel, O.D., Associate Dean for Clinical Affairs and Continuing Education and Outreach
Timothy A. Wingert, O.D., Chief, Primary Care Services
Edward S. Bennett, M.S.Ed., O.D., Chief, Co-Contact Lens Service
Alexander D. Harris, M.A., O.D., Chief, External Rotations
Jane Shea, O.D., Coordinator, Optometric Center
Carol Merritt, O.D., Coordinator, East St. Louis Eye Center
W. Howard McAlister, M.A., MPH., O.D., Director of Residencies
Carol K. Peck, Ph.D., Director of Graduate Programs
Aaron Franzel, O.D., Chief, Pediatric/Binocular Vision Service

Pierre Laclede Honors College
Robert Bliss, Ph.D., Dean
Dennis Bohnenkamp, M.A., Associate Dean

UM-St. Louis/Washington University Joint Undergraduate Engineering Program
John Russell, Dean
Bernard Feldman, Ph.D., Associate Dean
Gloria Gardner, B.S., Academic Adviser

Administrative Services
Reinhard Schuster, M.S., Vice Chancellor
Peter Heithaus, Director, Human Resources
Bob Roeseler, Director, Institutional Safety
Gloria L. Schultz, M.Ed., Director, Auxiliary and Management Services; Manager, Bookstore
James L. Hickerson, Ph.D., Coordinator for Environmental Health and Safety

Managerial and Technological Services
James M. Krueger, D.B.A., C.P.A., Vice Chancellor
Ernest A. Cornford, B.A., Director, Finance
Gloria J. Leonard, M.Ed., Director, Business Services
Jerrold Siegel, Ph.D., Associate Vice Chancellor for Technology and Information Technology Services
Lawrence W. Westermeyer, M.S., Director, Institutional Research
Joann Wilkinson, B.A., Planning and Budgeting Specialist

Student Affairs
Vacant, Vice Chancellor
Joanne Bocci, Interim Associate Vice Chancellor
Deborah A. Kettler, B.S., Director, Career Services
M. Sharon Biegen, Ph.D., Director, Counseling Services
Joanne Bocci, Director, Student Activities (Interim)
Vacant, Registrar
Anthony Georges, Ph.D., Director, Student Financial Aid
Curtis Coonrod, M.A., Director, Admissions

University Relations
Donald Driemeier, Vice Chancellor (Interim)
Robert Samples, M.S., Director, University Communications
Mark O-Reilly, Director, Graphics and Printing
Phillury Platte, Director, Development
Robyn Wahby, Manager, Alumni Relations
Lucinda R. Vantine, B.A., Manager, Special Events
Maureen Zegel, B.A., Manager, Media Relations
Introduction to UM-St. Louis

The University of Missouri-St. Louis is one of four campuses that constitute the University of Missouri, the ninth largest university in the United States. 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.

The university remained a single-campus institution until 1870, when the Rolla campus was opened. In the 1960s a movement began across the country toward creation of public universities located within metropolitan centers. That movement marked the most significant change in higher education in the twentieth century, and the University of Missouri-St. Louis is a product of that educational development. Two campuses were added in 1963. The private University of Kansas City became the university's Kansas City campus, and an entirely new campus was started in St. Louis.

The notion of a major public institution serving the St. Louis area evolved from a dream to a solid reality, which today exceeds the expectations of those who created it. Since the doors of the old Administration Building opened nearly 40 years ago, UM-St. Louis has become the largest university serving Louisans and the third largest university in the state. The university faculty has grown from 30 in 1963 to more than 900 members, committed to the future of the St. Louis area through teaching, research, and service.

One of the keys to this university's development as an outstanding institution has been the careful selection of faculty over the years. UM-St. Louis has attracted some of the top authorities in many fields. More than 90 percent of the full-time faculty hold doctoral degrees, a figure that far exceeds the national average. These professionals develop new theories and new procedures, and in so doing attract millions of dollars each year in research funding.

Student enrollment has grown from 600 in 1963 to more than 16,000. The numbers have changed, but not the spirit. Faculty and students are still most concerned with the education of new talent, which is the basis for the future social, intellectual, and economic health of Missouri's largest metropolitan area. From its beginning on what was once the site of a country club with a single building, UM-St. Louis has grown to a large modern campus of some 73 buildings on 250 acres, offering a full university experience.

The curriculum has grown to include 42 undergraduate programs, 26 master's programs, seven preprofessional programs, ten doctoral programs, and one professional degree program. There are programs which answer the particular needs of older students returning to school; of students pursuing pre-architecture, pre-law, pre-medicine, pre-pharmacy, pre-engineering, or pre-journalism courses, and of students interested in urban careers. There are also many opportunities for students to combine their academic course work with internships that often lead to job offers.

Mission Statement

The University of Missouri-St. Louis is the land-grant research institution committed to meeting the diverse needs in the state's largest metropolitan community. It educates traditional and nontraditional students in undergraduate, graduate, and professional programs so that they may provide leadership in health professions, liberal and fine arts, science and technology, and metropolitan affairs such as business, education, and public policy. University research advances knowledge in all areas, and through outreach and public service, assists in solving, in particular, problems of the St. Louis region.

Academic programs are enriched through advanced technologies and partnerships that link UM-St. Louis to institutions and businesses locally, regionally, nationally, and internationally. Its special commitment to partnership provides UM-St. Louis with a leadership responsibility among public educational and cultural institutions in improving the region's quality of life, while its relations with two- and four-year colleges and universities in the St. Louis region promote seamless educational opportunities.

Academic Structure

UM-St. Louis consists of the College of Arts and Sciences, College of Business Administration, College of Education, Evening College, Graduate School, Barnes College of Nursing, School of Optometry, UM-St. Louis/Washington University Joint Engineering Program, and Continuing Education-Extension.

College of Arts and Sciences.

The College of Arts and Sciences, largest of the divisions, includes 18 academic departments. These departments combine general educational offerings that provide students with opportunities to acquire a breadth of knowledge and a foundation in the basic skills of intellectual inquiry with basic preparation for the student's professional life through learning experiences leading to a career in a specific field.

College of Business Administration

Through its bachelor's and master's degree programs, the College of Business Administration expands student capability in communication, analysis, and judgment, enabling its graduates to deal effectively with today's complex economic environment. The college maintains a balance between the specialization of professional courses and the diversity of liberal arts.
College of Education
Consistently one of the top three institutions in the state in production of educators, the College of Education provides undergraduate and graduate programs to prepare and sustain educational leaders. Its programs emphasize state-of-the-art technological applications to enhance teaching and learning as well as collaboration among university, school, agency, and corporate partners.

Evening College
For students interested in traditional university study, the Evening College offers almost all of the degree programs and campus services available to day students and ensures that these programs conform to the same standards and requirements as their daytime counterparts. The bachelor of general studies (BGS) program is designed for mature students who want more flexibility in reaching educational goals.

Graduate School
Programs offered in the Graduate School fall into two categories: professional programs designed to develop a special competence in a particular field and academic programs designed to develop the student's command of a range of related subjects within a field. These graduate programs are structured to meet the needs of the metropolitan area and to give students the skills and professional competence to succeed.

School of Optometry
The School of Optometry is one of 17 such schools in the United States. It provides professional optometric education and clinical experience. Facilities are furnished with equipment for teaching and research. The school operates the University Eye Center on campus, the Optometric Center of St. Louis in the city's Central West End, and the East St. Louis Eye Center, jointly owned and operated by the UM-St. Louis School of Optometry and Southern Illinois University at Edwardsville.

Pierre Laclede Honors College
The Pierre Laclede Honors College brings together intellectually curious and gifted students who are pursuing various career goals and earning degrees in disciplines offered by the university's other undergraduate schools and colleges. Honors Scholars follow a special curriculum that combines Honors College classes with course work done for honors credit in their major areas. In addition to offering scholarships and stipends, the college's Community Mentorship Program links scholars with model urban citizens who share their interests.

Barnes College of Nursing
The Barnes College of Nursing offers programs at the bachelor's, master's, and doctoral levels. The Bachelor of Science in Nursing is available for a student wishing to pursue a program of study leading to eligibility to complete state licensure examinations to become a registered nurse (R.N.). In addition, an upper-level option designed for the associate degree or diploma-educated registered nurse avoids repeating basic nursing course work. The Master of Science in Nursing, a cooperative program with UM-Kansas City School of Nursing, offers studies in adult, children's, and women's health. Practitioner options are also available (adult, family, neonatal, pediatric, and women) as part of the MSN program. The Ph.D. in Nursing offers studies focused on health promotion and protection, health restoration and support, and health care systems.

UM-St. Louis/Washington University Joint Undergraduate Engineering Program.
The University of Missouri-St. Louis and Washington University have joined forces to offer bachelor of science degrees in mechanical, electrical, and civil engineering. Students who enter the program take about half of their course work—mathematics, physics, chemistry, humanities and social sciences, and some elementary engineering subjects—on the campus of UM-St. Louis. The remaining half consists of upper-level engineering courses and laboratories taken on the campus of Washington University and taught by Washington University engineering faculty members. Students register for all courses at UM-St. Louis, pay tuition at UM-St. Louis rates (plus a small surcharge on engineering courses), and receive their degrees from the University of Missouri.

Division of Continuing Education and Outreach
Continuing Education and Outreach extends the university's expertise to the community by offering a variety of credit and noncredit courses, both on- and off- campus. It also sponsors programs in the community, such as the annual St. Louis Storytelling Festival.

Office of International Student Services of the Center for International Studies
The Office of International Student Services assists international students and scholars with undergraduate and graduate admission, credential and transfer credit evaluations, visa and immigration advising, pre-arrival and cultural adaptation assistance, new international student and scholar orientation, prospective student information requests, and personal advising. The office also coordinates activities for integration of students and scholars into the community by facilitating cultural events and activities, coordinating the annual International Student Speaker's Bureau, and working closely with other campus and community organizations.
Student Life

Although UM-St. Louis provides opportunities for all students through a demanding curriculum, the life of the university is not all work. There are a great many leisure-time activities, either free or at reduced cost to students. Numerous student organizations, from the Accounting Club to Zeta Tau Alpha sorority, seek members and leaders. Interesting speakers, concerts, film series, plays, exhibits, recitals, and a host of informal gatherings crowd each week's schedule. The St. Louis area offers still more recreational, sports, and cultural events.

The university offers a wide range of varsity and intramural sports for students, whether as players or spectators. On the varsity level, Rivermen and Riverwomen compete in most major sports. UM-St. Louis men's soccer teams have participated in numerous NCAA Division II tournaments; the team won the national title in 1973. The men's basketball, baseball, swimming, and golf teams frequently play in national tournaments. The expanding women's program includes varsity competition in basketball, soccer, softball, volleyball, swimming, and tennis. The women's soccer team ranks annually in the top 20 teams nationwide.

The Mark Twain athletic facility offers a state-of-the-art fitness center, weight room, swimming pool, and basketball, volleyball, handball, and racquetball courts. Outdoor facilities include tennis and handball courts, a fitness trail, and baseball, soccer, and softball fields.

Students will find fitness activities, both organized and individual, to suit their interests and needs. Intramural sports are available to all students, with schedules designed for maximum participation.

Graduates

The graduates of UM-St. Louis reflect the diversity found in a metropolitan community. The university has more than 50,000 graduates living in all 50 states and several foreign countries. Of these alumni, more than 80 percent continue to live and work in the St. Louis metropolitan area.

The university is a major force in providing the region with a highly educated and diverse work force. Alumni can be found in companies and organizations throughout the region and nation. UM-St. Louis has graduated more than 6,000 accountants, 600 nurses, and 400 doctors of optometry. With more than 8,000 graduates, the College of Education is the largest educator of teachers in the St. Louis metropolitan area.

Eye Protection Law

It is now a law in the state of Missouri that every student, teacher, and visitor must wear approved eye protection devices when participating in or observing certain university courses. Definitely included in this act, which is posted along with University policy in selected buildings on this campus, are courses requiring chemical, physical, and combined chemical-physical laboratories and shops, as well as certain vocational, technical, and industrial arts courses. Consult instructors for exact requirements. Approved safety glasses and goggles must meet ANSI Standard Z87.1-1968 and are available from the UM-St. Louis Bookstore.
Undergraduate Study

This section includes admission, general education degree requirements, and academic policies for students seeking undergraduate degrees from the University of Missouri-St. Louis.

Admission and Application Procedures

Admission for First-Time Freshmen

The University of Missouri has a uniform policy for admission of freshman students to its four campuses. The four campuses are of equal stature in the university system, and a common standard is applied at each campus. The procedure for regular admission from high school is described in this publication.

Selection of students for regular admission is based on high school class rank, performance on a standardized college aptitude test, and required high school units. Students must submit their high school transcripts.

Admission Procedure. Students applying as first-time freshmen (i.e., students without previous college work) need to submit to the Director of Admissions four items:

1. Undergraduate Application for Admission form. Form may be requested by calling the Office of Admissions at (314) 516-5451. Application is also available via the Internet. Applicants may apply by visiting the UM-St. Louis home page http://www.umsl.edu

2. Application Fee. A $25 ($40 for international students) check or money order made payable to the University of Missouri-St. Louis. Cash is acceptable if paid in person at the Office of the Registrar.

3. High School Transcript and Class Rank. Transcript must be sent directly from the high school to the UM-St. Louis Admissions Office. Transcript should indicate class rank at time of application and all courses satisfactorily completed. For students applying during senior year in high school, class rank at the end of six semesters (end of junior year) will be used. If a later class rank is available at the time application is made, it should be used. Submit final high school transcript upon graduation.

4. College Aptitude Test. Freshman admissions require that a test score be submitted for each applicant. This requirement may be met by a score from one of the following college aptitude examinations:

- American College Testing Program (ACT)
  These tests are administered at UM-St. Louis and at many other locations across the country under the auspices of the ACT program. Reports should be sent to the Director of Admissions at UM-St. Louis. To request a test packet, call the Office of Admissions at 516-5451.

- Scholastic Aptitude Test (SAT). Tests are administered at many locations across the country under the auspices of the College Entrance Examination Board. Score reports should be sent to the Director of Admissions at UM-St. Louis.

Admission Requirements. Any 1997 or later high school graduate is admissible without further data upon submission of a transcript or other evidence indicating he or she meets both the following requirements:

- At least 17 units of credit (1 unit=1 year in class) as follows:
  - English: 4 units. Two units emphasizing composition or writing skills. One of the remaining 2 units may be in speech or debate.
  - Mathematics: 4 units (Algebra I and higher). (Unit may be accepted from middle/junior high school.)
  - Science: 3 units Not including general science. 1 of 3 units must be a laboratory course.
  - Social Studies: 3 units.
  - Fine Arts: 1 unit.
  - Foreign Language: 2 units. Must be 2 units of a single foreign language. (Unit may be accepted from middle/junior high school.)

- In addition to the 17-unit requirement, each student will be evaluated on the basis of high school rank and college admission test score (ACT or SAT). Students with a composite ACT score of 24 or SAT of 1100 will be admitted without regard to class rank. Class rank will be used to determine eligibility for admission when the student's ACT score is from 17 to 23 (SAT 800 to 1090).

Required minimum combinations of percentile rank in graduating high school class and admissions test score (ACT or SAT) are as follows:

If the ACT Composite score is 24 or higher or the total of SAT Verbal and Math scores is 1100 or higher, the applicant meets the minimum requirement for admission.
If the ACT Composite score is 17 to 23 or the total of SAT Verbal and Math scores is 800 to 1090, the applicant must meet the following high school class rank requirement to be admitted:

<table>
<thead>
<tr>
<th>ACT</th>
<th>SAT Total (Verbal, Math)</th>
<th>High School Class Percentile Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>1050 - 1090</td>
<td>48</td>
</tr>
<tr>
<td>22</td>
<td>1010 - 1040</td>
<td>54</td>
</tr>
<tr>
<td>21</td>
<td>970 - 1000</td>
<td>62</td>
</tr>
<tr>
<td>20</td>
<td>930 - 960</td>
<td>69</td>
</tr>
<tr>
<td>19</td>
<td>890 - 920</td>
<td>78</td>
</tr>
<tr>
<td>18</td>
<td>840 - 880</td>
<td>86</td>
</tr>
<tr>
<td>17</td>
<td>800 - 830</td>
<td>94</td>
</tr>
</tbody>
</table>

If the ACT Composite score is less than 17 or the total of SAT Verbal and Math scores is less than 800, the applicant does not meet the regular admission standards. However, the applicant may still be admitted, depending on other evidence of likely success and campus enrollment objectives. For additional information regarding admission requirements, contact the admissions office at 516-5451.

The university seeks a heterogeneous student body reflecting diversity of race, ethnicity, age, geography (including international students), and physical disability. Factors given prime consideration for admission to undergraduate study are an applicant's previous academic success and the quality of the record presented. Applicants who do not meet these criteria may be considered by applying to the Director of Admissions. Additional factors considered for admissions include:

- Extensive extracurricular activity involving school, church, or community.
- Outstanding talent and/or abilities.
- Number and scope of college preparatory courses taken.
- Evidence of marked improvement over time in high school academic record.
- Significant work experience and/or family responsibilities.
- Supporting evidence attesting to one or more of the above in student's own hand (in essay form).
- Recommendations by persons knowledgeable of their potential for success in university-level education.

Out-of-State Freshmen. The same admissions requirements apply to all out-of-state freshmen who have graduated from an accredited high school. UM-St. Louis provides residence hall facilities as well as University Meadows apartments. Nonresident students must pay nonresident educational fees in addition to regular educational fees except when awarded National Access Awards.

When to Apply. Qualified applicants are admitted and notified by letter of their admission in the order that completed applications are received. Applications are accepted after October 1 for the next fall semester on the basis of six or more high school semesters.

Acceptance. Upon graduation, students must submit a final high school transcript indicating their class rank and graduation date. First-time freshmen may be required to take a placement examination in mathematics. Arrangements for this exam are made through the Office of Admissions after notification of acceptance.

Advanced Standing for Entering Freshmen. UM-St. Louis grants credit hours to entering freshmen who, through their performance on College Entrance Examination 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, write to College Board Placement Examinations, Box 592, Princeton, New Jersey 08540. The score-reporting institution code number for the University of Missouri-St. Louis is 6889. Test scores should be sent to the Director of Admissions and must be on file before the first day of classes. A brochure with detailed information is available in the Office of Admissions.

Dual High School/University Enrollment. Superior high school students may be admitted in a special student category for the purpose of taking one or more university courses concurrently during their junior or senior years of high school or during the summer session prior to these years. Students must submit a regular application for admission, as well as a special request which includes a high school counselor's or principal's recommendation. Students are admitted on an individual basis on the evidence of academic standards that exceed those required for regular admission from high school. Admission is limited and governed by available space, and students must meet the prerequisites for the desired course or courses. Students should contact the College of Arts and Sciences at 516-5501 for more information.
College Level Examination Program. Applicants over age 18 who have had no previous college work may earn advanced credit through the College Level Examination Program (CLEP) General Examinations, provided they score at or above the 50th percentile. A maximum of 28 semester hours of credit may be earned. In addition, CLEP offers subject examinations for credit in specific areas. These examinations can be taken any time, provided the student has not taken a course in the test area. The student must earn a score at or above the 50th percentile to receive credit. Consultation with an adviser is recommended. CLEP tests are given by appointment in the university Assessment Center. Contact the Assessment Center at (314) 516-6396 for complete information. A brochure with detailed information is available.

Credit for Military Service. Credit may be allowed for service training programs conducted by the various Armed Forces branches. The American Council of Education 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.

Trial Admission. High school graduates who do not meet the regular admission standards may be admitted on a trial basis. Each student's academic record will be reviewed by the Director of Admissions and decisions will be made on a case-by-case basis.

High School Equivalency Applicants. Individuals may seek admission on the basis of passing the General Education Development (GED) tests after the individual's high school graduating class has graduated. An overall score of 250 is required with a minimum score of 50 in each test area. Applicants submitting GED scores are reviewed on an individual basis.

Home-Schooled Students. UM-St. Louis accepts homeschooled students. In such cases, the admission decision is largely based on the ACT/SAT test scores.

Veterans and Mature Adults. Applicant may be admitted as special or non-degree-seeking students if they are veterans of the military service or over age 21 and have not previously earned college credit, have not been in school for several years, have not earned a high school diploma or passed the GED; or if they have a diploma but do not meet regular admission requirements from high school. Admission is based on special preparation, attainment, or exceptional aptitude as judged by an evaluation of military and other experiences, test scores, and other indicators of potential success at the university.

Students can become degree candidates on the basis of their performance in university course work.

Admission for Transfer Students
Missouri state institutions of higher education welcome transfer students; however, students should be aware that actual requirements for degrees vary from institution to institution. This factor makes it particularly important that students who plan to transfer make contact, early in their academic career, with the campus from which they eventually wish to graduate. By arranging in advance for appropriate courses to be taken prior to transfer, they can likely minimize problems.

Students transferring from other colleges and universities must submit the following information to the Director of Admissions:

- Undergraduate Application for Admission
- A $25 application fee
- High school transcript (if one of the following applies):
  1. Applicant has less than 24 hours of college-level course work.
  2. Applicant is pursuing a degree or certification in Education.
  3. Applicant is a nonresident of Missouri.
- Official transcripts from all colleges/universities attended.

Official transcripts must be sent by each institution directly to the Office of Admissions. Hand-carried credentials are not accepted. All credentials submitted for admission become the property of the university.

A transferring student who has completed fewer than 24 semester hours of college-level work must apply under the procedures for admission to the freshman class and must have at least a 2.0 overall grade point average (4.0 system) in all college-level courses attempted at previous institutions.

Transfer applicants applying to the University of Missouri-St. Louis from regionally accredited colleges or universities with grade point averages of 3.0 or higher, based on a 4-point system, may be admitted at any time.

Suspended and Dismissed Transfer Students. Students under suspension or dismissal from another institution or whose previous record is of unsatisfactory quality may need to appeal to the Faculty Senate Committee on Admissions and Financial Aid.
CBHE Statement. Students transferring to UM-St. Louis and out of UM-St. Louis may use the Coordinating Board of Higher Education Articulation Agreement. The agreement outlines statewide undergraduate general education requirements which satisfy the general requirements for students transferring into UM-St. Louis and students transferring out of UM-St. Louis to other public higher education universities in the state. These requirements are detailed on the page before the Appendix in this catalog.

The math proficiency requirements at UM-St. Louis that students must satisfy are not part of the general requirements covered by the CBHE requirement.

Transfer Credit. According to the articulation agreement among public institutions within the state of Missouri, the following guidelines will govern transfer of credit to UM-St. Louis from colleges and universities within the state of Missouri. These guidelines also apply to students transferring to UM-St. Louis from schools located outside Missouri. Advanced standing in the form of credit hours may be allowed for work satisfactorily completed in another college or university of recognized standing, public or private, located in the state of Missouri, as long as the work satisfies the requirements of the university division in which the student registers.

The academic record at a given institution will include 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 UM-St. Louis. The university, however, will treat all grades on courses attempted on the same basis as that of a UM-St. Louis student. For example, if a UM-St. Louis student is required to repeat a specified course, having earned a D grade, a transfer student will also be required to repeat the same course if it carried a D grade.

Advanced Standing. Advanced standing includes credit by examination, such as Advanced Placement (AP), the College-Level Examination Program (CLEP), 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 transcripts to the Office of Admissions before their first semester at UM-St. Louis. Likewise, the Fine Arts department should be consulted for portfolio reviews. 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, transcripts should be submitted as soon as they are available.

University of Missouri-St. Louis
Undergraduate Study

Shortly after all official transcripts are on file, a student's previous academic record will be evaluated to determine which courses are applicable. Should there be any question concerning applicability of any courses, students should contact the advising office of their academic unit.

The University of Missouri-St. Louis Bulletin in effect at the time of the transfer student's initial enrollment in a college will govern the degree requirements, provided the student has had continuous, full-time enrollment and remains in the same degree program after transferring to UM-St. Louis. If the student has not maintained full-time continuous enrollment, or if the student changes programs, the catalog in effect at the time of the student's latest enrollment or at the time the student elects the new program may be followed.

Degree checks, that is, 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 dean concerned. Should questions arise, students should contact the advising office of their academic unit.

Associate Degree Transfers from Community Colleges. A student admitted to the university and holding an associate degree oriented 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 UM-St. Louis. However, this does not exempt the student from meeting the specialized lower-division degree requirements of departments or divisions of the university. 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 located in Missouri, other University of Missouri campuses, and other divisions on this campus. Credit earned in or transferred from a community college shall normally be limited to approximately half the baccalaureate degree program requirement, and to the first two years of the undergraduate educational experience.

Transfer Within the University of Missouri System. A student not in good standing at another campus of the University of Missouri (suspended or dismissed) must submit an appeal to the Senate Committee on Admissions and Student Financial Aid.

Any course that leads to an undergraduate degree 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. Grades, including D and F grades, and honor points earned in such courses will also transfer and will be included in the cumulative grade
point averages of the transferring student. Questions concerning acceptability of credit should be referred to the Director of Admissions. Unresolved problems related to transferability of credit may be appealed to the Senate Committee on Admissions and Student Financial Aid.

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 UM-St. Louis and the work is approved by their respective deans and departments.

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 Kansas, Michigan, Minnesota, Missouri, and Nebraska to enroll in the institutions and specified programs located outside their home state at reduced tuition levels.

Students from Other Countries. Prospective students living outside the United States and its possessions should write to the Office of International Student Services at the address below at least one year before the date of desired admission for information about application to the university. Students 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. All students should make arrangements to take the TOEFL well in advance of their admission date.

Since 1998, all students in F-1 and J-1 status have been required to purchase an inexpensive insurance policy with coverage for illness and accidents, billed directly to the students' accounts. For details, contact:
Office of International Student Services
University of Missouri-St. Louis
304 SSB
8001 Natural Bridge Road
St. Louis, MO 63121-4499

Former Students. Former students not currently enrolled should file a reenrollment application with the Director of Admissions.

Visiting Students. Students who do not wish to earn a degree from the University of Missouri-St. Louis may register as visiting college students. Registration forms can be obtained from the Office of Admissions or the office of the Registrar. At the end of the session, students must request that their grades be reported by transcript to their respective schools.

Non-Degree-Seeking Students. An individual wishing to enroll in a course who is not seeking a degree may apply to the university as a non-degree-seeking student. No transcripts are required; however, the admission applies only for that particular semester. To attend for another semester, the student must reapply. Financial aid is usually not available for such students.

Auditors. Students may enroll as auditors in any course with the prior consent of the instructor and dean of the school or 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.

Registration

New Students
Upon admission to the university, students are notified that instructions will be sent by the Registrar's office before registration.

Former Students
Former students not currently enrolled must submit a reenrollment application to the Office of Admissions.

Currently Enrolled Students
Currently enrolled students are given the opportunity to preregister, by appointment, before all other students. Students wishing to preregister for the next semester in a different division or school must complete a Change of Division form.

After the close of the preregistration-by-appointment period, all newly admitted or readmitted students are eligible to register. Students wishing to register for more than a normal course load must obtain approval from their dean.

Registration Cancellation
Students who have enrolled and paid their fees but do not wish to attend the university may cancel their registration any time before the first day of the semester. Cancellation forms may be obtained at the Office of the Registrar. For the refund schedule for cancellation of registration after class work begins, see the Schedule of Courses published each semester.

Enrollment and Academic Advising

Undergraduate students that have met the admission requirements of UM - St. Louis are admitted to the college, school, or professional school which offers the degree program which was declared on the student's application. Undeclared students, visiting students, and non-degree-seeking students who have met the university admission requirements are admitted to the College of Arts and Sciences. Students indicating a desire to pursue a degree in the evening hours are admitted to the Evening College, regardless of major.
The Advising Center, 225 Millennium Student Center, (314) 516-5300, provides advising for all undergraduate students, regardless of major. The University Advising Center encourages undeclared students to declare a major as soon as possible since it is important to determine what specific requirements must be satisfied to complete the baccalaureate program. Declared students are assigned a faculty adviser or may go to the advising office in their major area or continue to be advised in the Advising Center. Advisers in the Advising Center offer the following services to all undergraduate students: setting and planning academic goals, planning or changing a course schedule, evaluating transfer credit, withdrawing from school, placing a course on s/u status, petitioning for grade modification, applying for graduation, and making referrals as needed.

College of Arts and Sciences
All incoming undergraduate students are required to be advised in the University Advising Center in the Millennium Student Center. Students who have declared majors are encouraged to contact their major departments as soon as possible.

The 18 departments in the College of Arts and Sciences offer majors, minors, and certificates in the humanities, social sciences, mathematics and computer science, and the biological and physical sciences. Interdisciplinary programs are available in women's and gender studies, gerontology, labor studies, conservation biology, trauma studies, and more. The college also serves students with interests in the health sciences, pre-law, pre-journalism, and pre-architecture. Information on these areas may be obtained in the Office of Undergraduate Student Affairs in the College of Arts and Sciences, 303 Lucas Hall.

Since there are specific requirements that each major must satisfy to complete a baccalaureate program, students are urged to declare their majors as soon as possible. This may be done at the time of application, or later in the Advising Center. Once a student declare a major, the department offering the degree will assign a faculty adviser and contact the student. The adviser, usually a faculty member in the student’s area of interest, will assist in selecting suitable courses and advise the student in matters relating to degree requirements.

Students with specific concerns related to the specialized degree requirements of the college should consult with the academic departments responsible for their majors. Questions regarding transfer credit as they relate to a specific degree may be directed to the appropriate department. Students may contact the Office of Undergraduate Student Affairs in the College of Arts and Sciences by phone at (314) 516-5501 for clarification on any academic issues related to the division.

College of Business Administration
The College of Business Administration’s office of academic advising has available a staff of professional academic advisers who provide assistance to students in planning their academic careers and in dealing with appropriate course selection, College of Business Administration requirements, general education requirements, evaluation of transfer credit, course prerequisites, school policy and regulations, and graduation requirements. Other matters related to a student's academic matriculation should also be directed to this office.

Prospective business students who are admitted to the Evening College should submit an official declaration of their major to that office. When they have completed 39 hours of credit, they will be assigned to the College of Business Administration for advisement.

Transfer students who have been admitted to the College of Business Administration should contact the advising office and plan to meet with an adviser early in the semester for an evaluation of transfer credit and the planning of their degree programs.

All students are urged to make advising appointments early during each semester, prior to registration dates, to obtain approval of schedules for upcoming semesters. Advising is a continuous and ongoing process. For information, call (314) 516-5888.

College of Education
Students wishing to prepare for teaching careers should consider the following:

- Students who intend to teach in elementary, early childhood, middle school, special education, business education, or physical education settings must apply for admission to the College of Education.
- Students who intend to teach in other secondary school classrooms may elect to apply for admission to the College of Education to pursue the bachelor of science in education degree (B.S.Ed.), or they may elect to earn a degree from another college or school at UM-St. Louis and take courses additionally to meet state teacher certification requirements.

With either option, pre- and post-degree students must meet university and departmental requirements, as well as those for teacher education in Missouri. Teacher education curricula vary considerably. Regardless of which option a student chooses, he or she must complete the formal application to the teacher education program. Careful planning of individual schedules is necessary to ensure selection of appropriate courses and to avoid extending programs. Students should therefore seek advisory help from the office of teacher education at the
earliest opportunity. Regular consultation with advisers is essential. For information, call (314) 516-5937.

The office of teacher education provides assistance to all students interested in professional education programs and certification requirements. Questions about admission to the teacher education program, sequencing of courses, prerequisites, graduation requirements, and related matters should be directed to that office.

Barnes College of Nursing
The Barnes College of Nursing offers the bachelor of science in nursing degree (B.S.N.) for non-RNs through a four-year program of study. RNs who are graduates of diploma or associate degree nursing programs complete a junior-senior B.S.N. track (B.S.N. Completion), which avoids repeating previous nursing education.

With both options, students must meet university and Barnes College of Nursing requirements. Careful planning is necessary to assure appropriate course sequencing. Students are strongly encouraged to develop a plan of study in conjunction with a nursing academic adviser to avoid extending the program of study.

Faculty maintain the right to make appropriate curriculum changes to comply with standards for accreditation as stipulated by the National League for Nursing and Missouri Board of Nursing's minimum standards.

Pierre Laclede Honors College
Honors Scholars receive both academic advising and personal counseling from the college's administrative and teaching staff throughout their undergraduate careers. During the first two years, particular attention is given to the ways in which students fulfill their Honors College and university general education requirements and prepare themselves for their majors by taking the necessary prerequisites. After a major is declared, Honors College advisement with regard to work done for honors credit continues and is supplemented by major-related advising provided by the appropriate academic unit. The college identifies candidates for major graduate fellowships and assists them in preparing their dossiers. Similar assistance is given to scholars planning to go on to graduate and professional schools or seeking career opportunities immediately upon graduation.

General Education Requirements
Students must successfully complete the general 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.

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 100 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.

Basic Skills
All students must show from their high school or college transcript, by examination or appropriate courses, competency in basic communicative and mathematical skills. Students should check with their divisional dean's office at the end of the first year to verify that their proficiency in these skills has been properly recorded.

An additional communicative skills requirement must also be completed before graduation. Students should check with their divisional dean's office at the beginning of their senior year to verify that fulfillment of this requirement has been recorded.

Communicative Skills (two requirements):

- All students are required to complete a Freshman English Composition course with a grade of C- or better (English 10, Freshman Composition at UM-St. Louis).
- Effective since the fall semester 1985, students must also complete English 210, Advanced Expository Writing, or its equivalent, with a grade of C- or above.

Mathematical Skills: Proficiency in the basic mathematical skills area should be satisfied before the student completes 24 hours of coursework by demonstrating either:

- A grade of C- or better in a college-credit mathematics course having at least intermediate algebra as a prerequisite. *(Students in need of this prerequisite, who score less than a 14 on the UM-St. Louis Math Placement Test, must satisfactorily complete it through Mathematics Workshop 2, previously Math 02C.)*
- OR
- A score of 26 or higher on the Missouri Math Placement Test. This test covers mathematics through the college algebra level.

The math requirement should be completed before the student completes 24 hours of coursework at UM-St. Louis.

Study guides for the Missouri Math Placement Test, the UM-St. Louis Math Placement Test, and the Trigonometry Test (not needed for minimum math proficiency) are available at the circulation desks of the Thomas Jefferson Library (file number 2365) and the Ward E. Barnes Library (file number 991). Students will
need to make copies to keep. Math placement tests may be taken twice at most. Test dates are published in the Schedule of Courses.

*Math 20 or higher meets this requirement at UM-St. Louis.

Breadth of Study
Students must complete at least 42 hours in the following three areas, with at least three courses in each area. (Courses meeting these requirements are listed at the beginning of each departmental section.)

- Humanities: art history or art appreciation; selected communication courses; literature; music history, literature, theory, or appreciation; philosophy and logic; theater appreciation, theory, and history. (Applied art/music courses do not count.) (Symbol IH)
- Natural sciences and mathematics: applied mathematics; astronomy; atmospheric science; biology; chemistry; computer science; geology; mathematics; physics; statistics. (Symbol SM)
- Social sciences: anthropology; communication (select courses only); criminology and criminal justice; economics; geography; history; political science; psychology; social work; sociology. (Symbol SS)

Other Requirements
American History and Government: Students must satisfactorily complete a course or courses in American history or government taken at UM-St. Louis or at other colleges or universities in Missouri. Transfer students should check with the dean's office of their division to find out if they have fulfilled this requirement.

The requirement may be satisfied by one of the following courses:
CCJ 10, Introduction to Criminology and Criminal Justice
CCJ 226, Law and the Individual
Hist 3, American Civilization I
Hist 4, American Civilization II
Hist 6, African-American History
Hist 7, The History of Women in the United States
Hist 207, The History of Missouri
Hist 302, United States History: Revolution and the New Nation, 1763 to 1815
Hist 311, Topics in American Constitutional History
PolSci 11, Introduction to American Politics
PolSci 129, Women and the Law
PolSci 130, State Politics
PolSci 135, Introduction to Urban Politics
PolSci 140, Public Administration
PolSci 226, Law and the Individual

PolSci 230, The American Presidency
PolSci 231, Congressional Politics
PolSci 232, African-Americans and the Political System
PolSci 233, Introduction to Political Behavior
PolSci 235, Political Parties and Elections
PolSci 238, Women in U. S. Politics
PolSci 240, Bureaucratic Politics
PolSci 242, Introduction to Public Policy
PolSci 245, Urban Administration
PolSci 320, Introduction to American Constitutional Law
PolSci 321, Civil Liberties
PolSci 326, Judicial Decision Making
PolSci 333, Mock Constitutional Convention
PolSci 346, Urban Planning and Politics

Business Education Courses
The following courses are approved for degree credit only in the business education degree program and in the bachelor of general studies degree program with the dean's approval:
- Sec Ed 162, Computer Keyboarding and Formatting
- Sec Ed 361, Shorthand/Alpha Systems: Theory and Application

Reserve Officers Training Courses
Courses in ROTC do not receive Arts and Sciences credit, nor are they counted in the student's grade point average.

Other Considerations
Assessment
The University of Missouri has been directed by the Board of Curators to implement a variety of studies designed to assess the outcomes of university education. All students are required to participate in such studies as requested. Students who do not comply will not be able to register for the next semester or if in their final semester will not be allowed to graduate. In subsequent years as alumni, graduates are encouraged to participate in assessment by completing questionnaires sent to them by the university.

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.

Graduation
Students must file a degree application form with their respective dean's office at least one year before the expected graduation date. (Students in the College of Arts and Sciences should file their degree applications in the University Advising Center.) The dean's office makes a final check to determine that all graduation requirements have been met. Students should check with the dean's office or an adviser to be sure their program fulfills the requirements of the department and college or school, as
well as the university general requirements. 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 Admissions no later than the official date for submission of final semester grades.

Course Schedules
Three times during the year, a Schedule of Courses is published, listing the specific courses offered that semester and their meeting times and locations. This Schedule is available as follows:

- Fall semester schedule: preceding March.
- Winter semester schedule: preceding October.
- Summer session schedule: preceding March.

The Schedule is also on the UM-St. Louis Web site: http://www.umsl.edu. 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 which does not have adequate enrollment at the close of registration.

Academic Policies

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 3 semester hours meets for three periods weekly for one semester, a 2-credit 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 in parentheses after each course title. If the credit is variable, to be fixed in consultation with the instructor, it is shown by (credit arranged) or by minimum and maximum credit, such as research (2-8).

Grading System
The grading system available to all faculty in all schools, colleges, and other parallel units at UM-St. Louis consists of:

- 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
- EX Excused
- DL Delayed
- Y 'No basis for a grade
- S/U Satisfactory/unsatisfactory (applied when a student has formally requested this option for a course—see information below)

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).

At the end of each semester and summer session, the registrar informs students of their grades. A copy will be mailed to parents at the student's request.

Education majors. Professional education courses must be completed with a grade point average of 2.50 and no grade lower than a C (2.0). A C-grade is not acceptable.

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 and department chairperson, be assigned a delayed grade. Such work must be made up no later than one semester after the incomplete grade is given, or the grade automatically becomes F. The dean may, in unusual circumstances, extend this time limitation (summer session is not counted as a semester). Notice of change in a delayed grade shall be given to the registrar on a special form.

Y Grade. When, in the instructor's judgment, there is no basis for evaluating the work of a student who does not officially drop a course or officially withdraw from the university, a mark of Y (unauthorized withdrawal—no basis for evaluation) is given.

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

Satisfactory/Unsatisfactory Option. Undergraduate students may elect to take up to 18 credit hours during their academic careers at UM-St. Louis on a satisfactory/unsatisfactory (S/U) grading basis. This includes courses taken as electives or those which satisfy the general education requirements. Most courses required for a specific degree may not be taken on a satisfactory/unsatisfactory basis, and academic departments may designate other courses within their jurisdiction which may not be taken under the option.

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 proper dean's office. Instructors are not informed of students taking courses on a satisfactory/unsatisfactory basis.
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 one's cumulative grade point average; however, it does satisfy credit-hour graduation requirements. An unsatisfactory grade--U--is recorded when an instructor assigns the grades of D+, D, D-, or F, and has no numerical value in computing one's cumulative grade point average, nor does it satisfy any credit-hour graduation requirements. Grades will be recorded on transcripts as S or U.

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+, C, or C- have been earned. If a student earns a D+, D, D-, or F, the course may be repeated. All grades earned will affect the calculation of one's cumulative grade point average; the course hours, however, will be counted only once in calculating hours towards one's degree. (See Grade Modification.)

Grade Modification. When the grade received in an initial attempt in a course at UM-St. Louis is a D+, D, D-, or F, 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 UM-St. Louis. All grades received in second and subsequent attempts will be included in GPA calculations. A maximum of 15 hours may be dropped from the calculation of the student's GPA. All attempts of a given course will appear on the official transcript with the grade(s) earned. The transcript will have an explanation which 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.

Enrollment Policies

Prerequisites for a Course
A minimum grade of C- is required to meet the prerequisite requirements of any course, except with the permission of the department in which the second course is taught. An "academic standing" prerequisite stated by class--for example, "senior standing"--means senior-class standing. Requirements for class standing vary. Students should determine the requirements for their school or college. Individual course restrictions are specified in the individual course descriptions.

Course Load
A normal full-time semester work load is 15 hours. Six hours is normal for the summer session. Minimum full-time enrollment is 12 hours. Students who have demonstrated the ability to carry more than 17 hours successfully may enroll for additional hours with the approval of their dean.

Attendance
Students are expected to attend class regularly, and, in accordance with the UM-St. Louis 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 divisional 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.

Dropping/Adding Courses
To add courses to their original enrollment, students must get approval from their advisers. Students may not enter courses after the first week of a regular semester or the first three days of the summer session. Students may not enter courses after the first week of a regular semester or the first three days of the summer session. Courses may be dropped, without approval, through the fourth week of a regular semester and the second week of a summer session. Students may withdraw from courses without a grade up to the end of the fourth week of a regular semester and the second week of the summer session.

From the fifth through the twelfth weeks of the fall or winter semesters (for summer session, the third through the sixth weeks), students may withdraw from a course with an "Excused" grade, providing they are passing the course and receive the approval of their instructor, adviser, and dean's office representative. Otherwise, a failing grade is given. Students not attending classes who fail to drop officially receive F or Y grades. After the allowable period, "Excused" grades are given only in exceptional instances where the instructor's approval and dean's approval are given. These grades are recorded on the students' official records at the end of the term. If an F grade is recorded, it is counted in computing the grade point average. No partial credit is granted to students who withdraw from a course during any semester or otherwise fail to complete the work required for full course credit.

Section Changing
Section changing is normally done during the first week of a regular semester and the first three days of a summer session. No approvals need be received during this time. However, after the first week of a regular semester and the first three days of a summer session, a section change form must be obtained from the departmental or dean's office. The signatures of both instructors (of both sections) are required. The form is to be submitted to the Registration Office, 269 Millennium Student Center.
Change of Major
To change academic majors, students should consult their adviser and the dean's office. Students admitted to one college or school may pursue work in others under the conditions set forth by the other division's faculty. The chairperson of a student's major department shall determine which courses in other colleges or schools, or even other institutions, shall apply as credit toward the degree.

Withdrawal after Classes Begin
After classes begin, students may withdraw from the university by completing the withdrawal form, available in the dean's office. During the first four weeks of a regular semester and the first two weeks of a summer session, students may withdraw from the university without receiving grades. After this period, grades of F or "Excused" are issued, based on whether the student is passing or failing. After the regular semester's twelfth week (or the sixth week in the summer session), "Excused" grades are given only in exceptional instances with the instructor's and the dean's approvals.

These grades are recorded on the student's official record at the end of the term. An F grade is counted in computing the grade point average. 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 withdrawing officially from the university are issued an F or the temporary Y grade. Any F grades are counted in computing grade point averages.

Academic Probation, Suspension, and Dismissal
A student may be placed on academic probation any time that his or her cumulative GPA falls below a 2.00. Students should consult college or school advisers in their respective dean's office for additional information.

Students may be suspended if they do not pass more than two-thirds of their work, their semester grade point average is below 1.5, or their cumulative grade point average falls below 1.75. Students may be suspended if they have been on scholastic probation for two or more semesters, not necessarily consecutive, and again become subject to probation. The dean may retain students on probation rather than suspend them if circumstances justify such action.

Students who have once been suspended may be dismissed if they again become subject to suspension. Students placed on probation because of poor scholastic records at other institutions are regarded as having been once suspended under these rules. Normally, students who have been dismissed are not considered for readmission. In certain unusual cases, students may be readmitted on probationary status after one year.

Students admitted on probation to the summer session must enroll for at least six academic hours. If they receive any grades below C, their work will be reviewed by the college or school dean or appropriate committee to determine eligibility to reenroll. Students enrolled in the summer session whose grade point averages are below 1.5 may have their work reviewed. Students suspended or dismissed from one school or college shall not be admitted to any other school or college until they are eligible for readmission to the original college or school, unless they obtain the consent of the school's or college's dean or appropriate committee. In this event, the dean or committee shall file a written statement for the student's official records, stating the reasons for the decision.

Academic Dishonesty
Academic dishonesty is a serious offense which 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 the back of this Bulletin and is also available in the UM-St. Louis Student Handbook, available from the Office of the Vice Chancellor for Student Affairs.

Honors
Pierre Laclede Honors College
The Pierre Laclede Honors College offers academically qualified and intellectually serious students the opportunity to focus a significant portion of their undergraduate careers upon a special honors curriculum.
Honor Societies
The following honorary societies are located at the University of Missouri-St. Louis:

- Alpha Sigma Lambda (Criminology and Criminal Justice)
- Alpha Sigma Lambda (Evening College)
- Beta Alpha Psi (College of Business Administration, Accounting Majors)
- Beta Gamma Sigma (College of Business Administration)
- Beta Sigma Kappa (School of Optometry)
- Financial Management Association National Honor Society (Finance)
- Kappa Delta Pi (College of Education)
- Omicron Delta Epsilon (Economics)
- Phi Alpha Theta (History)
- Phi Epsilon Kappa (Physical Education)
- Phi Kappa Phi (Campuswide)
- Pi Sigma Alpha (Political Science)
- Psi Chi (Psychology)
- Sigma Delta Pi (Spanish)
- Sigma Iota Rho (International Studies)
- Sigma Tau Delta (English)

Dean's List
At the end of each semester the College of Arts and Sciences, College of Business Administration, College of Education, Evening College, and Barnes 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 part-time 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 winter semesters combined.

Who's Who Among Students in American Universities and Colleges
Eligible students may be nominated to Who's Who Among Students in American Universities and Colleges by students (themselves or others), faculty members, or administrators. Nominees are selected on the basis of scholastic ability (a cumulative grade point average of 2.5 or higher), participation and leadership in academic and extracurricular activities, service to the university, and a promise for future usefulness. Nomination forms and further information may be obtained in room 366 Millennium Student Center or by visiting the Who's Who Web site at http://www.umsl.edu/services/stuacltv.

Latin Honors
To graduate with Latin honors, students must have attended UM-St. Louis for at least 60 graded hours and must meet the following qualifications: cum laude 3.2 to 3.49 grade point average; magna cum laude 3.5 to 3.79 grade point average; summa cum laude 3.8 to 4.0 grade point average. If a student has the necessary GPA at UM-St. Louis to qualify for Latin honors but has fewer than 60 graded hours at UM-St. Louis, 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 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 UM-St. Louis grade point average will be awarded. All honors must be recommended by the student's major department. (Effective August 1990.)

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's office. There is a charge for each transcript. Students transferring to another University of Missouri campus may ask the UM-St. Louis registrar to furnish a transcript to the office of admissions at the other UM campus. 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's Office authorizing the release of such information.

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

Commencement
Degrees are conferred at commencement with candidates present for the awarding of diplomas. Only in unusual circumstances may degrees be conferred in absentia.

Veteran Affairs
The Veteran Affairs Office, 269 Millennium Student Center, serves as liaison to various government offices to provide information on benefits, privileges, and responsibilities relating to Veteran Administration educational benefits. A certifying official is available to answer veterans' questions and process official paperwork.

Veterans are certified to the Veteran Affairs Regional Office beginning with the date of initial registration, and regularly until the expected completion date of the VA-approved program or degree. Veteran students must promptly inform the certifying official in 269 Millennium Student Center of any changes in status which might affect benefits. Failure to report such changes can result in overpayments and other complications in receipt of benefits.

Veteran students are expected to attend classes, perform academic duties as assigned by instructors, and adhere to academic policies. Failure to do so will result in reports to
the VA of unsatisfactory progress, which may result in discontinuance of benefits. Veteran students who cease attending but do not officially withdraw from class or from the university will be reported as not making satisfactory progress.

If enrollment status is altered in any way, the VA will be notified and an overpayment may be charged against the veteran. For complete details and information, contact the Veteran Affairs Office at (314) 516-5676.

Fees for Undergraduate Study

Detailed information regarding current fees and residency regulations is furnished in the Schedule of Courses, a newspaper schedule, distributed before each semester registration, available at the registrar's office or at the Web site:

Payment of Fees

All fees are due and payable before the beginning of classes each semester. A minimum payment plan is available for students unable to complete their financial arrangements at the time of registration. A finance charge will be assessed on the unpaid balance of all students at the rate of 1% per month. All accounts will be billed using this method; therefore, it is NOT necessary that a student choose the minimum payment plan at the time the charges are incurred. Students with delinquent accounts will NOT be allowed to register in subsequent semesters.

Credit Cards. Valid MasterCard, VISA and Discover credit and debit cards are accepted toward payment of fees.

Personal Checks. Personal checks in payment of fees or other obligations to the University will be accepted only when the amount of the check does not exceed the amount due from the student. Any checks payable to the university which are returned unpaid will be assessed a $20 return check.

Quick and Easy Ways To Pay Fees.

- **By Mail** using the mail in coupon and envelope provided with your monthly statement.
- **Using STAR**, from a PC in your home, at work, or on-campus. Payment can be made by credit card only.
- **Using TRAIN**, from a touch-tone telephone. Payment can be made by credit card only.
- **In Person** at one of the service windows at the Cashier's Office.

Nonresident Student Fees

A student who is admitted to the university as a nonresident must pay the above listed Nonresident Educational Fee as well as all other required fees. The Residence and Education Fee Rules are available at www.umsl.edu/services/finance/resrules.htm. The petition for a change of Missouri Resident Status is available at www.umsl.edu/services/finance/res-pet.htm. All questions should be directed to the Office of Admissions at (314) 516-5451.

Fee Reassessment for Dropping Classes or Withdrawal From School

Fees are reassessed for students who officially withdraw from the University or who drop classes. It is the student's responsibility to formally notify the registrar's office and to follow proper procedures when withdrawing from the university or dropping a class or classes. Failure to receive financial aid or refusing financial aid does not constitute an official withdrawal from the university. Likewise, failing to attend class does not, in and of itself, mean a student has dropped a class. Please refer to the appropriate sections in this publication for specific information about these procedures.

From the standpoint of fee reassessment, it is in the student's best interest to formally drop a class during the 100 percent refund period to avoid higher cost implications later. Reassessments are based on the total cost of the class(es), not just the amount paid thus far. This is necessary because the university commits resources to students when they register and the space reserved could have gone to another student.

Fees included in the reassessment are the Educational Fee, Student Activity Fee, Instructional Computing Fee, Special Course Fee (if applicable), and Parking Fee (if applicable). Such fees are reassessed and reduced according to the schedule published in the Schedule of Courses published each semester.

Refund of Fees

All refunds are made by mail or direct transfer to your bank and require two to four weeks processing time after withdrawal or dropped classes. Deductions will be made for any financial obligation due the University of Missouri.

Delinquent Indebtedness

All delinquent indebtedness to the university must be cleared before transcripts or diplomas will be released, or before registration in subsequent semesters. The university will pursue any and all collection efforts and practices including referring the account to a collection agency and reporting to a credit bureau. The account could be assessed an additional collection charge up to 50 percent of the balance when it is referred to a collection agency.
Other Fees

Laboratory Breakage Fee
Breakage or loss of laboratory equipment due to personal negligence on the part of the student shall be assessed against the student when the actual value of the supplies exceeds $1.00. The amount of the charge shall be determined by the department chairperson.

Room and Board
The university offers many different room and board plans. The average total cost for the residence hall is $2,360 a semester. For more information contact the Office of Residential Life at (314) 516-6877.

Student Insurance: International Students (required)
International students in F-1 and J-1 status are required to purchase the health insurance policy offered through the university. Information regarding waivers, premiums, and coverage is available through the Office of International Student Services.

Student 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.

The university reserves the right to change fees and other charges at any time without prior notification.
Graduate Study

Admission and Application Procedure

The University of Missouri-St. Louis offers courses for graduate credit to qualified individuals to fulfill two kinds of student objectives:

- Completion of academic and professional degrees and certificates.
- Continuing personal or professional development.

Students with a bachelor's degree or the equivalent from an accredited college or university may apply for admission to the Graduate School. Applications are reviewed by the graduate program in which students propose to do graduate study and by the Graduate School. Within limitations, students may be admitted to the Graduate School if their previous academic record and background suggest reasonable likelihood for success in their proposed programs. Students are admitted by the Dean of the Graduate School only upon recommendation of the graduate program involved.

Inquiries concerning admission and requests for application forms should be sent to the Office of Graduate Admissions. A list of admission requirements for the particular degree program is sent with each application form. Application forms for financial assistance are also sent on request. All of the above information and forms are available on the Web at http://www.umsl.edu/divisions/graduate.

Different departments have different application deadlines, some as early as January 1 for the fall semester. Applicants should check with Graduate Admissions for the deadline for the department to which they wish to apply. In general, completed applications should be filed with the Office of Graduate Admissions by July 1 for the fall semester, December 1 for the winter semester, and May 1 for the summer session. Applicants requesting financial aid should submit the application by March 15.

The University of Missouri-St. Louis supports the Council of Graduate Schools Resolution Regarding Graduate Scholars, Fellows, Trainees, and Assistants. This resolution defines the obligations of students and institutions regarding acceptance of support offers after April 15. Inquiries concerning Graduate School admission should be made as early as possible.

All doctoral programs require the GRE General Test. It is also required for the M.A. in Economics, English, Philosophy, Political Science, Psychology, and Sociology, and the M.S. in Physics and Physiological Optics.

Advanced GRE examinations in the subject area are required for the Ph.D. program in applied mathematics and psychology and the M.A. in psychology. GMAT is required for applicants to the M.B.A., M.I.S., and M.Acc. and all graduate business certificate programs. Students who have not taken these examinations should do so at the earliest possible test date.

Application Fee

Applicants for admission into the Graduate School must remit an application fee of $25 for permanent residents of the United States, and $40 for nonpermanent residents or international applicants. An application fee, in the form of a personal check, bank check, or money order payable in U.S. currency, to the University of Missouri-St. Louis, must be submitted with the application.

Admission of International Students

In addition to the general requirements for admission to the Graduate School, other special provisions apply to international students. Prospective students should contact the Office of International Student Services. Phone (314) 516-5229. Fax (314) 516-5636 E-mail: iss@umsl.edu Web page: http://www.umsl.edu/intelstu

International students whose native language is not English must take the TOEFL examination, and score 500 or above, to gain admission to the Graduate School. Teaching assistantships will not be awarded to students whose TOEFL scores are below 570.

For information on applications and test dates for GRE, GMAT, and TOEFL examinations, contact Education Testing Service at http://www.ets.org.

Admission Categories

Any student who receives graduate credit for a course at the University of Missouri-St. Louis must have been admitted to the Graduate School under one of the categories specified for admission:

Matriculated Student
- Regular
- Restricted
- Provisional

Nonmatriculated Student
- Nondegree
- Education certification
- Intercampus exchange
- Postdoctoral

Matriculated Students

Students who wish to take courses to obtain a UM-St. Louis graduate certificate or degree must apply for status as a matriculated graduate student.

Regular Students

Students may be admitted as regular graduate students if the undergraduate GPA and major field GPA are both 2.75 or above on a 4-point scale. A graduate program may establish or more restrictive standards of admission for a particular program.
Restricted Students
Students with an undergraduate GPA of 2.5 to 2.75 may be admitted as restricted graduate students if there is strong supporting evidence in other areas: test scores, work in major field, strongly supportive letters, sharp improvement in undergraduate work, previous successful graduate work, evidence of academic maturity following completion of the undergraduate degree, etc. The courses in which such a student enrolls will apply to a degree or certificate program. However, a student may acquire no more than 12 credit hours on restricted status. Shift from restricted to regular status requires:

- A B average on courses taken on restricted status.
- A positive recommendation from the graduate program.
- Approval from the Graduate School.

Students with GPAs below 2.5 will not normally be admitted to the Graduate School.

Provisional Students
A provisional student is one who seems qualified for admission to the Graduate School but who has not submitted all materials required for admission (official transcripts, test scores, etc.). The courses in which such a student enrolls will apply to a degree or certificate program. A student may enroll provisionally for one semester or summer term only. When all admission materials have been received, the graduate program will review the additional material before finally recommending regular or restricted admission, or denial.

Because admission to doctoral-level studies is limited to people of demonstrably superior academic ability, the doctoral admission categories do not include restricted status. Only two categories of admission to the doctoral level exist: regular and provisional.

Nonmatriculated Students
Students who wish to take courses solely for personal or professional development should apply for status as nonmatriculated, nondegree graduate students. They must provide an official transcript showing completion of a baccalaureate or higher degree, with a GPA of 2.5 or greater, and they must generally meet the same requirements for admission as a matriculated student with restricted status. They do not need to submit test scores or letters of recommendation. Change from nonmatriculated to matriculant requires submission of a new graduate admission application, and it occurs only upon subsequent recommendation by the graduate program and approval by the Graduate School.

Nondegree Students
Students may be admitted as nondegree students if they are visiting students, they do not intend to pursue a degree, they intend to enter a program not yet established, or they are participants of graduate workshops or institutes. They must be accepted by the appropriate graduate program or a department without an established graduate program.

A nondegree student must maintain at least a 3.00 GPA. A nondegree student wishing to take more than 9 credit hours may be allowed to do so, contingent upon departmental recommendation. However, course work completed by a nondegree student is not regarded as completed within a degree program. If such work is later to be transferred into a program, it must be approved by the department and may not exceed 9 credit hours. It may not be counted as part of the residence requirement for a degree.

Education Certification Students
Education certification students are students who are taking courses for state Department of Education certification. They do not need specific departmental approval to take more than 9 credit hours. All other conditions regarding admission and registration that apply to nondegree students apply to education certification students.

Intercampus Exchange Students
Students who have been admitted to an accredited graduate school and who wish to take courses at UM-St. Louis for later transfer to the degree-granting university are intercampus exchange students. Such students should apply for admission as nonmatriculated students.

Postdoctoral Students
Individuals with doctoral degrees wishing to pursue special studies at the University of Missouri-St. Louis may be appointed postdoctoral research fellows by the Dean of the Graduate School on recommendation of the appropriate university division.

Traveling Scholars and Interuniversity Graduate Exchange Students
There are two categories of students who may take graduate courses at UM-St. Louis without applying for admission to UM-St. Louis. Traveling Scholars are graduate students at one of the other UM campuses. Traveling Scholars register on their own UM campus to take courses at UM-St. Louis, using a special form to register for each course, and they report to the UM-St. Louis campus when classes begin. Interuniversity graduate exchange students are Washington University or Saint Louis University students who enroll by special arrangement through the registrar on the home campus for courses not offered on their own campus. Students are
usually restricted to one exchange program course during their academic program.

Unclassified Students
Students who are not qualified for admission to the Graduate School may request admission to UM-St. Louis as unclassified students. Students so admitted are not admitted to the Graduate School, do not take 400-level courses, and do not receive graduate credit. Credits earned by an unclassified student cannot later become graduate credits should the student subsequently be admitted to the Graduate School.

Enrollment

Enrollment in Off-Campus and Continuing Education Courses
Students may enroll in off-campus and Continuing Education graduate courses on one of two bases. Students who have been admitted to the Graduate School may enroll without further application. Courses they complete satisfactorily may be included as part of a graduate program, subject to departmental and Graduate School approval. (See below for limits on institutes and workshops.)

Students holding a baccalaureate degree who have not been admitted to the Graduate School must simultaneously apply for admission as a nondegree graduate student. If admission is not obtained by the end of the semester, graduate credit will not be received.

Specific courses offered off-campus may be designated as taken in residence. Courses taken at the UM-St. Louis Lindbergh Education Center, St. Charles County Education Center, Jefferson County Education Center, Mineral Area College Center, and East Central Community College Center are considered as taken in residence. Unless otherwise specified, all other off-campus and Continuing Education courses are considered nonresident courses.

Nonresident courses may make up no more than one-third of a master's program. Nonresident courses are not normally included in the final two-thirds of a program.

Undergraduate Enrollment in 400-Level Courses
Undergraduate students at UM-St. Louis may enroll in 400-level courses for undergraduate credit. Approvals from the adviser, department chairperson, divisional dean, and graduate dean are required.

Students subsequently admitted to the Graduate School may petition for graduate credit for 400-level courses which they took as undergraduates over and above those needed for their undergraduate degrees. To obtain graduate credit for such approved courses, students must pay the undergraduate-graduate credit fee differential and have written approval from the instructor.

Enrollment in Relation to Admission
A student who has been admitted to the Graduate School may begin enrollment in any term of the following calendaryear after admission. An approved application will be kept on active file for one year. After initial enrollment, students must enroll for at least one term each calendar year to remain in good standing. Students not meeting this enrollment requirement will be dropped from the Graduate School and required to reapply for admission if they subsequently wish to continue. 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. Doctoral students are required to register each semester after they achieve candidacy.

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 department and adviser, students should define the program modifications the leave of absence requires. Requests should indicate the reason for leaving and the expected date of return to the university. Approval of the Graduate School is required. A leave of absence does not affect the maximum time limitation set for a degree program, unless a specific exception is approved. The primary effect of a leave of absence is to suspend the requirement for continuous enrollment.

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.

Maximum Course Load
The normal full-time course load for a regular semester is 9 to 12 credit hours. For an eight-week summer session, the maximum course load is two courses consisting of no more than 9 credit hours. Three hours is the maximum load during four-week summer sessions.

Graduate students who are employed full time may not register for more than six hours. Students employed part time must adjust their course loads according to the number of hours employed. Students may either work full time or carry a full-time load of courses, but not both. Graduate assistants may not work full time.
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.

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.

Students transferring to another University of Missouri campus may ask the UM-St. Louis Director of Admissions to furnish a transcript to the Office of Graduate Admissions at the other UM campus.

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.

Academic Policy
Course Level
All UM-St. Louis 300- and 400-level courses can be taken for graduate credit unless they have been designated in advance "Not for graduate credit." For both master's and doctoral degrees, at least half of the credits must be from 400-level courses. Individual graduate programs may have more restrictive requirements, requiring a higher proportion of 400-level credits.

Within the department in which a student is pursuing a degree, no 200-level course may be taken for graduate credit. However, outside the student's department, one 200-level course may be taken for graduate credit with the approval of the student's adviser and the instructor. In every such case, the student's adviser must consult with the instructor to ensure that the instructor is aware that the course is being taken for graduate credit. The instructor may assign the additional work to the student commensurate with the student's graduate status. Courses numbered from 0 to 199 cannot be taken for graduate credit.

Transfer credit may be granted only for regular graduate courses for which a grade of A or B, or equivalent, was achieved.

Institute and Workshop Courses
Degree credit is allowed for institutes and workshops only if they are offered by a Missouri public university. All institute and workshop credit is considered transfer credit. No more than three hours of transfer credit in this category is permitted.

Graduate workshops or institutes are short-term offerings intended to meet the needs of specialized groups and to provide opportunities to explore new developments and current issues. Graduate study experiences not readily available in existing courses are appropriate for workshop or institute offerings.

A student who completes a workshop or institute course while not enrolled in the Graduate School may not subsequently include the course as part of a degree program. Inclusion of the workshop or institute credit in a graduate program is subject to the approval process inherent in the filing of a degree program. In instances where workshops or institutes are offered on a credit/noncredit or pass/fail basis, such credit may not be applied to a graduate degree.

Foreign Language Requirement
The Graduate School does not have any general foreign language requirements for advanced degrees. Where graduate programs establish required levels of competence in one or more foreign languages, that competence shall be shown in one of the following ways, as determined by the graduate programs: an examination given by the program or satisfactory completion of a language course at a specified level. Evidence that the foreign language requirement has been satisfied shall be presented to the Graduate School in each case.

Grades
Faculty have complete discretion in assigning grades in their courses. Point assignments for grades are as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>4.0</td>
</tr>
<tr>
<td>A-</td>
<td>3.7</td>
</tr>
<tr>
<td>B+</td>
<td>3.3</td>
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<tr>
<td>B</td>
<td>3.0</td>
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<tr>
<td>B-</td>
<td>2.7</td>
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<td>C+</td>
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<td>1.7</td>
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<td>F</td>
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<td>EX</td>
<td>-</td>
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<td>DL</td>
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EX - Excused  DL - Delayed
The Graduate School does not recognize a D grade for a graduate student enrolled in a course carrying graduate credit. According to the regulations of the Graduate School, grades lower than C- are recorded as F.

Delayed grades may be given when a student's work is incomplete but otherwise worthy of credit. Delayed grades must be removed within two regular semesters after the time recorded or they automatically become F grades. Delayed grades recorded for courses in thesis or dissertation research are left as delayed grades until the final regular grades are reported by the instructor.

Students cannot earn a graduate degree with any delayed grades on their transcript. The only exception to this rule is for students enrolled in doctoral programs who are obtaining a master's degree or graduate certificate on the way to the doctorate. For these students, delayed grades in dissertation research are allowed at the time they receive their master's degree or graduate certificate.

**Grade Point Average (GPA) on a 4.0 Scale**

All courses taken at UM-St. Louis for graduate credit figure into the calculation of the transcript GPA, including courses that may not be a part of the degree program. However, only those courses included in the degree or certificate program are included in the calculation of the program GPA. The program GPA must be at least 3.0 for a student to receive a graduate degree or certificate.

Graduate courses taken by UM-St. Louis undergraduates and then petitioned into graduate credit will be included in GPA calculations. Courses transferred from other universities or other UM campuses will not be included in any GPA calculation, even though the courses may be included as part of a degree program.

**Probation**

A graduate program must place a graduate student on probation if the transcript GPA, based on a minimum of three courses (9 credit hours), falls below 3.0 or if it regards the student's progress as unsatisfactory. The student will be placed on probation for one semester, during which time progress will be formally reviewed by the appropriate graduate program. After one semester the student will be removed from probation, continued on probation, or dismissed. A student may not continue on probation for more than one calendar year without permission of the dean of the Graduate School. Probation letters will be sent out by the graduate program, with copies sent to the Graduate School and the Graduate Admissions Office.

**Dismissal**

A graduate student can be dismissed from the Graduate School on the recommendation of the graduate program and concurrence of the Graduate School. Dismissal letters will be sent out by the Graduate School, with copies sent to the graduate adviser and the Graduate Admissions Office. Notification will be sent by the Graduate School to the Registrar's Office. Nondegree students must maintain the same standards required of students enrolled in degree or certificate programs. Upon recommendation of the graduate program, nondegree students may be dismissed if their grade point averages fall below 3.0. They are dismissed if their grade point average is below 3.0 at the end of 12 completed credit hours of study.

**Certificate Programs**

**Credit Requirements**

A minimum of 18 hours of course work is required for a graduate certificate. At least 12 of these credit hours must consist of courses drawn from the list of core courses for the particular certificate program. At least 12 credit hours must be completed in residence at UM-St. Louis. At least 9 credit hours must be at the 400 level. No more than 6 credit hours may be independent study.

**Filing the Degree Program**

A graduate student enrolled in a certificate program is required to file a degree program with the Graduate School before completing the first two-thirds of the number of hours required in the program.

**Master's Degree Requirements**

**Credit Requirements**

A minimum of 30 semester hours carrying graduate credit is required for every master's degree program.

**Filing for Degree Program**

Before completing the first two-thirds of the required hours in a degree program, graduate students, in consultation with their advisers, should file a program of study. This program must be approved by the graduate program involved and the dean of the Graduate School.

**Thesis and Comprehensive Examinations**

Although not a general Graduate School requirement, a thesis may be required in particular degree programs. Where required, the thesis is directed by a three-member committee of graduate faculty appointed by the dean of the Graduate School on the recommendation of the graduate program.

Microfilming of master's theses is required by the Graduate School as a condition of degree conferral. Information on requirements, costs, and optional copyrighting can be obtained from the Graduate School or the library representative.

Comprehensive examinations--oral, written, or both--are required in most master's degree programs. Examinations are administered by a committee of no fewer than three graduate faculty members appointed by
the dean of the Graduate School on the recommendation of the graduate program.

Dual Master's Degrees
With approval of the graduate program and the dean of 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 to a third master's degree are not permitted.

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

- No more than one-third of the credit hours required by either program may be applied to both programs.
- Students must obtain approval of the graduate program and graduate advisers from both areas before they have completed 12 hours in either program. Under normal circumstances, two degrees will be pursued consecutively rather than concurrently.

An exception to the above one-third limit may be granted by the dean of the Graduate School if the two degree programs have filed with the Graduate School approved guidelines addressing specific allowable transfers between those two degree programs.

Credit From a Certificate Program
Students who have completed course credits in certificate programs may transfer such credits into a master's degree program with the consent of the graduate program, as long as the credits fall within the time limitations set for master's degrees. If the master's degree is in a different graduate program from that awarding the certificate, no more than one-third of the credits from the certificate program may apply to the master's degree. Students engaged in established multidisciplinary studies governed by guidelines approved by the relevant graduate programs and the Graduate School may apply appropriate certificate credits in excess of this limit.

Time Limitation
The maximum amount of time allowed for completion of a master's degree is six years after the first graduate course enrollment. All courses included in a master's degree program, whether taken at UM-St. Louis or at another institution, must have been completed within six years of the awarding of the degree.

Residence Requirement
The final two-thirds of the courses in a master's degree program must be completed in residence at UM-St. Louis.

University of Missouri-St. Louis
Graduate Study

Continuous Enrollment
All master's degree students who regularly utilize faculty or facilities for the purpose of advisement, data gathering, or examinations must be enrolled for credit commensurate with this activity.

Degree Conferral
Candidates for the master's degree are expected to attend commencement.

Doctoral Degree Requirements
The doctoral degree is based on evidence that candidates have achieved a high level of scholarship and proficiency in research. The proficiency of students and their ability to work independently are established by a series of qualifying and comprehensive examinations and by the quality of their dissertations.

Credit Requirements
A minimum of 60 credit hours carrying graduate credit is required for every doctoral degree program. Graduate programs may require a greater number of credit hours.

Residence Requirement
The majority of credits used to satisfy requirements for a doctoral degree must be completed in residence at UM-St. Louis. For example, for a doctoral degree requiring 90 hours of work beyond the bachelor's degree, at least 46 hours must be completed at UM-St. Louis.

At some point in their course work, doctoral students must successfully complete a minimum of 15 hours over two consecutive terms ("term" meaning a regular semester or a summer session). The 15 hours may not all be taken in one term.

Work completed as a post-master's degree student, prior to admission to a doctoral program, may be counted toward a doctoral degree, up to a maximum of 12 credit hours. Inclusion of such course work is subject to graduate 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 must be approved by the graduate dean prior to filing the program of study.

When doctoral students have earned a master's degree, appropriate credits may be applied toward meeting the requirement for the doctoral degree, subject to graduate program approval. Such credits must constitute less than half of the total credits required for the doctorate. For example, for a doctoral degree requiring 90 credit hours of work beyond the bachelor's degree, no more than 44 credit hours from a master's degree may apply to the doctoral degree. Credit for courses taken for a master's degree is exempt from the eight-year time limitation.
Time Limitation
Doctoral-degree work must be completed within eight years after the first course of the doctoral program of study.

Comprehensive Examination
Each graduate program will determine the number of times a comprehensive examination may be taken by a student. The graduate program must file with the Graduate School a statement specifying (a) the number of times the graduate program will allow its students to take a comprehensive examination and (b) the maximum and/or minimum period of time the department will allow between the first and final attempt to pass the comprehensive examination.

Appointment of the Comprehensive Examination Committee is made by the graduate dean upon recommendation of the graduate program.

The comprehensive exam format must be approved by the graduate program and the dean of the Graduate School. The format may consist of an oral and/or written portion. No revision of the approved format is permitted without the approval of the graduate program and the dean.

Application for Candidacy
An Application for Candidacy should be filed immediately after the student has passed all comprehensive and language examinations, as required by the graduate program, and completed all course work.

Dissertation Proposal
A doctoral dissertation proposal should be filed before the student conducts any substantial research. Prior to this filing, the dissertation committee will meet with the student for an oral defense of the dissertation proposal. The dissertation proposal must be accepted by the Graduate School before a doctoral student completes the sixth semester of study, or before the student takes more than 4 credit hours of dissertation credit, whichever comes later.

It is understood that the dissertation research may evolve in directions quite different from the dissertation proposal, and the proposal is not intended to restrict the development of a research project. The dissertation proposal is in no way a contract between the university and the student. Depending on the outcome of the research, the dissertation may require substantially more work than anticipated at the stage of the dissertation proposal. The termination of a line of research and the adoption of a substantially new dissertation project will require the preparation, oral defense, and acceptance by the dissertation committee and the dean of the Graduate School of the new dissertation proposal.

Continuous Enrollment
When students are advanced to candidacy, they must remain in continuous enrollment until the degree is conferred. If students are actively engaged in degree activities on campus, they shall enroll for credit commensurate with this activity. If away from campus, students shall enroll for at least one credit hour each semester.

Dissertation Committee
The Doctoral Dissertation Committee will consist of at least four members of the UM-St. Louis Graduate Faculty. Included in this number is the committee chair, who must be a member of the Doctoral Faculty. Also included in this number is at least one person from outside the division, college, or school. The majority of members of the committee must be from the department in which the student is obtaining the degree.

When the Dissertation Committee deliberates on a dissertation or on an oral defense of the dissertation, two negative votes are sufficient for failure, even if outnumbered by positive votes. An abstention will be considered a negative vote. A student failing an oral defense should be provided with an opportunity for an additional defense. The timing and format of the subsequent defense will be determined by the Dissertation Committee and the second defense will take place before the same committee.

Dissertation and Final Examination
One copy of the dissertation, certified as complete and provisionally acceptable by all dissertation committee members, must be submitted to the Graduate School at least six weeks before commencement. The dean of the Graduate School may assign the dissertation to other readers, on- or off-campus, or seek such other advice as the dean feels pertinent.

Upon preliminary acceptance of the dissertation, the dean of the Graduate School appoints the Defense of Dissertation Committee to conduct the final examination. The dean appoints members of the Dissertation Committee and such other members of the Graduate Faculty as seem appropriate.

Candidates must submit an oral defense announcement, including an abstract of the dissertation, at least three weeks before the oral examination.

The Defense of Dissertation Committee certifies the final acceptability of the dissertation to the dean of the Graduate School on the basis of a final examination open to all Graduate Faculty members. 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. This
certification is made by signing the Final Approval of the Doctoral Dissertation form. Microfiling of doctoral dissertations by UMI is required by the Graduate School. Information on requirements, costs, and optional copyrighting can be obtained from the Graduate School or the library representative.

Degree Conferral
Candidates for the doctoral degree are expected to attend Commencement.

Fees for Graduate Study
Detailed information regarding current fees and residency regulations is furnished in the Schedule of Courses, distributed before each semester registration, available at the Registrar's office, or on the Web site:

The university reserves the right to change fees and other charges at any time without advance notice.

Nonresident Students
A student who is admitted to the University as a nonresident must pay the Nonresident Educational Fee as well as all other required fees. The Residence and Education Fee Rules are available at www.umsl.edu/services/finance/resrules.htm. The petition for a change of Missouri Resident Status is available at www.umsl.edu/services/finance/res-pet.htm. All questions should be directed to the Office of Admissions at 314-516-5451.

Final Semester Incidental Fee
Students must enroll in the semester in which they graduate.

Thesis and Dissertation Fee
Graduate students must also pay a fee for the binding and microfilming of the thesis or dissertation.

Fees for Auditing Courses
Auditors are charged full fees and receive no academic credit.

Laboratory Breakage Fee
Breakage or loss of laboratory equipment due to personal negligence on the part of the student shall be assessed against the student when the actual value of the supplies exceeds $1. The amount of the charge shall be determined by the department chairperson.

Room and Board
The university offers many different room and board plans. For more information please contact the Office of Residential Life at 314-516-6877.

Student Insurance: International Students (required)
International students in F-1 and J-1 status are required to purchase the health insurance policy offered through the university. Information regarding waivers, premiums, and coverage is available through the Office of International Student Services.

Student 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.

Payment of Fees
All fall semester fees are due and payable on August 21, 2001. A minimum payment plan is available for students unable to complete their financial arrangements at the time of registration. A finance charge will be assessed on the unpaid balance of all students at the rate of 1 percent per month. All accounts will be billed using this method; therefore, it is NOT necessary that a student choose the minimum payment plan at the time the charges are incurred. Students with delinquent accounts will NOT be allowed to register in subsequent semesters.

Personal Checks. Personal checks in payment of fees or other obligations to the university will be accepted only when the amount of the check does not exceed the amount due from the student. Any checks payable to the university which are returned unpaid will be assessed a $20 return check charge.

Credit Cards. Valid MasterCard, VISA, and Discover credit and debit cards are accepted toward payment of fees.

Quick and Easy Ways To Pay Fees.
• By Mail, using the mail-in coupon and envelope provided with the monthly statement.

• Using STAR, from a PC in your home, work or campus. Payment can be made by credit card only.

• Using TRAIN, from a touch-tone telephone. Payment can be made by credit card only.

• In Person at one of the service windows at the Cashier's Office.

Fee Reassessment for Dropping Classes or Withdrawal From School
Fees are reassessed for students who officially withdraw from the University or who drop classes. It is the student's responsibility to formally notify the registrar's office and to follow proper procedures when withdrawing from the university or dropping a class or classes. Failure to receive financial aid or refusing financial aid does not constitute an official withdrawal from the university. Likewise, failing to attend class does not, in and of itself,
mean a student has dropped a class. Refer to the appropriate sections in this publication for specific information about these procedures. Fees included in the reassessment are the Educational Fee, Student Activity Fee, Instructional Computing Fee, Special Course Fee (if applicable) and Parking Fee (if applicable). Such fees are reassessed and reduced according to the schedule published in the Schedule of Courses each semester.

Financial Assistance

Teaching and Research Assistantships
Most departments with established graduate programs offer teaching and research assistantships to qualified graduate students. Appointments are usually half-time appointments and carry stipends. Students receiving .5 FTE assistantships receive a fellowship covering residential and nonresidential educational fees. Students with these assistantships must register for a minimum of 6 credit hours in semesters in which they hold the assistantship.

Teaching or research assistantship appointments are made directly by the departments. Inquiries and applications for assistantships should be addressed to the director of the graduate program of the appropriate department. Applications should be submitted no later than March 15 for the fall semester. Occasionally a few teaching assistantships are available for the winter semester. Interested students should contact the director of the appropriate graduate program as soon as possible.
Confidentiality Policy

These statements are set forth as guidelines and procedures to implement the University of Missouri policy on student records developed from The 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 Handbook, the Schedule of Courses, the UM-St. Louis Bulletin, and the Current (student newspaper) the following information:

1. "Education Records" are those records, files, documents, and other materials which contain information directly related to a student and are maintained by the university. Those records, made available 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 which 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 which were created for a law enforcement purpose and are 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 which 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 which 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 which are 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.

2. The University of Missouri-St. Louis recognizes "Directory Information/Public Information" to mean a student's name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, 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 Admissions and Records before the end of the two-week period following the first day of classes that any or all of the information designated as directory information should not be released without the student's prior consent. The information listed above will become directory information or public information as of the first day of classes following the end of the two-week period in a regular semester and the first day of classes following the end of the one-week period during the summer session.

3. University of Missouri-St. Louis students have access to the educational records identified in Paragraph 1 above. In accordance with Public Law 93-380 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 which were 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.

4. The director of Financial Aid, the appropriate academic dean, the coordinator of the Student Health Service, the Vice Chancellor 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.

5. 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.
6. 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.

7. 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.

8. 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:

- The request for a hearing shall be submitted in writing to the campus chancellor who will appoint a hearing officer or a hearing committee to conduct the hearing.
- 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.
- 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.
- The student shall be afforded a full and fair opportunity to present evidence relevant to the hearing.
- 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 from the Chancellor's decision is to the President. Appeal from the President is to the Board of Curators.

9. The University of Missouri-St. Louis will mail grade reports only to a student's permanent mailing address. Grades will not be mailed to parents unless the student in question has completed the necessary authorization in the registrar's office.

10. 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.

11. 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.

Student Financial Aid Programs

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 grants, 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 April 1. Preference means that the Student Financial Aid Office will begin awarding FWS (Federal College Work-study), Federal SEOG (Federal Supplemental Educational Opportunity Grant) and Federal Perkins Loan funds. A completed financial aid application means that the Financial Aid Office has received an official Student Aid Report from the Federal Processing Center.

The Student Financial Aid Office maintains a Web site at www.umsl.edu/services/finaid, where students will find useful information along with the ability to contact the office electronically via e-mail. Also included is a scholarship directory that is updated biweekly.

To be considered for all university scholarships offered through the Financial Aid Office, a student must be accepted for admission. A scholarship application must be completed to apply for scholarships awarded through Student Financial Aid. All incoming freshmen should complete the Incoming Freshman Scholarship Application. Continuing students should complete the Continuing Student Scholarship Application.

Students are encouraged to contact the department in which they are majoring for other possibilities for scholarships.
**Library Services**

**Librarians**

Amy Arnott, Director, University Libraries  
M.A.L.S., University of Missouri-Columbia

Gregory Ames, Curator, John W. Barriger National Railroad Library  
M.L.S., State University of New York, Genesco

Clinton Berry, Reference Librarian  
M.A., University of Missouri-Columbia

Cheryle Cann, Head, Ward E. Barnes Library  
M.S.L.S., University of Missouri-Columbia

Christopher Dames, Reference Librarian  
M.S., University of Missouri-St. Louis  
M.L.S., Kent State University

Mary Doran, Reference Librarian  
M.L.S., University of California-Los Angeles  
M.A., University of Missouri-Columbia

Bette Gorden, Curator, Herman T. Pott Inland Waterways Library  
M.A., University of Oregon; M.A.L.S., University of Missouri-Columbia

John H. Hoover, Director, St. Louis Mercantile Library at UMBSt. Louis and Associate Director of Libraries for Special Collections  
M.A.L.S., University of Missouri-Columbia; M.A., Southern Illinois University-Edwardsville

Peter Monat, Reference Librarian  
M.A., Saint Louis University; M.S., University of Illinois-Urbana-Champaign

Raleigh Muns, Reference Librarian  
M.L.S., University of California-Los Angeles

Christopher Niemeyer, Reference Librarian  
M.L.I.S., University of Texas at Austin

David Owens, Head, Technical Services  
M.A.L.S., University of Missouri-Columbia

Frances Piesbergen, Reference Librarian/Government Documents  
M.A., University of Missouri-Columbia

Marilyn Rodgers, Reference Librarian  
M.A., University of Missouri-Columbia

John Mark Scheu, Head, Collection Development  
M. Phil., University of Kansas; M.S., University of Illinois - Urbana-Champaign

Sally Schneider, Reference Librarian  
M. S., University of Kentucky

Helen Shaw, Reference Librarian  
M.Ed., University of Illinois-Champaign; M.A., University of Missouri-Columbia

The University Libraries support the educational objectives of the university and meet the teaching, research, and informational needs of the campus community. Housed in three locations—the Thomas Jefferson Library and the St. Louis Mercantile Library at UM-St. Louis (North Campus) and the Ward E. Barnes Library (South Campus)—the Libraries' collections consist of more than 950,000 volumes, 2,900 periodical subscriptions, one million U.S. government documents, over one million items in microform, and numerous special and manuscript collections.

Materials from the libraries of all campuses of the University of Missouri and Saint Louis University can be identified in the MERLIN online catalog. At the time of the catalog search, users can request that items at other institutions be transferred to UM-St. Louis. A full range of services, including interlibrary loan, reference assistance, library instruction, and access to a large number of databases are also available through the Libraries.

**Western Historical Manuscript Collection and University Archives**

**Archivists**

Kenneth F. Thomas, Senior Manuscript Specialist, Western Historical Manuscript Collection  
M.A., University of Missouri-St. Louis

William M. (Zelli) Fischetti, Associate Director, Western Historical Manuscript Collection and University Archives  
M.A., University of Missouri-St. Louis

Linda J. Belford, Senior Manuscript Specialist, University Archives  
M.A., University of Missouri-St. Louis

The Western Historical Manuscript Collection contains primary source materials for research in many fields, including local history, the environment, labor history, women's history, politics, and black history. The collection is open to the university community and the general public. Material from the other three campuses in the WHMC system may be borrowed for research use at UM-St. Louis. A catalog of the holdings of the other branches of WHMC is available.

The archives contain official records, campus publications, student newspapers, photographs, and other material on the history of the University of Missouri-St. Louis.

Located on Level II in the Thomas Jefferson Library, the office is open for reference service Monday through Friday, 8 a.m. to 4:45 p.m. and until 9 p.m. on Tuesday. Archival and manuscript material does not circulate.
Division of Student Affairs

Office of the Vice Chancellor for Student Affairs
The Office of the Vice Chancellor for Student Affairs, located in 301 Woods Hall, 516-5211, offers assistance and a wide variety of services to students. The office is responsible for administering the Student Conduct Code, confidentiality of student records, and the Discrimination Grievance Procedure for Students.

Disability Access Services
Located in 144 Millennium Student Center, Disability Access Services provides information, guidance, referral services, and assistance for students with disabilities. Special arrangements and assistance in providing for the accessibility needs of students with permanent or temporary disabling conditions are available through this office. A TDD is provided for individuals with a hearing impairment. For more information or questions, call 516-6554 (voice) or 516-5212 (TDD). Additional information is available at the Web site http://www.umsl.edu/services/disabled/.

The Division of Student Affairs has been awarded a federal Student Support Services TRIO Grant to provide specialized educational services to students with disabilities. The S.T.A.R.S. (Students Taking Advantage of Resource Services) SSS grant project office is located in 144 Millennium Student Center, telephone 516-6554 (voice) or 516-5212 (TDD). Applications for these services are available in the office. Web site: www.umsl.edu/~stars/

Admissions
The Office of Admissions is located in 351 Millennium Student Center, 516-5451. Admissions is generally the first point of contact for prospective students who require information and assistance as they go about planning for the college decision process. The Office of Admissions arranges tours of campus, sponsors open houses throughout the year for both first-time freshmen and transfers, and processes admission applications. Prospective students and families as well as applicants can arrange to meet personally with admission counselors. Counselors can provide information on applying for financial aid and scholarships, placement tests, and new student orientation.

Registrar/Registration/Records
The Office of the Registrar is located in 269 Millennium Student Center, 516-5545. This office is responsible for registration, academic records, grades, transcripts, enrollment verification, veterans certification, change of name and/or address, ordering diplomas, and many other enrollment-related services. No appointment is needed for service, and hours are convenient to both day and evening students.

Degree Audit
The Degree Audit office, 261A Millennium Student Center, 516-6814, provides an automated record (DARS report) which reflects a student's progress toward degree completion. This report is very useful in planning a major, tracking graduation requirements, and investigating other areas of study. DARS reports are available from a student's academic adviser, who will assist in the interpretation of the audit as well as online through the STARUMSL system.

Student Financial Aid
The Office of Student Financial Aid is located in 278 Millennium Student Center, 516-5526. The staff in this office assist students with applying for financial aid, including scholarships, grants, loans, and work study. The office is open various hours to accommodate both day and evening students. Appointments are not necessary.

Office of Residential Life
Located in 123 South Campus Residence Hall, 516-6877, the Office of Residential Life offers on-campus housing to students year-round. The Office of Residential Life offers air-conditioned, furnished residence halls, in which 93 percent of rooms are singles. Contracts for 9 and 12 months are available. Residence Hall rates include all utilities, local phone service with six features, cable, microfridges (combination refrigerator and microwave), data communications hook-ups in each room, and a tax-exempt declining-balance meal plan. The halls also offer a large swimming pool, as well as laundry facilities, kitchenettes, and common TV lounges. All residence halls are located on the free campus shuttle route.

For students who are at least 21 years of age, Mansion Hill condominiums offer one- and two-bedroom unfurnished apartments conveniently located adjacent to the campus. The complex is on the free campus shuttle route and offers swimming pool, picnic areas, recreation areas, and laundry facilities. Rent is billed to the university account of UM-St. Louis student residents.

A variety of social, cultural, and educational programs and activities are offered by the Office of Residential Life and the Residence Halls Association. As one of the most active and visible student organizations on campus, RHA serves as the student voice for residence hall students, providing leadership opportunities and activities both on- and off-campus. Residential students are active in intramurals, student organizations, campus leadership positions, and other university activities. Tours of the UM-St. Louis residence halls and campus operated-housing are available by calling 516-6877.
The University Meadows Apartments is a privatized complex offering efficiencies, and one-, two-, and four-bedroom units. Nine- and 12-month leases are available. A variety of amenities are available, including swimming pool, laundry facilities, recreational facilities, and data communications hook-ups in each room. University Meadows is managed by its own external management staff. Information on leases and tours of University Meadows may be obtained by contacting the management office at 516-7500.

Counseling Services

Counseling Services offers professional counseling regarding personal, social, educational, and career concerns. Services include individual and couple counseling, educational workshops, and groups, as well as career testing and career development counseling. Counseling Services also provides consultation to faculty and staff.

Counseling Services' Career Resource Center contains a well-stocked library of career-related materials and computerized career tests. The Study Skills Lab offers assessment and instruction in study skills and strategies for academic success. Use of the Career Resource Center and Study Skills Lab is free of charge. There is a small fee for career testing.

Counseling Services supervises the undergraduate Horizons peer educators. Horizons peer educators assist students looking for information about career options or academic majors in the Career Resource Center. They also present programs and workshops on topics such as alcohol awareness, time management, career exploration and stress management. The staff also provides training and supervision for graduate student interns. For information about participating in any of these programs, call 516-5711.

The Counseling Services receptionist will arrange for an appointment with a counselor or for use of computer programs. Evening appointments are available for Evening College students. In an emergency, students can be seen almost immediately. For more information, call 516-5711 or visit Counseling Services office at 427 SSB. Web site: http://www.umsl.edu/services/counsel

Women's Center

The Women's Center serves as an educational resource center offering an information and referral service, advocacy, programs on women's issues, cultural events, a library of literature by and about women, topical resource files, and information on women's activities, networks, organizations, and services in St. Louis. Located in 126 Millennium Student Center, the Women's Center offers support and assistance in coping with sexual harassment, help in doing research on women, and answers to questions about almost anything. The center is also a good place to relax, drink coffee, and share ideas and experiences with other UM-St. Louis students in a comfortable atmosphere.

The Student Emergency Contact Form has been developed by the center for students who may need to be contacted in emergency situations. This service is especially useful for students who are parents. Call the center at 516-5380, or stop by and complete an Emergency Contact Form.

Career Services

Career Services works in partnership with employers and the campus community by helping students and alumni to develop, implement, and evaluate job search strategies.

Job and career services are available to all UM-St. Louis students and alumni. Career Services hours are Monday through Friday, 8 a.m. to 5 p.m. For more information, call 516-5111, or visit 327 Millennium Student Center.

Web Registration. Internet technology allows students 24/7 access to career services. Web registration enables students to become members of the Candidate Database, display resumes in the WebResumeBook for hundreds of local and national employers to view, and produce professional targeted resumes, interview on campus, and more.

Candidate Database. Qualifications and experience of Candidate Database members may be quickly matched with job vacancy listings. Resumes will be sent directly to the employer.

WebHomePage. Provides general information about Career Services, upcoming Job Fairs, Career Days, and other special events, the on-campus interviewing schedule, direct links to company information, job banks, career resource materials, and self-assessment exercises. The WebJobListings service has hundreds of current vacancies listed daily by employers. http://www.umsl.edu/depts/career

Career Mapper. This career development tool gives students and alumni a thorough analysis of abilities, interests, and personality traits, creating a picture of how best to fit into the job market. Career Mapper can help students who are confused about career direction or need validation that they are moving in the right direction.

Steps-to-Career-Success Program. Designed to assist students who may be uncertain about their career goals and job options, this program provides a systematic approach to making the right choices.
Career Experience and Employment Program. Co-op and internship opportunities help students with expenses and a degree-related position to give a competitive edge in the job market. Jobs may be part-time, full-time or summer positions, and, if the work is related to an academic major, students will receive a transcript notation. This program may be used to "test drive" a career decision.

Career Assistance Program. This job search program can assist with career management decisions, career transition, or job change questions. It can help students and alumni to manage a career with positive results, evaluate skills, interests, and traits, and provides structure, guidance, and motivation in the job search.

Office of Student Activities
E-Mail: studentactivities@umsl.edu. Web Page: http://www.umsl.edu/services/stuactv

The Office of Student Activities, 366 Millennium Student Center, advises and serves as a facilitator for programs and services provided to 120 recognized and registered student organizations at the University of Missouri-St. Louis. The director of Student Activities serves as a nonvoting chairperson for the Student Activity Budget Committee, which allocates operating budgets to organizations approved for funding.

The Office of Student Activities directs the campuswide orientation program so that students can become acquainted with university rules, procedures, and services. For more information call 516-5291.

In conjunction with the University Program Board, the Office of Student Activities sponsors a diverse series of educational, cultural, recreational, and social programs, services, and activities which complement the academic mission of the campus and attend to developmental needs of students at UM-St. Louis.

The office serves as a resource for students desiring information about any student organization on campus and will actively assist any student wishing to participate in any student organization or program on campus.

Organizations. There are approximately 120 student organizations at UM-St. Louis ranging in size from 3 to 50 members. Their activities address the educational, cultural, social, recreational, and spiritual cocurricular needs of the campus community.

Social fraternities and sororities, performing and fine arts, curriculum-related support groups, ice hockey, bowling, and other special interest clubs enhance the collegiate experience. The Associated Black Collegians, International Students Organization, and Women's Center serve as resources for students on campus. Information regarding student organizations is available in 366 Millennium Student Center. Specific organizations may be contacted by mail through the same address.

The University Program Board, a 15-student volunteer group, initiates and implements a variety of lectures, and appearances by comedians and musical groups throughout the year. The board also sponsors games, tournaments, and discounted tickets for local sporting events, concerts, and theater. Most campus events are free to the campus community and are subsidized by student activity fees. Membership in this organization is open to students who are interested in coordinating these types of programs. Information is available by calling 516-5291 or by stopping by the Office of Student Activities in 366 Millennium Student Center.

Housing Referral. The Student Activities Office maintains a list of available apartments, rooms, and flats in the North County area. Lists of persons requesting roommates are also available.

University Health Services
University Health Services, an ambulatory care clinic in 131 Millennium Student Center, offers wellness through care and education. Basic health services include treatment of minor injury and illness, screening exams, women's health care, strep throat testing, pregnancy testing, tuberculin skin testing, flu shots, immunizations, urinalysis, and allergy injections. Care is provided by nurse practitioners and registered nurses. Consultation is offered on nutrition and diet management, sexually transmitted diseases, contraception, wellness assessment, and health promotion. Consultation is available to clients with chronic health problems (such as asthma, and diabetes) in assisting with health problem management. Educational materials on a variety of health-related topics are available. Educational outreach programs addressing current health issues and needs are offered. Assistance with referral to medical facilities is provided upon request and when deemed necessary.

The university requests that students born after 1956 provide documented proof of immunity to measles and rubella, through current immunization records or disease documentation by a physician. Immunization records may be sent to University Health Services.

Information, application, and claim forms for the Student Accident and Sickness Insurance Plan are available at the UHS office. Validation for handicapped parking is handled through UHS upon presentation of signed medical documentation verifying a disability that impairs mobility. Automobile information and license place number are also necessary to obtain verification for handicapped parking.

University Health Services is open Monday - Thursday 8 a.m. until 7 p.m. and Friday 8 a.m. until 5 p.m. Scheduled appointments begin at 8:30 a.m. Generally there is no
charge for services; however, selected screenings, tests, and services may be offered on fee-for-service basis. To make an appointment, or for further information, call 516-5671. For a medical emergency on campus, call 911.

Drug and Alcohol Prevention Program
Pursuant to the Drug-Free Schools and Communities Act Amendments of 1989, the University of Missouri-St. Louis is required to establish a drug and alcohol prevention program for its students and employees. A biennial review of this program will be done to determine its effectiveness, to implement changes to the program if they are needed, and to ensure that the university’s disciplinary sanctions are consistently enforced.

Standard of Conduct. University of Missouri regulations prohibit the unlawful possession, use, distribution, and sale of alcohol and illicit drugs by university students and employees on university-owned or controlled property and at university-sponsored or supervised activities.

Legal Sanctions. Local, state, and federal laws also prohibit the unlawful possession, use, distribution, and sale of alcohol and illicit drugs. Criminal penalties for violation of such laws range from fines up to $20,000 to imprisonment for terms up to and including life.

University Discipline. Violation of these University of Missouri regulations can result in disciplinary action up to and including expulsion for students and discharge for employees.

Health Risks. Specific serious health risks are associated with the use of illicit drugs and alcohol. Some of the major risks are listed below.

Alcohol and Other Depressants (barbiturates, sedatives, and tranquilizers). Addiction, accidents as a result of impaired ability and judgment, overdose when used with other depressants, damage to a developing fetus, and heart and liver damage.

Marijuana. Addiction, panic reaction, impaired short-term memory, increased risk of lung cancer and emphysema (particularly in cigarette smokers), and impairment of driving ability.

Cocaine. Addiction, heart attack, seizures, lung damage, severe depression, paranoia, and psychosis. Similar risks are associated with other stimulants, such as speed and uppers.

Hallucinogens (acid, LSD, PCP, MDMA, etc.). Unpredictable behavior, emotional instability, violent behavior, organic brain damage in heavy users, convulsions, and coma.

Narcotics (heroin, Demerol, Morphine, Codeine, etc.). Addiction, accidental overdose, and risk of hepatitis and AIDS from contaminated needles.

Inhalants (gas, aerosols, glue, nitrites, etc.). Loss of consciousness, suffocation, damage to brain and central nervous system, sudden death, nausea and vomiting, nosebleeds, and impaired judgment.

Resources. A variety of resources exist for drug or alcohol counseling, treatment, or rehabilitation programs. For detailed information concerning these resources available from the university and/or community agencies, students, employees, and faculty may contact the offices below. Such referrals will respect individual confidentiality. The UM-St. Louis Drug and Alcohol Prevention Program is described in a brochure. To obtain the brochure and more information, contact Counseling Service, 427 Social Sciences and Business Building, 516-5711; Student Health Center, 125 Millennium Student Center, 516-5671; or the Office of Human Resources, 211 General Services Building, 516-5804.

Smoke-Free Campus Policy of UM-St. Louis
Effective June 1, 1991, smoking is prohibited throughout the University of Missouri-St. Louis campus.

Student Government
Student Association
The Student Association of the University of Missouri-St. Louis is the student governance body composed of both elected student representatives from each school and college, and of organizational representatives from every recognized student organization which petitions for representation on the assembly.

The purpose of the Student Association is to represent University of Missouri-St. Louis student concerns at every level of governance within the university and at the state and local level. This is done by ensuring adequate and capable student representation within the University Senate, the policy-making and governance body of the University of Missouri-St. Louis. In addition, Student Government, the policy-making arm of the Student Association, has its own standing committees to address student concerns. On the local and state levels, Student Government leaders visit various officials to address student concerns and priorities throughout the year. For more information call 516-5105 or drop by 375 Millennium Student Center.

Student Court.
The Student Court is nominated by the Student Assembly and appointed by the vice chancellor for Student Affairs. The five-member court rules on student appeals concerning matters such as disputes between individuals and organizations, or organizations and organizations.
Evening College Council.
The Evening College Council serves the evening student body as a liaison between students, faculty, and administrators. It functions as a sounding board for Evening College students' ideas and interests, and it coordinates social activities of special interest to evening students. Membership is open to all Evening College students who are in good standing. Contact the Evening College, 2nd floor Millennium Student Center, at 516-5162 or any council member for more information.

Senate

The Senate is the governing body of the campus. Its membership includes 75 faculty members, up to 25 students, the campus's top-ranking administrators, and other ex officio members.

Students are elected to the Senate in the winter semester, and they are required to file their candidacy in advance of the election. The filing deadline and election dates are widely publicized on the campus. The number of student senator seats is dependent on the number of eligible candidates filing for election, but the maximum number of seats available to students is 25.

To qualify for service on the Senate, a student must be enrolled in good standing, must not be on disciplinary probation, must have a cumulative grade point average calculated by UM-St. Louis to be at least 2.0, and must have completed a minimum of nine hours of academic credit on this campus.

The Senate has a number of standing committees which include student members. They are Budget and Planning; Bylaws and Rules; Committee on Committees; Computing; Curriculum and Instruction; Executive Committee; Faculty Teaching and Service Awards; International Relations; Physical Facilities and General Services; Recruitment, Admissions, Retention, and Student Financial Aid; Student Affairs; Student Publications; University Libraries; University Relations; and Video and Instructional Technology. The Senate establishes ad hoc committees as needed, and these committees sometimes include student members.

Recreational Sports

The university's recreational sports program is geared toward the interests of the entire university community. Students, faculty, staff, and alumni are encouraged to take active roles in the creation of new recreational sports programs.

Intramural activities currently offered include touch football, basketball, volleyball, swimming (Swim the Mississippi River Club), racquetball, golf, tennis, bowling, softball, hoc soc, fun run, soccer, and weight lifting. For more information call 516-5125.

Intercollegiate Sports

A variety of intercollegiate sports are available for both men and women at UM-St. Louis. The Rivermen and Riverwomen compete at the NCAA Division II level and are members of the Great Lakes Valley Conference. The women's intercollegiate athletic program includes basketball, soccer, tennis, volleyball, golf, and softball. The men's intercollegiate athletic program includes basketball, soccer, tennis, volleyball, golf, and softball. Scholarships are available for both men and women in all sports. Both men's and women's athletic teams have brought both local and national recognition to the university for more than 20 years, with one national championship and trips to the NCAA Tournament in several sports.

UM-St. Louis students with validated IDs are admitted free to all home athletic contests.

For more information about intercollegiate athletics, please call 516-5661.

Facilities

The athletic and exercise areas in the Mark Twain Building are available for use by the university community at specified hours. During the regular semester, the building is open seven days a week and on specified evenings. Facilities include basketball, volleyball, badminton, and handball/racquetball courts, an aerobic dance room, and an NCAA regulation swimming pool.

The facilities also include two conditioning and fitness rooms with state-of-the-art equipment, an indoor running track suitable for walking or running, and a sauna. Outdoor facilities include baseball, softball, soccer, intramural fields, and tennis courts. For further information call 516-5641.
Other Services

Alumni Relations Office

UM-St. Louis alumni, now numbering more than 56,000, help shape the future of not only the university but the entire St. Louis region. The Alumni Association and the Alumni Relations offices are located at 7952 Natural Bridge Road, across the street from the main campus entrance. The two work together to promote the St. Louis campus and build mutually beneficial relations between the university and its alumni. Membership in the Alumni Association is open to all graduates and former students with payment of modest dues.

Alumni Association

The Alumni Association sponsors several scholarship funds for UM-St. Louis undergraduate and graduate students, provides special funding of certain campus projects, and works as an organization to obtain increased public support for the university. For more information, call 516-5833.

A historic and elegant setting, the Alumni Center, located at 7956 Natural Bridge Road across the street from the main campus entrance, offers students, faculty, staff, and alumni a gathering place for community receptions and other social events. Contact the Alumni Center at 516-5722 for more information and reservations.

Gallery 210

Gallery 210, 210 Lucas Hall, sponsors five major art exhibitions yearly. These include professional work of national and international importance in all media, with a primary emphasis on contemporary art. In conjunction with these exhibits, the gallery frequently sponsors symposia, lectures, and other events which enhance the impact of the works of art that are displayed.

Under the auspices of the Department of Art and Art History, the exhibits offered by the gallery meet the best of both educational and aesthetic standards, and serve the visual interests of both the metropolitan community and the university's students and staff. For more information, call 516-5952 or visit the Web page at http://www.umsl.edu/~gallery/.

Police Department

The mission of the University of Missouri-St. Louis police department is to work cooperatively with the university community and within the framework of the Constitution to enforce the laws, preserve the peace, and provide a safe environment for the campus.

The police department is committed to professional management and to providing services in a manner that is responsive to community concerns. It pledges to be sensitive to the needs of those it serves.

The police department, located in the TeleCommunity Center, serves the students, faculty, and staff by providing year-round campus security. The police are trained to give emergency aid in the event of accident or illness. All incidents should be reported immediately to the police department, telephone 516-5155. A 911" phone number is available on all phones with a 516 prefix and should be used for emergencies only. These numbers are monitored 24 hours a day. Call for help or to report fire or any hazardous conditions. Emergency telephones on campus include the red AHot-Line—phones, which are located in every building. In addition, there are a number of outdoor emergency phones that connect directly to the police dispatcher.

Traffic regulation is also a responsibility of the campus police, including issuance of faculty/staff parking permits and any temporary parking permits. These permits may be picked up at the police department office. Informational booklets on traffic regulations and parking, as well as campus maps, tips on crime prevention, and other useful publications are available outside the police department office.

The police department provides limited emergency vehicle service, at no charge, to vehicles on campus. Any person requiring such service (due to dead battery, empty fuel tank, flat tire, etc.) should phone the university police for assistance. An escort service is available 24 hours a day by calling 516-5155. All members of the campus community are strongly encouraged to call the police for an escort if they feel uncomfortable walking to their car at night.

For information on any of these services, contact the police by calling 516-5158, Monday through Friday, 8 a.m. to 5 p.m. For emergencies, call 516-5155 or 911.
Specialized Centers and Facilities

Research

Center for Business and Industrial Studies
The Center for Business and Industrial Studies is organized within the College of Business Administration for studying managerial problems and performing applied research. The center operates on a not-for-profit basis, helping organizations nationwide to understand factors affecting their business environments and to enhance their productivity. University faculty, supported by powerful computer systems, statistical databases, and sophisticated software, provide multidisciplinary consultation in a wide variety of business applications. Studies are undertaken in computer systems, operations management, human resources management, planning and business development, facilities location, distribution, marketing, and financial analysis. Organizations contract with the center for studies tailored to their specific needs. For a brochure outlining the center's services, call (314) 516-5857.

Center for Entrepreneurship and Economic Education
The Center for Entrepreneurship and Economic Education is sponsored by the College of Arts and Sciences and Continuing Education- Outreach to support and enhance economic education in elementary and secondary schools. The center provides in-service programs in economic education to area teachers. Working closely with local school districts, the center serves to improve and evaluate economics curriculum. The center develops and publishes curriculum units for K-12 classrooms. Entrepreneurship education is another focus for center activities. The center also promotes the goals of entrepreneurship and economic education among business, professional, educational, labor, and other organizations and individuals in the St. Louis community.

Center for International Studies
The Center for International Studies supports academic programs, seminars, and conferences designed to promote and improve research in international studies, improve methods of teaching international studies in schools and colleges, and encourage an interest in international affairs in the university and area communities. The center's Office of International Student Services coordinates and provides services for international students including admissions, immigration, orientation, nonacademic advising, etc. In addition, the center administers the campus exchange and study abroad programs and disseminates information on study, work, and travel abroad. The center promotes the development of interdisciplinary and multidisciplinary courses, assists in staffing courses within individual departments, houses the Joint Center for East Asian Studies of UM-St. Louis and Washington University, the E. Desmond Lee Global Ethnic Collaborative, the Karakas Family Foundation Alliance for the Advancement of Hellenic Studies, and the Endowed Professorships in African African-American Studies, Chinese Studies, Greek Studies, Irish Studies, Japanese Studies, and the German Culture Center. It conducts seminars that address specific faculty and student needs and interests, sponsors conferences for academic and community audiences, organizes international business development programs, sponsors an International Performing Arts series, issues occasional papers, administers undergraduate certificate programs in Africana studies, East Asian studies, European studies, international business, international studies, and Latin American studies and the Graduate Certificate in International Studies. In addition, the Community Education Office serves precollegiate educators statewide through the Missouri International Studies Resource Collection and operates a comprehensive global education program.

Center for Molecular Electronics
Molecular electronics lies at the cutting edge of recent developments in the study and application of thin-film materials, the growth of semiconductor device material, the fabrication of electronic sensors and devices, and the development of high-performance polymers. In all these areas, knowledge and control at the atomic or molecular level is essential for state-of-the-art materials and devices. In recognition of the critical importance of research, education, and industry-university cooperation in these areas, the University of Missouri-St. Louis has established the Center for Molecular Electronics. The goals of the center are both research at the forefront of the field of molecular electronics and assistance in development of high-technology products by St. Louis-area corporations. To encourage cooperation between university and corporate scientists and engineers, the membership of the center includes physicists, chemists, and engineers from the University of Missouri-St. Louis, Washington University, MEMC Electronic Materials, and Monsanto Company.

Center for Neurodynamics
This center sponsors basic research on transmission and processing of information by the brain and the sensory nervous system. Research functions are performed largely by faculty, graduate students, and postdoctoral research associates, though exceptionally talented and motivated undergraduate students also make valuable research contributions. The center is interdisciplinary, composed of faculty from the departments of Biology and Physics and the School of Optometry. It maintains a program of external associates with whom collaborative research projects are pursued. Current associates are in Baylor College of Medicine, Houston, Texas; the Department of Biomedical Engineering, Boston University, Boston, Mass.; and Viatech Imaging Inc., Ivoryton, Conn. The center is host to frequent scientific visitors and maintains an active program of seminars on contemporary problems in neuroscience and in the physics underlying neural processes. For further information consult the URL http://neurodyan.umsl.edu.
International Center for Tropical Ecology
The Center for Tropical Ecology promotes education and research concerning the study of biodiversity, conservation, and sustainable use of tropical ecosystems. The center was established to centralize the activities of faculty at UM-St. Louis and researchers at the Missouri Botanical Garden who specialize in ecology, evolution, systematics, and conservation biology. A priority is to provide funding for graduate students interested in tropical biology and conservation who are enrolled in the cooperative graduate program between UM-St. Louis and the Missouri Botanical Garden. The International Center for Tropical Ecology sponsors multidisciplinary lectures and symposia on biological, political, and cultural issues related to tropical ecosystems. The center also provides funding and assistance to the undergraduate Certificate in Conservation Biology, which focuses on Missouri conservation, and the graduate certificate in Tropical Biology and Conservation. For further information visit the ICTE Web page: http://icte.umsl.edu.

Inter-University Consortium for Political and Social Research
An academic partnership between the University of Michigan Center for Political Studies and more than 350 colleges and universities in the United States and abroad the Consortium for Political and Social Research is an interdisciplinary, inter-university research and training facility for students and faculty in the social sciences. Through consortium archives, students and faculty have direct access to a variety of multipurpose data of a sociopolitical nature that may serve research and training needs. Students and faculty are eligible to participate in the consortium's summer training program, a series of intensive eight-week courses of interdisciplinary work for historians, political scientists, sociologists, and other social scientists.

Campus Computing
Students, faculty, and staff have access to powerful computing resources. The largest systems are a Sun Ultra Enterprise 4000 and a cluster of HP Netserver LX Pros. Resources include free dial-up access to E-mail and the Internet, five student computing laboratories, nine smart classrooms, and eight media enhanced lecture halls/classrooms. Campus Computing also provides consultation, programming, error analysis, and operations services. Noncredit short courses are taught during the fall and winter semesters on a wide variety of computer applications.

University of Missouri-St. Louis
Specialized Centers and Facilities
the faculty to demonstrate software applications, research the World Wide Web, and share information with students.

Student computer labs in the Social Sciences Building, Thomas Jefferson Library, Benton Hall, and South Campus Computer Building offer Windows NT, Macintosh, Sun Solaris, and Silicon Graphics workstations. Student consultants are available to assist students with general operation and troubleshooting needs.

The Technology Support Center, 211 Lucas Hall (516-6034) is available for students, faculty, and staff who have general questions regarding their accounts or use of campus resources. The Web office provides assistance for faculty and staff in developing Web pages.

The Urban Information Center, a specialized part of Campus Computing, operates on a cost recovery basis and therefore charges for all products and services. It focuses on applications programming related to the U. S. Census and other public data. The primary UIC programming tool is the SAS. Using SAS, the UIC maintains a large data archive, primarily derived from the decennial census data. This archive is accessible at no charge via the WWW. To access the archive or learn more about UIC services visit the home page at www.umsl.edu/services/ccornputing/uic/index.html.

Office of Research Administration
The Office of Research Administration provides services to faculty, graduate students, and staff for obtaining external support for research, instruction, or public service programs. Services include providing information, application materials and instruction for submitting proposals, assisting with electronic submissions, developing project budgets, negotiating contracts, and fiscal monitoring of awards. The ORA administers grants and contracts from federal, state, and local government programs and grants awarded by private foundations. The ORA works with faculty committees to award and administer internal research grants. Administrative support is provided to committees charged with monitoring university compliance with various federal and state regulations concerning research. The ORA provides on-line information through its home page: http://www.umsl.edu/services/ora.

Public Service
Child Development Center
The Child Development Center, 130 South Campus Classroom Building, provides high-quality day programs for children of students, faculty, staff, and community families. The program operates from 7 a.m. to 5:30 p.m. Monday through Friday, year round. This program serves children from six weeks to five years of age. The center
also provides university students with observation, participation, research, and similar educational and clinical opportunities. Call the center at 516-5658 for additional information.

**Center for Humanities**
The center provides visibility and focus for humanities activities at UM-St. Louis and attracts and channels resources for support of interdisciplinary humanistic inquiry. The center sponsors a variety of conferences, symposia, and lectures. Over the last several years, the center has sponsored a conference in the fall semester titled "What is a City?" which examines the structure and social environment of cities and their effects on social and cultural diversity. In the spring semester the center sponsors a second conference on an interdisciplinary humanistic theme. The center also sponsors throughout the academic year the Monday Noon Cultural Series, which features a variety of humanities lectures and musical performances. The center also supports and coordinates the poetry and short story series, which offers contemporary authors reading their works. In addition the center houses and funds the journal *Theory and Society*, a refereed, interdisciplinary journal of social theory and practices, published by Kluwer Academic in The Netherlands. The center disseminates information on the humanities on its Web site and promotes development of interdisciplinary outreach programs.

**KWMU**
90.7 KWMU-FM, is the 100,000-watt public radio station of the University of Missouri-St. Louis and National Public Radio/ Public Radio International affiliate. The professionally staffed station broadcasts news, talk, and entertainment 24 hours a day. KWMU provides programming that is responsive to the needs of the community. In training students who plan to pursue broadcast careers, KWMU augments the educational and training function of the university.

**Public Policy Research Center**
PPRC is the focal point for the University's role as a metropolitan institution, committed to meeting the diverse needs of Missouri's largest urban region. The center's professional staff and faculty from a wide variety of disciplines are dedicated to improving public strategies that foster livable communities, the economic well-being of the region's people, and the sustainability of the natural and built environments. In particular, the PPRC focuses it resources on issues related to neighborhood and community development, economic vitality, governance (at the local, county, and regional levels), and land-use and transportation-policy planning.

The PPRC endeavors to achieve its mission by:

- Undertaking objective basic and applied research.
- Serving as a regional information and data center.
- Sponsoring forums and seminars for debates and discussions.
- Publishing and disseminating policy briefs, issue papers, research reports, and newsletters.
- Commenting on issues of public policy and identifying regional challenges and opportunities.
- Providing training and certificate programs for community and government leaders and professional organizations.
- Evaluating public and community programs.

The center undertakes these tasks by developing partnerships with local, county, regional and state governments and agencies, nongovernmental organizations, and citizen's groups. It also promotes policy research through faculty fellows. Drawn from a variety of disciplines such as public policy administration, economics, political science, business, sociology, nursing, education, social work and history, fellows receive PPRC support to undertake and disseminate applied research. PPRC also serves as a policy laboratory for a number of graduate students participating in research and outreach activities. PPRC is organized around four activity areas: research, community and neighborhood development, metropolitan information and data analysis services, and publications and communication. It also mounts regularly changing photographic exhibits.

**University Eye Center**
Located on the South Campus, the center is open to the public as well as to faculty, staff, and students of the university. Its goal is to provide patients with high-quality vision care and optometry students with diverse educational opportunities. The school also operates the Optometric Center, a comprehensive optometric eye care facility in the Central West End of the city of St. Louis, and the East St. Louis Eye Center, jointly owned and operated by the University of Missouri-St. Louis School of Optometry and Southern Illinois University at Edwardsville.

**Teaching**

**Center for Academic Development (CAD)**
CAD is an academic support and assessment unit that focuses attention on the needs of UM-St. Louis students seeking success in their coursework. The center is comprehensive in nature and offers the following programs:

**The Writing Lab (409 SSB).** This lab offers tutorial assistance to students working on papers for their classes. No appointment is necessary, and tutors are prepared to help both undergraduate and graduate students in all the disciplines. Issues covered in the lab include organization, sentence clarity, development, grammar, and usage. The Writing Lab offers both IBM and Macintosh computers
There is no charge for any Writing Lab service.

**Supplemental Instruction.** Student assistants (SI Leaders) conduct study groups for specific courses. Course content and study skills are reviewed several times a week at scheduled sessions. Students participate on a voluntary basis without charge for the service.

**English-as-a-Second-Language Program (ESL).** The center is the administrative home for the English as a Second Language Program. The program provides assessment and supplementary ESL courses for international students. Courses are listed under the Foreign Languages and Literatures Department.

**Mathematics Lab (425 SSB).** This lab offers free individual assistance on a walk-in basis to students needing help with any mathematics from basic math through calculus or any course involving mathematical skills. The lab also offers on-site use of videotaped lessons that accompany some mathematics courses, computer packages covering certain topics, and mathematics textbooks and worksheets on several basic topics. Students or prospective students who are preparing to take the Mathematics Placement Test or C-Base Exam may come to the lab for help. Review materials for these two tests are available on general reserve in the Thomas Jefferson Library.

**Math Workshops.** The center provides assistance for students needing to improve their skills in mathematics. Zero-credit workshops covering Beginning and Intermediate Algebra are offered as a semester-long lecture class or as an independent study course with flexible beginning and ending options. Schedules for the workshops can be found in the current Schedule of Courses.

**Campus Assessment.** This unit administers the Campus Assessment Plan. Two types of assessment are required of all students:

- A test of general educational development, given to incoming freshmen and graduating seniors.
- A test or project, specified by the major department, given to graduating seniors.

In addition, the unit is involved in the survey of alumni, currently enrolled students, faculty, and employers.

**Assessment Center (412 SSB).** The center provides a controlled environment for students to take make-up exams or to test under conditions where special accommodations are needed and authorized. Students unable to take campus level exams (Math Placement, Academic Profile) in regularly scheduled group sessions may take them in the center for a fee. All testing is by appointment. Call (314) 516-6396.

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**University of Missouri-St. Louis**

**Specialized Centers and Facilities**

**Tutor Referral Services.** Students desiring a private tutor for a particular course should check with the appropriate academic department for a list of tutors. Some tutor names and phone numbers can be found on the tutor referral list Web site under the Center for Academic Development Web page. Times and costs are arranged by student and tutor.

**Facilities**

**Multicultural Relations.** Multicultural Relations was designed to support the university's goal of academic success for all students. Cognizant of the unique challenges facing the minority population, Multicultural Relations works to enhance and promote academic success for these students. It provides and directly links students to such services as new student orientation, scholar retention, tutoring, academic counseling, career exploration, and leadership development. Workshops and discussion groups are held to foster a larger awareness of the university and its resources.

Students meet with counselors to work on individual academic plans and are assigned tutors if necessary. Student Support Services Program and African American Scholars Retention Program are a part of Multicultural Relations and assist in ensuring that the mission of this office is accomplished. Additionally, Multicultural Relations fosters effective communication among students, faculty, staff, and alumni.

**UM-Rolla Engineering Education Center**

The UM-Rolla Engineering Education Center, housed on the University of Missouri-St. Louis campus, is an engineering graduate program administered by UM-Rolla for nontraditional students in the St. Louis area. The program is conducted in the evening and on weekends, making it suitable for students who are employed full time. Graduate work leading to the Master of Science degree is available in engineering management and engineering mechanics, as well as aerospace, civil, computer, electrical, environmental, and mechanical engineering.

The center provides information to St. Louis area residents about UMR programs in Rolla. Advisers can assist area pre-engineering students with transfer to the Rolla campus and with entry into the Cooperative Training Program that exists between UMR and numerous U.S. industries. This co-op program allows engineering students to gain valuable industrial experience during their school years and to be partially or totally self-supporting.

The center also assists St. Louis area companies by offering noncredit short courses, in-house training courses and engineering consultation services in the technical areas of competence of UMR faculty.
Video Instructional Program and Career Experiences and Employment

The Video Instructional Program offers flexible learning for students who are far from campus or whose schedules make it difficult to attend regular classes. Textbooks and study materials accompany the video lessons for each course and are available through the bookstore.

The following courses from the UM-St. Louis curriculum are currently offered (new courses are being developed):

Anthro 19, Archaeology
Anthro 25, World Cultures
Anthro 124, Cultures of Africa
Anthro 350, Special Studies
Biology 01, General Biology for Non-Science Majors
Biology 120, Environmental Biology
Comm 70, Introduction to Cinema
Comm 232, Effective Communication in the Organization: Tool for Leadership
Education 308, Foundations of Adult Basic Education
History 31, Topics in European Civilization: Emergence of Western Europe to 1715
History 32, Topics in European Civilization: 1715-present
History 150, The Peoples Century, Part I
History 350, The People's Century, Part I, Special Studies
Phil 91, Significant Figures in Philosophy (Was Phil 210.)
Phil 92, Philosophical Issues in Other Disciplines (Was Phil 290.)
Psych 03, General Psychology
Psych 245, Abnormal Psychology
Psych 268, Human Growth & Behavior
Psych 280, The Psychology of Death & Dying
Social Work 280, Human Behavior in the Social Environment
Social Work 312, Women's Social Issues
Sociology 10, Introduction to Sociology
Sociology 108, Diversity of People and Places

Courses are also available on the Higher Education Channel (HEC) on St. Louis area cable stations. For complete information, call (314) 516-6171.

Career Experiences and Employment

The Career Experience and Employment Program combines classroom studies with work experience in a field related to 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 this program, 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.

The Career Experience and Employment Program links students, UM-St. Louis, and employers in partnership. Throughout this program, Career Services and academic departments work with students and employers to ensure that positions are linked to curriculum and career development. Students who work in this program will receive a transcript notation for each semester employed.

These work arrangements are available to UM-St. Louis students at all levels in all majors. Contact Career Services for requirements for participation and opportunities available, 516-5111, or visit 327 Millennium Student Center.

College of Arts and Sciences

Anthropology
315, Senior Seminar - required, for credit
325 - 329, 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.

Human Origin and Cultural Diversity program offers internships in educational anthropology and diversity education.

Art
287, Professional Internship for Art History majors only - elective, for credit.
288, St. Louis Art Museum Internship for Studio Art or Art History majors only - competitive position elective, for credit.

Biology
231, Undergraduate Internship in Biotechnology - optional as part of certificate program, for credit or noncredit, enrollment in certificate program required.
347 Practicum in Conservation - required as part of certificate program, for credit, enrollment in certificate program required.
Chemistry
Opportunities are available to pursue research with faculty members for credit during the academic year. Normally requires enrollment in Chemistry 290. Stipend available in some cases. Expanded opportunities 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 Chemistry 290 research at a local company through collaborative arrangement between a faculty member and an industrial chemist.

Communication
193, 194, 196, 197, Practicum in Applied Communication, Debate/Forensics, Radio, and Television/Film - required, for credit. On-campus positions, as available.
393, 394, 396, 397, Internship in Applied Communication, Journalism, Radio, and Television/Film - elective, for credit, Senior standing, 3.0 GPA, and faculty recommendation required; off-campus positions.

Criminology and Criminal Justice
280 Internship in Criminology and Criminal Justice - elective, for credit.

Economics
Career-related work arrangements for students majoring in economics are primarily administered through the department, located in 408 SSB. These positions are generally paid and non-credit bearing; however, students receive a transcript notation for each semester worked. Occasionally credit may be earned for selected assignments with departmental approval.

English
320, 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.
198 Practicum in Theater - optional, credit
398, Internship in Theater - optional, credit.

Foreign Languages and Literatures
Positions as tutors in language lab available on a competitive basis - paid, noncredit. Students of German can apply for summer internships abroad through the German-American Student Exchange Program - noncredit. Information available in department.

History
390, Special Readings - internships occasionally available with historical agencies; department chair and/or undergraduate coordinator must approve to obtain credit.

Mathematics and Computer Science
Career-related work arrangements for students majoring in math and/or computer science are primarily administered through Career Services located in 327 Millennium Student Center. These positions are paid and non-credit-bearing; however, students receive a transcript notation for each semester worked.

Music
292, 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 111/112 sequence.

Political Science
295, 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
295, Selected Projects in Field Placement - elective, for credit.

Social Work
320 and 321 Supervised Field Experience in Social Work I and II - required, for credit, enrollment in B.S.W. program and prior consent of instructor are required.

Sociology
385, Internship in Sociology - elective, for credit.
304 Survey Research Practicum - elective, for credit. Students should consult the sociology department, 707 Tower, for requirement guidelines.

Many departments within the College of Arts and Sciences work in cooperation with the College of Education for students seeking teaching certification in an emphasis area. Student teaching work arrangements are coordinated through the College of Education.

Career of Business Administration
Career-related work arrangements for students majoring in all areas of business are primarily administered through Career Services. These positions are paid and non-credit-bearing; however, students receive a transcript notation for each semester worked.
Career Experiences and Employment and Continuing Education and Outreach

BA327, Practicum in Finance - recommended course for credit and compensation for students with a finance emphasis. Students work closely with local firms to gain practical work experience.

College of Education
Student Teaching - required, for credit. The College of Education is involved with a variety of programs which provide students with academically related work opportunities. These include Parkway Central Middle School/UM-St. Louis Internship Program, Professional Development School Program, and Schools for Thought-Compton-Drew Middle School. These programs are optional and both for credit and non-credit. Positions at Parkway Central Middle School and Compton-Drew Middle School are paid.

Engineering
UM-St. Louis/Washington University Joint Undergraduate Engineering Program Career-related work arrangements for students majoring in all areas of engineering are primarily administered through Career Services. These positions are paid and non-credit-bearing; however, students receive a transcript notation for each semester worked.

Barnes 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.

Visit Career Services, 327 Millennium Student Center, or call 516-5111 for more information on these programs and other work arrangements available. Web site: http://www.umsl.edu/depts/career

Continuing Education and Outreach

As the comprehensive public university in a metropolitan region, UM-St. Louis serves students who are in many ways nontraditional in their demographic make-up, their approach to higher education, and their educational needs. Meeting the requirements of these nontraditional students while extending the expertise of the university to the community is the mission of Continuing Education and Outreach.

Through Continuing Education and Outreach, the university's schools and colleges administer a wide variety of credit courses, noncredit programs, and problem-oriented research for the benefit of the greater St. Louis metropolitan area and beyond. Programs are offered both on and off campus. Research, generally of an applied, urban-related nature, is designed to solve specific problems of client groups.

Arts and Sciences
Continuing Education and Outreach in the College of Arts and Sciences includes credit courses and noncredit programs for the college's departmental disciplines, including courses and workshops in the arts, microcomputers, music appreciation, writing, languages, history, and science. Interdisciplinary teaching and research programs deal with such fields as social work, the humanities, and economics. Programs for ongoing professional development provide targeted, concentrated information to area employers and to the general public regarding scientific and technological advancements. Informational lectures and workshops on current issues are offered to the interested public.

Continuing Education and Outreach in the College of Arts and Sciences also sponsors the Center for Entrepreneurship and Economic Education, which provides programs and curriculum consultations to local teachers and schools.

The Microcomputer Program, which develops and teaches applied computer courses and offers the Chancellor's Certificate on the Computer, along with other certificate programs, is also a unit of Arts and Sciences Continuing Education and Outreach.

The Advanced Credit Program, administered by Arts and Sciences, provides an enrichment experience for university-bound secondary students by providing freshman-level courses for credit in selected high schools.

The Gateway Writing Project offers credit and noncredit programs on writing improvement for classroom teachers.

A variety of credit courses offered at locations throughout the St. Louis metropolitan area enables students to obtain
academic credit at locations convenient to where they live and work.

The Annual St. Louis Storytelling Festival is also sponsored by Continuing Education and Outreach. The College of Arts and Sciences partners with area cultural institutions to offer credit and noncredit programs for symphony, opera, and theater fans.

Business Administration
Continuing Education programs through the College of Business Administration are offered in several areas, including organizational and management development and individual professional growth. Programs include a certificate program for first-line supervisors and a certificate program for human resource administrators. Special seminars and conferences are offered regularly on specific topics of current interest. In addition, the college co-sponsors programs in the area of microcomputing.

Education
The overall aim of the College of Education's outreach activities is to provide services that bring about better teaching and learning situations in educational settings. The programs and courses help students complete Missouri teacher certification requirements as well as provide work either toward advanced degrees or for in-service professional growth. The college extends instructional research and service to educational personnel in other parts of Missouri and the Midwest in addition to the St. Louis metropolitan area.

Graduate School and Public Policy Administration
The Nonprofit Management and Leadership Program offers comprehensive education and training for professional staff, board members, and other leaders of nonprofit and voluntary organizations, as well as students and others wishing to explore a future in the field. The program offers noncredit seminars and credit courses leading to undergraduate and graduate certificates.

Nursing
Barnes College of Nursing at UM-St. Louis offers a variety of continuing education programs for nurses and other health care professionals. Undergraduate Nursing and Arts and Sciences credit courses are offered for those wishing to complete their B.S.N. or finish prerequisites to begin work on a master's degree. Selected graduate courses are also offered.

Optometry
The University of Missouri-St. Louis offers Continuing Education and Outreach programs for optometrists through the UM-St. Louis School of Optometry. Diagnostic and therapeutic classes are held on a frequent basis with doctors coming from a variety of states. Each spring, the Optometric Institute draws several hundred optometrists, opticometric assistants, and technicians for a two-day conference covering the latest optometric techniques.

Video Instructional Program
The Video Instructional Program offers an alternative for the student who is unable because of work schedules, family commitments, or other reasons, to take traditional credit courses. Video lessons are offered on HEC on St. Louis-area cable stations, or they may be checked out from the UM-St. Louis libraries.

Outreach Sites
Continuing Education and Outreach offers selected graduate and undergraduate credit courses at UM-St. Louis Lindbergh, a satellite center located at Lindbergh High School in south St. Louis County. Continuing Education and Outreach offers credit courses at other metropolitan sites, including St. Charles West Senior High School, and Jefferson College in Hillsboro.

The UM-St. Louis St. Charles County Educational Center has been established on the campus of St. Charles Community College. Junior- and senior-level courses are offered at this site. In the Jefferson County Educational Center, courses are offered at Fox High School in Arnold and Jefferson College in Hillsboro. The university offers additional junior- and senior-level courses at Mineral Area College in Park Hills and at East Central Community College facilities in Union and Washington, Missouri, respectively.

In-house Training
Specialized research and technical assistance and in-house training programs are available to local businesses and organizations. With the help of expert faculty and staff consultants, the university is equipped to deliver specialized training on an in-house basis.

J.C. Penney Conference Center
This large conference facility at UM-St. Louis houses a 435-seat auditorium, as well as six large conference rooms, designed to provide an excellent academic environment and maximum convenience for course participants. A complete conference staff provides administrative support for seminars and conferences, as well as coordination for hundreds of hosted programs each year.

For more information on programs and services offered by Continuing Education and Outreach, call (314) 516-5961.
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Degree Programs

Undergraduate Studies

Undergraduate degree programs are offered by the College of Arts and Sciences, College of Business Administration, College of Education, Evening College, and Barnes College of Nursing.

Bachelor of Arts (B.A.)
Anthropology
Art history
Biology
Chemistry
Communication
Economics
English
French
German
History
Mathematics
Music
Philosophy
Physics
Political science
Psychology
Sociology
Spanish

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

Bachelor of General Studies (B.G.S.)

Bachelor of Health Studies (B.H.S.)

Bachelor of Music (B.M.)
Music
Music education

Bachelor of Science (B.S.)
Accounting
Applied mathematics
Biology
Chemistry
Civil engineering (joint program with Washington University)
Computer science
Criminology and criminal justice
Economics
Electrical engineering (joint program with Washington University)
Management information systems
Mathematics
Mechanical engineering (joint program with Washington University)
Nursing
Physics
Sociology

Bachelor of Science in Business Administration (B.S.B.A.)

Bachelor of Science in Education (B.S.Ed.)
Early childhood education
Elementary education
Physical education
Secondary education
Special education

Bachelor of Science in Nursing (B.S.N.)

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

Bachelor of Social Work (B.S.W.)

Graduate Studies

The Graduate School administers all degrees and certificates beyond the bachelor's degree in all divisions except the School of Optometry, which administers the professional program leading to the Doctor of Optometry degree.

In most cases, master's degree programs can be completed through part-time study.

Master of Accounting (M. Acc.)

Master of Arts (M.A.)
Communication
Criminology and criminal justice
Economics
English
History
Mathematics
Philosophy
Political science
Psychology
Sociology

Master of Fine Arts (M.F.A.)
Creative writing

Master of Health Science (M.H.S.)
Managerial decision making and health informatics

Master of Music Education (M.M.E.)

Master of Business Administration (M.B.A.)

Master of Education (M.Ed.)
Counseling
Educational administration
Elementary education
Secondary education
Special education
Master of Public Policy Administration (M.P.P.A.)

Master of Science (M.S.)
Biology
Chemistry
Computer science
Gerontology
Management information systems

Degree Programs (continued)

Physics
Physiological optics

Master of Science in Nursing (M.S.N.)

Master of Social Work (M.S.W.)

Doctor of Education (Ed.D.)

Doctor of Optometry (O.D.)

Doctor of Philosophy (Ph.D.)
Applied mathematics
Biology
Chemistry
Criminology and criminal justice
Education
Nursing
Physics
Physiological optics
Political science
Psychology
College of Arts and Sciences
General Information

The College of Arts and Sciences consists of some 275 full-time faculty members in the following departments, each offering work in specific undergraduate degree programs: anthropology, art history and fine arts, biology, chemistry, communication, criminology and criminal justice, economics, English, foreign languages and literatures, history, mathematics and computer science, music, philosophy, physics and astronomy, political science, psychology, social work, 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: biology, chemistry, criminology and criminal justice, economics, English, history, mathematics and computer science, physics and astronomy, philosophy, political science, psychology, social work, and sociology. An interdisciplinary master's degree in public policy administration is offered in cooperation with the College of Business Administration. Specific degree requirements for both undergraduate and graduate degree programs are described in the departmental sections which follow this general information on the college.

Requirements for Undergraduate Study

In addition to the university general education requirements, all majors in the College of Arts and Sciences must meet the following requirements:

Cultural Diversity Requirement.

To expand cultural awareness, all students are 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:

Anth 11, Introduction to Cultural Anthropology
Anth 19, Introduction to Archaeology
Anth 21, The Body in Culture
Anth 25, World Cultures
Anth 29, Cultural Diversity through Literature
Anth 33, World Archaeology
Anth 41, Sex and Gender Across Cultures
Anth 71, Native American Literature
Anth 91, Introductory Topics in Anthropology
Anth 110, Cultures of Asia
Anth 111, Cultures of East Asia
Anth 112, Cultures of Southeast Asia
Anth 113, Cultures of South Asia
Anth 114, Cultures of the Near and Middle East
Anth 120, Native Peoples of North America
Anth 121, Native Peoples of Eastern North America
Anth 122, Native Peoples of Western North America
Anth 123, Cultures of Oceania
Anth 124, Cultures of Africa
Anth 131, Archaeology of Missouri
Anth 132, Archaeology of North America
Anth 134, Archaeology of the Inca, Aztec, and Maya
Anth 135, Old World Archeology
Anth 136, Archaeology of East Asia
Anth 137, Archaeology of Africa
Anth 138, African-American Archaeology
Anth 140, Cultures of Mexico and Central America
Anth 145, Indians of South America
Anth 173, Archaeology and Cultures of the Biblical World
Anth 191, Special Topics in Non-Western Cultures
Anth 201, Comparative Economic Behavior
Anth 225, Topics in Tribal Arts
Anth 235, Women in Subsaharan Africa: A Contemporary Perspective
Anth 238, Culture and Business in East Asia
Anth 428, Culture and Business in East Asia
Art 8, Introduction to Asian Art
Art 15, Art of Africa, Oceania, and the Americas
Art 107, The Arts of China
Art 108, The Arts of Japan
Art 116, North American Indian Art
Art 117, African Art
Art 119, Pre-Columbian Art of Mexico and Central America
Art 208, Topics in Asian Art
Art 215, Topics in Tribal Arts
Art 217, Topics in African Art
Englisb 71, Native American Literature
Englisb 128, The Contemporary World in Literature
History 380, Western History to 1800
History 381, Western History to 1800
History 382, Western History to 1800
History 383, Western History to 1800
To graduate, all majors in the college also must complete the following:

- Requirements of their chosen baccalaureate degree (i.e., B.A., B.S., B.M., 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.

Academic Policies

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

- Earn 120 graded hours with a C grade or better, which constitutes a complete degree program and does not include a satisfactory/unsatisfactory basis. A C- does not meet this requirement.
- Earn a cumulative grade point average of 2.0 or better for all hours attempted with a minimum of 120 hours. (This College of Arts and Sciences policy supersedes the statement under General Education Requirements.)

Residency Requirements
Unless otherwise specified, a transfer student must complete 12 hours of graded work at UM-St. Louis at the 100 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 UM-St. Louis at the 100 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, economics, English, foreign languages/literatures, geology, history, mathematics/computer science, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, 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, art history, biology, chemistry, communication, economics, English, French, German, history, mathematics, music, philosophy, physics, political science, psychology, sociology, and Spanish.

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 115 series (see section 4).
2) Students with the degree of proficiency equivalent to 13 hours of college-level work may obtain exemption by passing the department's placement exam. The specific dates for the exam are announced in the Schedule of Courses or may be obtained from the admissions office or the Department of Foreign Languages and Literatures.
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 115 a, b, and c (Intensive) will satisfy the foreign language requirement.
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. All students in the college may count any number of hours of applied music (private lessons) or studio art courses toward any degree in the college. This also includes transferred credit. However, students not majoring in music may count no more than eight hours in music-performing organizations (Music 40, 41, 50, 52, etc.) toward graduation, including credit transferred. Moreover, courses in studio art and applied music (private lessons or performing organizations) do not fulfill general education requirements in the humanities.
Bachelor of Science (B.S.)
The College offers the B.S. degree in applied mathematics, biology, chemistry, computer science, criminology and criminal justice, economics, physics (with emphasis in applied physics, astrophysics, engineering physics, or medical physics), 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 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 Social Work (B.S.W.)
The Department of Social Work offers the B.S.W. degree, stressing the scientific and applied aspects of social work.

Bachelor of Music (B.M.)
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 are available at UM-St. Louis. Some are offered by individual departments, while others, such as Classical Studies and Black Studies, are interdisciplinary in nature and involve a number of departments. The requirements for the various minors are listed in either the departmental or interdisciplinary sections of this Bulletin.

Special Programs
Certificate Programs
Certificate programs are offered in biochemistry, biotechnology, gerontology, photographic studies, studies in religions, trauma studies, tropical and conservation biology, nonprofit organization management and leadership, women's and gender studies, and writing.

International Studies Certificate
In cooperation with College of Arts and Sciences, the Center for International Studies offers certificate programs in Africana, East Asian, European, Latin American, and International Studies. The college cooperates with the College of Business Administration and the Center for International Studies in offering the International Business Certificate. For information on the certificates, see the International Studies section of this Bulletin.

Departmental Honors
Majors in the following departments may pursue departmental honors: biology, chemistry, economics, English, foreign languages and literatures, history, music, and political science.

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 and earn a substantial income. Co-ops and internships are administered through Career Services, 327 Millennium Student Center.

College of Arts and Sciences Extension
Credit courses are offered at off-campus locations through the continuing education branch of the College of Arts and Sciences. These courses are open to UM-St. Louis students and qualify for regular academic credit toward degrees in the college. In addition, noncredit courses are offered in a range of disciplines within the college.
Faculty

Sheilah Clarke-Ekong, Associate Professor*, Chairperson
Ph.D., University of California-Los Angeles

Pamela Ashmore, Assistant Professor of Anthropology and Education
Ph.D., Washington University

Timothy E. Baumann, Assistant Professor
Ph.D., University of Tennessee-Knoxville

Susan E. Brownell, Associate Professor*
Ph.D., University of California-Santa Barbara

Michael Cosmopoulos, Hellenic Government-Karakas Foundation Professor of Greek Studies and Professor of
Ph.D., Washington University

Margo-Lea Hurwicz, Associate Professor*
Ph.D., University of California-Los Angeles

Van A. Reidhead, Associate Professor*
Ph.D., Indiana University

Jay Rounds, Des Lee Professor of Museum Studies*
Ph.D., University of California-Los Angeles

Elizabeth Dinan, Lecturer
A.B.D., University of Illinois at Urbana-Champaign

John Kelly, Adjunct Associate Professor
Ph.D., University of Wisconsin-Madison

Jacquelyn Lewis-Harris, Lecturer of Education and Anthropology
A.B.D., Washington University

Paul Schoomer, Senior Lecturer
B.A. Washington University

John Wolford, Assistant Museum Professor*
Ph.D., Indiana University

Patti Wright, Assistant Museum Professor*
Ph.D., Washington University

*members of Graduate Faculty

General Information

The aim of anthropology is to understand the cultural diversity of humans. For 100 years we have studied the cultures of the world, teaching people how to see themselves more clearly through those who are different from themselves and how to work with the underlying humanity that unifies all cultural differences.

Anthropology is the study of humans through all time and space. The discipline considers our struggle to adapt to and survive in the natural and social environments and to improve our lot in the face of perpetual change. Anthropologists teach how cultures evolve and the role of individuals and groups in the invention and perpetuation of cultural beliefs, behaviors, symbols, and systems. Anthropologists have accumulated in-depth knowledge of thousands of cultures and use this 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 bear in understanding the emerging global order. 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

A Bachelor of Arts in Anthropology is offered with a focus on applied and theoretical skills. The anthropology faculty are actively involved in cultural, archaeological, folkloric, and biological anthropology research at home and abroad.

Cultural Anthropology. Faculty are involved in research in St. Louis, Los Angeles, Ghana, South Africa, China, Japan, India, the Pacific, Papua-New Guinea, Australia, Native American communities, and monasteries in the United States. They encompass studies of student success in inner-city schools, health care choices of elder citizens, economic development, body culture, culture diversity principles, educational anthropology, evolution of consciousness, and more. With a large core of cultural anthropology faculty, opportunities abound for students to pursue diverse research experiences on a vast range of topics on human actions, beliefs and organization. Through its partnership with the College of Education, selected students are able to work with a team of anthropology and education faculty and students in the design and teaching of human origin and cultural diversity lessons for 3rd-12th grade school children and their teachers.

Archaeology. Faculty are involved in regional and global research of both New and Old work Cultures. Current projects include excavation of an 800-year-old ceremonial and village site at Cahokia Mounds, Illinois; a mid-19th century pottery factory and postbellum African-American community in Arrow Rock, Missouri, and exploring the rise of state-level societies in and around the site of Pylos, Greece, a Bronze Age administrative center. The Department of Anthropology offers summer field schools where students learn excavations around the world through other institutions. Recent examples include archaeological studies in Egypt, Jordan, Belize, South Africa, and Malta. The department also has an archaeology lab and library with one of the largest extant collections of prehistoric and historical artifacts from eastern Missouri.

Folklore. Faculty are active in the study of the folklore of diverse communities in St. Louis and of religious communities. Interests include how communities express their beliefs about who they are, and the ways that peoples use space and time markers to create and express identity. Interested students can pursue a wide range of independent research and study options in urban folklore.

Biological Anthropology: Faculty are active in the study of the behavior, ecology, and evolution of primates and of
educational issues in the study of paleoanthropology (fossil record of human origins). Students have conducted original research at the St. Louis Zoo and have designed experiential lessons on human origin, fossil classification, and the foundations of human diversity for school children.

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. Research results written by students have been presented at professional meetings, published, and presented to government and community agencies for use in planning and development. Students are encouraged to participate in the department'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 for Senior Seminar, culminating in written and oral reports to student colleagues and the faculty. The department encourages study abroad and in other regions of the United States and has scholarship funds to assist. There is an active Anthropology Club that sponsors an intercultural film series, speakers, and social activities.

Paid undergraduate positions are available on a competitive basis to anthropology majors as 1) Human Origins teaching lab assistants, 2) faculty research assistants, 3) human origin and cultural diversity lab teachers/facilitators working with school groups grades 3-12, and adults, and 4) staff intern/assistant at the St. Louis Art Museum.

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.

Undergraduate Studies

General Education Requirements
Majors must satisfy the university and college general education requirements. Any foreign language may be used to meet the language requirement for the B.A. degree.

Degree Requirements

Bachelor of Arts in Anthropology
Six hours of credit will be accepted for courses taken on a satisfactory/unsatisfactory basis from any departmental elective. The statistics requirement may be taken on an S/U basis. All other required courses for the major must be completed with a grade of C- or better. The following courses are required:

- Anth 5, Human Origins
- Anth 11, Introduction to Cultural Anthropology
- Anth 19, Introduction to Archaeology
- Anth 202, Culture, Politics, and Social Organization
- Soc 220, Sociological Statistics, or any other college level statistics course
- Anth 301, Ideas and Explanations in Anthropology
- Anth 308, Practicum in Cultural Research Methods OR
- Anth 310, Laboratory Methods in Archaeology
- Anth 315, Senior Seminar
- One archaeology area course in Anthropology numbered 100-199.
- One culture area course in Anthropology numbered 100-199.
- Two courses in Anthropology numbered 200-299, in addition to 202.

Students may elect to take up to, but not to exceed, 12 additional hours in anthropology courses of their choice.

All minor degree candidates must take:

- Anth 5, Human Origins
- Anth 11, Introduction to Cultural Anthropology
- Anth 19, Introduction to Archaeology
- Anth 301, Ideas and Explanations in Anthropology OR
- Anth 308, Practicum in Cultural Research Methods OR
- Anth 310, Laboratory Methods in Archaeology

- One anthropology course at the 100-199 level.
- One anthropology course at the 200-299 level.
- One elective anthropology course at any level.

Grades of C- or better should be attained in all courses used to satisfy these requirements. One elective course taken on satisfactory/unsatisfactory basis may be applied toward the minor.
Career Outlook

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, many areas of business, government service, teaching, computer systems design, university administration, and many other areas. 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 UM-St. Louis anthropology graduates have gone on to advanced training in master's, doctoral, and professional programs in respected universities around the country. The employment forecast for people with M.A. and Ph.D. degrees in anthropology is good and is also good for bachelor degree graduates wishing to work in the business sector or to take advanced degrees in related fields. For more career information, contact the department at 516-6020 for an appointment to talk with an appropriate faculty member or to request an information packet.
Course Descriptions

05 Human Origins (4)
Introduction to biological anthropology. Topics include evolutionary theory and its development, the evolution/creationist debate, Mendelian and 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 Sciences and Mathematics (SM) breadth of study requirement.

11 Introduction to Cultural Anthropology (3)
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.

15 Introduction to Folklore (3)
Introduces the basic concepts of folklore. Examines the connections between folklore as a discipline and anthropology as a discipline. Examines specific folk cultures both in Western societies and in non-Western societies. Emphasizes the view of folk culture as a dynamic part of modern as well as historical societies, with a constant focus on the human element that comprises the very heart and soul of culture.

19 Introduction to Archaeology (3)
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. Satisfies the Cultural Diversity requirement.

20 Introduction to Historical Archaeology (3)
An introductory course in archaeology of historic period sites. The historic period refers to that portion of human history that begins with the appearance of written documents and continues to contemporary societies. This course will discuss the development, research strategies and future goals of historical archaeology. Archaeological examples will come from all populated continents, but will concentrate on the Americas including the Colonial towns of Jamestown and Williamsburg, Deep South plantations, Civil War battlefields, and shipwreck sites like the Titanic.

21 The Body in Culture (3)
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 cultural 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.

25 World Cultures (3)
An ethnographic survey of the major culture areas of the world (Africa, Asia, North and South America, Europe, and Oceania). This course satisfies the Cultural Diversity requirement.

29 Cultural Diversity Through Literature (3)
This course emphasizes the application of anthropological concepts to literary works to gain greater understanding of the richness and the relative validity of the expressions of people from a wide variety of geographical, ethnic, religious, and cultural backgrounds. Both male and female writers will be covered, and both male and female-oriented works will be read. This course satisfies the Cultural Diversity requirement.

33 World Archaeology (3)
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 Olduvia 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. Satisfies the Cultural Diversity Requirement.
Sex and Gender Across Cultures (3)
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 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 fulfills the Cultural Diversity Requirement.

Introductory Topics in Anthropology (3)
This course features special and current topics at the introductory level in the areas of social 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.

Archaeological Field School (3-6)
Prerequisite: 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.

Cultures of South Asia (3)
An ethnographic and historical survey of the various people of South Asia including India, Pakistan, Afghanistan, Bangladesh, Sri Lanka, Tibet, and Nepal. 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.

Cultures of the Near and Middle East (3)
A study of the cultural diversity and unity of the peoples of the Near and Middle East. Emphasis on historical and ethnological relationships, social and political structure, religious beliefs, and contemporary problems. This course satisfies the Cultural Diversity requirement.

Native Peoples of North America (3)
A survey of the aboriginal cultures of Native Peoples of North America, including prehistory of the area, the ethnographic and linguistic groupings, and the social organization and cultural systems of North American groups. This course satisfies the Cultural Diversity requirement.

Cultures of Oceania (3)
An introduction to the original cultures and peoples of the South and Western Pacific: New Guinea, Australia, New Zealand, Samoa, Hawaii, Easter Island, etc. Focus is on art, religion, language, relationships to the environment, economics, politics, social groupings, and how these intertwine to form distinctly adaptive cultures in one of the least understood regions of the world. Satisfies the cultural diversity requirement.

Cultures of Africa (3)
A basic ethnographic survey of African cultures, with attention to social groupings, tribalism, religion, language and social change, and the ecological relationship between humans and nature. This course satisfies the Cultural Diversity requirement.

Archaeology of Greater St. Louis (3)
Discussion of Ice Age hunters and gatherers, moundbuilders, fur traders, farmers and industrial workers from the history of the Greater St. Louis Community. The physical testimony to their lives remains buried beneath the city streets and buildings. Archaeology is our link to this cultural legacy. Through the use of archaeological data and historical sources, this class will explore human social and cultural developments in St. Louis.
131 Archaeology of Missouri (3)
An introduction to the prehistoric American Indian cultures of Missouri and adjacent areas from 20,000 years ago to the coming of Europeans. Examines the development of prehistoric cultures in Missouri from small bands of hunters and gatherers to moundbuilding, agricultural societies and discusses the decline of indigenous cultures as they came into contact with European civilization. Satisfies the Cultural Diversity requirement.

132 Archaeology of North America (3)
Examines the archaeological record of human development 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.

134 Archaeology of the Inca, Aztec, and Maya (3)
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. Satisfies the Cultural Diversity requirement.

135 Old World Archaeology (3)
Examines the long and rich archaeological record of the Old World (Africa, Europe, Asia, Australia, and Oceania). Various topics and cultures of the Old World will be discussed from the earliest human ancestors to the rise and fall of complex societies. Satisfies the Cultural Diversity requirement.

136 Archaeology of East Asia (3)
Discusses the development of cultures of China, Japan, and Korea from the most ancient origin of humans in the region to the rise of early Chinese Dynastic states. Discoveries from archaeological excavations will be explored emphasizing China. Satisfies the Cultural Diversity requirement.

137 Archaeology of Africa (3)
Examines the archaeology of Africa from pre-historic times up to the period of European contact (ca. A.D. 1700). Explores the diversity of the past African environments and cultures. It will deal with important archaeological issues such as the history and practice of African archaeology, the role of the environment in the development of technology, art, architecture, trade relations and statehood in Africa. Satisfies the Cultural Diversity requirement.

138 African-American Archaeology (3)
This course examines people of African descent in the New World through archaeology. Class lectures will outline the development, research strategies and goals of African-American archaeology using examples from the colonial slave trade to the 20th Century. Specific topics include foodways, architecture, spirituality, health, ethnicity, acculturation/creolization, status, racism and gender. This course satisfies the Cultural Diversity requirement.

173 Archaeology and Cultures of the Biblical World (3)
A survey of the cultures of the Old Testament World with attention to their evolution, internal and external relationships, as well as their diverse religious, social, economic, and political institutions. The instructor will teach skills in evaluating popular vs. scientific and historical evidence of Biblical events. This course fulfills the Cultural Diversity requirement.

190 Special Topics in Archaeology (3)
Discusses varying cultural areas from an archaeological perspective. May be repeated with consent of department. Satisfies the Cultural Diversity requirement only when the topic is a Non-Western Culture.

191 Special Topics in Non-Western Cultures (3)
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. This course satisfies the Cultural Diversity requirement.

202 Culture, Politics and Social Organization (3)
Prerequisite: Anth 11 or introductory course in another social science, or consent of instructor. A survey of political organizations and processes with emphasis on native and non-Western cultures. Included are topics such as strategies for obtaining and maintaining power, ethnicity, tribalism, and the relationship of ideology to politics.

210 Applied Anthropology (3)
Prerequisite: Anth 11, or introductory course in another social science, or consent of instructor. A description and analysis of the methods, principles, and use of anthropology in solution of problems associated with the changing conditions of our times. The course will examine a wide variety of cross-cultural case studies.
212 Medical Anthropology (3)
Prerequisite: Anth 11, or introductory course in another social science, or consent of instructor. 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.

215 Growing Old in Other Cultures (3)
(Same as Gerontology 215.) 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.

230 Method and Theory in Prehistoric Archaeology (3)
Prerequisites: Anth 19 or consent of instructor. An advanced course emphasizing the various theories and methods employed in prehistoric archaeological research. Archaeological theories and methods will cover diffusion, cultural ecology, seasonality, plant and animal domestication, subsistence, settlement patterns, spatial analysis, ethnoarchaeology, artifact analysis, seriation, dating techniques, remote sensing, and others. Requires substantial reading and writing.

231 Method and Theory in Historical Archaeology (3)
Prerequisites: Anth 19, 20, or consent of instructor. An advanced class in archaeological method and theory concerning historical period sites. Requires substantial reading and writing and covers a broad range of theoretical and methodological approaches. Theoretical paradigms will include functionalism, middle range theory, evolutionary theory, and public archaeology. Methodological topics will include pattern analysis, architectural archaeology, urban archaeology, subsistence studies, and others.

234 Cultural Continuity and Change in Sub-Saharan Africa (3)
Prerequisite: Anth 11 or intro course in another social science or consent of instructor. This course is intended to examine cultural phenomena within Africa from the 19th century to the present. Our goal will be to reach an understanding of continuities and change in the existing universal social institutions. A thematic approach will include discussions on kinship; geopolitics; natural and supernatural forces; gender relations; economics in the world economy; and prospects for the future. Ethnographic and other supporting social scientific resources gathered from African people will be investigated. Problems and accomplishments are both reviewed so as to acknowledge the complexity of contemporary African societies. Student discussion is encouraged.

235 Women in Subsaharan Africa: A Contemporary Perspective (3)
Prerequisite: Anth 11, or introductory course in another social science, or consent of the 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 fulfills the Cultural Diversity requirement.

238 Culture and Business in East Asia (3)
Prerequisite: Anth II, or introductory course in another social science, or consent of the instructor. This course looks at the influence of local history and culture on the course of economic development in Mainland China, Taiwan, Hong Kong, Japan and North and South Korea. This course will consider how East Asia has departed from the Western model of modernization and will look at the clash of cultures as Western corporations try to do business in East Asia. The course will analyze the role of family, kinship, and social hierarchy in shaping East Asian business practices. The largest part of the course will be devoted to Mainland China. This course fulfills the Cultural Diversity Requirement.

242 The Culture of Cities (3)
Prerequisite: Anth 11, or introductory course in another social science, or consent of instructor. A comparative analysis of the cultural roles of urban centers and the processes of urbanization in non-Western and Western societies, past and present. A consideration of urban influences on rural America and the traditional peasant and primitive peoples of Africa, Asia, and Latin America.

244 Religion, Magic, and Science (3)
Prerequisite: Anth 11, or introductory course in another social science, or consent of the instructor. A consideration of the roles of religion, magic, and science in culture and social organization.
250 American Folklore (3)
Prerequisite: Anth II, or introductory course in another social science, or consent of the instructor. Focuses on United States society from humanistic and cultural viewpoints. Operates under the basic definition of folklore as artistic communication in small groups, and thus embraces the idea of folklore as an ongoing creative process combining the conservative elements of tradition with the dynamic aspects of cultural creation. Comparing United States folklore with that from the borderlands of Canada and Latin America, the course will use fieldwork and concepts in folkloristics to focus on folklore genres (such as narratives, arts, crafts, architecture, oral history, and others) and folk groups (such as ethnic populations, age groups, gender groups, occupations, college students, and others).

286 Society, Arts, and Popular Culture (3)
(Same as Sociology 286.) Prerequisite: Sociology 10 or Anth II. The relationship of artists, writers, and musicians; their traditions and modes of artistic expression to variant social structures and institutions; and social pressures and rewards.

290 Advanced Topics in Archaeology (3)
Prerequisites: Anth 19, or consent of instructor. Selected topics in archaeology with a strong theoretical and methodological approach. Requires substantial reading and writing. May be repeated with consent of department.

291 Current Issues in Anthropology (3)
Prerequisite: Anth 11, 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.

301 Ideas and Explanations in Anthropology (3)
Prerequisite: Anth II or consent of instructor. Major developments in anthropological explanations of social and cultural behavior through intensive reading and discussion of source materials.

308 Practicum in Cultural Research Methods (4)
Prerequisites: One course in statistics and Anth II, or consent of instructor. (With computer laboratory.) Emphasizes hands-on training in techniques for both the collection and analysis of ethnographic data, including participant observation, selection of ethnographic informants, key informant interviewing, and more systematic methods such as survey research. The use of computer programs for the development of protocols to collect, analyze, and display data will be covered in lab.

309 Archaeological Field School (3-6)
Prerequisite: Consent of instructor. Advanced methods in field archaeology and laboratory analysis. Emphasis is placed on sampling, the use of theory in guiding field and laboratory work, advanced field techniques, and specialty analysis. Opportunities are provided for the development of field and laboratory leadership skills. Independent research is encouraged.

310 Laboratory Methods in Archaeology (4)
Prerequisite: Anth 199, Soc 220 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.

315 Senior Seminar in Anthropology (3)
Prerequisite: Anth 308 or 310 or consent of instructor. The capstone course for anthropology majors, ideally taken in the final semester of the senior year. Students write a research proposal, conduct an original research project, write it up as a senior thesis, and present the thesis before the department.

325 Internship in Cultural Anthropology (1-3)
Prerequisite: Recommendation of major adviser. Students will be assigned an internship on recommendation of their adviser. 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 a student's interests and career goals.

326 Internship in Archaeology (1-6)
Prerequisite: Recommendation of major adviser. Students will be assigned an internship on recommendation of their adviser. 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 a student's interests and career goals.
327 Internship in Folklore (1-3)
Prerequisite: Recommendation of major adviser. Students will be assigned an internship on recommendation of their adviser. Internships will consist of a period of study, observation, and training in an appropriate public or private institution. Folklore internships are aimed at providing students with opportunities to work with professional folklorists and anthropologists in an applied setting. Further, it allows a student to devote an entire semester to produce a viable urban fieldwork report. Specific placements will be selected to match a student's interests and career goals.

328 Internship in Museum Studies (1-3)
Prerequisite: Recommendation of major adviser. Students will be assigned an internship on recommendation of their adviser. 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.

329 Internship in Physical Anthropology (1-3)
Prerequisite: Recommendation of major adviser. Students will be assigned an internship on recommendation of their adviser. Internships will consist 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 physical anthropology.

350 Special Study (1-3)
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.

391 Current Issues in Anthropology (1-4)
Prerequisite: Anth 11 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. (Non-majors may register in Anthropology 191.)

428 Culture and Business in East Asia (3)
Prerequisite: Advanced Undergraduate or Graduate standing and one course on East Asia. This course looks at the influence of the local history and culture on economic development of Mainland China, Taiwan, Hong Kong, Japan and North and South Korea. This course will consider how East Asia has departed from the Western model of modernization and will look at the clash of cultures as Western corporations try to do business in East Asia. The course will analyze the role of family, kinship, and social hierarchy in shaping East Asian business practices. The largest part of the course will be devoted to Mainland China. This course fulfills the Cultural Diversity requirement. This course is taught at Washington University for the Joint Center on East Asian Studies.

435 Foundations of Museology I (3)
Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 435 and History 435.) Concepts for understanding museums in their social and cultural context; history of museums; museology and general social theory; information transfer vs. meaning-making models; museums and communities; the changing role of museums; museums as complex organizations; process models of museology.

436 Foundations of Museology II (3)
Prerequisite: Anthropology 435 and consent of Director of Museum Studies Program. (Same as Art 436 and History 436.) Audience-centered approaches to museology; visitor research and learning theory; philosophical and practical considerations in museum planning; the physical design of museums; creativity; exhibit and program development; collections and curation; the challenge of diversity; the future of museums.

437 Effective Action in Museums (3)
Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 437 and History 437.) The nature of the work done in museums; how museums are organized to accomplish this work; professional roles and practices; technology and resources used by museums, skills for creative and effective leadership in project management and administration in museums; planning, flow charting, budgeting, team dynamics, and related skills. The course will include several site visits to area museums and guest lectures by a variety of museum professionals.

438 Museum Studies Master's Project (4)
Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 438 and History 438.) Research and writing/exhibit development on a selected topic.

439 Practicum in Exhibit and Program Development (3)
Prerequisite: Consent of Director of Museum Studies Program. 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.
440 Cultural Aspects of Aging (3)
(Same as Gerontology 440.) 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.

491 Gender, Ethnicity, and Nationalism (3)
This course considers contemporary theories and case studies on the cultural construction of collective identity and difference, concentrating on the issues of gender, ethnicity, and nationalism. Of particular concern is the relationship between culturally constructed social groups (divided by gender, race, or nationality) and the distribution of power. Case studies are selected from both North American and world cultures.
Faculty

Ruth L. Bohan, Associate Professor*, Chairperson
Ph.D., University of Maryland
E. Louis Lankford, Professor, Des Lee Foundation Endowed Professorship in Art Education*
Ph.D., Florida State University
Jay Rounds, Professor, Des Lee Foundation Endowed Professorship in Museum Studies and Community History*
Ph.D., University of California, Los Angeles
Kenneth Anderson, Professor*
M.F.A., Southern Illinois University, Edwardsville
Tom Patton, Professor*
M.F.A., University of New Mexico, Albuquerque
Jeanne Morgan Zarucchi, Professor*
Ph.D., Harvard University
Yael Even, Associate Professor*
Ph.D., Columbia University
Dan Younger, Associate Professor, B.F.A. Coordinator
M.F.A., University of Iowa
Marian Amies, Assistant Professor*
M.F.A., Southern Illinois University, Edwardsville
Phillip E. Robinson, Assistant Professor*
M.F.A. University of Illinois, Chicago
Jeffrey L. Sippel, Assistant Professor*
M.F.A., Arizona State University
Terry L. Suhre, Assistant Professor, Gallery Director*
M.F.A., Southern Illinois University, Carbondale
Keith Holz, Visiting Assistant Professor
Ph.D., Northwestern University
Juliana Y. Yuan, Senior Lecturer/Slide Curator
M.A., University of Kansas
Luci Mauricio-McMichael, Lecturer
M.A., Webster University
*members of Graduate Faculty

General Information

Degrees and Areas of Concentration
The department offers course work leading toward the B.A. in art history and the B.F.A. in studio art.

Courses included in the B.A. in art history cover the arts of Asia, Africa, Europe, and North America, including Native American arts, from ancient times to the present. Courses examine the entire range of human visual expression from painting, sculpture, architecture, and photography to performance and festival arts in the tribal world. In each case the arts are examined within their historical, aesthetic, and cultural contexts.

The B.F.A. in studio art is offered in partnership with the St. Louis Community College. The degree consists of a foundation art program and an emphasis area in one of the following: drawing, graphic design, painting, photography, printmaking, and general fine arts. Students will generally complete the Associate of Fine Arts degree in Studio Art (A.F.A.) at one of the St. Louis Community Colleges before transferring to UM-St. Louis to complete the upper-division courses leading to the bachelor of fine arts degree in Studio Art (B.F.A.).

To support its teaching and research objectives, the department maintains a slide collection of over 80,000 slides. The collection, which includes examples of painting, sculpture, architecture, photography and decorative arts, is under the supervision of a professional slide curator, who is available for special assistance to staff and students.

Gallery 210
Gallery 210 offers visual arts programming of regional, national, and international importance that would otherwise not be shown in St. Louis. 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.

Scholarships/Internships
Three scholarships are available on a competitive basis within the department: the Art Department/Barbara St. Cyr Scholarship, the William T. Isbell Jr. Scholarship, and the Aronson Scholarship. The department also sponsors a variety of internships with local arts institutions, including the St. Louis Art Museum, the Missouri Historical Society, the Forum for Contemporary Arts, Laumeier Sculpture Park, and various private art galleries.

The Department of Art and Art History represents a diverse faculty actively engaged in the production of art and in its historical and critical evaluation. 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 have written books, articles, and critical reviews and regularly participate in national and international conferences. For their research art history faculty have received research grants from such major institutions as the J. Paul Getty Foundation, the National Endowment for the Humanities, the Andrew W. Mellon Foundation, and the American Philosophical Society. Studio art faculty exhibit nationally and internationally in group- and solo-juried and invited exhibitions. Their work has been accorded various show awards and received financial support from the National Endowment for the Arts, the Ford Foundation, and University Research grants.
Undergraduate Studies

General Education Requirements
Majors in art history must meet the college and university general education requirements. A foreign language is required. French or German is recommended. Art history courses required for the degree may not be taken on a satisfactory/unsatisfactory (S/U) basis.

Art history courses can be applied toward minors in Anthropology, American Studies, Black Studies, Classical Studies, Philosophy, and Urban Studies, or certificates in Studies in Religions, Women's and Gender Studies, and Photographic Studies.

Majors in studio art must meet the college and university general education requirements. 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 total of 123 hours is required for graduation. Studio art courses do not fulfill the humanities general education requirement.

Degree Requirements

Bachelor of Arts in Art History
Art history majors must complete a minimum of 36, but no more than 45, hours in art history. The following courses are required:

5, Introduction to Art
195, Sophomore/Junior Seminar: The Methods of Art History
203, Media and Technique in Art History
395, Senior Art History Seminar

Students must take three lower-division courses from three of the following four categories:

Ancient and Medieval
111, Art and Archaeology of the Ancient World
112, Greek Art and Archaeology
113, Roman Art and Archaeology
114, Early Christian Art
125, Medieval Art

Renaissance and Baroque
135, European Art and Architecture 1300-1800
137, Early Renaissance Art and Architecture
138, High Renaissance Art and Mannerism
140, French Art and Architecture 1400-1715
145, Baroque Art

Modern and American
155, Modern Art
158, American Art
159, American Architecture
191, Art Since 1945

Non-European
8, Survey of Asian Art
15, Art of Africa, Oceania, and the Americas
107, Chinese Art
108, Japanese Art
116, North American Indian Art
117, African Art
119, Pre-Columbian Art

Students must take four 200-level courses. Two of these courses must be chosen from two of the following four categories:

Ancient and Medieval
212, Topics in Ancient Art
225, Topics in Medieval Art

Renaissance and Baroque
235, Topics in Renaissance Art
245, Topics in Baroque Art

Modern and American Art
255, Topics in Modern European Art
258, Topics in American Art
263, Photography Since 1945
291, Topics in Contemporary Art

Non-European
208, Topics in Asian Art
215, Topics in Tribal Art
217, Topics in African Art

The remaining two 200-level courses should be chosen from the following list:

205, Advanced Issues and Ideas in Art History
274, Philosophy of Art
275, The Art of the Print
276, Women and the Visual Arts
285, Studies in Architectural History
294, Art Criticism
295, The Artist and the City
296, The Nude in Art
297, Landscape Perspectives in Art
298, The Portrait in Historical and Cross-Cultural Contexts

Students must also take one course in studio art. Up to nine hours in studio art may be applied toward the B.A. in art history. Art 134, Art Activities for Elementary Schools, does not fulfill this requirement.
To complete the 36-45 hours for the degree, art history majors may take additional courses from those previously noted or any of the following:

65, Photography and Society
105, Issues and Ideas in Art History
165, History of Photography
179, Special Topics in Art History
265, Topics in Photographic Studies
287, Professional Internship
288, UM-St. Louis-Saint Louis Art Museum Internship
289, Visual Resource Management
290/390, Special Study
292, Museum Studies
293, Art Gallery Management

Note: Art history majors who began in the program before 1991 have their choice of completing the major under the old requirements or the new. Consult with your adviser for details.

Bachelor of Fine Arts in Studio Art

Candidates for the B.F.A. degree must complete a Foundation Art Program (which is largely satisfied by the A.F.A. degree) and an emphasis area in one of the following: drawing, graphic design, painting, photography, printmaking or general fine arts. Studio art majors are required to take 75 hours in studio art (this includes 30 hours in the foundation art program) and 15 hours in Art History. Art 134, Art Activities for Elementary Schools, cannot be applied toward this degree. The final 24 hours must be completed in residence at UM-St. Louis. Graduating students must also pass a faculty portfolio review.

The following courses are required for the Foundation Art Program:
40, Drawing I
42, Figure Drawing I
50, Design I
140, Drawing II
150, Design II
240, Drawing III or
142, Figure Drawing II*
250, Composition
9 hours of Studio Art Electives
*Those planning an emphasis in drawing or painting must take Art 142.

Students must complete 45 hours in one of the following emphasis areas:

Drawing
240, Drawing III
242, Figure Drawing III
340, Drawing IV
342, Figure Drawing IV
350, Design III

387, Advanced Problems in Drawing I
388, Advanced Problems in Drawing II
396, Senior Studio Seminar (6 hours)
6 hours of Painting or Printmaking
12 hours of Studio Art Electives

Graphic Design
210, Graphic Design I
211, Graphic Design II
220, Computer Art I or Studio Art Elective
221, Computer Art II or Studio Art Elective
310, Graphic Design III
311, Graphic Design IV
312, Special Techniques in Illustration and Graphic Design or Studio Art Elective
383, Advanced Problems in Graphic Design I
384, Advanced Problems in Graphic Design II
389, Graphic Design Studio or Studio Art Elective
397, Senior Seminar in Graphic Design I
398, Senior Seminar in Graphic Design II
9 hours of Studio Art Electives

Painting
180, Painting I
280, Painting II
380, Painting III
381, Painting IV
385, Advanced Problems in Painting I
386, Advanced Problems in Painting II
396, Senior Studio Seminar (6 hours)
6 hours from the following list:
240, Drawing I
242, Figure Drawing III
340, Drawing IV
342, Figure Drawing IV
12 hours of Studio Art Electives

Photography
260, Digital Photography II
261, Color Photography I
350, Design III
360, Photography III
361, Color Photography II
391, Advanced Problems in Photography I
392, Advanced Problems in Photography II
396, Senior Studio Seminar (6 hours)
12 hours of Studio Art Electives
6 hours of Photography electives

Printmaking
270, Printmaking I
271, Printmaking II
340, Drawing IV
342, Figure Drawing IV
350, Design III
370, Printmaking and Relief
393, Advanced Problems in Printmaking I
394, Advanced Problems in Printmaking II
396, Senior Studio Seminar (6 hours)
6 hours from the following list:
272, Printmaking: Lithography I
273, Printmaking: Screenprinting I
277, Printmaking: Photolithography
372, Advanced Lithography
9 hours of Studio Art Electives, including one course in photography

General Fine Arts
30 hours of studio art electives must be taken at the 200 level or above.

The following courses are required:
350, Design III
396, Senior Studio Seminar (6 hours)
Select 6 hours from the following:
387, Advanced Problems in Drawing I and III
388, Advanced Problems in Drawing II or, 385, Advanced Problems in Painting I and III
386, Advanced Problems in Painting II or, 391, Advanced Problems in Photography I and II
392, Advanced Problems in Photography II or, 393, Advanced Problems in Printmaking I and II
394, Advanced Problems in Printmaking II

Students must complete 15 hours of Art History, with at least 9 hours taken in residence at UM-St. Louis.

Students choosing a double major in two studio art emphasis areas must complete all the requirements for each emphasis area. If the double major includes Graphic Design, students must take four semesters of Senior Studio Seminar. This includes Art 397, Art 398, Art 396a, and Art 396b.

Minors

Minor in Art History
A minor in art history requires the completion of at least 18 hours of art history courses. Students must take Art 5, Art 8, or Art 15. In addition, students are required to take at least one course in Western art, one course in non-Western art and one course at the 200 level. A maximum of 3 hours of internship can be applied toward a minor in art history. The GPA for the courses for the minor must be 2.0 or better. Nine of the 18 hours must be taken in residence at UM-St. Louis.

Minor in Studio Art
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. The requirements for the minor are as follows:

40, Drawing I
140, Drawing II
50, Design I

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and two consecutive courses (6 hours) in any single area to be selected from the following (students should be aware that courses are not always available in all areas):
Painting
Printmaking (any one subfield)
Photography
Graphic Design
Advanced Drawing
plus a studio art elective: one three-hour course.

Photographic Studies Certificate
UM-St. Louis students, graduates, and post-baccalaureate candidates may obtain a certificate in photographic studies by coordinating courses in and related to photography. To be eligible for the certificate, undergraduates must complete a degree in a chosen major field. A faculty member of the Interdisciplinary Photographic Studies Committee will act as adviser to all students and will consult with the faculty adviser in the student's major to plan appropriate credits.

The Photographic Studies Certificate is the only such program in the country and should be of special interest to those considering a career in the arts, communications, history, science, business, or advertising, or in photography itself. The program should also interest professional photographers, teachers, interested lay people, and graduates who are returning to school. This certificate is designed for all who have an intense interest in the myriad aesthetic and practical aspects of the medium.

Requirements
The following courses are required:
Art 60, Photography I
Art 160, Photography II
Art 165, History of Photography, or History 168, Photohistory
Interdisciplinary 65/Art 65, Photography and Society
Art 360, Photography III, or Interdisciplinary 390, Independent Studies in Photographic Studies

Students must also take at least one 3-hour course selected from the following departmental offerings. New courses will be reviewed periodically for inclusion:
Art 5, Introduction to Art
Art 161, Introduction to Digital Photography
Art 261, Color Photography I
Art 262, Non-Silver Photography
Art 263, Photography Since 1945
Art 264, Video Art I
Art 274/Philosophy 274, Philosophy of Art
Art 277, Printmaking: Photolithography
Art 360, Photography III
Art 361, Color Photography II
Art 364, Video Art II
Art 390, Special Studies
Art 391, Advanced Problems in Photography I
Art 392, Advanced Problems in Photography II
Biology 360, Techniques in Electron Microscopy
Comm 50, Introduction to Mass Media
Comm 70, Introduction to Cinema
Comm 210, Television Production
English 214/Comm 214, News Writing
English 215, Feature Writing
History 168, Photohistory
Interdisciplinary 40, The Black World
Interdisciplinary 365, Seminar in Photographic Studies
Interdisciplinary 390, Independent Studies in Photographic Studies
Psych 213, Principles of Perception
Psych 355, Psychology of Perception
Extension course, Professional Photography Seminar

Pre-Professional Graduation: Architecture
The Department of Art sponsors the 3+4 Program for the School of Architecture at Washington University. A student who transfers to the School of Architecture, Washington University, at the end of the junior year may graduate from UM-St. Louis after the satisfactory completion of the first year of professional school upon meeting one or more of the following conditions:

1) The student has completed all general education requirements and all requirements for a major and lacks only the total hours (electives) necessary for a degree.

2) A student who has not completed required courses for a degree must remedy the deficiency with courses taken at the University of Missouri-St. Louis within three years of entering the professional school. At the time of graduation the student must remain in good standing in the professional school or have successfully graduated from the professional school.

3) A student who has not completed all the courses required for a major may, if the major department at UM-St. Louis agrees, substitute up to six hours of appropriate course work from the professional school.

The requirement that 24 of the last 30 hours of course work for a degree be taken at UM-St. Louis shall be waived where necessary for students graduating under this procedure.

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, and historic preservation, and as travel guides, art administrators, and editors and in art restoration.

Students with degrees in studio art find careers in teaching, advertising, public relations, graphic design, illustration, film and video production, art administration, art restoration, product and industrial design, framing, and commercial photography.
Course Descriptions

Courses in this section are grouped as follows: Art History and Studio Art. Prerequisites may be waived by consent of instructor. For the nonmajor, any number of studio courses will be accepted as electives.


Art History

5 Introduction to Art (3)
An introduction to major historical movements in Western art.

8 Introduction to Asian Art (3)
A survey of the major achievements in architecture, sculpture, and painting of India, China, Japan and Southeast Asia. Emphasis on religious, historical, and social context of the arts. This course fulfills the Cultural Diversity requirement.

15 Art of Africa, Oceania, and the Americas (3)
A survey of the art of tribal people of Africa, Oceania, and the Americas from prehistoric times through the present. The relationship of art to religion, myth, festival, and social life will be considered, as well as the effects of acculturation on the arts. This course fulfills the Cultural Diversity requirement.

65 Photography and Society (3)
(Same as Interdisciplinary 65.) A study of photography as a means of information and expression, as an influence on culture, and as a reflection of concepts in politics, science, morality, and art. This course counts toward the major.

90 Freshman Seminar (3)
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences.

105 Issues and Ideas in Art History (3)
Prerequisite: Art 5 or permission of instructor. 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. May be repeated for credit with change of topic and permission of adviser.

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107 The Arts of China (3)
A survey of the major achievements in the history of Chinese art. Bronzes, sculpture, painting, calligraphy, ceramics, and jades will be considered within their historical, philosophical, and social context. This course fulfills the Cultural Diversity requirement.

108 The Arts of Japan (3)
A survey of the art and architecture of Japan from prehistory to the present. Topics will include sculpture, architecture, pottery, gardens, Japanese prints and paintings in their various forms, i.e. Chinese style, purely Japanese style, narrative scrolls, Zen, and Rimpa. This course fulfills the Cultural Diversity requirement.

111 Art and Archaeology of the Ancient World (3)
Prerequisite: Art 5. 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.

112 Greek Art and Archaeology (3)
Prerequisite: Art 5. General survey of material culture in the Aegean basin, beginning with the Bronze Age (third millennium BC), and terminating in the late Hellenistic period (second century BC). For the Hellenistic period the course will trace Greek developments and influences outside of the Aegean, for example, in Italy and in Egypt.

113 Roman Art and Archaeology (3)
Prerequisite: Art 5. General survey of material culture in Italy and its dependencies beginning with prehistoric Italy (ninth and eighth centuries B.C.) and terminating in late antiquity (the fifth century A.D.). The course will focus on the regional variants of Roman art in such places as Gaul, Spain, Great Britain, North Africa, and the Greco-Roman East.

114 Early Christian Art and Archaeology (3)
Prerequisite: Art 5. The origins and development of Christian imagery prior to the fourth century, the Constantinian epoch and Late Antique developments to the death of Justinian. Attention will be paid to works of art and to the entire material culture of early Christianity.

116 North American Indian Art (3)
A detailed survey of the arts of North America from prehistoric times to the present. Cultures to be covered include: Moundbuilders, Northeast, Navajo, Pueblo peoples, Northwest Coast, and Eskimo. The relationship of art to religion, dance, philosophy, and social life will be explored. This course fulfills the Cultural Diversity requirement.
117 African Art (3)
A survey of the tribal and traditional arts of Black Africa. The function and context of art among specific peoples such as the Yoruba, Dan, Dogon, Kuba, and Kongo will be discussed. Emphasis will be placed on dance, festival, and religion as the primary contexts of African art. This course fulfills the Cultural Diversity requirement.

119 Pre-Columbian Art of Mexico and Central America (3)
A survey of the arts of native peoples of Middle America before the coming of the Spaniards in 1519. The cultural context and meaning of sculpture, painting, architecture, and ritual among the Olmec, Maya, Aztec, and other tribes. This course fulfills the Cultural Diversity requirement.

125 Medieval Art (3)
Prerequisite: Art 5. 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.

135 European Art and Architecture 1300-1800 (3)
Prerequisite: Art 5. Between 1300 and 1800, European art changed from primarily a vehicle for the church and the princely court to an art that incorporated a wider spectrum of society. This course examines some of the artistic styles (Renaissance, Baroque, Rococo) and the social, political, and economic forces that contributed to these changes.

137 Early Renaissance Art and Architecture (3)
Prerequisite: Art 5. An exploration of the painting, sculpture, and architecture of the fourteenth and fifteenth centuries in Italy, the Netherlands, and Germany. Special attention given to public and private patronage, the interrelationships among regional schools, workshop procedures and images of women.

138 High Renaissance Art and Mannerism (3)
Prerequisite: Art 5. A survey of Italian art from the time of Leonardo da Vinci through the late phase of Venetian art. Artists to be examined include Leonardo, Michelangelo, Raphael, Sofonisba Anguissola, and Titian.

140 French Art and Architecture 1400-1715 (3)
A survey of art and architecture in France from the late medieval period to the late baroque. Topics will include the development of French chateaux and gardens, the rise of the Academy, and the influence of royal patronage on the arts.

142 French Art and Architecture 1715-1900 (3)
Prerequisite: Art 5. A survey of art and architecture in both northern and southern Europe from 1600 to 1750. Emphasis on the contributions of individual artists as well as the political, social, and philosophical background of the visual arts.

155 Modern Art (3)
Prerequisite: Art 5. A survey of European art of the nineteenth and twentieth centuries.

158 American Art (3)
Prerequisite: Art 5. An overview of the major developments of painting, sculpture and the decorative arts in the United States since 1600. Emphasis on the contributions of individual artists and the changing cultural contexts in which they worked.

159 American Architecture (3)
Prerequisite: Art 5. A survey of European art of the nineteenth and twentieth centuries. 

165 History of Photography (3)
Prerequisite: Art 5 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.

179 Special Topics in Art History (1-3)
Prerequisite: Art 5 or consent of instructor. Selected topics in art history. This course may be repeated for credit.

191 Art Since 1945 (3)
Prerequisite: Art 5. An overview of the major developments in European and American art since World War II. Topics include abstract expressionism, pop art, conceptual and minimal art, performance and video.

195 Sophomore/Junior Seminar: The Methods of Art History (3)
Prerequisites: Art 5 and nine additional hours in art history. An introduction to the methods of art historical analysis. Emphasis on research techniques and writing. This course must be taken before a student's senior year.

203 Media and Technique in Art History (3)
Prerequisite: Art 5, and two other courses in art history. Technical demonstration of and research into various materials and media used by artists. In addition to ancient media such as egg tempera and fresco, it will include modern media such as photography and video.

205 Advanced Issues and Ideas in Art History (3)
Prerequisites: Art 5 and three additional courses in art history, or permission of the instructor. Seminar format. Intensive study of a few objects or issues in the history of art, focusing on issues which crosscut periods or geographic regions.
208 Topics in Asian Art (3)
Prerequisite: Art 8 or permission of instructor. A study of selected topics in Asian art. The content will vary, focusing on topics such as Chinese and Japanese landscape in paintings and in gardens, images of women in Asian art, or the Spirit of the Brush in Chinese and Japanese painting. May be repeated for credit with permission of instructor and adviser. This course fulfills the Cultural Diversity requirement.

212 Topics in Ancient Art and Archaeology (3)
Prerequisites: Art 5 or Interdisciplinary 10 and one of the following: Art 111, 112, 113, 114, or permission of instructor. Intensive study of some aspect of Classical or Early Christian art. Content will vary. May be repeated for credit with permission of adviser.

215 Topics in Tribal Arts (3)
(Same as Anthropology 225) Prerequisite: One of the following: Art 15, 116, 117, 119, or consent of instructor. Intensive study of the arts of several tribal groups. Inquiry into relationships between art and culture by means of an examination of myth, literature, festival, and social life. Seminar format. May be repeated for credit with permission of adviser. This course fulfills the Cultural Diversity requirement.

217 Topics in African Art (3)
Prerequisite: Art 15 or 117 or permission of instructor. A study of selected topics in the history of African art. The content of the course will vary, focusing upon a single topic, which might include Islam and the arts of Africa, Christianity and the arts of Nubia and Ethiopia, art and festival in West Africa, or women and art in sub-Saharan Africa. May be repeated for credit with permission of instructor. This course fulfills the Cultural Diversity requirement.

225 Topics in Medieval Art (3)
Prerequisite: Art 125 or consent of instructor. A study of selected topics in Medieval art. The content of the course will vary, focusing on single topics such as manuscript painting, the Gothic cathedral and its sculptural decoration, or the art of pilgrimage churches. May be repeated for credit with permission of instructor.

235 Topics in Renaissance Art (3)
Prerequisite: Art 135, 137 or 138 or consent of instructor. Studies of selected topics, which will vary. Subjects to be considered may include the art of Florence, the role of patronage in Renaissance Italy, and Papal art. May be repeated for credit.

245 Topics in Seventeenth and Eighteenth-Century European Art (3)
Prerequisite: Art 145 or consent of instructor. A study of selected topics in Baroque and Rococo art. The content of the course will vary, focusing on single areas, such as the Baroque in Rome; or on major artists, such as Bernini, Rubens, and Rembrandt. May be repeated for credit with permission of instructor and adviser.

255 Topics in Nineteenth and Twentieth-Century European Art (3)
Prerequisite: Art 155 or consent of instructor. Intensive study of selected topics in European art. May be repeated for credit with permission of instructor and adviser.

258 Topics in American Art (3)
Prerequisite: Art 158 or 159 or consent of instructor. A study of selected topics in American art from colonial beginnings to the present. Topics may include the image of the family in art, patronage, the relationship between art and literature, and the role of the artist in modern society. May be repeated for credit with permission of instructor and adviser.

263 Photography Since 1945 (3)
Prerequisites: Art 5 and either Art 65 or 165 or permission of instructor. Seminar on creative photography from postwar period to present. Topics include relation of this medium to other arts, including sculptural and performance art, as well as current modes of photographic depiction in landscape and studio work.

265 Topics in Photographic Studies (3)
(Same as Interdisciplinary 265.) Prerequisite: Permission of instructor. Advanced study of specific styles, periods, or issues within photographic history.

274 Philosophy of Art (3)
(Same as Philosophy 274.) A study of issues concerning the definition of art, meaning and truth in the arts, aesthetic experience, and criticism.

275 The Art of Print (3)
Prerequisite: Art 5. Dealing with the history of print forms: woodcuts, etchings, engravings, lithographs, silkscreens, monotypes, and mixed media. Special emphasis will be given to the importance of prints to the art and artists of our time.

276 Women and the Visual Arts (3)
Prerequisite: Art 5 or enrollment in the Women's Studies Certificate Program recommended. Selected topics concerning women as creators, users, and subject matter of art. Great women artists in the Western world will be studied, as well as women weavers, potters, and sculptors in tribal society.
285 Studies in Architectural History (3)
Prerequisite: Art 5 or consent of instructor. A study of selected topics in architectural history. The content of the course will vary, and the course may be repeated for credit with permission of the instructor and departmental adviser. Possible topics include the history of the castle, factory architecture, the evolution of the Gothic cathedral, and domestic and vernacular architecture.

287 Professional Internship (1-6)
Prerequisites: Art 5, 6 hours in Art History or Studio Art, and consent of faculty adviser. 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 adviser 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.

288 UM-St. Louis/Saint Louis Art Museum Internship (3)
Prerequisites: Art History or Anthropology major, junior/senior standing, and consent of faculty adviser. Student, selected competitively after submitting application to the UM-St. Louis/St. Louis Art Museum Internship Committee, completes 20 hours of work per week under direction of a curator or curators at the Saint Louis Art Museum. The precise schedule and particular projects are to be determined by the curator and the student together. Projects can include research on the Museum collection, research on possible Museum acquisitions, checking label information, research or compilation of bibliography for exhibitions, or other tasks at the discretion of the curator. Each internship runs for the duration of one semester.

289 Visual Resources Management (3)
Prerequisites: Art 5 and 3 credit hours in other art history courses, or permission of instructor. This hands-on course in the art department's slide library will consist of the daily operation and management of, as well as technological and theoretical approaches to visual resource collections. The course content relies upon the Art Department's slide library of over 80,000 slides, videotapes, and other visual materials.

290 Special Study (1-10)
Prerequisites: Junior or senior standing and consent of department and instructor. Independent study through readings, reports, or field research.

291 Topics in Contemporary Art (3)
Prerequisites: Art 5 and Art 191 or permission of instructor. Seminar on particular topics in European or American art since 1945. Topics may include contemporary feminist art, postmodernism, or abstract expressionism. May be repeated for credit with permission of instructor and adviser.

292 Museum Studies (3)
Prerequisites: Art 5 and 6 credit hours in other art history courses. This course is intended as an introduction to the function and operation of the art museum. Sessions will include the history of art museums and collecting policies, the organization of art museums; the tasks of the curator; the registration practices; art conservation; the museum as an educational institution; the organization and planning of permanent galleries; and the planning and installation of temporary exhibitions.

293 Art Gallery Management (3)
Prerequisites: Art 5 and 6 credit hours in other art history courses. This course will consider the practical application of professional training in art history as it applies to gallery management. Topics covered will include: grant writing in the arts, the development of art exhibits, the role of the art curator, and the operation of a gallery. All students will get hands-on experience in Gallery 210.

294 Art Criticism (3)
Prerequisite: Art 155 or Art 191 or permission of instructor. An overview of the history and function of art criticism, focusing principally on the theory and criticism of twentieth-century art. Students will attempt their own critical writings on contemporary art.

295 The Artist and the City (3)
Prerequisite: Art 5. Examines the role of urban centers as a focus for significant artistic activity, as a recurring theme in art, and as a spatial and physical architectural reality. Aspects of urban planning, urban imagery in art, and the social, political, and personal networks artists develop as a result of living in particular urban centers at particular moments in history will be among the topics discussed.

296 The Nude in Art (3)
Prerequisites: Art 5 and one other course in art history. An exploration of the various meanings of nudity in art. The cultural, social, and psychological contexts of nudity in art will be examined in different historical periods and geographic regions, both Western and non-Western. Representations of both males and females will be analyzed in terms of gender construction, political authority, and personal identity.
297 Landscape Perspectives in Art (3)
Prerequisite: Art 5. This seminar considers the various conventions for representing landscape and nature, and human relationships to landscape, throughout history and across cultures. Issues to be considered may include landscape as metaphor in European painting, contemporary earthworks, landscape photography, and the relationship of artist to landscape in the non-Western world.

298 The Portrait in Historical and Cross-Cultural Contexts (3)
Prerequisite: Art 5 or permission of instructor. This class will examine the development of portraiture in the western tradition as well as its use and development in non-western cultures. Topics to be investigated will include a wide variety of stylistic approaches and media.

300 Special Study (1-10)
Prerequisites: Junior/senior standing and consent of department chairperson and instructor. Independent study through readings, reports, or field research.

395 Senior Art History Seminar (3)
Prerequisite: Art 195 and Senior standing in art history or consent of instructor. Intensive reading, discussion, and writing on topics to be announced.

435 Foundations of Museology I (3)
Prerequisite: Consent of Director of Museum Studies Program. (Same as Anthropology 435 and History 435.) Concepts for understanding museums in their social and cultural context; history of museums; museology and general social theory; information transfer vs. Meaning-making models; museums and communities; the changing role of museums; museums as complex organizations; process models of museology.

436 Foundations of Museology II (3)
Prerequisite: Art 435 and consent of Director of Museum Studies Program. (Same as Anthropology 436 and History 436.) Audience-centered approaches to museology; visitor research and learning theory; philosophical and practical considerations in museum planning; the physical design of museums; creativity; exhibit and program development; collections and curation; the challenge of diversity; the future of museums.

437 Effective Action in Museums (3)
Prerequisite: Consent of Director of Museum Studies Program. (Same as Anthropology 437 and History 437.) The nature of the work done in museums; how museums are organized to accomplish this work; professional roles and practices; technology and resources used by museums, skills for creative and effective leadership in project management and administration in museums; planning, flow charting, budgeting, team dynamics, and related skills. The course will include several site visits to area museums and guest lectures by a variety of museum professionals.

438 Museum Studies Master's Project (4)
Prerequisite: Consent of Director of Museum Studies Program. (Same as Anthropology 438 and History 438.) Research and writing/exhibit development on a selected topic.

458 Topics in American Art (3)
Prerequisite: Graduate standing and consent of instructor. This course examines a discrete aspect of the history of American art within the changing social, cultural and historical contexts of Euro-American and/or Native American experiences and traditions.

488 Museum Education and Visitor Research (3)
Prerequisite: 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; field experience; impact on programming and strategic planning.

492 The History of the Visual Arts in American Museums (3)
Prerequisite: 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.

Studio Art

2 Introduction to Studio Art (3)
An introduction to drawing, painting, and design in a beginning studio environment. This course is designed to provide basic skills and understanding of studio experience for the non-art major. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

30 Ceramics I (3)
An introduction to basic methods and theory of ceramics including work with hand-built construction, wheel techniques, and glazing. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

40 Drawing I (3)
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.
42 Figure Drawing I (3)
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.

50 Design I (3)
Studio problems in the creative use and integration of the elements of two-dimensional design: line, form, space, texture. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

60 Photography I (3)
An introduction to the techniques and aesthetics of black and white photography, the camera and the darkroom. Students must provide a 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.

74 Special Topics in Studio Art (1-3)
Selected topics in studio studies. This course 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.

80 Comics and Cartoon Illustration (3)
A course in creating and appreciating the world of comics and cartoons. This course will investigate the tools and techniques for creating cartoons, cartoon illustrations and the world of comics. Students will create their own cartoons with traditional media and also with 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. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

130 Ceramics II (3)
Prerequisite: Art 30. A continuation of Art 30. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

132 Sculpture I (3)
An introduction to traditional and contemporary materials, aesthetics, and theories of three-dimensional art. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

134 Art Activities for Elementary Schools (3)
(Same as ELE ED 179.) A study of art principles and laboratory experiences with various media and materials. Stresses curriculum planning and development of the elementary school program in art. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

140 Drawing II (3)
Prerequisite: Art 40. The development of drawing skills through continued observation and problems of invention. A further exploration of varied drawing materials and techniques including graphite, charcoal, conte crayon, and inks. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

142 Figure Drawing II (3)
Prerequisite: Art 42. 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.

150 Design II (3)
Prerequisite: Art 50. A continuation of Art 50, two-dimensional design, with introduction to color theory. Some application of mixed media problems. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

160 Photography II (3)
Prerequisite: Art 60. Continuation of Photography I at the intermediate level. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

161 Introduction to Digital Photography (3)
Prerequisite: Art 60 or consent of instructor. An introduction to computer usage in photography. The basic computer techniques and software applications for digitizing, retouching, enhancing and altering photographic images will comprise the core of this course. This class will involve both learning exercises and the creation of original computer-aided photographic art. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

180 Painting I (3)
Prerequisite: Art 40, Art 50 or consent of instructor. An introduction to the use of oil and/or acrylic painting media. Studio problems to develop technical and expressive skills on various surfaces. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

210 Graphic Design I (3)
Prerequisite: Art 50 and Art 140 or consent of instructor. Introductory studio problems in layout, lettering, and design with typographic elements. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.
211 Graphic Design II (3)
Prerequisite: Art 210 or consent of instructor.
Continuation of Graphic Design I. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

220 Computer Art I (3)
Prerequisite: Art 50. An introduction to the use of computer graphics software for the creation of artwork applicable to the advertising and graphic design industry. No previous computer experience is necessary. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

221 Computer Art II (3)
Prerequisite: Art 220. Designed to familiarize students with the methods and processes and computer functions used in graphic art and illustrations. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

232 Sculpture II (3)
Prerequisite: Art 132. Continuation of Sculpture I. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

240 Drawing III (3)
Prerequisites: Art 40 and Art 140. 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.

242 Figure Drawing III (3)
Prerequisites: Art 42 and Art 142. Advanced study 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.

250 Composition (3)
Prerequisites: Art 50 and Art 150. An investigation of the use of formal design elements as used in historic and contemporary art. Weekly studio problems and discussions will concentrate on skills, application, and unifying effects of compositional elements on a variety of visual art forms. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

260 Digital Photography II (3)
Prerequisite: Art 161. Intermediate exploration of the aesthetics and techniques of digital photography. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

261 Color Photography I (3)
Prerequisite: Art 60 or equivalent. An introduction to the techniques and aesthetics of color photography. Mastering the printing and finishing processes and producing a color print portfolio will be the requirements of this class. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

262 Non-Silver Photography (3)
Prerequisites: Art 60 and Art 160. An introduction to the aesthetics and techniques of non-traditional photographic processes. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

263 Commercial Applications in Photography
Prerequisites: Art 160 and permission of adviser. Exploration of issues and applications in commercial photographic production. Topics will vary. Course may be repeated for credit with permission of adviser. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

264 Video Art I (3)
Prerequisite: Art 160 or permission of instructor. An introduction to video as an art form. Knowledge of contemporary uses and video techniques will be stressed. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

270 Printmaking I (3)
Prerequisite: Art 50 and Art 140 or consent of instructor. An introduction to printmaking techniques, materials, and theories. The course will include work in a variety of print materials. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

271 Printmaking II (3)
Prerequisite: Art 270 or consent of instructor. A continuation of Printmaking I. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

272 Printmaking: Lithography I (3)
Prerequisite: Art 50 and Art 140 or consent of instructor. An introduction to printmaking skills and theory in stone and plate lithography. Studio problems in the use of materials and equipment. Attention will be given to individual development. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.
273 Printmaking: Screenprinting I (3)
Prerequisite: Art 270. An introduction into the techniques, methods, and aesthetics of screenprinting. Studio problems involving uses and approaches will be emphasized. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

277 Printmaking: Photolithography I (3)
Prerequisite: Art 60 or departmental consent. An introduction to printmaking skills and theory in stone and plate lithography with particular emphasis on the photographic applications of the process. Some attention will also be given to commercial printmaking applications while studio problems in the use of materials and equipment will be stressed. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

280 Painting II (3)
Prerequisite: Art 180 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.

283 Watercolor Painting (3)
Prerequisites: Art 50 and Art 140. 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.

290 Special Study (1-10)
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.

310 Graphic Design III (3)
Prerequisites: Art 211. 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. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

311 Graphic Design IV (3)
Prerequisite: Art 310. Further studio problems in the graphic arts. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

312 Special Topics in Illustration and Graphic Design (3)
Prerequisite: Art 311 or consent of instructor. Illustration and graphic design techniques as diverse as cartooning, Web page design, multi-media animation, and interactive kiosk design (among others) are explored in this class. Each semester, one or more of these specialties are offered. Emphasis is placed on the practical applications of these approaches as well as the production of a strong student portfolio that will demonstrate the mastery of these skills.

334 Contemporary Art Education: Craft and Theory (1-2)
Prerequisite: Upper-division standing or consent 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. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

340 Drawing IV (3)
Prerequisite: Art 240. Studio problems with emphasis on color and multi-material approach to drawing. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

342 Figure Drawing IV (3)
Prerequisite: Art 242. Continuation of Figure Drawing III. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

350 Design III (3)
Prerequisites: Art 50 and Art 150. Advanced studio problems in design materials. Use of two-dimensional and three-dimensional mixed media. Experimental use of materials and media will be introduced. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

360 Photography III (3)
Prerequisite: Art 160. 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.

361 Color Photography II (3)
Prerequisite: Art 261. An advanced exploration into the aesthetics and techniques of color photography. Students will be expected to refine their vision utilizing color processes. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.
363 Special Topics in Photography
Prerequisite: Art 160: Photography II and permission of adviser. Selected topics in photographic practice. May be repeated for credit with permission of adviser. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

364 Video Art II (3)
Prerequisite: Art 264. An advanced exploration of video as a visual art. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

370 Printmaking and Relief (3)
Prerequisites: Art 271. Advanced problems in printmaking. Problems in relief printmaking. Work in wood and mixed materials. Development of skills and aesthetic judgments in the media. May be repeated for credit with consent of instructor. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

372 Advanced Lithography (3)
Prerequisites: Art 273. 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.

380 Painting III (3)
Prerequisite: Art 280 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.

381 Painting IV (3)
Prerequisite: Art 380. A continuation of Painting III. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

383 Advanced Problems in Graphic Design I (3)
Prerequisite: Art 311. 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.

384 Advanced Problems in Graphic Design II (3)
Prerequisite: Art 383. A continuation of Art 383. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

385 Advanced Problems in Painting I (3)
Prerequisite: Art 381. This course is focused on professional-level art and portfolio production. Non-traditional materials might be explored. Attention is focused on individual development of painting theory, self-expression, and advanced techniques. The student is expected to assume a substantial responsibility with regard to direction, motivation, and content. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

386 Advanced Problems in Painting II (3)
Prerequisite: Art 385. A continuation of portfolio production in Art 385. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

387 Advanced Problems in Drawing I (3)
Prerequisite: Art 340. This course is focused on professional-level art and portfolio production. It offers studio problems designed to further the development of drawing skills. Emphasis will be given to the study of drawing as an independent art form. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

388 Advanced Problems in Drawing II (3)
Prerequisite: Art 387. A continuation of Art 387. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

389 Graphic Design Studio (3)
Prerequisite: Art 384 or consent of instructor. Students will work on actual client projects in a studio setting from creative concept through client presentation. Studies will include client interviews, project planning, studio operations, project budget and estimating, vendor selection, prepress preparation, working in creative groups and professional presentations.

390 Special Study (1-10)
Prerequisites: 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.

391 Advanced Problems in Photography I (3)
Prerequisite: Art 360. This course is focused on professional-level art and portfolio production. Students may employ black and white, color, non-silver or other traditional or non-traditional press for projects in this course. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.
392 Advanced Problems in Photography II (3)
Prerequisite: Art 391. A continuation of Art 391. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

393 Advanced Problems in Printmaking I (3)
Prerequisite: Art 370. This course is focused upon professional-level art and portfolio production. After completion of this and the preceding course, students should be ready to meet the artistic and intellectual demands of today's visual art world. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

394 Advanced Problems in Printmaking II (3)
Prerequisites: Art 393. A continuation of Art 393. Lab fee required. Basic studio equipment will be provided, though students will need to supply some personal equipment and supplies.

396a Senior Studio Seminar (3)
Prerequisites: Senior standing and Art 386, 388, 392 or 394. 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.

396b Senior Studio Seminar (3)
Prerequisites: Senior standing and Art 396a. 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.

397 Senior Seminar in Graphic Design I (3)
Prerequisite: Senior standing and Art 384. 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.

398 Senior Seminar in Graphic Design II (3)
Prerequisite: Art 397. Continuation of Art 397. Will instruct students in the methods of professional preparation. Lab fee required. Basic studio equipment will be provided through students will need to supply some personal equipment and supplies.
Biology

Faculty

Albert Derby, Associate Professor*, Chairperson
Ph.D., City University of New York

Elizabeth A. Kellogg, E. Desmond Lee Professor of Botanical Studies*,
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Patricia G. Parker, E. Desmond Lee Professor of Zoological Studies*, Director, Graduate Program
Ph.D., University of North Carolina, Chapel Hill

Charles R. Granger, Professor*
Ph.D., University of Iowa

Arnold B. Grobman, Professor Emeritus*
Ph.D., University of Rochester

James H. Hunt, Professor*
Ph.D., University of California-Berkeley

Robert J. Marquis, Associate Professor*,
Ph.D., University of Iowa

Frank Moss, Professor*
Ph. D., University of Virginia

Susanne S. Renner, Professor*
Dr. Habil; Dr. rer. Nat, University of Hamburg

Robert E. Ricklefs, Curators Professor*
Ph.D., University of Pennsylvania

Martin Sage, Professor Emeritus*
Ph.D., Nottingham University

Victoria Sork, Professor*
Ph.D., University of Michigan

Peter F. Stevens, Professor*
Ph.D., Edinburgh

Zuleyma Tang-Martinez, Professor*
Ph.D., University of California-Berkeley

Teresa Thiel, Professor*; Director, Biotechnology Program
Ph.D., Case Western Reserve University

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Ph.D., Florida State University

Shirley T. Bissen, Associate Professor*
Ph.D., University of Michigan

John G. Blake, Associate Professor*
Ph.D., University of Illinois

Godfrey R. Bourne, Associate Professor*
Ph.D., University of Michigan

Harvey P. Friedman, Associate Professor*
Ph. D., University of Kansas

Lawrence D. Friedman, Associate Professor Emeritus*
Ph.D., University of Wisconsin

Donald E. Grogan, Associate Professor Emeritus*
Ph.D., University of Missouri-Columbia

Bette A. Loiselle, Associate Professor*; Director, International Center for Tropical Ecology
Ph.D., University of Wisconsin

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Ph.D., The William Marsh Rice University

Wendy M. Olivas, Assistant Professor
Ph.D., University of Nebraska Medical Center

Marc Spingola, Assistant Professor
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Ph.D., Saint Louis University

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M.S., University of Missouri-St. Louis

Peter H. Raven, Research Professor*; Director, Missouri Botanical Garden,
Ph.D., University of California-Los Angeles

M. Jan Salick, Research Professor*
Ph.D., Cornell University

H. AlShehbaz, Research Associate Professor*
Ph.D., Harvard University

Bruce Allen, Research Associate Professor*
Ph.D., University of Cincinnati

Eldridge Bermingham, Research Associate Professor*
Ph.D., University of Georgia

Thomas B. Croat, Research Associate Professor*
Ph.D., University of Kansas

Peter Goldblatt, Research Associate Professor*
Ph. D., University of Cape Town, South Africa

Peter E. Hoch, Research Associate Professor*
Ph.D., Washington University

Peter M. Jorgensen, Research Associate Professor
Ph.D., Aarhus Universitet

Timothy Killeen, Research Associate Professor*
Ph.D., Iowa State University

David A. Neill, Research Associate Professor*
Ph.D., Washington University

Charlotte Taylor, Research Associate Professor*, Ph.D., Duke University

Stanton Braude, Research Assistant Professor*
Ph.D., University of Michigan

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Ph.D., Saint Louis University

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Biology

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Ph.D., Saint Louis University
Donna Duberg, Adjunct Lecturer; Chair CLS Program, Jewish Hospital College of Nursing and Allied Health
M.S., Michigan State University
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M.A., Webster University

*members of Graduate Faculty

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. in Secondary Education with a major in biology and the B.A. or B.S. in Biology with teacher certification; in cooperation with the Evening College, the department offers courses in clinical laboratory science and cytotechnology. It also offers graduate work leading to the Master of Science and the Doctor of Philosophy degrees in Biology. The graduate program includes a cooperative program with the Missouri Botanical Garden for students who concentrate in evolutionary biology with emphasis areas of plant systematics and environmental studies.

Biology faculty members are engaged in teaching and research in areas ranging from molecular biology to population studies. Majors have the chance to take courses which help them develop both theoretical and experimental backgrounds necessary for further work in some of the most rapidly expanding fields of biological science or to pursue in-depth studies in specific areas through advanced courses, seminars, and individualized research programs.

Departmental Honors
Candidates for the B.A. or B.S. degree are eligible for departmental honors if they:
1) Have a minimum of 3.2 overall GPA and a minimum 3.2 average in biology courses used to complete the major.
2) Complete a minimum of 2 credit hours of Biology 390, Research.
3) Complete an honors thesis based on Biology 390 research work. The academic record and thesis will be evaluated by the Honors Committee, and those students who qualify will be recommended for honors.

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.

Graduate Studies
The Department of Biology offers graduate work leading to the M.S. and Ph.D. degrees in biology. Graduate students may work toward an M.S. or Ph.D. degree in three broad areas of biology: a) cellular, molecular, and developmental biology, b) physiology and organismal biology, and c) 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 or the Saint Louis Zoo through a cooperative graduate program.

Objectives of the master's degree program are to provide the research-oriented training necessary for students to enter doctoral programs in biology; to develop professional biologists qualified to function in responsible technical positions; and to train secondary school and junior college biology teachers.

The objectives of the Ph.D. program are to train biologists for academic and professional positions in research and teaching. Ph.D. students in the areas of plant systematics and environmental studies have the opportunity for specialized training in tropical biology and conservation biology. This training prepares students for research careers and for leadership and scientific positions involving the conservation and management of tropical ecosystems. Ph.D. students in cellular, molecular and developmental biology will receive training in research techniques appropriate for careers in academic or industrial laboratories.

Graduate Assistantships
Stipends for teaching and research assistantships are students in master's or Ph.D. programs. Out-of-state educational fees are waived for graduate assistants.
Applications for assistantships must be sent to the Director of Graduate Studies in the Department of Biology and be received by February 1.

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 or the Saint Louis Zoo. Several sites within an hour of campus are suitable for regional field studies, including state parks, wildlife conservation areas, and Washington University's Tyson Research Center. UM-St. Louis is a member of the St. Louis University Research Station Consortium that operates Lay and Reis Field Stations in Missouri and it also holds membership in the Organization for Tropical Studies, which operates three field stations in Costa Rica. CEIBA Biological Centre in Guyana has hosted several UM-St. Louis 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.

Undergraduate Studies

General Education Requirements
Students must satisfy the university and college general education requirements. Biology courses may be used to meet the science and mathematics requirement of the university.

The foreign language requirement of the College of Arts and Sciences fulfills the departmental requirements for the B.A. degree. 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 chemistry, physics, mathematics, or psychology, and biology courses other than Biology 389, Senior Seminar, and Biology 390, Research.

Degree Requirements

Bachelor of Arts in Biology
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, and law, and graduate studies in the life sciences. Candidates must have a cumulative grade point average of 2.0 or better in biology courses. All B.A. degree majors must take at least 39 credit hours but not more than 50 hours in appropriate biology course work. The following biology foundation courses must be included in the 39 credit hours.

Foundation Courses
11, Introductory Biology I
12, Introductory Biology II
224, Genetics
232, Cell Structure and Function
246, Introduction to Evolution
371, Biochemistry
389, Senior Seminar, or 285 and 286 for those seeking teacher certification.

Lecture Course Requirements. An additional three lecture courses are required and can consist of any of the other lecture courses offered at the 200 level or above. At least one of the courses must be at the 300 level. Biology 327, 371, 389, and 390 cannot be used to fulfill this requirement.

Laboratory Course Requirements. In addition to the lecture course requirements, three laboratory courses, independent or integrated into a lecture course, will be required. They may be taken from any of the lecture-laboratory or laboratory courses offered. Introductory, General Biology, and Biology 390 laboratories cannot be used to fulfill this requirement.

Off-campus transfer students must satisfactorily complete at least 12 credit hours of UM-St. Louis biology course work (including two laboratories) at the 200 level or above before receiving a B.A. degree from the College of Arts and Sciences with a major in biology.

Related Area Requirements. The following courses in chemistry are required:
11, Introductory Chemistry I (or I, General Chemistry I,
plus 9, General Chemistry II)
12, Introductory Chemistry II
261, Structural Organic Chemistry
and one of the following chemistry courses:
122, Quantitative Analysis
262, Organic Reactions
263, Techniques of Organic Chemistry

Also required:
Math 30, College Algebra, and
Math 35, Trigonometry
Statistics 31, Elementary Statistical Methods or
Statistics 132, Applied Statistics I, or
Edu 330, Educational Statistics, or
Psy 201, Psychological Statistics, or
Biol 388, Biometry
Math 100, Basic Calculus or
Math 80, Analytical Geometry and Calculus
Phys 11, Basic Physics
Phys 12, Basic Physics
Bachelor of Science in Biology

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 foundation courses and general education requirements as those seeking the bachelor of arts degree. In addition, certain minimal requirements in depth of study, laboratory experience, research, data processing, communication skills, and background in associated science areas, are required.

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 46 hours but not more than 50 hours must be completed in appropriate biology course work. A minimum of 17 hours in biology (including three laboratory courses) must be completed at UM-St. Louis. Candidates must have a cumulative grade point average of 2.0 or better in biology courses.

Foundation Courses. All candidates for the B.S. degree must successfully complete the same basic courses as those for the B.A degree.

Lecture Course Requirements. An additional four lecture courses are required and can consist of any of the other lecture courses offered at the 200 level or above. At least two of the courses must be at the 300 level. Selection of the 300-level courses should reflect the career interest of the student, and at least one of the courses should be in a topic area that could lead to an independent research project (Biology 390). Biology 327, 371, 389, and 390 cannot be used to fulfill this 300-level course requirement.

Laboratory Experience. A minimum of five laboratory courses must be taken to satisfy the bachelor of science requirements. They may be taken from any of the laboratory courses, independent or integrated with lecture, that are offered. Introductory, General Biology, and Biology 390 laboratories cannot be used to fulfill this requirement.

Basic Skills Requirement

Certain skills outside the biology subject matter are needed to function adequately in a research environment. The basic skills requirement is designed to provide the student with a background in data processing and communication and knowledge in associated science areas.

1) Data Processing: Students must show a basic understanding of mechanisms for handling data by successfully completing one course in each of the following sets:

Set A. Statistics
- Statistics 31, Elementary Statistical Methods, or
- Statistics 132, Applied Statistics I, or
- Edu 330, Educational Statistics, or
- Psych 201, Psychological Statistics, or
- Biol 388, Biometry

Set B. Computer Science
- CompSci 101, Introduction to Computers and the Internet, or
- CompSci 125, Introduction to Computer Science or
- Bus 103, Computers and Information Systems

2) Communication Skills Courses in formal speaking and technical writing are required for development of the minimal communication skills needed to transmit scientific information. The following courses satisfy this requirement:

Communication
- Comm 40, Introduction to Public Speaking

Writing
- Eng 213, Technical Writing
- Eng 216, Writing in the Sciences*
*Preferred

3) Associated Science Area: The following courses or their equivalents must be successfully completed in science areas related to biology:

Phys 11, Basic Physics
Phys 2, Basic Physics
Chem 11, Introduction Chemistry I, or
Chem 1, General Chemistry I, plus
Chem 9, General Chemistry II
Chem 12, Introductory Chemistry II
Chem 261, Structural Organic Chemistry
Chem 262, Organic Reactions
Chem 263, Techniques of Organic Chemistry, or
Chem 122, Quantitative Analysis
Phil 156, Medical Ethics, or
Phil 280, Philosophy of Science
Math 30, College Algebra, and
Math 35, Trigonometry
Math 100, Basic Calculus, or
Math 80, Analytical Geometry and Calculus I

Research Requirement. All students acquiring a bachelor of science degree are strongly encouraged to complete a minimum of 2 credit hours of undergraduate research, Biology 390. The privilege of doing undergraduate research provides students with a firsthand 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.

Biology majors may take any of the following 100-level biology courses:
110, Human Biology
113, Human Physiology and Anatomy I
114, Human Physiology and Anatomy II
115, Human Genetics
116, General Microbiology
118, General Microbiology Laboratory
120, Environmental Biology
130, Global Ecology
140, Female Sexuality
150, Plants and Civilization

These courses do not count toward the credit hours required for a major, but they may be included in the 120 hours required for graduation as elective credit.

Bachelor of Science in Education with Emphasis in Biology
The B.S. Ed. is a professional degree designed for individuals who wish to pursue a teaching career in biology in the secondary schools. The biology requirements parallel those for the B.A. degree with the exception that Biology 285, Curriculum and Methods of Teaching Life Sciences, and Biology 286, Laboratory in Teaching Life Sciences, are substituted for Biology 389, Senior Seminar. Students must also fulfill the requirements for the B.S. Ed. degree as prescribed by the College of Education.

Bachelor of Arts in Biology with Teacher Certification
Biology majors interested in teaching biology in secondary schools may obtain teacher certification in cooperation with the College of Education by fulfilling the B.A. or B.S. with certain prescribed courses in biology, with the exception of Biology 389, Senior Seminar, and in addition, completing the following courses:

Psych 3, General Psychology
Psych 271, Adolescent Psychology
Ed Fnd 111, The School in Contemporary Society
English 216, Writing in the Sciences
History 3, 4, or 6, American Civilization
PolSci 11, Introduction to American Politics
Philosophy 280, Philosophy of Science
Comm 40, Introduction to Public Speaking
Theater 21, Fundamentals of Acting
Geology 1, General Geology
Atmospheric Science 1, Elementary Meteorology
Ed Psy 312, The Psychology of Teaching and Learning
Ed Tec 248, Utilization of Computer-Based Materials in Instruction
Sec Ed 213, Techniques of Secondary School Teaching and Field Experience

Spec Ed 313, The Psychology and Education of Exceptional Individuals
Sec Ed 386, Teaching Reading in Secondary School
Content Areas
Biology 285, Curriculum and Methods of Teaching Life Sciences
Biology 286, Laboratory in Teaching Life Sciences
Sec Ed 290, Secondary School Student Teaching
Biology 399, Science Teaching Intern Seminar
Since specific biology courses are required for teaching endorsement, contact the Department of Biology AND the College of Education for special advising regarding teacher certification.

Minor in Biology
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 UM-St. Louis.

Requirements are:
1) Biology 11 and 12, Introductory Biology I and II.

2) Three additional courses at the 200 level or above totaling no less than 9 credit hours. These may include either lecture or laboratory courses.

All students must consult with an adviser to plan an appropriate course of study. This program must be approved 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. Such a candidate must receive prior approval by the biology department to pursue this program.

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.

Biochemistry Certificate
The university offers a certificate program for science majors who are interested in careers in biochemistry. The Biochemistry Certificate is an interdisciplinary specialization which may be earned within either a biology major or a chemistry major. The requirements for earning a Biochemistry Certificate within the biology major are:

Biology
11, Introductory Biology I
12, Introductory Biology II
224, Genetics
232, Cell Structure and Function
371, Biochemistry, or
Chem 371, Biochemistry
375, Techniques in Biochemistry (lab)
College of Arts and Sciences
Biology

376, Topics in Biochemistry, or
Chem 372, Advanced Biochemistry
378, Protein Biochemistry Lab, or
Chem 373, Biochemical Techniques
389, Senior Seminar

Chemistry
11, Introductory Chemistry I
12, Introductory Chemistry II
122, Quantitative Analysis
261, Structural Organic Chemistry
262, Organic Reactions
263 Techniques of Organic Chemistry

and three of the following biology courses:
216, Microbiology
218, Microbiology Laboratory
235, Development
310, Cell Physiology
317, Immunobiology
326, Gene Expression in Eukaryotes
327, Introduction to Biotechnology
335, Molecular Cell Biology
338, Gene Expression in Prokaryotes

Undergraduate Certificate in Biotechnology
The university offers an undergraduate certificate program for biology majors who are interested in careers in biotechnology, including biochemistry, microbiology, molecular biology, cell biology, developmental biology, and molecular evolution.

Requirements
Undergraduate biology majors must enroll in the biotechnology certificate program after the completion of 60 credit hours. A student will receive the certificate by completing the requirements for the bachelor's degree and fulfilling all the science (biology, chemistry, math, and computer science) course requirements of the B.S. in biology program. The required biology courses for the certificate are:

Biology
216, Microbiology
218, Microbiology Laboratory
226, Genetics Laboratory
327, Introduction to Biotechnology
375, Techniques in Biochemistry

One of the following two courses:
Biology
326, Gene Expression in Eukaryotes
338, Gene Expression in Prokaryotes

One of the following five courses:

Biology
317, Immunobiology
328, Techniques in Molecular Biology
334, Virology
335, Molecular Cell Biology
376, Topics in Biochemistry, or
Chemistry 372, Advanced Biochemistry

Undergraduate Certificate in Conservation Biology
The Certificate in Conservation 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, Political Science, Social Work, and Sociology. Building on a core curriculum, students can elect courses from these departments to complete their requirements. Regularly enrolled undergraduates at UM-St. Louis 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 must apply to the certificate program. Application forms are available from the biology department. 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
220, General Ecology
240, Conservation Biology
241, Conservation Biology Laboratory
347, Practicum in Conservation

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
120, Native Peoples of North America
131, Archaeology of Missouri
132, Archaeology of North America

Biology
323, Tropical Resource Ecology
324, Tropical Resource Ecology Field Studies
325, Tropical Vertebrate Ecology
341, Population Biology
348, Evolution of Animal Sociality
351, Flowering Plant Families: Phylogeny and Diversification
359, Evolutionary Ecology of Animals
364, Ornithology
366, Ornithology Laboratory
367, Entomology
368, Entomology laboratory
380, Behavioral ecology
385, Wildlife Ecology and Conservation
386, Wildlife Ecology and Conservation Laboratory
395, Field Biology
396, Introduction to Marine Science

Economics
230, International Economic Analysis
251, Intermediate Economic Theory: Microeconomics
360, Natural Resource Economics

History
300, Selected Topics when relevant

Political Science
248, Environmental Politics
285, International Organizations and Global Problem Solving
351, Comparative Public Policy and Administration
359, Studies in Comparative Politics when relevant

Social Work
390, Seminar in Social Work when relevant

Sociology
342, World Population and Ecology
346, Demographic Techniques

Preprofessional Graduation
The Department of Biology sponsors a 3+4 Program for the UM-St. Louis School of Optometry.

In this program students may be admitted to the School 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 UM-St. Louis within three years after entering the School of Optometry.
- Up to 6 hours from the School of Optometry may be substituted for undergraduate degree requirements, with approval of the Department of Biology.

Bachelor of Health Sciences with Personal Emphasis in Clinical Laboratory Science or Cytotechnology
Courses in clinical laboratory science and cytotechnology are offered through the biology department for students who are pursuing a career in one of these fields. Students develop a program of studies through the bachelor of health sciences degree. Refer to the Evening College section of this Bulletin concerning the degree.

The following courses are offered in this area through the biology department. These courses are not acceptable for graduate credit:

Cytotechnology:
302a, Introduction to Cytotechnology
302b, Female Genital Tract I
302c, Female Genital Tract II
302d, The Processing Laboratory
302e, Respiratory and Oral Cytology
302f, Body Fluid Cytology
302g, Gastrointestinal and Genitourinary Cytology
302h, Fine Needle Aspiration Cytology
302i, Advanced Practices in Cytology
302j, Leadership and Management CT

Clinical Laboratory Science:
303a, Issues and Trends in Role Development
303b, Clinical Bacteriology
303c, Bacteriology Practicum
303d, Parasitology and Mycology
303e, Clinical Immunology
303f, Immunology Practicum
303g, Immunohematology
303h, Immunohematology Practicum
303i, Hematology
303j, Hematology Practicum
303k, Clinical Chemistry
303l, Chemistry Practicum
303m, Leadership and Management
303n, Research Methods in the Health Sciences

Graduate Studies

Master of Science in Biology
The Department of Biology offers two ways of achieving the master of science degree. The first is a nonthesis 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 traditional apprenticeship in research leading to a written thesis. All students admitted to the graduate program are considered to be in the nonthesis program unless they have been accepted into an individual faculty lab. Starting with a common core, either option may be developed into a final degree program in one of the following areas: animal behavior, biochemistry, biotechnology, conservation biology, developmental biology, ecology, evolution, genetics, molecular and cellular biology, microbiology, plant and animal physiology, plant systematics, population biology, and tropical biology.

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, 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 an overall minimum grade point average of 2.75 and minimum grade average of 3.0 in the applicant's undergraduate major.

All foreign applicants, except those from countries where English is the primary language, must take the TOEFL. Ordinarily, a score of 550 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 adviser, the student, and the director of graduate studies 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 B392 Topics in Biology can be given to graduate students for B224, B246, and B371, if they receive a B or better grade for all undergraduate course work plus completing a graduate-level paper assigned by the instructor. Instructor consent is required.

M.S. Degree Requirements

General Requirements
All students are required to take at least 4 but not more than 8 hours of Biology 489, Graduate Seminar.

Advisers
All incoming thesis and nonthesis students will be assigned an academic adviser by the director of graduate studies upon admission to the graduate program.

In the event that a student's interest changes or the faculty adviser feels the student's direction no longer falls within his/her area of expertise, the student and adviser should discuss whether a change of adviser is warranted. The Graduate Director must be notified in writing of any change in advisers. If a student or adviser is uncomfortable discussing the issue directly with each other, he/she is encouraged to meet with the director or associate director of the graduate program.

Nonthesis Option
Including the general requirements, students must take at least 36 credit hours, of which at least half must be at the 400 level. Students are encouraged to take a laboratory course (300 or 400 level) or 2 credit hours of Biology 490, Graduate Research. A maximum of 5 credit hours of Biology 490 will be counted toward the 36-credit-hour total. This research may be conducted in the laboratory, field, or library.

Thesis Option
Including the general requirement, students must take at least 30 graduate credit hours, of which at least half must be at the 400 level. No more than 13 hours of Biology 490, Graduate Research, may be counted toward the degree.

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 Biology 490, Graduate Research, and before the student has completed 15 credit hours in the master's program. 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.

Ph.D. in Biology

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.

Applicants 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
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 credit hours of course work which must be taken beyond the bachelor's degree. At least 30 of the 60 hours must be taken at the 400 level. With the explicit consent of the advisory committee, students may take for graduate credit up to 3 credit hours of 200-level courses in allied departments. Courses in biology at the 200 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.

Specific courses shall be completed as follows:

- Biology 388 (3 hours), Biometry, or equivalent course in statistics.
- Biology 489 (2 hours), Graduate Seminar. Three semesters required (6 credits total).
- 12 hours of formal course work required by the student's emphasis area at the time a student is admitted to the Ph.D. program.

The maximum number of credit hours that may be applied toward the 60-hour requirement is limited as stated below:

A combination of 6 total credit hours of the following:

- Biology 405, Topics in Ecology, Evolution, and Systematics
- Biology 406, Topics in Molecular, Cellular, and Developmental Biology
- Biology 407, Topics in Floristic Taxonomy
- Biology 489, Graduate Seminar: 10 hours
- Biology 490 Graduate Research: 30 hours

First-Year Experience

Graduate students are expected to become involved in a research experience during their first-year program, usually winter semester or summer session.
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 nondegree 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.

Core Requirements
I. Biology 428, Advanced Techniques in Molecular Biology
II. Biology 426, Advanced Gene Expression in Eukaryotes, or Biology 438, Advanced Gene Expression in Prokaryotes (if both above courses are taken, one may be used as elective credit)
III. The remaining 11 credit hours must be taken from the following electives:

Biology
317, Immunobiology
319, Immunobiology Laboratory
371, Biochemistry
376, Topics in Biochemistry
378, Protein Biochemistry Laboratory
406, Topics in Molecular, Cellular, and Developmental Biology
410, Advanced Cell Physiology
417, Advanced Immunology
429, Advanced Molecular Evolution
430, Advanced Topics in Development
431, Graduate Internship in Biotechnology
434, Advanced Virology
435, Advanced Molecular Cell Biology
439, Advanced Plant Molecular Biology and Genetic Engineering
444, Advanced Gene Activity During Development
489, Graduate Seminar, when relevant

Chemistry
372, Advanced Biochemistry
373, Biochemical Techniques

Graduate Certificate in Tropical Biology and Conservation
The certificate is awarded after completion of 18 credit hours of core courses and electives with a minimum of 12 credits at the 400 level. Up to 3 credits may be taken at the 200 level upon permission of the Graduate Committee. 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 elsewhere than UM-St. Louis. Students may simultaneously earn a graduate degree and count credits earned in their degree program toward the certificate when appropriate.

Required Core Courses:
Biology 445, Public Policy of Conservation and Sustainable Development
Biology 447 (1-4), Internship in Conservation Biology (may be replaced with a biology elective for individuals with applied conservation or environmental agency experience upon consent of the Graduate Committee).

Choice of:
Biology 446, Theory and Application of Conservation Biology
Biology 487, Advanced Tropical Ecology and Conservation

Electives:
Biology
341, Population Biology
351, Flowering Plant Families: Phylogeny and Diversification
364, Ornithology
367, Entomology
385, Wildlife Ecology and Conservation
396, Introduction to Marine Science
423, Advanced Tropical Resource Ecology
424, Advanced Tropical Resource Ecology Field Studies
425, Advanced Tropical Vertebrate Ecology
441, Advanced Population Biology
442, Population and Community Ecology
446, Theory and Application of Conservation Biology
448, Advanced Evolution of Animal Sociality
458, Evolutionary Ecology of Plants
459, Advanced Evolutionary Ecology of Animals
465, Methods in Plant Systematics
480, Advanced Behavioral Ecology
481, Advanced Theoretical Systematics and Evolution
483, Applications of Geographic Information Systems
487, Advanced Tropical Ecology and Conservation
489, Graduate Seminar, when relevant
Economics
230, International Economic Analysis
251, Intermediate Economic Theory: Microeconomics
360, Natural Resource Economics
History
300, Selected Topics in History, when relevant
371, History of Latin America: to 1808
College of Arts and Sciences

Biology

372, History of Latin America: Since 1808
381, West Africa Since 1800
425, Readings in Latin American History, when relevant
430, Readings in African History, when relevant

Political Science
248, Environmental Politics
253, Political Systems of South America
254, Political Systems of Mexico, Central America, and the Caribbean
258, African Politics
283, International Political Economy
285, International Organizations and Global Problem Solving
347, Introduction to Environmental Law and Policy
351, Comparative Public Policy and Administration
359, Studies in Comparative Politics, when relevant
385, International law
388, Studies in International Relations
394, Leadership and Management in Nonprofit Organizations
414, Topics in Public Policy Analysis, when relevant
448, Political Economy and Public Policy
459, Seminar in Latin American Politics, when relevant
462, Political Theory and Public Policy
481, Seminar in International Relations

Social Work
390, Seminar in Social Work Issues, when relevant

Sociology
342, World Population and Ecology
346, Demographic Techniques
426, Community and Regional Conflict Resolution

Career Outlook

The biology degree programs, at the baccalaureate and master's degree levels, are designed to prepare the student for further training. The undergraduate degree is designed to prepare the student for professional training in areas such as medicine, training, dentistry, veterinary medicine, optometry, and related areas, or for further graduate training in research. The master of science program is an extension of the undergraduate program and has as its goals three main objectives:

- Provide research-oriented training and education.
- Provide qualified graduates for doctoral programs.
- Provide secondary school and junior college biology teachers with training necessary to maintain and improve their teaching effectiveness.

The Ph.D. program prepares students as research professionals in fields such as biological conservation, ecology, and biomedical science. Employment opportunities are available in college or university research and teaching, in government and public institutions such as museums and botanical gardens, and in industry.

Prerequisites may be waived by consent of the department or instructor. Some courses as indicated in the course description may be taken concurrently with the listed offering. Consult an adviser for further information.
Course Descriptions


1 General Biology (3)
Emphasis on fundamental principles of biology. Biology 1 can be applied toward fulfillment of the general education requirement in science. Biology 1 does not satisfy the prerequisite requirements in other courses in biology at the 200 level or above. Students who plan to pursue a career in medicine or one of the medical-oriented professions should enroll in Biology 11 rather than Biology 1. Three hours of lecture per week.

3 General Biology Laboratory (2)
Prerequisite: Biology 1 (may be taken concurrently). Laboratory course to accompany Biology 1. Biology 3 can be used to fulfill the general education requirements in a laboratory science. Biology 3 does not meet the prerequisite requirements for other courses in biology. Three and one-half hours of laboratory per week.

11 Introductory Biology I (5)
Prerequisites: Satisfactory score on math placement test and English 09 or equivalent. Required for students intending to major in biology or take specified biology courses at the 200 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.

12 Introductory Biology II (5)
Prerequisites: Biology 11. Required for students intending to major in biology or take specified biology courses at the 200 level or above. This course presents an introduction to some of the principles of biology and scientific methodology applied to the organismal and supraorganismal levels of biology. Topics to be covered include: ecology, evolution, diversity, and population biology. Three hours of lecture, three and one-half hours of laboratory, and one hour of discussion per week.

110 Human Biology (3)
Lectures and readings concerned with the reproduction, development, genetics, functional anatomy, behavior, ecology, and evolution of the human species. Three hours of lecture per week.

113 Human Physiology and Anatomy I (4)
Prerequisite: Biology 1 or its equivalent. 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 of lecture and two hours of laboratory per week.

114 Human Physiology and Anatomy II (4)
Prerequisite: Biology 113. A continuation of Biology 113. A study of the basic aspects of human physiology and anatomy. Three hours of lecture and two hours of laboratory per week.

115 Human Genetics (3)
The structure and transmission of genetic characteristics in humans, including modern advances and their impact on society. Three hours of lecture per week.

116 General Microbiology (3)
Prerequisite: Biology 1 or its equivalent. A survey of microbial structure, genetics, and physiology. Special emphasis will be placed on the transmission and control of such organisms as they relate to the maintenance of human health. Three hours of lecture per week.

118 General Microbiology Laboratory (2)
Prerequisite: Biology 116 (may be taken concurrently). Standard techniques for identification, growth, and control of microorganisms. Three and one-half hours of laboratory per week.

120 Environmental Biology (3)
An examination of the biological basis of current environmental problems, with emphasis upon resources, energy, pollution, and conservation. Three hours of lecture per week.

130 Global Ecology (3)
Prerequisite: Biology 1. Must be taken concurrently with Political Science 85 for 3 hours of Biology and 3 hours of Political Science credit. A course team-taught by the Biology and Political Science departments, aimed particularly at elementary education majors. Combines natural science and social science perspectives in taking a global view of a variety of environmental concerns, such as air and water pollution, climate change, conservation of nonrenewable resources, and other issues. Examines the underlying scientific dimension, as well as the political-economic-social aspects of problem-solving at local, national, and international levels. Features labs and field trips in addition to lecture and discussion. Three hours of lecture, one hour and fifteen minutes discussion and three and one-half hours laboratory per week.
140 Female Sexuality (3)
(Same as Psych 140.) Prerequisites: Psych 3, or Biology 1, or its equivalent. This course will present a biological-psychological orientation toward the study of female sexuality. Topics include: sexual anatomy, hormonal influences on sexual behavior, psychosexual development, sexual attraction and relationships, sexual response and dysfunction, menstruation, pregnancy, menopause, reproductive health issues, and social issues in sexuality.

150 Plants and Civilization (3)
Prerequisite: Biology 1 or its equivalent. A study of use and dependency on plants. Primary topics of discussion will center on the origin of agriculture and its influence on the development of nations, the origin and evolution of food crops, drug and medicinal plants, and problems in feeding the world's population. Three hours of lecture per week.

201 Fundamental Biological Laboratory Skills (1)
Prerequisite: Chem 11 and 12 and Math 30. Biology majors must complete Biology 11 and 12 before taking this course. This laboratory course will provide background information and practical experience in introductory laboratory techniques. This course is appropriate for biology majors or for students in other disciplines who wish to improve their laboratory skills for technical positions or for teaching. This course meets for two hours each week. The course will not fulfill laboratory requirements for the major.

213 Vertebrate Physiology (3)
Prerequisite: Biology 11 and 12 and Chem 11 (or Chem 1 plus Chem 9). Basic functional aspects of organ systems in relation to the physicochemical properties of protoplasm. Three hours of lecture per week.

215 Vertebrate Physiology Lab (2)
Prerequisite: Biology 213 (may be taken concurrently). Instrumental and experimental studies in physiology. Three and one-half hours of laboratory per week.

216 Microbiology (3)
Prerequisite: Biology 11 (majors must also take Biology 12) and Chem 11 (or Chem 1 plus Chem 9). Study of microorganisms, their metabolism, genetics, and their interaction with other forms of life. Three hours of lecture per week.

218 Microbiology Laboratory (2)
Prerequisite: Biology 216 (may be taken concurrently). Experimental studies and procedures of microbiological techniques. Three and one-half hours of laboratory per week.
235 Development (3)
Prerequisites: Biology 11 and 12. Basic principles of development from the point of view of growth, morphogenesis, and differentiation. Three hours of lecture per week.

237 Development Laboratory (2)
Prerequisite: Biology 235 (may be taken concurrently). Laboratory to accompany Biology 235. Three and one-half hours of laboratory per week.

240 Conservation Biology (3)
Prerequisite: Biology 11 and 12. 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.

241 Conservation Biology Laboratory (2)
Prerequisites: Bio 240 (recommended to be taken concurrently). Laboratory to accompany Bio 240. 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 non-governmental agencies. Three and one-half hours of laboratory per week.

246 Introduction to Evolution (3)
Prerequisite: Biology 11 and 12; Bio 224 strongly recommended. Introduction to the theory, events, and processes of organic evolution.

250 Biology of Plants (5)
Prerequisites: Biology 11 and 12. 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 (32 hours per week) involves examination of representatives of the plant kingdom and experimentation in plant physiology and genetics. Fulfills both a lecture and a laboratory requirement.

254 General Plant Physiology and Development (3)
Prerequisite: Biology 11 and 12 and Chem 11 (or Chem 1 plus Chem 9). An examination of photosynthesis, water relations, development, and response to environmental stress in plants. Three hours of lecture per week.

256 Plant Physiology and Development Laboratory (2)
Prerequisite: Biology 254 (may be taken concurrently). Laboratory to accompany Biology 254. Exercises will demonstrate basic plant biochemical and biophysical mechanisms and responses to environmental stress. Three and one-half hours of lab per week.

260 Vertebrate Biology (3)
Prerequisite: Biology 11 and 12. Development, structure, function, interrelationships, and zoogeography of vertebrate animals with particular attention to phylogenetic aspects. Three hours of lecture per week.

262 Vertebrate Biology Laboratory (2)
Prerequisite: Biology 260 (may be taken concurrently). Laboratory to accompany Biology 260. 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.

264 Invertebrate Biology (3)
Prerequisite: Biology 11 and 12. Structure and function of invertebrate animals with co-emphasis on evolution and phylogenetic interrelationships. A field trip to the Florida Gulf Coast will be offered but not required. Three hours of lecture per week.

266 Invertebrate Biology laboratory (2)
Prerequisite: Biology 264 (may be taken concurrently). Laboratory to accompany Biology 264. Dissection and analysis of invertebrates with an emphasis on structure and function; includes field trips to area stations. A field trip to the Florida Gulf Coast will be offered but not required. Three and one-half hours of laboratory per week.

280 Animal Behavior (3)
Prerequisite: Biology 11 and 12. 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.

282 Animal Behavior Laboratory (2)
Prerequisite: Biology 280 (may be taken concurrently). Observational and experimental studies of animal behavior in the field and laboratory. Three and one-half hours of laboratory per week.

285 Curriculum and Methods of Teaching Life Sciences (4)
(Same as SecEd 285.) Prerequisite: SecEd 213 and a near-major in biology. A study of 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/learning and field experience observations in secondary school classrooms will be integrated into classroom activities and discussions. This course must be completed in residence.
286 Laboratory in Teaching Life Sciences (2)
(Same as SecEd 286.) Prerequisite: SecEd 213.
Discussion, development, utilization, and evaluation of equipment, materials, and techniques applicable to instruction in the life sciences. Must be taken concurrently with Biology 285/SecEd 285.

292 Special Topics in Biology (3)
Prerequisites: Bio 11 and 12, junior standing, and consent of instructor or curriculum committee. In-depth discussions of special topics in the biological sciences, generally conducted in a seminar format with extensive student participation. This course may be used to satisfy requirements for elective biology courses for the B.A. or the B.S. degree in biology; it cannot be substituted for core courses required of all majors. May be taken up to two times for credit.

302 Science in the Real World: Microbes in Action (2)
Prerequisites: Bio 11 or Chem 11 or equivalent course, and experience teaching science at the middle school or high school level. A hands-on workshop in microbiology designed for secondary school science teachers interested in introducing microbiology to their students. Includes lectures on basic microbiology, laboratory exercises in microbiology for middle school or high school classroom, discussion sessions, and a session in the computer lab to familiarize teachers with microbiology resources on the Web. Open only to middle school and high school science teachers. Does not count as credit toward degree in biology.

302A Introduction to Cytotechnology (3)
Prerequisite: Admission to the Cytotechnology program at Jewish Hospital College of Nursing and Allied Health. Introduction to the profession of cytotechnology including basic cell biology, ethics, the microscope and history of the profession. Basic concepts of pathology, anatomy, normal histology, and benign cellular processes are taught.

302B Female Genital Tract I (4)
Prerequisite: Biology 302A or consent of instructor. Examines the morphogenesis of malignancies with emphasis on cellular changes of squamos and endocervical epithelium of the uterine cervix. The student is expected to identify morphologic cellular manifestations and begin to differentiate diagnosis of presented diseases on kodachromes and glass slides. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302C Female Genital Tract II (3)
Prerequisite: Biology 302B or consent of instructor. Emphasis on the study of lesions of the uterine corpus, metastatic lesions, and lesions of the vulva and vagina. The student is expected to differentiate between malignant and premalignant diseases of the uterine corpus and to begin differential diagnosis of endometrial adenocarcinoma and endocervical adenocarcinoma from glass slides and kodachromes. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302D The Processing Laboratory (2)
Prerequisite: Biology 302C or consent of instructor. Includes routine procedures for processing, receipt, staining, coverslipping and filing of specimens. Cytology laboratory experience includes performing laboratory techniques under the supervision of a cytotechnologist. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302E Respiratory and Oral Cytology (3)
Prerequisite: Biology 302D or consent of instructor. Designed to acquaint the student with the anatomy and histology of the upper and lower respiratory areas. Epithelial appearances and changes associated with normal, benign, and malignant processes are emphasized. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302F Body Fluid Cytology (3)
Prerequisite: Biology 302E or consent of instructor. Examines the cytopathology of effusions, cerebral spinal fluid and other body fluids, and the cytologic changes associated with benign and malignant processes. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302G Gastrointestinal Genitourinary Cytology (3)
Prerequisite: Biology 302F or consent of instructor. The study of the cytology of the gastrointestinal and genitourinary systems. The anatomy of each body site is discussed along with the normal, benign and malignant cellular changes of each system. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.
302H Fine Needle Aspiration Cytology (4)
Prerequisite: Biology 302G or consent of instructor. Examines the anatomy and histology of the breast, thyroid, and lymph nodes with emphasis on the cytologic patterns associated with normal, benign, and malignant processes. In addition, the student will have the opportunity to observe and assist the cytopathologist and/or cytotechnologist with fine needle aspiration procedures from various body sites to observe techniques for processing and rapid cytologic assessment. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302I Advanced Practices in Cytology (12)
Prerequisite: Biology 302H or consent of instructor. This clinical course requires the student to examine a variety of specimens for cytologic evaluations from all body sites. Students must have achieved minimum screening accuracy in prerequisite courses to begin practicum. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

302J Leadership and Management CT (4)
Prerequisite: Economics 51 or Business 210, or equivalents. Examines theories of leadership, management and organization as applied to cytotechnology. Healthcare economics, political issues, healthcare systems are investigated within a systems theory framework. Computer spreadsheets and delivery patterns. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303 Biotechnology Colloquium (1)
Prerequisite: Must be enrolled in the biotechnology certificate program. Weekly seminars by outside speakers who will focus on biotechnology. Speakers will discuss current research in biotechnology, new applications of biotechnology in medicine and agriculture, safety issues, federal compliance standards, and patenting of biotechnology products. May be repeated for a maximum of 2 credit hours.

303A Issues and Trends in Role Development (3)
Prerequisite: Admission to the Clinical Laboratory Science program at Jewish Hospital College of Nursing and Allied Health. Presents overview of educational principles and teaching. Selected laboratory management issues considered.

303B Clinical Bacteriology (3)
Prerequisite: Biology 216 and 218 or consent of instructor. Morphology, cultural and growth characteristics of bacteria and viruses which cause infectious disease. Specimen and media selection, collection, transport, storage, and processing are also studied. Students learn to differentiate normal from pathogenic microorganisms. Disease correlation with laboratory data is stressed. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303C Bacteriology Practicum (4)
Prerequisite: Biology 303B or consent of instructor. Morphology, cultural and growth characteristics of bacteria and viruses which cause infectious diseases. Specimen and media selection, collection, transport, storage, and processing covered. Differentiation between normal and pathogenic microorganisms and disease correlation with laboratory data stressed. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303D Parasitology and Mycology (2)
Prerequisite: Biology 216, 218, or consent of instructor. Lectures and laboratory exercises focus on identification and differentiation of selected parasites, medically important fungi, and common contaminants. Common methods and techniques and instruments explored. Classification, diagnostic states of fungi and parasites, and life cycles and vectors for parasites studied. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303E Clinical Immunology (2)
Prerequisite: Biology 317 or consent of instructor. Introduces the principles of both normal and abnormal responses of the immune system through the molecules, cells, organs and systems responsible for the recognition and disposal of foreign materials. Immunological manifestations of diseases are discussed. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303F Immunology Practicum (1)
Prerequisite: Biology 303E or consent of instructor. The focus of the clinical practice is on serologic and immunologic testing. Data interpretation, troubleshooting in test systems and disease correlation with laboratory data are stressed. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.
303G Immunohematology (3)
Prerequisite: Biology 317 or consent of instructor. Theory and principles in immunology and genetics that determine blood types. Transfusion services stressed. Aspects of red cells, platelets and components discussed regarding selection, collection, transport, storage, processing, and their use for transfusion. Donor requirements and laboratory operations included. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303H Immunohematology Practicum (3)
Prerequisite: Consent of instructor. Clinical practice focuses on basic and special testing to assure safe blood supply and safe transfusion therapy. Adverse reactions investigated to identify cause of reaction. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303I Hematology (4)
Prerequisite: Consent of instructor. Study of fundamentals of hematology and hemostasis. Hematopoiesis, pathogenesis of anemia and disease process resulting in abnormal erythrocyte morphology will be presented. Focus on leukocyte disorders, leukemias, lymphomas, and lipid storage disease. Platelet structure and function, vascular and platelet disorders, defects of clotting factors, and interaction of fibrinolytic coagulation and kinin systems discussed. Overview of use of flowcytometric and molecular diagnostics in hemopathology. Laboratory component will be part of comprehensive clinical experience in hematology. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303J Hematology Practicum (3)
Prerequisite: Biology 3031 or consent of instructor. Clinical practice focuses on basic and special testing in hematology as well as phlebotomy. Identification of normal and abnormal cell morphology is studied and diseases are is correlated with abnormal cells. Coagulation testing to identify coagulation defects and hemostatic diseases performed. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303K Clinical Chemistry (3)
Prerequisite: Consent of instructor. Focus on biochemical theory and physiology of carbohydrates, lipids, and lipoproteins, heme derivatives, liver and renal function, non-protein nitrogenous compounds, proteins, enzymes, electrolytes, and acid-base balance, hormones, and endocrine system. Normal and abnormal manifestations of diseases and correlation with other laboratory tests presented. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303L Chemistry Practicum (4)
Prerequisite: Consent of instructor. Clinical practice focuses on basic and special test methods and instrumentation used in quantifying metabolites and analytes discussed in Biology 303K. Quality control, correlation of test data and disease states presented. Biological and chemical safety practiced. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

303N Leadership and Management (3)
Prerequisite: Economics 51 or Business 210 or equivalent. Examines theories of leadership, management, and organization as applied to Healthcare Systems. Healthcare economics, political issues, and healthcare systems investigated within a systems theory framework. Computer programs used for development of financial spreadsheets and delivery patterns. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

310 Cell Physiology (3)
Prerequisite: Biology 371 (Biology 232 recommended). A study of cellular functions and their relationship to the structural and chemical properties of cellular components. Areas discussed: the cell and its environment, energy flow, exchange of materials across membranes, information transfer within and between cells, and cellular aspects of movement. Three hours of lecture per week. Students may not receive credit for both Biology 310 and 410.

314 Environmental Physiology (3)
Prerequisite: Biology 213. Physiological responses of animals to environmental changes. Adaptation of organisms to various environments. Three hours of lecture per week. Students may not receive credit for both Biology 314 and 414.

316 Parasitology (3)
Prerequisite: Biology 11, 12, and 10 additional hours of biology and upper-division standing. (Biology 232 strongly recommended.) A broadly based course emphasizing the phylogeny, life history, ecology, and physiology of parasites of medical and veterinary importance. Modern aspects of experimental parasitology, immunoparasitology, and parasite molecular biology will be addressed.
317 Immunobiology (3)
Prerequisite: Biology 371 and Chem 261. The fundamental principles and concepts of immunology and immunochemistry. Emphasis on the relation of immunological phenomena to biological phenomena and biological problems. Three hours of lecture per week.

319 Immunobiology Laboratory (2)
Prerequisite: Biology 317 (may be taken concurrently). Basic experimental procedures in immunology. Introduction to experimental evidence underlying concepts in immunology. Three and one-half hours of laboratory per week.

320 Introduction to Neuroscience (3)
Prerequisite: Biology 213 or consent of instructor. The study of nervous systems, featuring the cellular bases of initiation and conduction of 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.

322 Laboratory Techniques in Neuroscience (2)
Prerequisite: Biology 320 (must be taken concurrently). Experiments are designed to accompany Biology 320, and will include the use of live animals and computer simulation of the physiological and biophysical properties of excitable membranes.

323 Tropical Resource Ecology (3)
Prerequisite: Biology 220 and either Biology 246 or 280 or their equivalent, or consent of instructor. A lecture and seminar course that applies the behavioral ecology paradigm to the patterns of use and exploitation of resources in the tropics by humans. Student may not receive credit for both Biology 323 and 423. Three hours of lecture per week. Offered in odd years.

324 Tropical Resource Ecology Field Studies (2)
Prerequisite: Biology 323 (may be taken concurrently). The field component to the lecture and seminar course that applies the behavioral ecology paradigm to examine the patterns of use and exploitation of resources in the tropics of humans. Two weeks of intensive field research and lectures in Guyana, South America the week prior to and during Spring break (trip costs to be borne by student). Students may not receive credit for both Biology 324 and 424. Offered in odd years.

325 Tropical Vertebrate Ecology (3)
Prerequisite: Biology 220, and either Biology 246 or 280 or their equivalent, or consent of instructor. This course explores the role of neotropical vertebrate individuals in the expression of patterns and processes in populations and communities that elucidate the degree to which organic evolution can be ascribed to natural selection and/or random events. Three weeks of intensive lecture, discussion and individual field studies in Guyana, South America during July-August (trip costs to be borne by student). Class size 12 students. Students may not receive credit for both Biology 325 and 425. Offered in even years.

326 Gene Expression in Eukaryotes (3)
Prerequisite: Biology 224 and 371. A discussion of the current concepts of molecular biology as they apply to understanding genetic regulation of DNA, RNA, and protein synthesis and function in the cell. Three hours of lecture per week. Students may not receive credit for both Biology 326 and 426.

327 Introduction to Biotechnology (4)
Prerequisite: Biology 224 or equivalent, or consent of instructor. An introduction to the fundamental concepts that underlie the rapidly growing field of biotechnology. The structure and function of DNA, RNA and protein will be presented through lectures, discussions and a series of laboratory exercises. Both the basic biological concepts and essential laboratory skills necessary for students interested in the field of biotechnology will be covered in this course. Two hours of lecture and four hours of laboratory per week. Fulfills a laboratory requirement only. May not be used to fulfill the 300-level lecture course requirement for the B.A. or B. S. degree in biology. Students may not receive credit for both Biology 327 and either Biology 228 or a comparable transfer course in biotechnology from another institution.

328 Techniques in Molecular Biology (4)
Prerequisite: Biology 327 and either Biology 326 or 338. An in-depth look at theory and practice of current technologies in molecular biology. The focus will be on techniques used to study gene structure and expression. Laboratory will present hands-on experience with these techniques. One hour of lecture and 6 hours of laboratory per week. Fulfills a laboratory requirement only for majors. Students may not receive credit for both Biology 328 and 428.

329 Molecular Evolution (3)
Prerequisite: Biology 246 or 341, and Biology 326 or 338, or consent of instructor. Lectures and class discussions concern evolutionary processes that have changed the genetic material over time. This course will include the dynamics of genes in populations and several aspects of evolutionary change at the molecular level. Students may not receive credit for both Biology 329 and 429.
333 Nucleic Acid Structure and Function (3)
Prerequisite: Biology 224 and 371 or equivalent or consent of instructor. Comprehensive view of structural properties of DNA and RNA that promote molecular interactions and biological function. Topics include physical properties of nucleic acids, 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 Biology 333 and 433.

334 Virology (3)
Prerequisite: Biology 216 and 224. A comparative study of the structure, reproduction, and genetics of viruses. Three hours of lecture per week. Students may not receive credit for both Biology 334 and 434.

335 Molecular Cell Biology (3)
Prerequisite: Biology 326 or 338 and 371. This course is designed to explore the structural organization and processes in living cells. Topics of discussion will include gene product processing and transport, organelle biogenesis and assembly, cell-cell communication, control of gene expression, cytoskeletal structure and function, and normal and abnormal cell differentiation. Particular attention will be given to discussion of the current literature. This course is also designed to help unify genetics, biochemistry, and physiology. Three hours of lecture per week. Students may not receive credit for both Biology 335 and 435.

338 Gene Expression in Prokaryotes (3)
Prerequisite: Biology 216 and 224. The principles and mechanisms of inheritance and transfer of genetic material in microorganisms. Includes the study of mutation, gene transfer, and genetic manipulation of microorganisms. Three hours of lecture per week. Students may not receive credit for both Biology 338 and 438.

339 Plant Molecular Biology and Genetic Engineering (3) Prerequisite: Biology 326 or 338. Topics will include plant cell and developmental biology, DNA transfer into plants, using mutations to identify genes and their functions, regeneration of plants in tissue culture, signal transduction mechanisms, molecular biology of plant organelles, developmental engineering, metabolic engineering, plant-microbe interactions, and engineered resistance to pathogen attack. Three hours of lecture per week. Students may not receive credit for both Biology 339 and 439.

341 Population Biology (3)
Prerequisite: Biology 220 and 224 (Biology 246 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 Bio 341 and 441.

344 Gene Activity During Development (3)
Prerequisite: Biology 235 and 326 or consent of instructor. Discussion of selected experimental systems in which molecular genetic and cell biological approaches have provided insights about the genes and/or gene products that regulate animal development. Three hours of lecture per week. Students may not receive credit for both Biology 344 and 444.

347 Practicum in Conservation (2)
Prerequisite: Biology 240 or 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.

348 Evolution of Animal Sociality (3)
Prerequisite: Biology 280, 220 or 341 recommended or consent of instructor. The evolution of sociality, including a critical examination of sociobiological theories and alternative approaches to social evolution. Survey of social organization and behavior in arthropods, with an emphasis on social insects, and vertebrates. Two hours of lecture, one hour of discussion per week. Students may not receive credit for both Biology 348 and 448.

351 Flowering Plant Families: Phylogeny and Diversification (5)
Prerequisites: Biology 250 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. The 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.
353 Sex and Evolution in the Flowering Plants (3)
Prerequisites: Biology 11 and 12 or equivalent; Biology 246 or 250 recommended. The evolution of flowers, and flowering plants, is the result of mutualistic plant-animal interactions. This course explores all aspects of the function of flowers, integrating findings and approaches from ecology, systematics, plant physiology, and animal behavior. Flower color, scent, and nectar, deceptive pollination systems, pollen-stigma interactions and incompatibility systems, flowering plant mating systems (including selfing and apomixis), and pollination by insects, vertebrates, wind, and water. Two hours of lecture per week and one hour of laboratory per week to be arranged. Does not fulfill a laboratory requirement for biology majors.

355 Evolution and Phylogeny of Seed Plants (3)
Prerequisites: Biology 246 or 250 or equivalent. Examination of the evolution of, and relationships among, major lines of seed-bearing plants, both extinct (Bennettitales, cordaites, etc.) and extant (conifers, cycads, ginkgo, Gnetales, and flowering plants). Criteria for the assessment of morphological homology are examined, and wherever possible the evolution of morphological structures is related to their function. Included introduction to cladistic methods and practical exercises in the analysis of large morphological data matrices using PAUP & MacClade. Two hours of lecture per week and one hour of laboratory per week to be arranged. Does not fulfill a laboratory requirement for biology majors. Students may not receive credit for both Biology 355 and Biology 455.

359 Evolutionary Ecology of Animals (3)
Prerequisite: Biology 220, 280, and one of 224, 246, or their equivalents, or consent of instructor. Examines the interactions of the evolutionary forces that determine the distribution and abundance of animals. It explores the patterns and processes in populations and communities that should elucidate the degree to which organic evolution can be ascribed to natural selection and/or random events. Analysis of the theoretical constructs of evolutionary ecology and an examination of the empirical evidence from primary sources that claim to support or refute these theories will also be covered. Students may not receive credit for both Biology 359 and 459. Three hours of lecture per week.

360 Techniques in Electron Microscopy (3)
Prerequisite: Biology 232 and consent of instructor, Bio 234 recommended. Discussion of electron microscopy and associated techniques. Students will learn techniques associated with the preparation of materials for electron microscopy and learn to operate and perform minor servicing of the electron microscope. This course fulfills a laboratory requirement for the B.A. or B.S. degree in biology; it may not be used to fulfill the 300-level lecture course requirement for the B.A. or B.A. in biology. Two hours of lecture per week and two hours of laboratory per week.

361 Advanced Laboratory for Electron Microscopy (2)
Prerequisites: Bio 360 (may be taken concurrently). Additional laboratory to accompany Bio 360. Students may use the electron microscope to conduct specific research projects and/or to improve their proficiency in techniques associated with the electron microscope. Students may not use both Bio 360 and Bio 361 to fulfill the minimum number of laboratory courses required for the B.A. or the B.S. degree in biology. A minimum of four hours per week, to be arranged.

362 History of Natural History: Systematics, Ecology, and Natural History in the Strict Sense (3)
(Same as History 245.) Prerequisites: At least 3 biology courses beyond the introductory level or consent of instructor. Topics include principles of ethnobiological classification, Aristotle and Theophrastus and their incorporation in western science, and natural history in the Renaissance. Focuses on the breakup of natural history after 1750; integration of natural history and botany in popular culture and its consequences for professional disciplines; relationships between new botany and classification botany, among botany, zoology and biology at the end of 19th century, and between field and laboratory science; and conflict between systematic schools in later 20th century. Three hours of lecture per week. Paper on topic of student's choice required. Credit not granted for more than one of Biology 362, History 245, and Biology 462.

364 Ornithology (3)
Prerequisite: Biology 220 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.
365 Theory of Systematics (3)
Prerequisites: Biology 11 and 12 and at least one course beyond introductory level dealing with animal, plant, or microbial diversity (such as Biology 216, 250, 260, 316, 351, 364, or 367) or consent of instructor. Investigates theory of classification, phylogenetic analysis, systematic biology, and their relation to systematic practice. Covers goals and schools of systematics, characters, and homology, analysis of molecular and morphological data and underlying assumptions, species concepts, classification, naming, and connections between evolutionary biology and systematics. Appropriate for upper-level undergraduates and graduate students in all disciplines, animal, plant, and microbial, as introduction to systematic methods. Three hours of lecture per week.

366 Ornithology Laboratory (2)
Prerequisite: Biology 364 (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.

367 Entomology (3)
Prerequisite: Biology 11 and 12; 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.

368 Entomology Laboratory (2)
Prerequisite: Biology 367 (may be taken concurrently). Laboratory to accompany Biology 367. 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.

369 Social Insects (3)
Prerequisites: Bio 367 and upper division standing or consent of instructor. A study of social insects as a model system for the investigation and synthesis of topics in evolutionary biology. Basic aspects such as classification, diversity, and natural history; conceptual approaches to topics for which social insects yield novel insights. Three hours of lecture per week. Students may not receive credit for both Bio 369 and 469.

370 Endocrinology (3)
Prerequisite: Biology 213 (Biology 371 recommended). A survey of chemical coordinating mechanisms with special emphasis on the evolution of hormonal control systems. Three hours of lecture per week.

371 Biochemistry (3)
(Same as Chemistry 371). Prerequisite: Chemistry 261 and either Biology 11 or Chem 262. The chemistry and function of cell constituents, and the interaction and conversions of intracellular substances. Three hours of lecture per week. Students may not receive credit for both Biology 371 and Chemistry 371. Biology 371 may not be used to fulfill the 300-level lecture course requirement for the B.S. in Biology.

375 Techniques in Biochemistry (2)
Prerequisite: Biology 371 or Chemistry 371 (may be taken concurrently). Laboratory activities introducing fundamental qualitative and quantitative biochemical techniques.

376 Topics in Biochemistry (3)
Prerequisite: Biology 371. Topics include control of cellular metabolism, membrane transport mechanisms of action of enzymes and hormones, and enzyme kinetics. Three hours of lecture per week.

378 Protein Biochemistry Laboratory (2)
Prerequisite: Biology 375 or consent of instructor. Exploration of various techniques and tools for purification, analysis, and characterization of proteins. Three and one-half hours of laboratory per week.

380 Behavioral Ecology (3)
Prerequisite: Biology 280 (Biology 220 recommended). Topics in animal behavior with an emphasis on ecological and evolutionary aspects of behavior. Topics may include the role of behavior in population regulation, habitat selection and spacing, feeding and predator-prey interactions, sexual selection, evolution of mating systems, and new approaches to animal communication. Three hours of lecture per week. Students may not receive credit for both Biology 380 and 480.

381 Theoretical Systematics and Evolution (3)
Prerequisite: Biology 341 or equivalent. Mechanisms of speciation, the role of such phenomena as isolation, hybridization, polyploidy, gene flow, and breeding systems in the evolution and maintenance of species and modern theoretical systematics in phylogenetic reconstructions. Three hours of lecture per week. Students may not receive credit for both Biology 381 and 481.
383 Introduction to Geographic Information Systems (3)
Prerequisite: Biology 220, 388 or equivalent, and consent of instructor; short course in UNIX operating systems recommended. 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. Students will have hands-on use of GIS software using UNIX-based computer workstations. Three hours of combined lecture and computer operations per week. Students may not receive credit for both Biology 383 and 483.

385 Wildlife Ecology and Conservation (3)
Prerequisite: Biology 220, and junior standing. This course will provide a basic survey of the ecological issues involved in conservation and management of wild animals. Topics will include population dynamics and regulation, habitat management, endangered species, wildlife legislation, predator-prey interactions, human-wildlife conflicts, sustainable use of wildlife. There will be a strong emphasis on temperate ecosystems, but many examples will be drawn from tropical ecosystems. Use of computer simulation models in wildlife conservation and management will be included. Three hours of lecture per week.

386 Wildlife Ecology and Conservation Laboratory (2)
Prerequisite: Biology 385 (may be taken concurrently) or consent of instructor. This course will provide field and laboratory experiences to accompany Biology 385. Field trips will emphasize field research techniques, including methods for sampling animal populations and their habitat. Considerable emphasis will be placed on learning to identify common vertebrates of Missouri streams and forests. Laboratory periods will be used to discuss methods of data analysis, computer simulations, as well as further emphasis on identification. Three and one-half hours of lab per week. Several one- to two-day field trips will be required as well.

387 Tropical Ecology and Conservation (3)
Prerequisite: Biology 220, 341, 442 or equivalent. This course will cover research areas in tropical population, community and ecosystems ecology, with emphasis on interspecies 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 nonrenewable resources. Students may not receive credit for both Biology 387 and 487. Three hours of lecture per week.

388 Biometry (3)
Prerequisite: Math 30 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 hypotheses; 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.

389 Senior Seminar (2)
Prerequisite: Senior standing. Required of biology majors. Presentation of selected papers by students. May not be taken for graduate credit.

390 Research (1-3)
Prerequisite: Consent of the Biology 390 course coordinator. Generally restricted to junior and senior standing. Research (laboratory and/or library) in an area selected by the student in consultation with and under the supervision of a faculty research adviser. Credit arranged. Course may be repeated for a total of up to 5 credit hours. No more than 2 credit hours may be applied toward the minimum number of biology course credits for the major in biology.

392 Selected Topics (1-10)
Prerequisite: Junior standing and consent of instructor. Selected topics in biology. The topics will vary each semester. Topics available in the department office. Credit arranged. May be taken more than once for credit.

393 Research Methods in the Health Sciences (3)
Prerequisite: Psychology 201 or equivalent. Develops an understanding of the research process as applied to allied health. The value and purpose of research within an ethical/legal context is explored. Qualitative and quantitative research methods and approaches to solve problems are examined. Students are actively involved in evaluating, critically analyzing and interpreting data to determine implications for practice. Offered exclusively for students meeting Clinical Lab Science or Cytotechnology requirements in the Clinical Program at Jewish Hospital College of Nursing and Allied Health.

395 Field Biology (3)
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. Students may not receive credit for both biology 395 and 440.
396 Introduction to Marine Science (3)  
Prerequisite: Biology 11 and 12 or their equivalents, (Biology 264 and 266 recommended). A multidisciplinary study of the ocean environment. Topics to include the geology of ocean basins, atmospheric and astronomic effects on the motion of water, chemical and physical properties of seawater, and the adaptations and diversity of marine organisms to their environment. Topics will include the ecology of various benthic and pelagic marine communities and human impact on the world's oceans. Offered in Winter Semester only.

398 Introduction to Marine Science Laboratory (2)  
Prerequisite: Biology 396 and consent of instructor. An intensive laboratory and field study of selected North American marine communities. Based on a two-week field trip to Florida and offered during the Spring Intersemester, following the lecture course (Biology 396) of the preceding winter semester. Students must pay their own travel and living expenses.

399 Science Teaching Intern Seminar (3)  
Prerequisite: Biology 285 and 286. Addresses the application of educational philosophy, science curriculum, teaching strategies, and instructional technology in the classroom setting. Offered concurrently with SecEd 290, Secondary School Student Teaching.

405 Topics in Ecology, Evolution, and Systematics (1)  
Prerequisite: Graduate standing. Presentation and discussion of current faculty and student research projects in behavior, ecology, evolution, and systematics. May be repeated for a maximum of 3 credit hours. One hour per week.

406 Topics in Molecular, Cellular and Developmental Biology (1)  
Prerequisite: Graduate standing. Presentation and discussion of student and faculty research projects and/or current research articles in molecular, cellular and developmental biology. May be repeated for a maximum of 3 credit hours. One hour per week.

407 Topics in Floristic Taxonomy (1)  
Prerequisite: Biology 250 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.

414 Advanced Environmental Physiology (3)  
Prerequisite: Biology 213. Advanced aspects of physiological responses of animals to environmental changes. Adaptation of organisms to various environments. Three hours of lecture, one hour of discussion or seminar per week. Students may not receive credit for both Biology 314 and 414.

417 Advanced Immunology (3)  
Prerequisite: Biology 317. Advanced consideration of techniques of measuring antigen-antibody interaction; immunogenetics as applied to cellular immunity and transplantation; evolution of the immune response. Three hours of lecture per week.

423 Advanced Tropical Resource Ecology (3)  
Prerequisite: Biology 220, and either Biology 246 or Biology 280 or their equivalent, or consent of the instructor. A lecture and seminar course that applies the behavioral ecology paradigm to the patterns of use and exploitation of resources in the tropics by humans. Students may not receive credit for both Biology 323 and Biology 423. Three hours of lecture, and one hour of discussion or seminar per week. Offered in odd years.

424 Advanced Tropical Resource Ecology Field Studies (2)  
Prerequisite: Biology 423 (may be taken concurrently). The field component to the lecture and seminar course that applies the behavioral ecology paradigm to examine the patterns of use and exploitation of resources in the tropics by humans. Two weeks of intensive field research and lectures in Guyana, South America the week prior to and during spring break (trip costs to be borne by student). Graduate students will be required to write an extra paper on tropical resource use problems. Students may not receive credit for both Biology 324 and Biology 424. Offered in odd years.

425 Advanced Tropical Vertebrate Ecology (3)  
Prerequisite: Biology 220, and either Biology 246 or Biology 280 or their equivalent, or consent of the instructor. This course explores the role of neotropical vertebrate individuals in the expression of patterns and processes in populations and communities that elucidate the degree to which organic evolution can be ascribed to natural selection and/or random events. Three weeks of intensive lecture, discussion and individual field studies in Guyana, South America during July-August (trip costs to be borne by student). Graduate students will be required to write a paper on a topic relevant to the course. Class size 12 students. Students may not receive credit for both Biology 325 and Biology 425. Offered in even years.

426 Advanced Gene Expression in Eukaryotes (3)  
Prerequisite: Biology 224 and 371. An advanced discussion of the current concepts of molecular Biology as they apply to understanding genetic regulation of DNA, RNA, and protein synthesis and function in the cell. Three hours of lecture, one hour of discussion or seminar per week. Students may not receive credit for both Biology 326 and 426.
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428 Advanced Techniques in Molecular Biology (4)
Prerequisite: Biology 327 and either Biology 326 or Biology 338. An in-depth look at the theory and practice of current technologies in molecular biology. The focus will be on techniques used to study gene structure and expression. Laboratory will present hands-on experience with these techniques. One hour of lecture, six hours of laboratory, and one hour of seminar per week. Students may not receive credit for both Biology 328 and Biology 428.

429 Advanced Molecular Evolution (3)
Prerequisite: Biology 246 or 341, 326 or 338, or consent of instructor. Advanced lectures and class discussions concerning the evolutionary processes that have changed genetic material over time. This course will include the dynamics of genes in populations and several aspects of evolutionary change at the molecular level. Students may not receive credit for both Biology 329 and 429.

431 Graduate Internship in Biotechnology (1-4)
Prerequisite: Graduate standing and enrollment in graduate Biotechnology Certificate Program. Six credit hours maximum (maximum of eight combined credit hours of 490 and internship). Internship will consist of 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 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.

433 Advanced Nucleic Acid Structure and Function (3)
Prerequisites: Biology 224 and 371 or equivalent or consent of instructor. Comprehensive view of structural properties of DNA and RNA that promote molecular interactions and biological function. Topics include physical properties of nucleic acids, 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. May not receive credit for both Biology 333 and 433.

434 Advanced Virology (3)
Prerequisite: Biology 216 and 224. An advanced comparative study of the structure, reproduction, and genetics of viruses. Three hours of lecture, one hour of discussion or seminar per week. Students may not receive credit for both Biology 334 and 434.

435 Advanced Molecular Cell Biology (3)
Prerequisite: Biology 326 or 338 and Biology 371, or equivalent. This course is designed to explore the structural organizational and processes in living cells. Topics of discussion will include gene product processing and transport, organelle biogenesis and assembly, cell-cell communication, control of gene expression, cytoskeletal structure and function, and normal and abnormal cell differentiation. Particular attention will be given to discussion of the current literature. This course is also designed to help unify genetics, biochemistry, and physiology. Three hours of lecture, one hour of discussion per week. Students may not receive credit for both Biology 335 and Biology 435.

438 Advanced Gene Expression in Prokaryotes (3)
Prerequisite: Biology 216 and 224. Advanced aspects of the principles and mechanisms of inheritance and transfer of genetic material in microorganisms. Includes the study of mutation, gene transfer, and genetic manipulation of microorganisms. Three hours of lecture, one hour discussion or seminar per week. Students may not receive credit for both Biology 338 and Biology 438.

439 Advanced Plant Molecular Biology and Genetic Engineering (3)
Prerequisite: Biology 326 or 338. Topics will include plant cell and developmental biology, DNA transfer into plants, using mutations to identify genes and their functions, regeneration of plants in tissue culture, signal transduction mechanisms, molecular biology of plant organelles, developmental engineering, metabolic engineering, plant microbe interactions, and engineered resistance to pathogen attack. Three hours of lecture and one hour of seminar per week. Student may not receive credit for both Biology 339 and Biology 439.

440 Ecological Research in Temperate Zones (3)
Prerequisite: Graduate standing and consent of instructor. This course will visit several temperate ecosystems with the objectives of learning about the natural history of these areas together with learning how to design projects and conduct field research addressing current ecological theories in a temperate setting. Several faculty members will participate in this course. Temperate sites to be visited will likely include Missouri Ozarks, Great Smokey Mountains, Indiana dunes, and Southern Illinois bottomland and cypress swamp forest. Students will be required to pay costs of travel and of field trips. Students may not receive credit for both Biology 395 and 440. Two hours of discussion (during weekday), four-six weekend field trips (leave Friday, return Sunday), and several (2-4) Saturday field trips during the first eight weeks of semester.
441 Advanced Population Biology (3)
Prerequisites: Bio 220 and 224 (Bio 246 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. A discussion section will focus on mathematical elements of population biology models. Three hours of lecture, and one hour of discussion per week. Students may not receive credit for both Bio 341 and 441.

442 Population and Community Ecology (3)
Prerequisite: Biology 220 or 341 or their equivalents. 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. Three hours of lectures per week.

444 Advanced Gene Activity During Development (3)
Prerequisite: Biology 235 and 326/426 or consent of instructor. Advanced discussion of selected experimental systems in which molecular genetic and cell biological approaches have provided insights about the genes and/or gene products that regulate animal development. Three hours of lecture and one hour of discussion per week. Students may not receive credit for both Biology 344 and Biology 444.

445 Public Policy of Conservation and Sustainable Development (3)
(Same as Pol Sci 452.) 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 the environmental policy-making in developing and developed economics.

446 Theory and Application of Conservation Biology (3)
Prerequisite: Biology 341, 442, or equivalent; or consent of instructor. Prerequisites may be taken concurrently. Advanced analysis of conservation theory with emphasis on conservation of populations, their genetic diversity, and the biodiversity of habitats. Applied aspects of conservation and sustainable development will be illustrated through case studies presented by conservation professionals.

447 Internship in Conservation Biology (1-4)
Prerequisite: Biology 445 or 446 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.

448 Advanced Evolution of Animal Sociality (3)
Prerequisite: Biology 228, 220, or 341 recommended or consent of instructor. The evolution of sociality, including a critical examination of sociobiological theories and alternative approaches of social evolution. Survey of social organization and behavior in arthropods, with an emphasis on social insects, and vertebrates. Two hours of lecture and one hour of discussion per week. Students may not receive credit for both Biology 348 and Biology 448.

453 Evolution of Plant Development (3)
Prerequisites: Graduate standing and understanding of basic molecular biology, plant morphology and physiology, and phylogenetic theory, or consent of instructor. Covers plant developmental genetics and morphogenesis in an evolutionary context. Readings in literature on developmental genetics, phylogenetic relationships, developmental morphology, and molecular evolution of developmentally important genes. Topics may include evolution and development of embryos, seedlings, shoots, roots, vascular systems, sporangia, flowers, gametophytes, seeds, and fruit. Three hours of lecture and discussion per week.

455 Advanced Evolution and Phylogeny of Seed Plants (3)
Prerequisites: Biology 246 or 250, or equivalent. Advanced approaches in examination of the evolution of, and relationships among, major lines of seed-bearing plants, both extinct (Bennettitales, cordaites, etc.) and extant (conifers, cycads, ginkgo, Gnetales, and flowering plants). Criteria for the assessment of morphological homology are examined, and wherever possible the evolution of morphological structures is related to their function. Includes use of cladistic methods and practical exercises in the analysis of large morphological data matrices using PAUP & MacClade. Two hours of lecture per week and one hour of laboratory per week to be arranged. Does not fulfill a laboratory requirement for biology majors. Students may not receive credit for both Biology 355 and Biology 455.
458 Evolutionary Ecology of Plants (3)
Prerequisite: Biology 388 and 341, or consent of instructor. This course will explore topics concerning evolution in natural plant populations, emphasizing current empirical research on the genetics and ecology of plant populations. Specific topics will include natural selection and pollination and seed dispersal, role of genetic drift, coevolution between plants and animals, molecular evolution, speciation, conservation of natural populations, and artificial selection. A formal research paper on a topic concerning the evolutionary ecology of plants will be required. Three hours of lecture per week.

459 Advanced Evolutionary Ecology of Animals (3)
Prerequisite: Biology 220, 280 and one of 224, 246; or their equivalents; or consent of instructor. This course examines the interactions of the evolutionary forces that determine the distribution and abundance of animals. It explores the patterns and processes in populations and communities that should elucidate the degree to which organic evolution can be ascribed to natural selection and/or random events. Analysis of the theoretical constructs of evolutionary ecology and an examination of the empirical evidence from primary sources that claim to support or refute these theories will also be covered. A formal paper in the form of an NSF research proposal on a topic concerning the evolutionary ecology of animals will be required. Students may not receive credit for both Biology 359 and 459. Three hours of lecture per week.

462 Advanced History of Natural History:
Systematics, Ecology, and Natural History in the Strict
Sense (3)
Prerequisites: At least 3 biology courses beyond the introductory level or consent of instructor. Topics include principles of ethnobiological classification, Aristotle and Theophrastus and their incorporation in western science, and natural history in the Renaissance. Focuses on breakup of natural history after 1750; integration of natural history and botany in popular culture and its consequences for professional disciplines; relationships between new botany and classification botany, among botany, zoology and biology at the end of 19th century, and between field and laboratory science; and conflict between systematic schools in later 20th century. Three hours of lecture per week. Comprehensive paper on topic of student’s choice required. Credit not granted for more than one of Biology 362, History 245, and Biology 462.

465 Methods in Plant Systematics (4)
Prerequisite: Biology 351 or consent of instructor. A techniques course covering the use of anatomical, cytological, chemical, palynological and numerical methods in taxonomic research. Herbarium management, databases, scientific publication and library techniques will also be covered. Two hours of lecture and discussion and three and one-half hours of laboratory per week.

469 Advanced Social Insects (3)
Prerequisites: Bio 367 and upper division standing or consent of instructor. An advanced study of social insects as a model system for the investigation and synthesis of topics in evolutionary biology. Basic aspects such as classification, diversity, and natural history; conceptual approaches to topics for which social insects yield novel insights. Three hours of lecture per week. Students may not receive credit for both Bio 369 and 469.

474 Hormones, Pheromones, and Behavior (3)
Prerequisite: Biology 213 and 280 required, Biology 370 recommended. This course will survey the hormonal and phenomenal control of behavior in both invertebrates (annelids, arthropods, and molluscs) and vertebrates (from fish to primates). Particular attention will be given to organizational and activational effects of hormones on sexual, parental, and aggressive behaviors. Interactions between hormonal, pheromonal, and neural control of behavior will be discussed. Three hours of lecture per week.

480 Advanced Behavioral Ecology (3)
Prerequisite: Biology 280 (Biology 220 recommended). Topics in animal behavior with an emphasis on ecological and evolutionary aspects of behavior. Topics may include the role of behavior in population regulation, habitat selection and spacing, feeding and predator-prey interactions, sexual selection, evolution of mating systems, and new approaches to animal communication. Three hours of lecture, one hour discussion or seminar per week. Students may not receive credit for both Biology 380 and 480.

481 Advanced Theoretical Systematics and Evolution
(3)
Prerequisite: Biology 341 or equivalent. Advanced aspects of mechanisms of speciation, the role of such phenomena as isolation, hybridization, polyploidy, gene flow and breeding systems in the evolution and maintenance of species, and modern theoretical systematics in phylogenetic reconstruction. Three hour of lecture, one hour of discussion or seminar per week. Students may not receive credit for both Biology 381 and 481.
483 Applications of Geographic Information Systems (3)  
Prerequisite: Biology 220, Biology 388 or equivalent, and consent of instructor; short course in UNIX operating systems recommended. 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 a spatial analysis. Examples from a wide range of disciplines are used 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 UNIX-based computer workstations. A formal research paper on GIS applications in biological research will be required. Three hours of combined lecture and computer operations per week. Students may not receive credit for both Biology 383 and 483.

485 Problems in Teaching College Biology (3)  
(Same as ADU ED 435.) Prerequisite: Teaching experience, 30 semester hours in biology, and consent of instructor. Basic philosophies underlying undergraduate biology education at the college level will be presented and examined with concern for establishment of an individual philosophy in the prospective college teacher. Teaching techniques suitable for college-level instruction will be considered, practiced, and evaluated. Advantages and limitations of various methods of instruction will be considered with respect to current research findings.

486 Techniques in Teaching College Biology for Graduate Students (2)  
(Same as SEC ED 486.) Prerequisite: Graduate standing and teaching assignment. Discussion and practice of techniques specific to instruction in the life sciences. Consideration will be given to teaching strategies, curriculum design, evaluation, instrumentation, and student-teacher interaction. Recommended for all graduate students with teaching assistantships.

487 Advanced Tropical Ecology and Conservation (3)  
Prerequisite: Biology 220, or 341, or 442, or their equivalent. This course will cover research areas in tropical population, community and ecosystem ecology, with emphasis on interspecies 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 developments of strategies leading to sustained use of nonrenewable resources. A research proposal designed to investigate current topic in tropical ecology will be required. Students may not receive credit for both Biology 387 and 487. Three hours of lecture per week.

489 Graduate Seminar (2)  
Presentation and discussion of various research problems in biology. Graduate student exposure to the seminar process.

490 Graduate Research in Biology (1-10)  
Research in area selected by student in consultation with faculty members.

491 Graduate Research Practicum (1-2)  
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 members.

492 Topics in Biology (2-5)  
In-depth studies of selected topics in contemporary biology. May be repeated. Three hours of lecture per week.
Faculty

Gordon K. Anderson, Professor*, Chairperson
Ph.D., University of Glasgow

Lawrence Barton, Professor*
Ph.D., University of Liverpool

James S. Chickos, Professor*
Ph.D., Cornell University

Joyce Y. Corey, Professor*
Ph.D., University of Wisconsin

Wesley R. Harris, Professor*
Ph.D., Texas A. and M. University

David W. Larsen, Professor Emeritus*
Ph.D., Northwestern University

Robert W. Murray, Curators' Professor Emeritus*
Ph.D., Yale University

William J. Welsh, Professor*
Ph.D., University of Pennsylvania

Lee Brammer, Associate Professor*
Ph.D., University of Bristol

Valerian T. D'Souza, Associate Professor*
Ph.D., University of Detroit

David L. Garin, Associate Professor Emeritus*
Ph.D., Iowa State University

Harold H. Harris, Associate Professor*
Ph.D., Michigan State University

Jane A. Miller, Associate Professor Emerita*
Ph.D., Tulane University

James J. O'Brien, Associate Professor*
Ph.D., Australian National University

Christopher D. Spilling, Professor*
Ph.D., The University of Technology, Loughborough

Keith J. Stine, Associate Professor*
Ph.D., Massachusetts Institute of Technology

Rudolph E. K. Winter, Associate Professor Emeritus*;
Ph.D., The Johns Hopkins University

Zhi Xu, Associate Professor*
Ph.D., University of Pittsburgh

Donald F. Becker, Assistant Professor*
Ph.D., University of Minnesota

F. Christopher Pigge, Assistant Professor*,
Director of Graduate Studies
Ph.D., University of North Carolina

Joseph B. Dence, Adjunct Associate Professor
Ph.D., California Institute of Technology

William L. Neumann, Adjunct Associate Professor
Ph.D., University of Missouri-St. Louis

Robert G. Orth, Adjunct Associate Professor
Ph.D., Case Western Reserve University

Nigam P. Rath, Research Associate Professor
Ph.D., Oklahoma State University

William P. Ridley, Adjunct Associate Professor
Ph.D., University of Minnesota

Janet B. Wilking, Research Associate Professor*
Ph.D., Washington University

John Gutweiler, Lecturer
Ph.D., Saint Louis University

Technical Staff

Kenneth Owens, Glassblower

Joseph Kramer, Electronics Technician II

Gordon Kerschmann, Electronics Technician

Donna Kramer, Coordinator, Laboratory Operations

Frank L. May, Research Investigator

Norman Windsor, Senior Electronics Technician

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration
The Department of Chemistry and Biochemistry offers courses leading to the B.A. in chemistry; the B.S. in chemistry (chemistry or biochemistry option); in cooperation with the College of Education, the B.S. in education with emphasis in chemistry and the B.A. in chemistry with teacher certification.

The department is accredited by the American Chemical Society. Students completing the B.S. degree in chemistry are certified to the American Chemical Society and are well-prepared for graduate study in chemistry or a career in the chemical industry.

The department also offers work leading to the M.S. degree in chemistry, with or without a thesis. The Ph.D. degree in chemistry is offered in the emphasis areas: inorganic, organic, physical, and biochemistry. In addition to a balanced program of basic graduate courses, the department offers special topics courses and seminars in current research areas. Research is being carried on in each of the above areas by faculty members, postdoctoral associates, and graduate and undergraduate students.

The department provides students with opportunities for strong interaction with faculty representing the various areas. Students and faculty working in one area consult freely with members in other areas. In addition, there are joint research projects involving faculty and students from two or more areas.

Fellowships and Scholarships

William and Erma Cooke Chemistry Fellowships are given annually to outstanding full-time chemistry majors who are at least sophomores and have financial need.

The Lawrence Barton Scholarship is given annually to a chemistry major who is enrolled in at least 9 credit hours per semester. Preference is given to juniors and to first generation college students, and to students who demonstrate financial need.
The Women in Chemistry Scholarship is given to a female student over the age of 24, who is a chemistry major and has completed at least 60 credit hours. The student is expected to work with a faculty member on an undergraduate research project.

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 approximately 10 junior or senior chemistry majors annually. The awardees are selected by the faculty on the basis of merit, and the scholarships consist of a stipend for books, educational materials, and Student Affiliate membership dues to the American Chemical Society.

The Mallinckrodt Fellowship is given annually to an outstanding chemistry doctoral student who has completed the teaching and course work component of the program. It consists of a full stipend for the academic year.

Alumni Graduate Research Fellowships are available for summer study for selected chemistry graduate students. The selections are based on merit, and the stipend is 20 percent of the academic year GTA stipend.

A series of undergraduate awards are given each year to the outstanding students. The Chemical Rubber Company Freshman Chemistry Award is given to the outstanding student in introductory chemistry, the American Chemical Society Division of Analytical Chemistry Award is given to the outstanding student in analytical 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 Award and the American Institute of Chemists 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 Chemistry 290, Chemical Research, and must have presented an acceptable thesis.

Undergraduate Studies

General Education Requirements
Students must satisfy the university and college general education requirements. 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. It is recommended that candidates for the B.S. degree fulfill the language requirement in German or French, but any language which meets the college requirement for the B.A. degree is acceptable. Chemistry majors normally include Language 100 in their foreign language sequence.

Satisfactory/Unsatisfactory Restrictions Chemistry majors may not take required chemistry, mathematics, or physics courses on a satisfactory/unsatisfactory basis, nor may B.S. degree candidates take the 2 elective hours in science on this option.

Degree Requirements

Bachelor of Arts in Chemistry This degree is intended primarily for preprofessional students in the health science and related areas, as well as prelaw students interested in patent law. Candidates must complete the following chemistry courses:

11, Introductory Chemistry I
12, Introductory Chemistry II
122, Quantitative Analysis
202, Introduction to Chemical Literature
231, Physical Chemistry I
232, Physical Chemistry II
233, Laboratory in Physical Chemistry I
241, Basic Inorganic Chemistry
261, Structural Organic Chemistry
262, Organic Reactions
263, Techniques of Organic Chemistry
289, Seminar (1 credit)

In addition, candidates must complete one laboratory course chosen from Chemistry 234, 323, 343, 364, or 373.

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. 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
371, Biochemistry
372, Advanced Biochemistry
373, Biochemical Techniques
376, Interdisciplinary Topics in Biochemistry or
377, Physical Biochemistry
Biology
11, Introductory Biology I
224, Genetics
232, Cell Structure and Function
327, Introduction to Biotechnology or
326, Gene Expression in Eukaryotes

Students may obtain a minor in biology by adding Biology 12 to the curriculum described above. The Biology department also offers a certificate in biochemistry.

Bachelor of Science in Chemistry.
This is the first professional degree in chemistry. It 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.

Chemistry Option
Candidates must complete the requirements for the B.A. degree in chemistry. In addition, the following chemistry courses are required:

234, Laboratory in Physical Chemistry II
321, Instrumental Analysis
323, Laboratory in Instrumental Analysis
341, Inorganic Chemistry I
343, Inorganic Reactions
364, Synthetic and Analytical Methods of Organic Chemistry
371, Biochemistry

Students must also take two elective hours of advanced work in chemistry at the 200 level or above. Students are encouraged to take Chem 290, Chemical Research, to fulfill the advanced elective requirement.

Biochemistry Option
Candidates must complete the requirements for the B. A. degree in chemistry. In addition, the following chemistry and biology courses are required:

Biology
11, Introductory Biology I
232, Cell Structure and Function or
224, Genetics

Chemistry
321, Instrumental Analysis
323, Laboratory in Instrumental Analysis
341, Inorganic Chemistry I
371, Biochemistry
372, Advanced Biochemistry
373, Biochemical Techniques
376, Interdisciplinary Topics in Biochemistry, or
377, Physical Biochemistry or

3 credits of Chemistry 290: Chemical Research, or 3 credits of Biology 390: Research.

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.

Fifty-one hours of chemistry courses may be applied toward the degree. Each candidate must present a seminar and pass a comprehensive examination during the senior year.

Related Area Requirements

Bachelor of Arts and Bachelor of Science in Chemistry
Candidates for both degrees must also complete:
Math 80, Analytic Geometry and Calculus I
Math 175, Analytic Geometry and Calculus II
Math 180, Analytic Geometry and Calculus III
*Physics 111, Physics: Mechanics and Heat
*Physics 112, Physics: Electricity, Magnetism, and Optics

*If neither of these courses included a laboratory, a separate laboratory course is required.

B.S. degree in Secondary Education with an Emphasis in Chemistry
All candidates must enroll in a program that includes Levels I, II, and III course work in the College of Education. In addition, students must complete the following Science Core Courses and those listed under Chemistry Endorsement:

Science Core Courses:
Philosophy 280, Philosophy of Science
Biology 11, Introductory Biology I
Biology 12, Introductory Biology II
Chemistry 11, Introductory Chemistry I
Chemistry 12, Introductory Chemistry II
Geology 1, General Geology
Atmospheric Science 1, Elementary Meteorology

Chemistry Endorsement
Chemistry 122, Quantitative Analysis
Chemistry 231, Physical Chemistry I
Chemistry 232, Physical Chemistry II
Chemistry 261, Structural Organic Chemistry
Chemistry 262, Organic Reactions
Chemistry 263, Techniques of Organic Chemistry
Chemistry 371, Biochemistry
Chemistry 280 or Education 240, Methods of Teaching Science in Secondary Schools
Chemistry 283, Teaching Intern Seminar
Bachelor of Arts in Chemistry with Teacher Certification
Students must complete the B.A. in chemistry requirements, as well as the requirements for teacher certification. (See the College of Education section of this *Bulletin*.)

Minor in Chemistry

Requirements for the Minor
Students may earn a minor in chemistry by completing the following program. The following five courses are required:

Chem
11, Introductory Chemistry I
12, Introductory Chemistry II
122, Quantitative Analysis
261, Structural Organic Chemistry
263, Techniques of Organic Chemistry

One course from the following list must be completed:

Chem
231, Physical Chemistry I
241, Basic Inorganic Chemistry
262, Organic Reactions
371, Biochemistry (same as Biology 371)

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 UM-St. Louis.

Graduate Studies

Admission Requirements
Individuals with at least the equivalent of the B.A. degree in chemistry 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, having completed at least 15 credit hours, may request to transfer to the Ph.D. program by petition to the department.

The department admissions committee, which makes admission recommendations to the chairperson, usually 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. For further information, contact the Graduate Studies Committee, Department of Chemistry.

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 (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.

Distribution Requirement
Students must take chemistry courses for graduate credit at the 300 or 400 level, including at least one in three of the four areas of chemistry: organic, inorganic, physical, and biochemistry. Intermediate level courses (Chem 303, and 306) and Inorganic Chemistry I (Chem 341) may not be used to satisfy this distribution requirement.

Master's Degree Requirements

Master of Science in Chemistry Candidates for the M.S. degree in chemistry must demonstrate proficiency in organic, inorganic, physical, and analytical chemistry within two years of initial enrollment.

A minimum of 30 hours is required, including 3 hours in Chem 489, Chemistry Colloquium. No more than 3 hours in Chem 489, and no more than 6 hours of Chem 30x (intermediate-level courses) may be applied toward the required minimum of 30 credit hours. Students are not required to take the cumulative examinations.
Master of Science in Chemistry with Thesis Students selecting this option must be enrolled full-time in the day division for at least two consecutive semesters. During this time, students are expected to enroll in Chem 490, Graduate Research in Chemistry, and work on their theses. A maximum of 12 hours of Chemistry 490 may be applied toward the required 30 hours. At least 9 hours must be at the 400 level, excluding Chemistry 490. A maximum of 9 hours in 200-level or above courses outside the department may be accepted if students receive prior approval of their advisers and the department. 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 400 level. A maximum of 6 credits of Chemistry 490, Graduate Research in Chemistry, may be included in place of 300-level courses. A maximum of 12 hours taken in 200-level or above courses outside the department may be accepted with prior approval of the Director of Graduate Studies.

Doctoral Degree Requirements

Incoming doctoral students must demonstrate proficiency in organic, inorganic, physical, and analytical chemistry within one year of initial enrollment. A minimum of 60 hours is required, including research hours.

Cumulative Examinations In addition to the Ph.D. requirements set forth by the Graduate School, students seeking the Ph.D. in chemistry must take a series of cumulative examinations given eight times a year. Students must pass at least two examinations per year and a total of eight examinations by the end of their third year in the Ph.D. program. At least six of these examinations should be in the student's specialization area. The examinations are usually given the second Saturday of each month, September through April. The mechanism for designing and deciding on passing and failing grades for each examination resides with faculty members in each specialization area.

Seminar Requirement Students must present a seminar in their third year and during each subsequent year. The third year seminar may be the defense of the doctoral dissertation proposal. One of the seminars is for the purpose of describing dissertation research. Students must enroll in Chemistry 489, Chemistry Colloquium, each semester they are in residence.

Advancement to Candidacy In addition to general Graduate School requirements for advancement to candidacy, students must complete the following:

1) 21 hours of nondissertation work. This may not include:

   Chem 303, Intermediate Physical Chemistry
   Chem 321, Instrumental Analysis
   Chem 323, Laboratory in Instrumental Analysis
   Chem 341, Inorganic Chemistry I
   Chem 343, Inorganic Reactions
   Chem 419, Advanced Reading in Chemistry
   Chem 448, Inorganic Problem Seminar
   Chem 468, Organic Problem Seminar
   Chem 478, Biochemistry Problem Seminar
   Chem 481, Introduction to Graduate Study in Chemistry
   Chem 482, Introduction to Graduate Research in Chemistry
   Chem 489, Chemistry Colloquium

   but should include at least one in three of the four areas of chemistry: organic, inorganic, physical, and biochemistry. Courses in areas other than chemistry may be included with prior departmental approval.

   2) Pass eight cumulative examinations.
   3) Present at least one seminar to the department on the dissertation research.
   4) Participate in the undergraduate academic program as a teaching assistant for at least one semester.
   5) Be in good standing.

Dissertation Four copies of the dissertation must be submitted upon completion of the graduate research problem.

Probation and Dismissal Students are dismissed from the program if they fail to pass the required number of cumulative examinations before the end of each year as precandidates for the Ph.D. or otherwise fail to meet the standards set forth by the Graduate School.

Career Outlook

The B.S. degree in chemistry is the usual foundation for graduate study in chemistry, while any bachelor's degree in chemistry provides students with professional competence to enter the chemical industry. The St. Louis metropolitan area is a major center for industrial chemistry, and the demand for graduates consistently exceeds the supply.

A major in chemistry provides students with excellent preprofessional training in the health sciences. A double major in chemistry and biology is often chosen by premedical and predental students and those interested in graduate work in biochemistry and biology. A minor in chemistry provides the minimum qualifications and training for a position as a laboratory technician in industry, hospital laboratories, etc.
Course Descriptions

Prerequisites may be waived by consent of the department or instructor. Some courses as indicated in the course description may be taken concurrently with the listed offering. Consult your adviser for further information.


1 General Chemistry I (3)
Prerequisite: Satisfactory score on math placement test. A broad introductory survey of chemical principles. Chem 1 plus Chem 9 are equivalent to Chem 11. This alternative may be attractive to students who are not mathematically prepared for Chem 11. Chemistry majors may not include both Chem 1 and 11 in the 120 hours required for graduation. Three hours of lecture per week.

2 General Organic Chemistry (3)
Prerequisite: Chem 1. A short course in organic chemistry with biochemical applications. This course should not be taken by majors in the physical or biological sciences. Chemistry majors may not include Chem 2 in the 120 hours required for graduation. Three hours of lecture per week.

3 General Chemistry Laboratory (2)
Prerequisite: Chem 1 (may be taken concurrently). Experiments to acquaint students with chemistry in the laboratory. No student may take both Chem 3 and 9 for credit. Three and one-half hours of laboratory per week.

5 Chemistry for the Health Professions (4)
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 Chemistry 5 nor 6 in the 120 hours required for graduation. Four hours of lecture per week.

6 Organic and Biochemistry for the Health Professions (2)
Prerequisites: any college chemistry course. An introduction to organic reactions and biochemistry. Chemistry 6 is offered during the second half of the semester. Four hours of lecture per week.

9 General Chemistry II (3)
Prerequisites: Chem 1 (or equivalent and consent of instructor) and Math 30 and 35 (may be taken concurrently). Additional work on the topics of Chem 1, with emphasis on quantitative material. Introduction to the chemical laboratory. Chem 1 plus Chem 9 is equivalent to Chem 11 for science majors. Chemistry majors who receive credit for Chem 1 and Chem 9 may not also include Chem 10 or Chem 11 in the 120 hours required for graduation. No student may take both Chem 3 and Chem 9 for credit. Two hours of lecture per week, three and one-half hours of lab or one hour of discussion on alternate weeks.

10 Chemistry in the Environment and Everyday Living (3)
This course examines the role of chemistry in everyday life and in the environment, and is intended for students not pursuing scientific or engineering majors. Chemical principles are introduced to the extent necessary for understanding of issues, but this course does not provide the basis for further technical courses. Two hours of lecture per week; on alternate weeks, one hour of discussion or two hours of laboratory.

11 Introductory Chemistry I (5)
Prerequisites: Mathematics through college algebra and trigonometry (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 1 and 11, nor both Chem 10 and 11 in the 120 hours required for graduation. Three hours of lecture and one hour of discussion per week; one hour of laboratory-lecture and three hours of laboratory per week.

12 Introductory Chemistry II (5)
Prerequisite: Chem 11 or advanced placement. Lecture and laboratory are a continuation of Chem 11. Three hours of lecture and one hour of discussion per week; one hour laboratory-lecture and three hours of laboratory weekly.

13 Special Topics in Introductory Chemistry (1-5)
Prerequisite: Consent of instructor. A lecture or laboratory course to assist transfer students in meeting the requirements of Chem 11 and 12.

122 Quantitative Analysis (3)
Prerequisite: Chem 12. Principles and practice of elementary quantitative chemistry. The lecture treats descriptive statistics with emphasis on small samples; various types of competing equilibria pertaining to acid-base, complexometric and potentiometric titrations; and an introduction to spectrophotometric processes. The laboratory provides exercises in titrimetric, gravimetric, and spectrophotometric techniques. Both portions of the course deal with the analytical chemistry of environmentally-significant problems. Two hours of lecture and four and one-half hours of laboratory weekly.
122 College of Arts and Sciences
Chemistry and Biochemistry

202 Introduction to Chemical Literature (1)
Prerequisite: Chern 262 (may be taken concurrently) and Chern 241. The course will familiarize the student with the literature of chemistry and its use. One hour of lecture per week.

231 Physical Chemistry I (3)
Prerequisites: Chem 122 and Math 180 (may be taken concurrently), and Physics 111 (or equivalent). Principles of physical chemistry including thermodynamics, theory of gases, phase equilibria, kinetics, crystal structure, spectroscopy, and quantum mechanics. Three hours of lecture per week.

232 Physical Chemistry II (3)
Prerequisite: Chem 231. Continuation of Chem 231. Three hours of lecture per week.

233 Laboratory in Physical Chemistry I (2)
Prerequisite: Chem 231 (may be taken concurrently). Experiments designed to illustrate principles introduced in Chem 231. One hour of lecture and four and one-half hours of laboratory per week.

234 Laboratory in Physical Chemistry II (2)
Prerequisites: Chem 232 (may be taken concurrently) and Chem 233. Experiments designed to illustrate principles introduced in Chem 232. One hour of lecture and four and one-half hours of laboratory per week.

241 Basic Inorganic Chemistry (2)
Prerequisites: Chem 12. Review of principles of atomic structure, covalent and ionic bonding. Properties of the elements and synthesis, reactions and bonding aspects of important compounds of main group and transition metal compounds.

261 Structural Organic Chemistry (3)
Prerequisite: Chem 12. An introduction to the structure, properties, synthesis, and reactions of aliphatic and aromatic carbon compounds. Three hours of lecture per week.

262 Organic Reactions (3)
Prerequisite: Chem 261. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours of lecture per week.

263 Techniques of Organic Chemistry (2)
Prerequisite: Chem 261 or consent of instructor. 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.

280 Curriculum and Methods of Teaching Physical Sciences (3)
(Same as SEC ED 240.) Prerequisites: SEC ED 213 and a near-major in the subject matter. 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. To be taken prior to student teaching. This course must be completed in residence.

283 Chemistry / Physics Teaching Intern Seminar (1)
(Same as Physics 283.) Prerequisite: Chem 280 or Physics 280. A seminar to accompany student teaching covering integration of physical science curricula and methods into the classroom setting. To be taken concurrently with Secondary Student Teaching, SEC ED 290. One hour discussion per week.

289 Seminar (1)
Prerequisites: Chem 202 and senior standing. Presentation of papers by students, faculty, and invited speakers. Chemistry majors must enroll during the semester in which they intend to graduate. Completion of a comprehensive examination during one of the semesters is a course requirement. One hour of lecture and one hour of discussion per week.

290 Chemical Research (1-10)
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.

303 Intermediate Physical Chemistry (3)
Prerequisites: Chem 231, 232, 233. A graduate and professional preparatory course reviewing the basic principles of physical chemistry. Topics include thermodynamics, kinetics, and quantum chemistry. Course designed for post baccalaureate students; may not be used to fulfill requirements for undergraduate programs in chemistry. Three hours of lecture per week.

306 Intermediate Organic Chemistry (3)
Prerequisites: Chem 261, 262, 263. A graduate and professional preparatory course reviewing the basic principles of organic chemistry. Topics to include structure, physical and spectroscopic properties and reactions of major classes of organic compounds, reaction mechanisms, and a survey of synthetic methods. Course designed for post baccalaureate students; may not be used to fulfill requirements for undergraduate degree programs in chemistry. Three hours of lecture per week.

321 Instrumental Analysis (2)
Prerequisite: Chem 232. Principles and applications of modern methods of instrumental analysis for analytical chemistry measurements. Topics will be selected from the areas of electrochemistry, absorption and emission spectroscopy, chromatography, mass spectrometry, surface analysis, and nuclear magnetic resonance. Two hours of lecture per week.
323 Laboratory in Instrumental Analysis (2)
Prerequisite: Chem 321 and 233. 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.

341 Inorganic Chemistry I (3)
Prerequisites: Chem 232 (may be taken concurrently), 241 and 262. 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. Three hours of lecture per week.

343 Inorganic Reactions (2)
Prerequisite: Chem 233, 341 and 364 (364 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.

364 Synthetic and Analytical Methods of Organic Chemistry (2)
Prerequisites: Chem 122, 202 (may be taken concurrently), 262, and 263. 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 laboratory per week.

365 Spectroscopic Identification of Organic Compounds (3)
Prerequisite: Chem 364. An applied approach to the use of spectroscopic techniques in organic chemistry. Topics to include integrated applications of infrared and Raman spectroscopy, nuclear magnetic resonance (13C and 1H, cw and pulsed) and mass spectroscopy for the purpose of elucidating the structure of organic compounds. Three hours of lecture per week.

371 Biochemistry (3)
(Also as Biology 371) Prerequisite: Chem 261 and either Biology 11 or Chem 262. The chemistry and function of cell constituents, and the interaction and conversions of intracellular substances. Three hours of lecture per week. Students may not receive credit for both Biology 371 and Chemistry 371. Biology 371 may not be used to fulfill the 300-level lecture course requirement for the B.S. in Biology.

372 Advanced Biochemistry (3)
Prerequisite: Chem 371. Selected advanced topics in the chemistry of life processes. Three hours of lecture per week.

373 Biochemical Techniques (2)
Prerequisite: Chem 371 (may be taken concurrently). 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 three and one-half hours of laboratory per week.

376 Interdisciplinary Topics in Biochemistry (3)
Prerequisites: Chem 371; Chem 372 strongly recommended. Includes advanced studies of enzyme mechanisms, the role of metal ions in enzymatic and non-enzymatic process, and the application of computational chemistry to biological systems. Three hours of lecture per week.

377 Physical Biochemistry (3)
Prerequisite: Chem 231. 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, electron transfer, and biological spectroscopy. Three hours of lecture per week.

381 Special Topics (1-10)
Prerequisite: Consent of instructor. A reading and seminar course in selected advanced topics.

414 Molecular Spectroscopy (3)
Prerequisite: Chem 232. A broad treatment of the interaction of electromagnetic radiation with matter, emphasizing the unity of such interactions. Interpretation of molecular rotational, vibrational and electronic spectra in terms of geometric structure and dynamics. Description and interpretation of physical techniques used to obtain molecular spectra. Three hours of lecture per week.

416 Chemical Applications of Group Theory (3)
Prerequisite: Chem 232. A brief introduction to the fundamental relationships of group theory and molecular symmetry. Application of group theory to molecular orbital theory, molecular vibrations, and molecular spectra. Three hours of lecture per week.

419 Advanced Reading in Chemistry (1)
Prerequisite: Admission to the Ph.D. degree program. Reading and examinations in the subdisciplines of chemistry. Enrollment must begin after completion of any course deficiencies.
430 Advanced Physical Chemistry (3)  
Prerequisite: Chem 232. Covers advanced topics in physical chemistry. May include but is not limited to properties of solids and liquids, gas/solid and solid/liquid interfacial chemistry, optical and electron spectroscopy, and chemical dynamics. Three hours of lecture per week.

432 Application of Thermodynamics and Reaction Kinetics in Chemistry (3)  
Prerequisite: Chem 232. Review of equilibrium thermodynamics. Focus is on statistical thermodynamics and reaction kinetics with an emphasis on solution phase chemistry. Three hours of lecture per week.

435 Quantum Mechanical Foundations of Spectroscopy (3)  
Prerequisites: Chem 232. A review of relevant principles and techniques of quantum mechanics. Focus is on the use of quantum theory and molecular symmetry (group theory) to understanding the structure and interpreting the spectra of atoms and molecules. Three hours of lecture per week.

439 Special Topics in Physical Chemistry (1-3)  
Prerequisite: Consent of instructor. Selected topics in physical chemistry. May be taken more than once for credit.

441 Typical Element Chemistry (3)  
Prerequisite: Chem 341 or an equivalent course. Chemistry of the main group elements and their compounds including such topics as electron deficient compounds, acids, bases and nonaqueous solvents, catenation and inorganic polymers, the solid state, organotypical element chemistry and energetics. Three hours of lecture per week.

442 Coordination Chemistry (3)  
Prerequisite: Chem 341 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.

443 Spectroscopic Methods for Inorganic Compounds (3)  
Prerequisites: Chem 341 or an equivalent course. Study of modern spectroscopic characterization methods of particular importance to inorganic systems, with emphasis on such techniques as multinuclear NMR spectroscopy, UV/visible and EPR spectroscopy, IR/Raman spectroscopy, and Mossbauer spectroscopy. Application of such methods to questions of structure, bonding and reactivity. Three hours of lecture per week.

445 Organometallic Chemistry of the Main Group Elements (3)  
Prerequisites: Chem 341 or an equivalent course. A systematic study of main group element compounds containing carbon-metal or carbon-metalloid bonds. Emphasis will be on preparative methods, structures and reactions of various classes of compounds. Three hours of lecture per week.

446 Organometallic Chemistry of the Transition Elements (3)  
Prerequisites: Chem 341 or an equivalent course. A study of the 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.

448 Problem Seminar in Inorganic Chemistry (1)  
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.

449 Special Topics in Inorganic Chemistry (1-3)  
Prerequisite: Consent of instructor. Selected topics in inorganic chemistry. May be taken more than once for credit.

460 Advanced Organic Chemistry I - Physical Organic (3)  
Prerequisites: Chem 262 and 232. Mechanism and theory of organic chemistry. Topics to include kinetics, transition state theory, reaction intermediates, and stereochemical analysis. Three hours of lecture per week.

461 Advanced Organic Chemistry II - Reactions and Synthesis (3)  
Prerequisite: Chem 262. Examination of 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.

468 Problem Seminar in Organic Chemistry (1)  
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 program.
469 Special Topics in Organic Chemistry (3)
Prerequisite: Consent of instructor. Advanced topics of special current interest. May be taken more than once for credit. Topics that may be offered include: methods of organic synthesis, organometallics in organic synthesis, topics in bioorganic chemistry, organic thermochemistry, natural products chemistry, stereochemistry, photochemistry, heterocyclic chemistry, medicinal chemistry.

478 Problem Seminar in Biochemistry (1)
Prerequisites: 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.

479, Special Topics in Biochemistry (1-3)
Prerequisite: Consent of instructor. Selected topics in biochemistry. May be taken more than once for credit.

481 Introduction to Graduate Study in Chemistry (1)
Prerequisite: Consent of Graduate Adviser. Topics to be covered include: techniques of teaching of Chemistry in colleges and universities, methods of instruction and evaluation; and responsibilities of the Graduate teaching Assistant in laboratory instruction; safety in the undergraduate laboratory, safety practices, emergency procedures; selection of research project and thesis adviser.

482 Introduction to Graduate Research in Chemistry (1)
Prerequisites: Consent of Graduate Adviser. Topics 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.

489 Chemistry Colloquium (1)
Presentation of papers by students, faculty, and invited speakers. One hour per week.

490 Graduate Research in Chemistry (1-10)
Faculty

Michael Beatty, Professor*; Chairperson
Ph.D., Ohio State University

Thomas McPhail, Professor*
Ph.D., Purdue University

Michael Murray, Professor*
Ph.D., University of Missouri-Columbia

Donald Shields, Professor Emeritus
Ph.D., University of Minnesota

Rita Csapo-Sweet, Associate Professor
Ed.D., Harvard University

James Fay, Associate Professor*
M.F.A., Tulane University

Elizabeth Kizer, Associate Professor Emerita
Ph.D., Purdue University

Alice E. Hall, Associate Professor
Ph.D., University of Pennsylvania

Alan D. Heisel, Assistant Professor
Ed.D., West Virginia University

Betty H. LaFrance, Assistant Professor
Ph.D., Michigan State University

C. Thomas Preston, Associate Professor*
Ph.D., University of Nebraska-Lincoln

Ronald Turner, Assistant Professor*, Vice President for University Outreach, and Director of Cooperative Extension
Ph.D., University of Missouri-Columbia

Clark McMillion, Lecturer
M.A., State University College of New York at Brockport

Steven Phipps, Lecturer
Ph.D., University of Missouri-Columbia

Sidney Savan, Lecturer
B.S., Washington University

*members of Graduate Faculty

Each member of the faculty of the Department of Communication represents a requisite balance between practitioner and scholar/teacher. The department's curricula and activities demand a faculty with practical expertise in such disciplines as communication, radio/television/film, media studies, and public policy. Each faculty member has demonstrated repeated excellence as a practitioner through varied endeavors in workshops and lectures, as well as communication, radio/television/film, and video programs and productions. The faculty also acknowledges the need for scholarly research as a contribution to the continued growth of academic study, publishing the results of their scholarly pursuits in a wide spectrum of scholarly journals and presenting papers at national, and international professional conferences. Additionally, faculty members contribute to the university's mission through active public service and a commitment to high standards of academic achievement. Annual student evaluations rate the department's teaching as excellent.

General Information

The Bachelor of Arts in Communication
The B.A. in communication is a flexible degree program that allows the student to emphasize a particular field of study (communication theory and rhetoric, or mass communication) or tailor a specific concentration to meet the student's individual needs and interests. An emphasis in communication theory or mass communication is recommended for students with clear career goals in one of these areas. The communication major is recommended for students interested in teacher certification, the bachelor of general studies degree in the Evening College, or in specific interdisciplinary fields such as public relations/advertising/organizational communication, information science, electronic journalism, television, media administration, and marketing communication. The faculty encourages all students to meet early and often with their faculty adviser to select a meaningful group of courses for a coherent, career-oriented academic program.

Minors and Certificates for Communication
The department actively supports the following minor and certificate programs open to students majoring in communication: Minor in Public Affairs Journalism, Minor in Photographic Studies, Minor in Legal Studies, Certificate in Writing, and Certificate in Secondary Education. For more information, see Certificate Programs and Interdisciplinary Studies in this Bulletin.

Master of Arts in Communication
The master of arts program, a collaborative effort between UM-St. Louis and UM-Kansas City, provides the opportunity for an advanced degree program in communication with emphasis in organizational and mass communication. For further details, please see the Graduate Studies section of the Communication Department listings.

Undergraduate Studies

General Education Requirements
Majors must satisfy the university and college general education requirements. The college's foreign language requirement may be taken in any language. Communication courses may not be taken on a satisfactory/unsatisfactory basis.

Course Emphasis Categories
Courses offered by the communication department are categorized below. Students will need to refer to this list in choosing courses to meet the requirements of their particular emphasis area.

Communication Theory and Rhetoric Area Courses
30, Interpersonal Communication I
40, Introduction to Public Speaking
41, Basic Public Debate
65, Introduction to Information Technology
108, Advertising Copywriting
130, Interpersonal Communication II
135, Communication Theory
140, Advanced Public Speaking
141, Business and Professional Speaking
143, Parliamentary Procedure
150, Introduction to Public Relations
228, Public Relations Writing
230, Small Group Communication
231, Communication in the Organization
240, Persuasive Communication
241, Argumentation and Debate
243, Communication in American Politics
330, Empirical Research in Communication
331, Research Methods in Communication
332, Intercultural Communication
333, Communication Audit
334, Advertising Media Planning
335, Seminar in Applied Communication Research
336, Communication in Advertising
337, Male/Female Communication
340, Rhetorical Criticism
341, Classical Rhetoric and Public Address
342, Modern Rhetoric and Public Address
343, The Rhetoric of Protest
344, Advanced Argumentation Theory
345, Theory and Practice of Interviewing
346, Advanced Interviewing Techniques
358, Communication in Public Relations
360, Health Communication

Mass Communication Area Courses
50, Introduction to Mass Media
65, Introduction to Information Technology
70, Introduction to Cinema
108, Advertising Copywriting
110, Introduction to Radio and Television Broadcasting
114, Radio Production I
118, Radio and Television Announcing
150, Introduction to Public Relations
210, Television Production I
212, Broadcast Writing and Reporting
214, News Writing
215, Radio Production II
216, Radio News
217, Script Writing for Business and Industry
218, Public Policy in Telecommunication
219, Promotion, Publicity, and Advertising in Broadcasting
228, Public Relations Writing
271, History of Film to World War II
272, History of Film Since World War II
273, Basic Film Production
310, Television Production II
311, Broadcast Management
316, Television News
317, Radio and the Recording Industry

330, Empirical Research Methods
331, Research Methods in Communication
334, Advertising Media Planning
350, Mass Communication History
352, Mass Media Criticism
354, Comparative Telecommunication Systems
355, Media Law and Regulation
356, International Communication
357, Media Ethics
358, Communication in Public Relations
360, Health Communication
370, Documentary Film

Degree Requirements

Bachelor of Arts in Communication
Majors must complete a minimum of 36, but not more than 45, hours in communication courses. At least 18 of these hours must be taken at UM-St. Louis. Each major must take at least 6 hours of communication courses numbered 200-299 and at least 6 hours of communication courses numbered 300-399. Every major must complete the requirements for an emphasis area as described below.

Emphasis Areas
Two emphasis areas are available: Communication theory and rhetoric and mass communication.

Required Courses for All Majors
40, Introduction to Public Speaking
135, Communication Theory
193, 194, 196, 197, 198 (at least 3 hours of Practicum courses), or
393, 394, 396, 397 (at least 3 hours of Internship courses).

Emphasis Area Requirements
In addition to the above required course work, majors must complete the requirements specified below for one of the following emphasis areas:

I Communication Theory and Rhetoric
In addition to the required courses for all majors, students must take the following:

a. 230, Small Group Communication
b. Twelve additional hours in Communication Theory and Rhetoric
c. One of the following Mass Communication courses:

50, Introduction to Mass Media
70, Introduction to Cinema
110, Introduction to Radio and Television Broadcasting
d. Plus 9-18 hours from any area or areas in the communication department.

II Mass Communication
In addition to the required courses for all majors, students must take the following:

a. 50, Introduction to Mass Media
70, Introduction to Cinema
110, Introduction to Radio and Television Broadcasting
b. Nine additional hours in mass communication
c. Plus 9-18 hours from any area or areas in the communication department.

Bachelor of Arts in Communication with Certification in Secondary Education
In addition to the requirements for the B.A. in communication and general requirements set by the College of Education, students must meet the state requirements for certification.

The B.A. and certification for grades 7-12 can be completed by taking a minimum of 39 hours in communication, selected according to departmental recommendations. The B.A. and certification for grades 7-9 can be obtained by taking 36 hours in communication, selected according to departmental recommendations.

Requirements of the College of Education include courses in professional education and English 262, The Curriculum and Methods of Teaching English (same as SEC ED 232).

Departmental Activities, Laboratories, and Internships
Cocurricular projects and activities relevant to student interests and vocational plans are sponsored and advised by the department (debate and forensic, television club). In addition to the traditional classroom experience, students receive practical training in the department's laboratory facility: the Lucas Hall video laboratory.

Internships at radio and television stations, community agencies, newspapers, and public relations, marketing, and advertising firms, and a variety of business organizations provide valuable opportunities for majors to apply their communication studies.

Minors in Communication
Students with majors other than communication may select from two minors to complement their academic and career goals.

The following conditions apply to all minors:
Credit hours in Communication 195, and/or Communication 395, may be substituted for credit hours listed below with written consent of the communication department chairperson.

At least 9 of the 18 hours required for the minor must be taken at UM-St. Louis.

A minimum GPA of 2.5 is required in the minor.

I Requirements for the minor in Communication Theory and Rhetoric are as follows:

a. 40, Introduction to Public Speaking
   135 Communication Theory
b. One of the following Communication Theory and Rhetoric courses:
   30, Interpersonal Communication I
   140, Advanced Public Speaking
   141, Business and Professional Speaking
c. Plus nine hours from courses in Communication Theory and Rhetoric at the 200 level or above.

II Requirements for a minor in Mass Communication are as follows:

a. 50, Introduction to Mass Media
   110, Introduction to Radio and Television Broadcasting
b. One of the following Mass Communication courses:
   70, Introduction to Cinema
   350, Mass Communication History and Criticism
c. Plus nine hours in Mass Communication courses at the 200 level or above.

Graduate Studies
The department offers the Master of Arts degree in communication.

Admission requirements:
Applicants must have a baccalaureate in communication or a related discipline by the end of the semester in which they apply. In addition, the minimum GPA for regular admission to the graduate program in communication is 2.75 on a 4-point scale. Three letters of recommendation, at least two of which address the applicant’s potential to succeed in graduate studies in communication, are required. International students must obtain a TOEFL score of at least 600 to be considered for admission.

Master of Arts in Communication

Degree Requirements:
Candidates for the M.A. degree will complete a minimum of 30 semester hours of approved study, at least 21 of which must be taken in courses offered by the department. Video courses from UM-Kansas City taken while in residence at UM-St. Louis may count toward this 21 hour minimum. A minimum of 18 hours must be taken at the 400 level, in addition to the hours taken for the thesis or internship/paper. Of this 18 hours of 400-level courses, 15 hours must be the specific core courses noted as follows:

Communication
400, Seminar in Communication Theory
405, Introduction to Communication Research Methods
411, Seminar in Mass Communication
431, Seminar in Organizational Communication
435, Seminar in Advanced Applied Communication

Research

Students complete one of the following exit projects: No less than a 6-hour thesis or a 6-hour internship. After consultation with the graduate coordinator and with input from prospective exit project committee members, the student selects the appropriate exit project. The internship option requires submission of an essay in which the coursework and internship experience are integrated. Internship essay and thesis must be approved by student's committees and assigned a grade by the adviser. The candidate must pass an oral examination conducted by student's committee regardless of exit option selected.

Career Outlook

The B.A. in communication prepares students for careers in numerous fields. Past graduates are working in the following positions: radio and television news, promotion and public relations, administration, directing, announcing, production, and sports journalism; media management; public relations, advertising, marketing, Web page design, market research, corporate media, sales, training, speech writing, print editing, journalism, teaching, and research. Other students have pursued graduate education in communication programs across North America offering the M.A. and Ph.D. degrees.
Course Descriptions

Prerequisites may be waived by consent of the department.

The following courses fulfill the Humanities [H] breadth of study requirements: 70, 160, 260, 271, 272, 337, 340, 341, 342, 343, 344, 350, 352.


30 Interpersonal Communication I (3)
Development of basic one-to-one communication skills. Includes self-awareness, listening, nonverbal communication, feedback, roleplaying, and receiver awareness.

40 Introduction to Public Speaking (3)
Theories and techniques of organization, evidence, argumentation, persuasion, and delivery in public speaking.

41 Basic Public Debate (3)
History and practice of debate in the public arena, with opportunities to prepare for a variety of public forums for argumentation. Various debate formats, including panel discussions, joint news conferences, and audience-participation debates, in a variety of settings, will be surveyed.

50 Introduction to Mass Media (3)
Introduction to oral, print, and electronic media of communication. Emphasis on history, theory, and criticism of the mass media as cultural institutions.

65 Introduction to Information Technology (3)
The production and consumption of information by individuals, the workplace and society. Emphasis on the changing nature of communication processes as a result of the expansion of communication technologies.

70 Introduction to Cinema (3)
An introduction to the history, rhetoric, and aesthetics of film. Film theory and criticism will be studied as well as major genres, authors, and artists.

108 Advertising Copywriting (3)
(Same as English 108.) To give students a hands-on approach for writing advertising material for print and broadcast against tight deadlines in a professional setting.

110 Introduction to Radio and Television Broadcasting (3)
An introduction to broadcasting, including the areas of history, government regulations, station operation, and program development.

113 Basic Television Studio Production (3)
Study of basic television studio production techniques and practices. The class will provide the student with practical experience in studio camera operating, directing, producing, switching, audio mixing and lighting. Lab arranged.

114 Radio Production I (3)
Prerequisite: Comm 110. Theory and practice in the creation of radio programs. Laboratory experience included.

118 Radio and Television Announcing (3)
Prerequisite: Comm 110; 114, and 210 recommended. Training in radio and television studio procedures. Production and criticism of lab programs, including news, continuity, interviews, and oral improvisation. Classroom meetings at the radio lab and the television lab, plus lab hours to be arranged.

130 Interpersonal Communication II (3)
Prerequisite: Comm 30. Interpersonal communication in relationships within group contexts, such as family, classroom, and business. Various theories and diagnostic approaches to interpersonal communication. Extensive laboratory sessions utilizing individual and group exercises.

135 Communication Theory (3)
Survey of elements and processes critical to human communication behavior. Comparison of influential communication theories.

140 Advanced Public Speaking (3)
Prerequisite: Comm 40. Application of advanced public speaking skills, with emphasis on special occasion speaking situations.

141 Business and Professional Speaking (3)
Prerequisite: Comm 40. Application of communication skills in the business and professional environment with emphasis on presentational speaking, organizational constructs germane to professional careers, and uses of various media.

143 Parliamentary Procedure (2)
Prerequisite: Comm 40. Study and practice in rules of procedure by which self-governing groups transact business.

150 Introduction to Public Relations (3)
Prerequisite: Comm 40 or 50. Publicity methods and public relations representation of profit and nonprofit institutions to the public; use of communication research and media, as applied to the public relations profession.
160 Fundamentals of Oral Interpretation (3)
Prerequisite: Comm 40 or consent of instructor. An introduction to the analysis of literature and to the principles of its oral presentation by the interpreter.

193 Practicum in Applied Communication (1-3)
Prerequisite: Consent of instructor. Practicum work at any of the UM-St. Louis public relations offices, sports and school newspapers, Office of Research or Photography Services. Work must be done on campus, under supervision of a working professional in the field, in consultation with a faculty member.

194 Practicum in Debate/Forensics (1-3)
Practical work in the University debate and forensics program, supervised by a faculty member. Repeatable, but no more than 6 credit hours may be earned in departmental practicum courses.

195 Seminar in Communication (3)
Prerequisite: Consent of instructor. In-depth study of topics pertaining to current research in the department or otherwise of timely interest to students or faculty.

196 Practicum in Radio (1-3)
Prerequisites: Comm 110 and consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Practical work at the campus radio station, supervised by a faculty member. Repeatable, but no more than 6 credit hours may be earned in departmental practicum courses.

197 Practicum in Television/Film (1-3)
Prerequisites: Comm 110 and consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Practical work at one of the campus television studios or for the UM-St. Louis Television/Film Club, supervised by a faculty member. Repeatable, but no more than 6 credit hours may be earned in departmental practicum courses.

210 Television Production I (3)
Prerequisites: Comm 110 or consent of instructor. A study of the basic theories and practices of remote television production. The areas of producing and directing in the field will be studied. The class will provide the student with practical experience in remote camera operation and basic editing techniques. Lab arranged.

212 Broadcast Writing and Reporting (3)
Prerequisites: Comm 110 and 214, or English 214, or permission of instructor. Elementary principles and practice of writing for radio and television in varied program formats, emphasis on preparation of written materials for news and public affairs presentation. Lecture and lab.

214 News Writing (3)
(Same as English 214.) Prerequisite: English 10 or equivalent. An introduction to news writing and reporting. Course covers basic components of news reporting principles, and news writing style and structure. Daily writing assignments include coverage of speeches, meetings and interviews, accidents, deaths, courts, sports, consumer affairs, and government. Emphasis on clarity, accuracy, and speed.

215 Radio Production II (3)
Prerequisite: Comm 114. Study of advanced theories and techniques of audio production, building on principles and skills learned in Radio Production I. Exploration of complex program formats such as radio drama and special problems such as those encountered in recording live music.

216 Radio News (3)
Prerequisite: Comm 114. Theory and laboratory practice in the gathering, writing, and delivery of news through radio. Lab hours to be arranged.

217 Script Writing for Business and Industry (3)
Prerequisites: Comm 210 and 212. Script writing for training, motivation, education, and other applications. Students will identify and discuss communication problems and solutions in live, slide/tape, video, and film script formats.

218 Public Policy in Telecommunication (3)
Prerequisite: Comm 65 or 110 or consent of instructor. An examination of the structure and operation of domestic, international, commercial and public telecommunication. Regulatory agencies, both private and public, will be considered in terms of their effect on programming and ownership.

219 Promotion, Publicity, and Advertising in Broadcasting (3)
Prerequisite: Comm 110. Introduction to theory and practice in the planning, execution, and evaluation of persuasive campaigns involving radio and television. Emphasis on concept developments and production elements. Discussion of broadcast ethics.

228 Public Relations Writing (3)
(Same as English 228.) Prerequisite: English 214 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.

230 Small Group Communication (3)
Prerequisite: Comm 40. Development of communication skills needed in small group decision making. Application of these skills to contemporary problems.
231 Communication in the Organization (3)
Prerequisite: Junior standing or consent of instructor.
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.

232 Effective Communication in the Organization: Tool for Leadership (3)
Prerequisites: Junior standing or consent of instructor.
Telecourse designed to equip students with communication skills applicable to the organizational context. The course will present effective strategies for the articulation of ideas, with particular emphasis on the development of leadership skills.

240 Persuasive Communication (3)
Prerequisite: Comm 40. A study of persuasive communication, including theories, techniques, forms, functions, applications, potential, and limitations for the individual and organizations. Insights from both classical rhetoric and contemporary communication theory.

241 Argumentation and Debate (3)
Prerequisite: Comm 40, or 41, 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.

243 Communication in American Politics (3)
Prerequisite: Comm 40. Analysis of audience response and media preferences in political campaigns, campaign speeches, candidates' uses of television and other mass media, and measuring effectiveness of campaign communications.

271 History of Film to World War II (3)
Prerequisite: Comm 70 or consent of instructor. History of world cinema from the late nineteenth century to the 1940s.

272 History of Film Since World War II (3)
Prerequisite: Comm 70 or consent of instructor. History of world cinema from the 1940s to the present day.

310 Television Production II (3)

311 Broadcast Management (3)
Prerequisite: Comm 110. Introduction to theories of management, with application to radio and television station operations. Discussion of economic, legal, and ethical problems and issues.

313 Advanced Video Editing (3)
Prerequisite: Six (6) hours of television production. Study of advanced editing techniques. Exposure to nonlinear formats. Animation and advanced graphics development. Exploration of state of the art editing formats. Lab arranged.

316 Television News (3)
Prerequisite: Comm 210. Theory and laboratory practice in the gathering, writing, and delivery of news through television. Lab arranged.

317 Radio and the Recording Industry (3)
Prerequisite: Junior standing. Historical development and current status of the recording industry, particularly as it interacts with the broadcast industry. Impact of radio and recording technology on the development of rock and other popular music.

330 Empirical Research in Communication (3)
Prerequisite: Comm 135. Introduction to the fundamental tools of quantitative research in communication, including data analysis, statistical design and methods, basic measurement concepts and designs for empirical research.

331 Research Methods in Communication (3)
Prerequisite: Comm 135. Introductory study of research designs and methodologies employed in communication, including historical, critical, and empirical methods. Review of research reports which exemplify these methods.

332 Intercultural Communication (3)
Prerequisite: Junior standing or consent of the instructor. Study of culture as a variable in both interpersonal and collective communicative situations. Emphasis upon opportunities and problems arising from similarities or differences in communication patterns, processes, and codes among various cultural groups.

333 Communication Audit (3)
Prerequisite: Comm 231. The application of specific empirical research designs to evaluate communication flows, effectiveness, or channels in complex organizations.

334 Advertising Media Planning (3)
Prerequisite: Comm 50. A hands-on study of how to determine an advertising budget, select media and develop a strategic plan.

335 Seminar in Applied Communication Research (3)
Prerequisites: Comm 135 and consent of instructor. This course explores the use of communication concepts, theories, methods, and designs in applied field settings with an emphasis on original research.
336 Communication in Advertising (3)
Prerequisites: Comm 50 and junior standing, or consent of
instructor. Overview of components in persuasive
messages and how advertising messages and campaigns
use various media to reach target audiences.

337 Male/Female Communication (3)
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.

340 Rhetorical Criticism (3)
Prerequisite: Comm 40. The application of rhetorical
theories to the analytical and critical explanation of
persuasive messages.

341 Classical Rhetoric and Public Address (3)
Prerequisite: Comm 40 or consent of instructor. A survey
of the history and theories of persuasion and public
address from ancient times to the Renaissance.

342 Modern Rhetoric and Public Address (3)
Prerequisite: Comm 40 or consent of instructor. A survey
of the history and theories of persuasion and public
address from the post-Renaissance era to the present.

343 The Rhetoric of Protest (3)
Prerequisite: Comm 40. An examination of the persuasive
messages and tactics used in social movements and their
campaigns.

344 Advanced Argumentation Theory (3)
Prerequisite: Comm 241 or consent of instructor. This
course focuses on advanced argumentation theory. It is
aimed at providing an advanced understanding of the
complex issues faced by argumentation scholars.

345 Theory and Practice of Interviewing (3)
Prerequisite: Comm 40 and junior standing, or consent of
instructor. The application of modern communication
theory to interview situations. This theory and practicum
course is designed to aid the student in mastering specific
skills appropriate to specialized settings.

346 Advanced Interviewing Techniques (3)
Prerequisite: Comm 345. Examination and application of
problem solving and information-gathering methods, with
emphasis on specialized situations such as journalistic;
health, crisis intervention, and counseling; superior-
subordinate relationships and employment. In-class study
approach and field interview assignments.

350 Mass Communication History (3)
Prerequisite: Comm 50 or 110. Examination of the social,
economic, and political factors contributing to the
development of American mass media. Emphasis on
significant personalities who helped shape its course;
analysis of select critical works.

352 Mass Media Criticism (3)
Prerequisite: Comm 50 or 110. The study of media
content and its effect on society. Reading and viewing of
selected works. Independent reading and critical analysis
required.

354 Comparative Telecommunication Systems (3)
Prerequisite: Comm 65 or consent of instructor. Historical
aspects of various systems of telecommunication
throughout the world. Examination of American,
Canadian, European Community (EC), and other
telecommunication systems.

355 Media Law and Regulation (3)
Prerequisite: Comm 50 or 110. Discussion of laws
affecting the mass media. Exploration of problems and
issues in legal regulation of media content, ownership,
access, and accountability. Discussion of industry self-
regulation and the influence of citizens' organizations.

356 International Communication (3)
Prerequisite: Comm 50 or 110. Examination of the social,
technical, economic, and political factors affecting
international broadcasting and transnational media
systems.

357 Media Ethics (3)
Prerequisite: nine hours of philosophy or nine hours
communication or consent of instructor. (Same as
Philosophy 357). This course is concerned with some of
the issues that arise from the intersection of ethics and
modern media communications. Attention is given to
some of the more specific concerns of media ethics, such
as truth, honesty, fairness, objectivity and bias; personal
privacy and the public interest; advertising; conflicts of
interest; censorship and offensive or dangerous content
(pornography, violence). Particular attention will be given
to problems posed by the development of personal
computer communications through bulletin boards, on-
line services, and the Internet.

358 Communication in Public Relations (3)
Prerequisite: Comm 150. An overview of communication
within the area of public relations. Emphasis on ethics,
law, professional standards, and written communication.
Case study approach.
360 Health Communication (3)
Prerequisite: Comm 030, 040, or 050 or consent of instructor. An analysis of the role communication plays in influencing the health care environment. The course consists of two parts. The first part examines public health care prevention campaigns, e.g., anti-smoking, as well as focusing on the environmental problems, including communication strategies utilizing various media alternatives. The second part focuses on interpersonal and small group communication practices within health-care settings. Consideration of verbal and nonverbal communication research will be explored.

362 Storytelling (1-3)
Prerequisite: 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.

370 Documentary Film (3)
Prerequisite: Comm 70. Consideration of the history, theory, and criticism of nonfiction film. Screening of representative documentary films.

390 Directed Readings (3)
Prerequisites: Consent of instructor; not open to students who have any Y or delayed grades outstanding. Supervised independent study involving readings, conferences, papers, etc., in one of the department's disciplines: communication theory and rhetoric, or mass communication.

391 Supervised Research (1-5)
Prerequisites: Junior/senior standing and consent of instructor; not open to students who have any Y or delayed grades outstanding. Supervised field or laboratory research, data collection, literature searches, qualitative or quantitative data analysis, report writing and other techniques used by communication researchers. Repeatable, but no more than 5 credit hours may be earned in supervised research courses.

392 Administration of Co-curricular Activities (3)
Prerequisites: Junior standing and consent of instructor. A survey of the skills required to administer the various co-curricular activities associated with teachers in the secondary schools, such as: operation of debate tournaments, public speaking competitions, and mass media centers.

393 Internship in Applied Communication (3-6)
Prerequisites: Senior standing, with a least 12 hours of course work in communication theory and rhetoric; an overall GPA of at least 3.0; consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Advanced practical work in business communication, political campaign communication, advertising, public relations, or other forms of organizational or public communication. Work must be done off campus, under supervision of a working professional in the field, in consultation with a faculty member. Repeatable, but no more than six hours total credit may be earned in internship courses toward the 36-hour minimum required for the degree.

394 Internship in Journalism (3-6)
Prerequisites: Senior standing, with at least 12 hours of course work in journalism, mass communication, etc.; an overall GPA of at least 3.0; consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Practical work with an off-campus newspaper, magazine, or other news organization, supervised by a journalism professional in consultation with a faculty member. Repeatable, but no more than six hours total credit may be earned in internship courses toward the 36-hour minimum required for the degree.

395 Senior Seminar in Communication (3)
Prerequisite: Senior standing and consent of instructor. This course will deal with basic issues, questions, theories and themes central to the discipline of communication. The course project will consist of a critique of selected communication literature and permit the student to integrate and synthesize the knowledge base accumulated in the systematic study of communication.

396 Internship in Radio (3-6)
Prerequisites: Senior standing, with at least 12 hours of course work in radio, broadcasting, etc.; an overall GPA of at least 3.0; consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Practical work at an off-campus radio station, supervised by a professional in consultation with a faculty member. Repeatable, but no more than six hours total credit may be earned in internship courses toward the 36-hour minimum required for the degree.

397 Internship in Television/Film (3-6)
Prerequisites: Senior standing, with at least 12 hours of course work in television, film, video, etc.; an overall GPA of at least 3.0; consent of instructor; open to communication majors only; not open to students who have any Y or delayed grades outstanding. Practical work at an off-campus television, film, or video organization, supervised by a television, film, or video professional in consultation with a faculty member. Repeatable, but no more than six hours total credit may be earned in internship courses toward the 36-hour minimum required for the degree.
400 Seminar in Communication Theory (3)
Prerequisites: 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. (Core Course.)

405 Introduction to Communication Research Methods (3)
Prerequisites: Graduate Standing. Concerns the logic of scientific inquiry including the discovery, counting, and analysis of material, social, and symbolic facts, and reviews research methods guided by general, micro and contextual communication theories. Provides an 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. (Core Course.)

406 Introduction to Communication Education Research (3)
Prerequisites: Graduate Standing. The development of educational communication research as a social scientific field. Critical evaluation of techniques and problem selection. Emphasis on the function of communication education concept formation and theory.

411 Seminar in Mass Communication (3)
Examines communication research literature pertaining to media planning, content, and effects. A broad range of media forms and possible effects is considered.

431 Seminar in Organizational Communication (3)
Prerequisites: Graduate Standing. Explores communication theories and topics related to organizational, institutional, and social system contexts and reviews the communication literature on behavior in organizations. Emphasizes a case study approach to the communication strategies used by agencies and corporations. (Core course.)

435 Seminar in Advanced Applied Communication (3)
Prerequisites: Graduate Standing. Examines the logic and forms of communication inquiry in solving client-centered problems. Topics include audience ratings and segmentation, targeting, applied and basic research paradigms and approaches to grounding theory. Reviews the use of research by agencies, campaigns and organizations. Includes a team research project. (Core Course.)

445 Seminar in Advanced Organizational Communication (3)
Prerequisite: Com 431. Extends exploration of communication in organizations covered in Com 431 to more advanced quantitative models of organizational communication. Focuses on quantitative studies published in communication research literature.

454 Seminar in Communication Systems and Technologies (3)
Prerequisites: Graduate Standing. Examines innovation in modern communications technologies, their impact on society, and their contribution to the information revolution.

490 Directed Readings in Communication (1-10)
Prerequisites: Graduate Standing. Individual research on a problem defined by the graduate student and the faculty member in conference. May be repeated once with the consent of the departmental graduate faculty.

495 Seminar in Special Topics in Communication (3-9)
Prerequisites: 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.

498 Thesis Research and Preparation (1-10)
Prerequisites: Graduate standing. Individual research for and preparation of the graduate thesis.

499 Graduate Internship (3-6)
Prerequisites: Graduate standing and approval of graduate coordinator. Individual on-site internship in organizational or mass communication setting. May be repeated.
Criminology and Criminal Justice Faculty

Richard B. Rosenfeld, Professor*, Chairperson
Ph.D., University of Oregon
Robert Bursik, Professor*
Ph.D., University of Chicago
G. David Curry, Professor*
Ph.D., University of Chicago
Scott H. Decker, Professor*
Ph.D., Florida State University
Richard Wright, Professor*,
Ph.D., Cambridge University
Bruce A. Jacobs, Associate Professor*
Ph.D., University of Southern California
David Klinger, Associate Professor*
Ph.D., University of Washington
Janet L. Lauritsen, Associate Professor*
Ph.D., University of Illinois-Urbana
Allen E. Wagner, Associate Professor Emeritus
Ph.D., Washington University
Eric Baumer, Assistant Professor*
Ph.D., State University of New York at Albany
Jody Miller, Assistant Professor*
Ph.D., University of Southern California
Norman A. White, Assistant Professor*
Ph.D., State University of New York at Albany
Timothy Maher, Lecturer
M.A., University of Missouri-St. Louis
Norman Malloyd, Lecturer
M.A., University of Missouri-St. Louis
Margaret Phillips, Lecturer
Ph.D., Saint Louis University

*members of Graduate Faculty

Criminology and criminal justice faculty represent several academic disciplines. By integrating practice with theory, faculty are able to present a comprehensive picture of crime and the justice system. This nexus of theory and application is found most directly in the department's emphasis on understanding policy in criminology and criminal justice. All components of crime and justice are represented in the curriculum including criminal behavior, delinquency, crime prevention, arrest, prosecution, defense, court processing, probation, prison, and parole. A special feature of the program is the cadre of local professionals who supplement the regular faculty. A federal appeals-court judge, local prosecutor, correctional supervisor, and probation supervisor are among this group.

General Information

Degrees and Areas of Concentration
The department offers courses leading to the bachelor of science, the master of arts, and Ph.D., in criminology and criminal justice.

Cooperative Programs
Faculty of the criminology and criminal justice department hold appointments as fellows in the Center for Metropolitan Studies, the Center for International Studies and the Institute for Women's and Gender Studies. Workshops, projects, credit courses, and other social services are brought to the criminal justice community.

Internships
Majors are strongly encouraged to participate in CCJ 280, 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 formal 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.

Undergraduate Studies

General Education Requirements
Majors must satisfy the university and college general education requirements. Courses used to fulfill the social science or state requirement may not be taken from courses in the major. 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; Sociology 220, Quantitative Techniques in Sociology; or Sociology 230, Research Methods. Additionally, substitutions which have been approved by departmental advisers for these courses may not be taken on a satisfactory/unsatisfactory basis.

The criminology and criminal justice department may require students to pass a placement 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. All prerequisites must be satisfied prior to enrolling in a course. Students may register for 300-level courses only after obtaining a signature from the adviser in the criminology and criminal justice department.

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 300-level courses only after obtaining a signature from the adviser in criminology and criminal justice. All pre-requisites must be satisfied prior to enrolling in a course.
CCJ majors may not take course numbers 010, 260, or 345 offered through UM-Independent Studies to fulfill degree requirements in the major.

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:
- 10, Introduction to Criminology and Criminal Justice
- 110, Theories of Crime
- 120, Criminal Law
- 130, Criminal Justice Policy
- 210, Research Methods in Criminology and Criminal Justice
- 220, Statistical Analysis in Criminology and Criminal Justice
- 390, Seminar in Criminology and Criminal Justice

One additional 200 level or above course in Criminology and Criminal Justice.

Two courses from the following four:
- 230, Crime Prevention
- 240, Policing
- 260, Corrections
- 270, Juvenile Justice

Two courses at the 300 level:
- 300, Communities and Crime
- 305, Comparative Criminology and Criminal Justice
- 310, Computers in Criminal Justice
- 315, Ethics in Criminology and Criminal Justice
- 320, Forms of Criminal Behavior
- 325, Gender, Crime, and Justice
- 330, History of Crime and Justice
- 335, Probation and Parole
- 340, Race, Crime, and Justice
- 345, Rights of the Offender
- 350, Victimization
- 380, Special Topics in Criminology and Criminal Justice

Elective Courses
- 99, The City
- 180, Alcohol, Drugs and Society
- 227, Urban Law: Poverty and the Justice System
- 280, Internship in Criminology and Criminal Justice
- 290, Special Readings

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:
- 10, Introduction to Criminology and Criminal Justice

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The candidate must then select from two of the following three courses:
- 110, Theories of Crime
- 120, Criminal Law
- 130, Criminal Justice Policy

Candidates must then complete 6 hours of criminology and criminal justice course work at the 200 level or above.

Candidates must 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.

**Graduate Studies**

**Master of Arts in Criminology and Criminal Justice**
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 2.75 on a 4-point scale. However, students may be admitted under restricted status with a GPA of 2.5.

Students admitted with a 2.5 to 2.75 GPA will be reviewed after completing 6 credit hours of graduate work. Admission is competitive.

**Degree Requirements**
The M.A. in criminology and criminal justice requires the completion of 33 credit hours, at least 18 of which are in criminology and criminal justice. All students must satisfy a 15-hour core course requirement. Additionally, M.A. candidates must take at least two of four graduate "option" courses offered by the department. Students may choose between a thesis and nonthesis course of study.

**Core Curriculum**
- 400, Proseminar: Criminology and Criminal Justice
- 405, Methods
- 410, Statistics
- 415, Foundations of Criminological Theory
- 420, Contemporary Criminological Theory

Two of the following four courses
- 451, Juvenile Justice System
- 452, The Police
- 453, Adjudication
- 454, Corrections

**Transfer Courses**
Transfer courses are evaluated for acceptance on a case-by-case basis subject to the rules and regulations of the Graduate School.
Application to the Ph.D. Program

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.

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 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. Twelve credit hours of dissertation research (CCJ 499) are required. Students may enroll for dissertation credits (CCJ 499) only when all other degree requirements have been completed.

Required courses for the Ph.D. are:
400, Proseminar (3)
405, Methods (3)
410, Statistics (3)
415, Foundations of Criminological Theory (3)
420, Contemporary Criminological Theory (3)
430, Law and Social Control (3)
440, Nature of Crime (3)
450, Criminal Justice Organization (3)
480, Multivariate Statistics (3)

In addition to the above 27 hours, students must choose two of the following three courses:
465, Qualitative Research Design (3)
470, Quantitative Research Design (3)
475, Evaluation Research Methods (3)

Students are also required to specialize in one of the following three areas:
Option 1: Crime and Criminality
Option 2: Criminal Justice
Option 3: Law and Social Control

Courses in Option 1 include the following:
441, Juvenile Delinquency (3)
442, Communities and Crime (3)
443, Violent Crime (3)
444, Organizational Crime (3)
445, Property Crime (3)
446, Sex Crime (3)
447, Public Order Crime (3)
448, Victimization (3)

Courses in Option 2 include the following:
451, Juvenile Justice Systems (3)
452, The Police (3)
453, Adjudication (3)
454, Corrections (3)
455, Ethical and Legal Issues in Criminal Justice (3)

Courses in Option 3 include the following:
431, The Nature of Punishment (3)
432, Criminal Law (3)
433, Philosophy of Law (3)
434, Human Rights (3)
435, Law, Courts, and Public Policy (3)
436, Comparative Legal Systems (3)
437, Private Justice (3)

Additional courses beyond the above requirements are taken as elective courses. These courses may be at the 300- or 400-level. Students are also encouraged to take courses outside the Department of Criminology and Criminal Justice.

Comprehensive Examination
Graduate students in the Ph.D. program cannot become recognized as Ph.D. candidates until they have passed the comprehensive examination. The goals of the comprehensive 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.

The qualifying examination will consist of two parts: the first focusing on crime and criminality and the second on either law and social control or criminal justice. The choice of the second part is made by the student. Each will integrate theory and methods into the substantive literature.

Part one of the exam will consist of a six-hour examination without access to notes or external references. Part two will be a 48-hour, non-collaborative, take-home examination. The student will pick which subject area is taken under which testing format.

Other 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.
dissertation committee assists in selecting and developing the research problem and evaluates the student's work on that problem.

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, giving a unique preparation for and providing the student with an understanding of the assumptions, values, and processes of the system of justice. Many prelaw 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.
Course Descriptions

Prerequisites may be waived by consent of the department or instructor.


The following courses fulfill the Humanities [H] breadth of study requirements: 152.

10 Introduction to Criminology and Criminal Justice (3)
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. Course fulfills the state requirement.

20 Foundations of Law: An Introduction to Legal Studies (3)
(Same as ID 20, and PoliSci 20). 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.

75 Crime and Punishment (3)
(Same as Sociology 75 and Interdisciplinary 75.) An introduction to sociological and psychological explanations of crime and punishment. An examination of private and governmental responses to the threats of crime and delinquent behavior.

99 The City (3)
(Same as PolSci 99, Sociology 99, and Interdisciplinary 99.) Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburbia and the metropolitan area, ethnic groups, stratification, and psychological implications of urban living. This course is primarily for freshmen and sophomores. It is open to juniors and seniors with the instructor's permission.

110 Theories of Crime (3)
Prerequisite: CCJ 10. Introduction to major theoretical approaches to the study of crime and justice.

120 Criminal Law (3)
Prerequisite: CCJ 10. Analysis of substantive criminal law, evidence and judicial procedure.

130 Criminal Justice Policy (3)
Prerequisite: CCJ 10. Introduction to criminal justice policy making, planning, and implementation.

152 Philosophical Foundations of Criminal Justice (3)
(Same as Philosophy 152). Addresses fundamental conceptual and ethical issues that arise in the context of the legal system. Questions may include: How does punishment differ from pre-trial detention? How, if at all, can it be justified? Is the death penalty ever justified? When is it morally permissible for juries to acquit defendants who are legally guilty? Is plea bargaining unjust? Why might people be morally obligated to obey the laws? Are laws restricting civil liberty (e.g., laws against abortion, homosexuality, or drug use) permissible.

180 Alcohol, Drugs, and Society (3)
(Same as Sociology 180.) Prerequisite: Sociology 10 or Psych 3. 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.

210 Research Methods in Criminology and Criminal Justice (3)
Prerequisite: CCJ 10. Examination of basic methods of research design, measurement and data collection in criminology and criminal justice.

220 Statistical Analysis in Criminology and Criminal Justice (3)
Prerequisites: CCJ 10, 210 and university math requirement. An introduction to techniques of quantitative data analysis. Both descriptive and inferential statistics are applied to problems in criminology and criminal justice.

226 Law and the Individual (3)
(Same as PolSci 226.) Prerequisite: PolSci 11, or 20, or consent of instructor. An examination of the formal and informal aspects and processes of the American judicial system and its effect on the individual. The course will cover criminal and civil law, public and private law, state and federal courts, and the processes by which disputes are transformed into legal actions. Topics include judicial selection and recruitment, plea bargaining, the impact and implementation of judicial decisions, the examination of a number of substantive areas of law like contracts and torts, and the role of courts in policy-making and dispute resolution. Course fulfills the state requirement.

230 Crime Prevention (3)
Prerequisite: CCJ 10. Examination of situational, social, and legislative approaches to the prevention of crime and delinquency. Emphasis on theories, implementation and consequences of these approaches.
233 Topics in Philosophy of Law (3)
Prerequisite: CCJ 10 and 3 hours of philosophy. (Same as Philosophy 387) An examination of typical problems raised by law, including the basis of legal obligations and rights, relations between law and morality, the logic of legal reasoning, and the justification for punishment. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

240 Policing (3)
Prerequisite: CCJ 10. Overview of current and historical perspectives on the function of American policing. Emphasis on the management of police organizations and relationships with the community.

260 Corrections (3)
Prerequisite: CCJ 10. Examination of correctional philosophies and practices. Emphasis on the history of correction, the formal and informal organization of correction facilities, inmate rights, and correctional alternatives.

270 The Juvenile Justice System (3)
Prerequisite: CCJ 10. Examination of formal and informal responses to juvenile delinquency. Emphasis on theories of delinquency and the decision-making processes of police, court and probation officials.

280 Internship in Criminology and Criminal Justice (3)
Prerequisite: Junior standing. Internship under faculty supervision in criminal justice setting.

290 Directed Readings (1-6)
Prerequisite: CCJ 10 and consent of instructor. Individualized study, under regular faculty supervision, designed to meet particular educational needs of selected students.

300 Communities and Crime (3)
(Same as Sociology 300.) Prerequisites: CCJ 110, 120, 130, 210, 220, or consent of instructor. Analysis of the sources, consequences, and control of crime within communities. Emphasis on social and ecological theories of crime, and on population instability, family structure, and the concentration of poverty as causes of crime.

305 Comparative Criminology and Criminal Justice (3)
Prerequisites: CCJ 110, 120, 130, 210, 220, or consent of instructor. Analysis of crime and criminal justice systems in selected cultures. Emphasis on the ways in which these cultures define and respond to criminal behavior.

310 Computers in Criminal Justice (3)
Prerequisites: CCJ 110, 120, 130, 210, 220, or consent of instructor. Use of computers, data base systems, and software applications in research and professional practice.

315 Ethics in Criminology and Criminal Justice (3)
(Same as Philosophy 315.) Prerequisites: CCJ 110, 120, 130, 210, 220, Philosophy 153, 154, 156, 330, 335, 338, or consent of instructor. Examination of major ethical issues encountered in criminology and criminal justice research and practice.

320 Forms of Criminal Behavior (3)
(Same as Sociology 320.) Prerequisites: CCJ 110, 120, 130, 210, 220, or consent of instructor. Examination of major types of criminal behavior including violent, property, public order, and organizational offenses. Emphasis on theories of and responses to these crimes.

325 Gender, Crime, and Justice (3)
(Same as Sociology 325.) Prerequisites: CCJ 110, 120, 130, 210, 220, 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.

330 History of Crime and Justice (3)
(Same as History 320) Prerequisites: Junior Standing or consent of instructor; CCJ 110, 120, 130, 210, 220. 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.

335 Probation and Parole (3)
Prerequisites: CCJ 110, 120, 130, 210, 220, 260, or consent of instructor. Analysis of alternatives to incarceration and postincarceration supervision. Emphasis on diversion, restitution, and community reintegration.

340 Race, Crime, and Justice (3)
(Same as Sociology 340.) Prerequisites: CCJ 110, 120, 130, 210, 220, 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.

345 Rights of the Offender (3)
Prerequisites: CCJ 110, 120, 130, 210, 220, or consent of instructor. Analysis of the objectives of criminal law regarding the rights of persons suspected or convicted of crime. Emphasis on rights regarding the police, the court, and in correctional settings.

350 Victimology (3)
Prerequisites: CCJ 110, 120, 130, 210, 220, or consent of instructor. Analysis of major perspectives on victimization. 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.
380 Special Topics in Criminology and Criminal Justice (3)
Prerequisites: CCJ 110, 120, 130, 210, 220. In-depth study of a selected topic in criminology and criminal justice.

390 Seminar in Criminology and Criminal Justice (3)
Prerequisites: CCJ 110, 120, 130, 210, 220, and senior standing. 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.

400 Proseminar (3)
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.

405 Methods (3)
Prerequisites: Graduate standing. Examination of basic methods for research design and data collection. Topics include participant observation and interviewing, survey research, aggregate data analysis, and experimental design.

410 Statistical Applications in Criminology and Criminal Justice (3)
Prerequisites: CCJ 405. 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.

415 Foundations of Criminological Theory (3)
(Same as Sociology 415.) Prerequisite: Graduate standing. Examination of the history of criminological thought incorporating the major works of such theorists as Bentham, Beccaria, Marx, Durkheim, Lombroso, Sutherland, and Merton.

420 Contemporary Criminological Theory (3)
Prerequisite: CCJ 415. 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.

430 Law and Social Control (3)
(Same as Sociology 461.) 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.

431 The Nature of Punishment (3)
(Same as Philosophy 431) Prerequisite: Graduate standing. The historical development of punishment philosophies and techniques. Topics include the emergence of the modern prison, the joining of medical and legal treatment, and rationales for alternative forms of punishment.

433 Philosophy of Law (3)
(Same as Philosophy 433.) Prerequisite: Graduate standing. Examination of origins of law and the basis for legal obligation. Specific consideration of the justification of punishment, morality and law, and legal reasoning.

434 Human Rights (3)
Prerequisite: Graduate standing. Examination of human rights from historical and cross cultural perspectives. Topics include capital and corporal punishment, political prisoners, rights of the accused, and rights of those imprisoned.

435 Law, Courts, and Public Policy (3)
(Same as PolSci 422.) Prerequisite: Graduate standing. Analysis of public policies, as represented by laws, court decisions, and agency adjudication, judicial review discrimination, affirmative action, urban planning, social welfare, intergovernmental relations, environmental law, freedom of information, and privacy concerns will be surveyed. The relationship between courts and the Constitution, courts and legislatures, and courts and the administrative process will be stressed.

436 Comparative Legal Systems (3)
Prerequisite: Graduate standing. Examination of diverse types of law and legal systems. The course contrasts Western and non-Western legal systems.

437 Private Justice (3)
Prerequisite: Graduate standing. Examination of the private sector's impact on formal criminal and juvenile justice systems, as well as the development of private security and informal justice systems. Financial incentives, moral and legal issues are explored.

440 Nature of Crime (3)
Prerequisite: Graduate standing. Examination of patterns and correlates of crime at the individual, situational, and aggregate levels. Topics include definitions of crime, offending typologies, and criminal careers.

441 Juvenile Delinquency (3)
Prerequisite: Graduate standing. Examination of youth crime and juvenile offenders. Topics include definitions of juvenile crime, and theories of juvenile crime causation in the United States.
442 Communities and Crime (3)  
Prerequisite: Graduate standing. Examination of the trends and sources of crime and social disorder across communities. The course emphasizes relationships among crime, fear of crime, neighborhood change, neighborhood responses to crime, and public policies.

443 Violent Crime (3)  
Prerequisite: Graduate standing. 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.

444 Organizational Crime (3)  
Prerequisite: Graduate standing. Examination of crime by and within groups. Focuses on the types of criminal behavior known as organized crime, white collar crime, and political corruption.

445 Property Crime (3)  
Prerequisite: Graduate standing. Examination of the sources and patterns of property offending across time and space. Topics include conceptions and typologies of property crimes and offenders, victim-offender relationships, and efforts to predict and control property offending.

446 Sex Crime (3)  
Prerequisite: Graduate standing. Examination of consensual and non-consensual sexual offending. Topics include historical development of laws regulating sexual conduct, controversies surrounding the application of these laws, and the nature and distribution of sexual offenses.

447 Public Order Crime (3)  
Prerequisite: Graduate standing. Examination of the nature of, prevalence of, and efforts to control public order crimes such as gambling, illicit drug use, prostitution, vagrancy, and disorderly conduct. The function of public order crimes as a means to control disruptive or threatening persons and groups is emphasized.

448 Victimization (3)  
Prerequisite: Graduate standing. 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.

450 Criminal Justice Process and Policy (3)  
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.

451 Juvenile Justice Systems (3)  
Prerequisite: Graduate standing. An examination of the historical evolution of juvenile justice and the processes by which specific behaviors are identified as delinquent. Informal responses to delinquency also are explored.

452 The Police (3)  
Prerequisite: Graduate standing. Historical, social and political analysis of policing in America. Examination of federal, state, county, and municipal agencies.

453 Adjudication (3)  
Prerequisite: Graduate standing. Examination of the objectives, institutions and processes involved in the adjudication of offenders. Topics address the structure and function of the judicial system and principal court actors.

454 Corrections (3)  
Prerequisite: Graduate standing. 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.

455 Ethical and Legal Issues in Criminal Justice (3)  
(Same as Philosophy 455.) Prerequisite: Graduate standing. Examination of the moral and legal aspects of the policies and practices of criminal justice agencies and agents. Issues may include treatment of offenders, the role of technology, and research and professional ethics.

465 Qualitative Research Design (3)  
Prerequisite: Graduate standing. Examination of participant observation and informant and respondent interviewing. Topics include gaining access, sampling, data collection and analysis, and legal and ethical concerns.

470 Quantitative Research Design (3)  
Prerequisite: CCJ 405 and CCJ 410. Examination of experimental, longitudinal, and cross-sectional designs. Sources of data, sampling procedures, operational definitions, and issues of reliability are also discussed.

475 Evaluation Research Methods (3)  
(Same as Psych 475, Sociology 475, and Public Policy Administration 475.) Prerequisites: At least one course in Research Design and Statistics at the graduate level. 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.
480 Multivariate Statistics (3)
Prerequisite: CCJ 410. Introduction to the general linear model with applications to multivariate problems in criminology and criminal justice. Topics include advanced ordinary least squares, causal modeling, time series analysis, simultaneous equations, and analysis of limited dependent variables.

485 Directed Readings (1-6)
Prerequisite: Directed Readings/Research in Criminology and Criminal Justice. Directed reading and research, under faculty supervision, designed to meet particular educational needs of selected students.

495 Internship in Criminology and Criminal Justice (3)
Prerequisite: Graduate standing. Supervised placements with criminal justice agencies. Designed primarily for students with limited field experience.

498 M.A. Thesis Research (1-6)
Prerequisites: Graduate standing.

499 Ph.D. Dissertation Research (1-6)
Prerequisite: Graduate standing or consent of instructor. To be arranged.
Faculty

Susan K. Feigenbaum, Professor*, Chairperson
Ph.D., University of Wisconsin
Sharon G. Levin, Professor*; Director of Graduate
Studies; Assistant Chairperson
Ph.D., University of Michigan
Lawrence H. White, Professor; Friedrich A. Hayek
Professor in Economic History
Ph.D., University of California, Los Angeles
Thomas R. Ireland, Professor*
Ph.D., University of Virginia
Joseph P. McKenna, Professor Emeritus
Ph.D., Harvard University
William E. Mitchell, Professor Emeritus
Ph.D., Duke University
Donald Phares, Professor*
Ph.D., Syracuse University
David C. Rose, Professor*
Ph.D., University of Virginia
Robert L. Sorensen, Professor*, Director of
Undergraduate Studies
Ph.D., Virginia Polytechnic Institute
Clinton A. Greene, Associate Professor*
Ph.D., University of California-Davis
Donald J. Kridel, Associate Professor*
Ph.D., University of Arizona
Timothy McBride, Associate Professor,* Economics,
Public Policy Administration, and Gerontology
Ph.D., University of Wisconsin-Madison
Herbert D. Werner, Associate Professor Emeritus*
Ph.D., University of California-Berkeley
Anne Winkler, Associate Professor*, Economics and
Public Policy Administration
Ph.D., University of Illinois at Urbana-Champaign
Debin Ma, Assistant Professor
Ph.D., University of North Carolina
Sarapage McCorkle, Assistant Professor*; Director,
Center for Entrepreneurship and Economic Education
Ed.D., University of Missouri-St. Louis
Michael T. Allison, Senior Lecturer
A.B.D., University of Virginia
Kathleen Phares, Senior Lecturer
M.A., University of Missouri-St. Louis
*members of Graduate Faculty

General Information

Degrees and Areas of Concentration Several degree
programs are offered by the economics department. The
B.A. in economics provides a flexible liberal arts
orientation for students. The B.S. in economics places
more emphasis upon developing the analytical and
quantitative skills used in analysis. Both degrees can be
tailored to meet the career interests of the student.

The economics faculty considers research an integral part
of good teaching. Research projects in recent years have
dealt with energy, public choice, industrial organization,
nonlinear modeling, property rights, wage discrimination,
urban economic development, health economics and
aging, economics of science, economics of gender,
poverty and welfare, and government regulations.

The economics department also offers courses at the
undergraduate level in geography.

A graduate program offers work leading to the M.A.
degree in economics in preparation for careers in
teaching, research, government, and industry. The
program includes course work in macroeconomic theory,
urban, international, industrial, and quantitative
economics; and research methodology. The program can
accommodate prospective full-time students as well as
those who wish to study part-time solely in the evening.
Classes are small, and student-faculty interaction is
encouraged.

The economics department cooperates with the College of
Business Administration and the Master's in Public Policy
Administration program.

Departmental Honors A student may earn departmental
honors with a GPA of 3.6 in economics and the
recommendation of the department.

Minor in Economics A minor in economics is also
available. See the following section for requirements.

Undergraduate Studies

General Education Requirements
All undergraduate economics majors must meet the
university and college general education requirements.
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.

Education majors specializing in economics must fulfill
the requirements for the bachelor of arts degree. These
majors are responsible for obtaining an adviser in the
Department of Economics.

All prerequisites for economics courses must be
completed with a C- or better.

Satisfactory/unsatisfactory Option
Courses outside the major field and Economics 51,
Principles of Microeconomics, and Economics 52,
Principles of Macroeconomics, may be taken on a
satisfactory/unsatisfactory basis.
Degree Requirements

Bachelor of Arts in Economics 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 100 level. All required courses for the major must be completed with a grade of C- or better. The following courses are required:

51, Principles of Microeconomics
52, Principles of Macroeconomics
220, Money, Banking, and Monetary Theory
251, Intermediate Economic Theory: Microeconomics
252, Intermediate Economic Theory: Macroeconomics
265, Economic Statistics
380, History of Economic Thought

Bachelor of Science in Economics
Candidates for the B.S. degree must complete at least 36, but no more than 45, hours in economics. At least 30 hours must be above the 100 level. All required courses for the major must be completed with a grade of C- or better. The following courses are required:

51, Principles of Microeconomics
52, Principles of Macroeconomics
220, Money, Banking, and Monetary Theory
251, Intermediate Economic Theory: Microeconomics
252, Intermediate Economic Theory: Macroeconomics
265, Economic Statistics
365, Introduction to Econometrics
Math 80, Analytic Geometry and Calculus I, or Math 100, Basic Calculus

Also required are two of the following:
350, Mathematical Economics
352, Analysis of Business Cycles
353, Managerial Economics
366, Applied Econometrics
367, Econometric and Time Series Forecasting
or any mathematics course numbered 175 or above (with consent of adviser)

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. 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 390).

Graduate School Preparation:
It is recommended that students considering doctoral-level graduate work in economics also take:

Math 175, Analytical Geometry and Calculus II
Math 180, Analytical Geometry and Calculus III
Math 245, Linear Algebra
Math 320, Mathematical Statistics

General Business Preparation:
It is recommended that students interested in pursuing careers in business also take:

BA 140, Fundamentals of Financial Accounting
BA 145, Managerial Accounting
BA 156, Legal Environment of Business
BA 204, Financial Management
BA 206, Basic Marketing

Requirements for the Minor. Candidates for a minor in economics must take a minimum of 18 hours in economics. At least 12 hours must be above the 100 level. Econ 265, Economic Statistics, cannot be counted towards the economics minor if the student has also taken Math 31, Math 132, BA 105, or the equivalent.

The following courses are required:
51, Principles of Microeconomics
52, Principles of Macroeconomics
251, Intermediate Economic Theory: Microeconomics

It is also recommended that students take Econ 252, Intermediate Economic Theory: Macroeconomics

Also required is a GPA of 2.0 or better for courses presented for the minor. The satisfactory/unsatisfactory (s/u) option may be applied to Econ 51 and 52 only.

Graduate Studies

Master of Arts in Economics
The Department of Economics offers a Master of Arts in Economics with two options: general economics and business economics.

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.

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.
Degree Requirements
Candidates for the M.A. in economics must complete a core curriculum that provides training in the fundamental areas of economic theory, quantitative methods, and communication skills. Students then select either the general economics or business economics option.

Required Core Courses
The following courses or their equivalents are required for both the general economics and business economics option. Students with previous education in economics or business may waive some of these courses.

Econ 350, Mathematical Economics
BA 410, Managerial Economic Analysis
BA 411, Analysis of National Economic Environment
MS/IS 481, Statistical Analysis for Management Decisions
Econ 403, Seminar in Economic Research
Econ 451, Microeconomic Analysis
Econ 452, Macroeconomic Analysis
Econ 465, Econometric Theory and Methods

General Economics
The general economics option is designed for students interested in a broad-based background in the traditional fields of economics. It is intended for those who wish to teach basic economics or pursue further graduate study in economics. A recommended study program is available for students who plan to pursue a Ph.D. at another university after completing the M.A. in economics at UM-St. Louis.

The general economics option requires 42 credit hours. Students with previous education in economics or business may waive up to 12 hours of the 42 hours required.

Regardless of the number of required courses waived, at least 30 hours of graduate work must be completed within a six-year period to earn the degree. A minimum of 21 hours must be completed while enrolled in the M.A. in economics program at UM-St. Louis.

Required Courses
Candidates must complete the required core courses.

Electives
Candidates must complete at least 18 hours of electives. A maximum of 6 hours of economics electives may be taken at the 300 level. With the approval of the graduate coordinator, students may take up to 9 hours of graduate courses outside the Department of Economics.

Business Economics
The business economics option prepares students for careers in business, government, and other organizations. This option combines the applied economic analysis and quantitative skills necessary for decision making in business and government with an appreciation for the function areas of these institutions.

The business economics option requires 60 credit hours. Students with previous education in economics or business may waive up to 24 hours of the 60 hours required. Regardless of the number of required courses waived, at least 36 hours of graduate work must be completed within a six-year period to earn the degree. A minimum of 24 hours must be completed while enrolled in the M.A. in economics program at UM-St. Louis. More than 50 percent of the credit hours completed in the business economics option must be taken in the Department of Economics.

Required Courses
In addition to the required core courses, students must complete the following courses:
BA 412, Public Policies Toward Business
BA 440, Financial Accounting: Theory and Practice
BA 450, Financial Management
BA 460, Organizational Behavior and Administrative Processes
BA 470, Contemporary Marketing Concepts
MS/IS 480, Management Information Systems
Econ 366, Applied Econometrics
Econ 453, Economics of Contracts and Organization
Econ 467, Business and Economic Forecasting

Electives
Candidates must complete at least 9 hours of electives in 400-level economics courses. With the approval of the graduate coordinator, students may take additional graduate courses outside the Department of Economics.

Certificate in Forensic Economics
This program of study is designed for individuals who wish to supplement previous graduate studies with training in the theory and application of forensic economics. It is aimed at individuals who wish to prepare economic reports and offer expert economic testimony for selected areas of litigation. The entrance requirement is a master's degree in such areas as actuarial science, business administration, finance, economics, or public policy. An applicant must have had course work, or its equivalent, in intermediate microeconomics, intermediate macroeconomics, and statistics. Course work in labor economics and law and economics is recommended but not required. Individuals admitted to this certificate program will be nonmatriculating graduate students.
Requirements

The certificate requires a minimum of 18 hours of course work in forensic economics. Students must complete:

Econ 440, Law and Forensic Economics
Econ 442, Labor Economics for Forensic Economics
Econ 444, Assessment of Damages in Personal Injury and Wrongful Death
Econ 446, Statistical Research in Forensic Economic Analysis
Econ 447, Writing Reports and Papers on Forensic Economics
Econ 449, Internship in Forensic Economics

Graduate Certificate in Management Economics
A Graduate Certificate in Managerial Economics is a program of study designed for individuals who wish to supplement previous graduate studies with advanced training in economic analysis. The entrance requirement is a master's degree in such areas as business administration, finance, or public policy administration. Individuals admitted to this certificate program will be nonmatriculating graduate students.

Requirements
The certificate requires a minimum of 18 hours of course work in economics. Students must complete:
451, Microeconomic Analysis
452, Macroeconomic Analysis
465, Econometric Theory and Methods

and two of the following:
366, Applied Econometrics
453, Economics of Contracts and Organization
467, Business and Economic Forecasting

Career Outlook

Economics is a language that provides the individual with a concise and logical way to study a wide range of problems and issues. It provides the flexibility for adapting to our ever-changing society, and it is also useful in everyday life. Thus, the economics major is excellent preparation for launching many careers. Economics graduates with a B.A. or B.S. degree pursue careers in banking, industry, and government. They use their training in economics as a foundation for a variety of jobs in management, personnel, sales, and marketing. Others continue their study of economics in graduate schools, earning M.A. and Ph.D. degrees. An undergraduate major in economics also provides a strong background for work on an M.B.A. or law degree. Economics is also important for careers in politics, journalism, and public and private service in foreign countries. Career planning materials are available in the Economics Resource Center, 452 SSB. For additional information, call the Director of Graduate Studies at 516-5560.
Course Descriptions

Courses in this section are grouped as follows: Economics, Geography, and Home Economics.

Prerequisites may be waived by consent of the department.


GEOGRAPHY: 101, 102, 295, 390

Economics

**40 Introduction to the American Economy (3)**
Introduction to economic analysis and problems through an examination of the development and operations of the American economy; study of its evolution, institutions, and principal problems. Econ 40 does not substitute for Econ 51 or 52. Students who have already completed Econ 51 or 52 may not take Econ 40 for credit.

**51 Principles of Microeconomics (3)**
Prerequisite: Math 30. 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.

**52 Principles of Macroeconomics (3)**
Prerequisite: Econ 51. 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.

**110 The Economics of Professional Sports (3)**
Prerequisite: Econ 40 or equivalent or consent of instructor. This course will survey the economic organization of professional sports team industries and the relationship of sports teams to their employees, fans, and governments. Economic issues relating to salaries and labor disputes, monopoly practices, cartels and pricing, team location decisions, and public subsidies for professional sports teams will be analyzed.

**205 History of American Economic Development (3)**
Prerequisites: Econ 40 or 51 or consent of instructor. (Same as Hist 205). Uses economic concepts to explain historical developments in American economy, beginning with hunter-gatherers who crossed the Bering land bridge around 12,000 B.C. Main topics include Native American economies, European exploration and conquest, colonial economies, indentured servitude, American Revolution, U.S. Constitution, westward expansion, transportation, Industrial Revolution, state banking and free banking, slavery, Civil War, post-bellum agriculture, rise of big business and antitrust, banking panics, Federal Reserve Act, First and Second World Wars, New Deal, and growth of government in postwar economy.

**207 The Business Firm: History, Theory, and Policy (3)**
Prerequisites: Economics 40 or 51 or consent of instructor. This course presents a history of development of modern business firms and examines the evolution of the economic theory of the firm. Special attention paid to the role that firms play in fostering social and economic development. Objective of course is to provide students with deeper understanding of firms so that they can make better policy decisions as owners, managers, lawmakers, regulators, and voters.

**210 Selected Topics in Economics (3)**
Prerequisites: Econ 51 and 52. 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 as long as the topic discussed in each semester is different.

**216 Public Finance: Expenditures (3)**
Prerequisite: Econ 51. Analysis of public goods and externalities, models of collective choice, elements of benefit-cost analysis, the theory of bureaucracy, governments as agents in markets.

**217 Political Finance: Revenues (3)**
Prerequisite: Econ 51. 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 differing tax institutions, and government borrowing.

**219 Law and Economics (3)**
Prerequisite: Econ 51. Analysis of the economic role of property rights and contracts in the private for-profit and not-for-profit sectors of the economy. Considers economic incentives to form organizations as one alternative and to form contracts as another. Considers the economic efficiency of the common law and judicial systems in use in the United States.

**220 Money, Banking, and Monetary Theory (3)**
Prerequisites: Econ 51 and 52. 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.
230 International Economic Analysis (3)
Prerequisite: Econ 40, or 51, or 52. 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.

231 International Finance (3)
Prerequisite: Econ 40, or 51, or 52. Introduction to
international monetary systems; foreign exchange
markets; financing of international transactions; the
international position of the dollar.

238 Comparative Economic Systems (3)
Prerequisite: Econ 40, or 51, or 52. Introduction to the
comparative study of economic organization, growth, and
welfare in different types of national economies such as
the United States, the United Kingdom, France, Germany,
Sweden, Japan, the republics of the former Soviet bloc,
and China.

240 Economic Development (3)
Prerequisites: Econ 51 and 52. Survey of economic
growth as applied to developed and underdeveloped
countries. Analysis of development policies with
emphasis on case studies. Case studies may include the
United States, Western Europe, or Latin America.

251 Intermediate Economic Theory: Microeconomics
(3)
Prerequisites: Econ 51 and 52. Analysis of prices in terms
of equilibrium of the business firm and consumer demand
in markets of varying degrees of competition.

252 Intermediate Economic Theory: Macroeconomics
(3)
Prerequisites: Econ 51, 52; 220 is recommended. Study of
national income, expenditure, and the forces determining
the level of economic activity. Special emphasis on the
theory of income determination and its application to
public policy.

260 Labor Economics (3)
Prerequisite: Econ 40, or 51, or 52. 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,
internal 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.

262 Economics of Women, Men, and Work (3)
Prerequisite: Econ 40 or 51. This course compares the
economic behavior of women and men in both the labor
market and the household. Topics include: the family as
an economic (production) unit, gender differences in labor
force participation, occupations and earnings; the
effectiveness of human capital theory and labor market
discrimination in explaining the male-female wage gap;
remedies for reducing the wage gap; family structure and
economic well-being; and alternative policies to alleviate
poverty.

265 Economic Statistics (3)
Prerequisites: Math 30, Econ 51, and Econ 52.
Introduction to economic data sources, data interpretation
and statistical inference as used in economic analysis.
Emphasizes the testing of economic hypotheses and the
development and estimation of economic models.
Introduces the use of statistical software used in
economics.

266 Industrial Organization (3)
Prerequisite: Econ 51. A theoretical and empirical
analysis of the actions of firms under alternative forms of
market organization. The role of economics 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.

270 Urban and Regional Economics (3)
Prerequisites: Econ 51 and 52. A survey of factors
affecting the location of economic activity, industrial
diversity, determinants of urban growth, the role of urban
public economy, and the management of the urban
environment.

272 The Political Economy of Health Care (3)
Prerequisite: Econ 40 or Econ 51. The course provides an
economic perspective on the working of the health care
market, focusing on the effects of government regulation,
tax policy, and entitlement programs. There will be a
detailed review of existing U.S. health care financing
programs (e.g., Medicare, Medicaid), as well as financing
systems of other developed countries. Health care policy
will be evaluated according to its impact on quality, cost,
and access to medical care and, ultimately, the overall
health status of our population.

301 Quantitative Methods and Modeling in
Economics, Business and the Social Sciences (3)
Prerequisites: Math 30; Econ 51 or junior standing. This
course focuses on the application of mathematical
techniques to model building. The course reviews various
mathematical techniques and shows students how they
can be used for describing various social and business
phenomena. Specific examples from the business,
economics, criminology and other social sciences will be
employed to reinforce the mathematical tools and
concepts discussed. Students who have previously
completed Econ 350 or Math 80 or Math 100 may not
take this course for credit.
302 Planning Processes in the Urban Economy (3)
Prerequisites: Econ 51 and junior standing. Economic techniques and criteria used in planning and evaluating programs and projects for the urban economy.

305 Macroeconomics for the School Curriculum (1-3)
Prerequisite: Junior standing. Analysis of forces affecting the national economy, with emphasis on income determination, employment, money and banking, and international trade and finance. Special reference to topics included in elementary and secondary school social science curricula. Econ 305 may not be used by economics majors to meet degree requirements.

306 Microeconomics for the School Curriculum (1-3)
Prerequisite: Junior standing. 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 306 may not be used by economics majors to meet degree requirements.

310 Economic Issues for the School Curriculum (1-3)
Prerequisites: 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.

317 Public Finance: State and Local (3)
Prerequisite: Econ 51 and 52 and junior standing. A study of expenditure, taxation, and financial administration of state and local governments, with emphasis on problems of current interest. Special attention given to research methods, as well as financial relations between various levels of government.

320 Financial Markets and Institutions (3)
Prerequisite: Econ 220. 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 operating within these markets, decision-making within individual intermediaries, their regulatory environment, and how their portfolio decisions affect flows in the financial system.

350 Mathematical Economics (3)
Prerequisites: Math 80 or 100, Econ 251, or Business 408 or 410. 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.

352 Analysis of Business Cycles (3)
Prerequisites: Econ 220; 252; 265 or equivalent. This course focuses on the empirical regularities in macroeconomics commonly referred to as the business cycle. It examines the variability and co-movements of aggregate economic variables and explores alternative theoretical explanations of these phenomena.

353 Managerial Economics (3)
Prerequisite: Econ 251; Math 80 or 100 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 structure and organization of firms. Problem-solving and case-study approach used.

355 Business and Government (3)
Prerequisite: Econ 51. Relations between business firms and government at all levels. Questions of regulation, public ownership, guidelines, and competition considered.

357 Government Regulation and Antitrust Policy (3)
Prerequisite: Econ 51. Evaluation of the use of antitrust policy and government regulatory agencies to improve the performance of industrial markets. Course will include discussion of antitrust cases and analysis of the economic impact of deregulatory initiatives in the airline, trucking, railroad, and telecommunications industries.

360 Natural Resource Economics (3)
Prerequisite: Econ 51, or consent of instructor. 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.

365 Introduction to Econometrics (3)
(Same as Public Policy Administration 365.)
Prerequisites: Econ 51 and 52; Econ 265 Math 80 or Math 101; or consent of instructor. 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.
366 Applied Econometrics (3)  
Prerequisite: Econ 365 or equivalent. Concepts, techniques, and 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.

367 Econometric and Time Series Forecasting (3)  
Prerequisite: Econ 365 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.

372 Economics of Nonmarket Decision Making (3)  
Prerequisites: Economics 51 or consent of instructor. Application of economic theory and methodology to study of nonmarket decision making. Introduction to economic models of the judiciary, bureaucracies, interest groups, regulatory agencies, legislative and executive branches of government, and private nonprofit charitable organizations. Impact of voting rules and agenda manipulation on collective outcomes will be explored.

380 History of Economic Thought (3)  
Prerequisites: Econ 51 and 52. The evolution of economic thought from the ancients through post-Keynesian theory.

390 Internship in Applied Economics (2-6)  
Prerequisites: Junior standing, Econ 251, and consent of instructor. Independent study involving work with appropriate private firm or public agency. Maximum of 6 hours may be earned, only 3 of which may be applied to economics major.

395 Special Readings (1-6)  
Prerequisites: 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.

403 Seminar in Economic Research (3)  
Prerequisites: Econ 220; Econ 251 or BA 410; Econ 252 or BA 411. Research methods applied to economics. Develops efficiency and skill in conducting research and communicating the results with written reports and oral presentations. This course must be taken within the first year of study after completion of the prerequisites.

408 Microeconomics for Policy Analysis (3)  
Prerequisites: Graduate Student Standing. (Same as PPA 408) This course introduces microeconomic analysis of consumers, firms, and government, with an emphasis on policy applications. It assumes no prior training in economics and is appropriate for graduate students in public policy administration, nonprofit management, political science, gerontology, criminology and criminal justice, and other related fields. This course may not be used by economics students to meet M. A. degree requirements.

420 Monetary Theory and Policy (3)  
Prerequisites: Econ 220; Econ 251 or BA 410; Econ 252 or BA 411; Econ 350. 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.

421 Public Sector Microeconomics (3)  
Prerequisite: Econ 251 or BA 410, or PPA 408. (Same as PPA 421.) Application of tools of intermediate microeconomics to address public sector issues. Special emphasis is placed on critically analyzing current public policy debates using the models developed. Topics covered include: cases in which competitive market fails to allocate resources efficiently (e.g., externalities and public goods), importance of property rights, incentive effects of the tax and transfer system, and the fundamentals of cost-benefit analysis.

422 Financial Markets (3)  
Prerequisites: Econ 220; Econ 251 or BA 410; Econ 252 or BA 411. 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.

430 International Trade (3)  
Prerequisite: Econ 251 or BA 410. Survey of the modern theories of international trade and their applications including factor endowments and other determinants of trade, 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.
431 International Monetary Analysis (3)
Prerequisite: Econ 220; Econ 252 or BA 411. 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.

440 Law and Forensic Economics (3)
Prerequisites: Econ 251, 252, 265, or equivalent, or consent of instructor. Reviews issues of law that dictate conditions under which forensic economic analysis is admissible. Topics include introduction to common law, federal and state court systems, statutory basis for wrongful death damages, "make whole" principle, efficient deterrence and efficient compensation, differences by class of litigation, determination of relevant law, legal implications of "preferred jury instructions," standards for admissibility of economic expertise.

442 Labor Economics for Forensic Economists (3)
Prerequisites: Econ 251, 252, 265, or equivalent; or consent of instructor. Focuses on areas of labor economics of special importance in forensic economic analysis. Topics include human capital as a recoverable asset, age-earnings cycles, variations in age-earnings cycles, earning capacity versus expected earnings, theories of family and family bargaining, theory of discrimination and tests for presence of discrimination.

444 Assessment of Damages in Personal Injury and Wrongful Death (3)
Prerequisites: Econ 251, 252, 265, or equivalent; or consent of instructor. Reviews methodologies for standard damage categories in forensic economic analysis. Topics include methods for establishing base earnings, use of age-earnings profile data, discount rates, net discount rates and stability of relationship between wage growth and discount rates, analysis of fringe benefit packages, concepts and measurement of nonmarket family services, hedonic damage controversy, analysis of personal consumption/personal maintenance for wrongful death cases.

446 Statistical Research in Forensic Economic Analysis (3) Prerequisites: Econ 251, 252, 265, or equivalent; or consent of instructor. Review of relevant statistical techniques, data sources, and reliability factors. Since factual information about individual tort victims is often limited in forensic economic assessment, this course deals extensively with issues of inference that must be made with little data. Also addresses issues of scientific admissibility and Internet as a potential source of relevant data.

447 Writing Reports and Papers in Forensic Economics (3)
Prerequisites: Econ 251, 252, 265, or equivalent; or consent of instructor. A professional writing course in which students are expected to prepare both a report suitable for litigation and a paper written in publication format for a professional journal or law review. Some student papers will be publishable in specialized journals, legal publications, and law reviews.

449 Internship in Forensic Economics (3)
Prerequisites: Econ 251, 252, 265, or equivalent; or consent of instructor. Internship with litigation division in law or accounting practice, or with forensic consulting firm. Internship activities and products will be monitored largely through Internet interaction between student and faculty.

451 Microeconomic Analysis (3)
Prerequisites: Econ 251 or BA 410; Econ 252 or BA 411; Econ 350. Survey of microeconomic comparative statics. Detailed examination of demand and supply, product, and factor markets. Partial equilibrium in competitive, imperfectly competitive, and monopolistic markets.

452 Macroeconomic Analysis (3)
Prerequisites: Econ 220; Econ 251 or BA 410; Econ 252 or BA 411; Econ 350. 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.

453 Economics of Contracts and Organization (3)
Prerequisites: Econ 251 or BA 410 (or 408). Considers issues in the coordination of human resources in the production of goods and services, either through individual contracting or through various forms of organizations. Organization is explained as a nexus of contractual relationships within a cooperative production unit, whether that unit is governmental, in private commerce, or has a nonprofit orientation-or some mix of the three basic modes. Emphasizes the roles of transactions costs, bounded rationality, monitoring individual performance in team production, opportunism, basic principles of insurance, and other incentive compatibility issues.

460 Structure and Performance of United States Industry (3)
Prerequisites: Econ 251 or BA 410; Econ 350. An analysis of the functioning of business firms under alternative market arrangements. Topics include: the theory and measurement of monopoly power and the role of economies of scale, product differentiation, and entry conditions in affecting this power; the impact of market power on the price-setting behavior, advertising and promotional strategies, and technological innovation of firms; the role of government policy in promoting or preventing competition among firms.
463 Economics of Telecommunications (3)
Prerequisites: Econ 251, BA 408 or BA 410 and Econ 350.
Application of economic theory and techniques to the telecommunications industry. Topics include demand theory for telephone access and use, consumer surplus models for subscription choice, nonlinear pricing strategies including pure and mixed bundling and multi-part tariffs, the incentives of the firm under various regulatory regimes, a comparison of rate-of-return regulation and incentive (price cap) regulation, and the impact of carrier-of-last-resort responsibilities.

465 Econometric Theory and Methods (3)
Prerequisites: Econ 251 or BA 410; Econ 252 or BA 411; Econ 350; Econ 365 or MS/IS 481; Math 245 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 single and multiple equation estimation and hypothesis testing. Topics include ordinary and generalized least squares, robust regression, and simultaneous equations estimation.

467 Business and Economic Forecasting (3)
Prerequisites: Econ 251 or BA 410; Econ 252 or BA 411; Econ 350; Econ 365 or MS/IS 481. 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.

470 The Political Economy of Metropolitan Areas (3)
Prerequisites: Regular graduate student status and consent of graduate student coordinator. This course deals with both the public and private sector issues that affect our nation’s metropolitan areas. It focuses on policy implications for economic development, government finance (especially at the state and local level) and intergovernmental relations. It also covers the economics of specific topical areas such as local education, transportation, financing adequate urban services, governmental structure and financial organization, infrastructure needs.

471 The Political Economy of Health Care (3)
Prerequisite: Econ 251 or BA 408 or consent of instructor. This course investigates the impact of government policy on health care provision and financing, focusing on the effect of entitlement programs, tax policy, and government regulation. Applying standard economics techniques, students will analyze incentives facing the decision makers in the health care system and ways in which they are altered by government policy. Attention will also be given to rationales for government intervention and roles of interest groups in the formulation of U.S. health care policy. The course will provide a detailed review of specific federal and state government financing programs, primarily focusing on Medicare and Medicaid, and will include discussion of the economic aspects of current health care reform proposals.

472 Health Economics (3)
Prerequisites: Econ 251 or BA 410; Econ 265 or equivalent; Econ 365 or equivalent recommended. This course applies microeconomic theory and statistical techniques to understand decision making in health care markets. The effects of government policies on the health care choices of consumers and providers are identified and quantified; attention is given to federal and state entitlement programs, regulations, tax policies and antitrust enforcement. The role of insurance as a risk-sharing device is explored, along with its implications for pricing and health care utilization.

480 Labor Economics: Theory and Public Policy (3)
Prerequisite: Econ 251 or BA 410. 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.

490 Advanced Topics in Economic Analysis (3)
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.

495 Directed Readings (1-6)
Prerequisite: Consent of instructor. Independent study through readings, reports, research projects, and conferences.

Geography

101 Introduction to Geography (3)
Prerequisite: Math 02 or equivalent. 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.

102 World Regions (3)
Prerequisite: Geography 101 recommended. 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.
210 Research Methods in Criminology and Criminal Justice (3)
Prerequisite: CCJ 10. Examination of basic methods of research design, measurement and data collection in criminology and criminal justice.

295 Special Topics in Geography (1-6)
Prerequisite: Consent of instructor. This course will provide a more in-depth analysis of the various factors which influence Geographic patterns. 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.

Home Economics

130 Nutrition in Health (3)
A study of dietary nutrients essential for health, proper selection of foods to provide them, and current issues affecting them.
Faculty

Barbara A. Kachur, Associate Professor·
Ph.D., The Ohio State University
Chairperson
David Carkeet, Professor·
Ph.D., Indiana University
Joseph Carroll, Professor·
Ph.D., University of California-Berkeley
Sylvia J. Cook, Professor·
Ph.D., University of Michigan
Charles Dougherty, Professor Emeritus
Ph.D., University of Toronto
William C. Hamlin, Professor Emeritus
Ph.D., University of Missouri-Columbia
Howard Schwartz, Professor·
M.A., Washington University
James E. Tierney, Professor Emeritus
Ph.D., New York University
Peter Wolfe, Professor, Curators’ Professor·
Ph.D., University of Wisconsin
Deborah Aldrich-Watson, Associate Professor·, Ph.D.,
Columbia University
Richard M. Cook, Associate Professor·
Ph.D., University of Michigan
Sally Barr Ebest, Associate Professor·
Ph.D., Indiana University
Kathy Gentile, Associate Professor·
Ph.D., University of Oregon
Francis Grady, Associate Professor·
Ph.D., University of California-Berkeley
Bruce L. Liles, Associate Professor Emeritus
Ph.D., Stanford University
John T. Onuska, Jr., Associate Professor Emeritus
Ph.D., Harvard University
Steven Schreiner, Associate Professor·
Ph.D., Wayne State University
Eamonn Wall, Jefferson Smurfit Professor of Irish
Studies and Associate Professor
Ph.D., City University of New York
Jane Williamson, Associate Professor Emerita
Ph.D., Bryn Mawr College
Jane Zeni, Associate Professor·
Ed.D., University of Missouri-St. Louis
Tivoli Majors, Assistant Professor·
Ph.D., University of Texas at Austin
Nanora Sweet, Assistant Professor·
Ph.D., University of Michigan
Mary Troy, Assistant Professor·
M.F.A., University of Arkansas
Dennis Bohnenkamp, Senior Lecturer
M.A., University of Missouri-Columbia
Ellie Chapman, Senior Lecturer Emerita
M.A., Murray State University
Susan Grant, Senior Lecturer
M.A., Southern Illinois University-Edwardsville
Nancy Gleason, Senior Lecturer
M.A., University of Missouri-St. Louis

Judy Gurley, Senior Lecturer Emerita
M.A., University of Arkansas
Linda Kick, Senior Lecturer
M.A., University of Missouri-Columbia
William Klein, Senior Lecturer
Ph.D., Michigan Technological University
Judith Linville, Senior Lecturer
M.A., University of Arkansas
Jennifer MacKenzie, Senior Lecturer
M.A., Purdue University
Terence Martin, Senior Lecturer
Ph.D., Southern Illinois University-Carbondale
Margaret DeCheeck Jenkins, Lecturer
M.A., University of Illinois - Champagne
William Mayhan, Lecturer
Ph.D., Washington University
Scott McKelvie, Lecturer
M.A., University of Missouri-St. Louis
Lyman Peters, Lecturer
M.A., University of Missouri-St. Louis
David Rota, Senior Lecturer
Ph.D., Southern Illinois University-Carbondale
Barbara Van Voorde, Lecturer
M.A., Washington University

*members of Graduate Faculty

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.

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.
Undergraduate Studies

General Education Requirements
English courses may be used to meet the university's humanities requirement, except the following:

10, Freshman Composition
11, Freshman Composition for International Students
112, Topics in Writing
122, Traditional Grammar
209, Practical Criticism: Writing About Literature
210, Advanced Expository Writing
211, Advanced Expository Writing for International Students
212, Business Writing
213, Technical Writing
214, News Writing
215, Feature Writing
216, Writing in the Sciences
218, Reporting
262, The Curriculum and Methods of Teaching English
300, Writing in the Professions
305, Writing for Teachers
313, Advanced Business and Technical Writing
319, Editing
320, Independent Writing Project

The college's foreign language requirement may be met in any language.

Satisfactory/Unsatisfactory Option
English majors may take any English course on a satisfactory/unsatisfactory basis except the following:

10, Freshman Composition
11, Freshman Composition for International Students
209, Practical Criticism: Writing About Literature
210, Advanced Expository Writing
211, Advanced Expository Writing for International Students
212, Business Writing
213, Technical Writing
214, News Writing
215, Feature Writing
216, Writing in the Sciences
218, Reporting
262, The Curriculum and Methods of Teaching English
300, Writing in the Professions
305, Writing for Teachers
313, Advanced Business and Technical Writing
319, Editing
320, Independent Writing Project

Degree Requirements

Bachelor of Arts in English
English majors must complete at least 36, but no more than 45, hours in English exclusive of English 10, Freshman Composition; English 11, Freshman Composition for International Students; and English 209, Practical Criticism: Writing About Literature.

1) Students majoring in English must take:
122, Traditional Grammar—or test out
131, English Literature I
132, English Literature II
171, American Literature I
172, American Literature II

2) English 209, Practical Criticism: Writing About Literature. (For English majors, this course is a prerequisite or corequisite for 300-level courses in English.)

3) Students must also complete one course from five of the following 10 areas:

Area 1 Medieval English
322, Old English Literature
324, Chaucer
325, Medieval English Literature

Area 2 Shakespeare
337, Shakespeare: Tragedies and Romances
338, Shakespeare: Comedies and Histories

Area 3 The Renaissance
332, Elizabethan Poetry and Prose
339, Tudor and Stuart Drama
342, Early Seventeenth-Century Poetry and Prose
345, Milton

Area 4 Restoration and Eighteenth-Century English
346, Restoration and Eighteenth-Century Drama
352, Age of Dryden and Pope
353, Age of Johnson
364, The Eighteenth-Century English Novel

Area 5 Nineteenth-Century English
365, The Nineteenth-Century English Novel
368, Early Romantic Poetry and Prose
369, Later Romantic Poetry and Prose
371, Prose and Poetry of the Victorian Period
372, Literature of the Late Nineteenth and Early Twentieth Centuries

Area 6 Nineteenth-Century American
373, Selected Major American Writers I
374, Selected Major American Writers II
375, American Fiction to World War I

Area 7 Twentieth-Century English/American
376, Modern American Fiction
383, Modern British Fiction
384, Modern Poetry
385, Modern Drama
386, Poetry Since World War II
Area 8 Literary Criticism
321, History of Literary Criticism
327, Contemporary Critical Theory
329, Forms and Modes of Poetry
387, The Two Cultures: Literature and Sciences
388, Narrative, Cognition, and Emotion

Area 9 Special Topics
306, Adolescent Literature
323, Continental Fiction
380, Studies in Women and Literature
390, Seminar
391, Special Topics in Jewish Literature
395, Special Topics in Literature

Area 10 Linguistics
307, Linguistics
308, English Grammar
309, History of the English Language

Work in 100-level courses provides background in literary history and forms, as well as the means for discussing literary issues, on paper and orally. Thus, the department requires English 131 or consent of the instructor as a prerequisite for all courses in Areas 1-4 and English 132 or consent of the instructor as a prerequisite for all courses in Areas 5 and 7, except American literature courses. English 171 or consent of the instructor is a prerequisite for all courses in Area 6, and both English 171 and English 172 or consent of the instructor are prerequisites for English 376. All survey courses (English 131, 132, 171, and 172) must be taken before the major has completed 90 hours toward a degree.

A maximum of 6 satisfactory/unsatisfactory hours may be taken in the department. Majors must complete at least 18 graded (i.e., not satisfactory/unsatisfactory) hours in English courses at the 200 level or above with a grade point of 2.0 or better in these courses.

Students majoring in English must complete a minimum of 12 graded hours in English courses at the 300 level or above in residence with a grade point average of 2.0 or better in these courses or students must receive special consent of the department.

Students should consult with faculty advisers to determine which upper-level courses best satisfy their major needs and interests.

Bachelor of Arts in English with Certification for Secondary Education
All candidates for certification to teach English must enroll in a program in the College of Education involving Level I, Level II, and Level III coursework plus student teaching. See the Division of Teaching and Learning in this Bulletin for information.

In addition to the requirements for the B.A. in English, students must meet the following requirements for secondary certification:

1) Two courses in American literature. This requirement may be met by courses counted for the major.
   a American literature must include a unit or course in the literature of ethnic groups.
   b American literature must include a unit or course in literature for adolescents.

2) Twelve hours in composition and rhetoric:
   Eng 10, Freshman Composition, may be counted
   Eng 209, Practical Criticism: Writing About Literature, is required.
   Eng 305/SEC ED 305, Writing For Teachers, is required. Recommended courses include creative writing, journalism, and business writing.

3) English language requirements
   a. Eng 122, Traditional Grammar
      Students with sufficient background may gain exemption from the English 122 requirement by passing the English-Education Test of Basic Grammar. This test may be taken only twice. Certification candidates must pass English 122 or the Test of Basic Grammar before applying for student teaching.
   b. Eng 308, English Grammar
   c. Eng 307, Linguistics, or Eng 309, History of the English Language

4) Eng 262, The Curriculum and Methods of Teaching English. Prerequisite: Completion of Level II courses and a near major in English. Must be taken concurrently with Sec. Ed. 290, internship, and before student teaching.

5) Eng 270, English Student Teaching Seminar, must be taken concurrently with Sec. Ed. 291, Secondary School Student Teaching.

6) Candidates for certification in Missouri must have a 2.5 cumulative GPA, computed from the beginning of freshman year and including all colleges attended. They also need a minimum GPA of 2.5 in their English courses. All grades in professional education and in required English courses must be C- or better.

Bachelor of Science in Secondary Education with an Emphasis Area in English
All candidates for certification to teach English must enroll in a program in the College of Education involving Level I, Level II, and Level III coursework plus student teaching. See the Division of Teaching and Learning in this Bulletin for information.
The required courses in English and professional education are the same as those for the B.A. with certification for secondary education. However, students fulfill the general education requirements of the College of Education rather than those of the College of Arts and Sciences. For example, students seeking the B.S. in Education are not required to study a foreign language.

Certification to Teach Secondary Speech and Drama
All candidates for certification to teach Speech and Drama must enroll in a program in the College of Education involving Level I, level II, and Level III coursework plus student teaching. See the Division of Teaching and Learning in this Bulletin for information.

In addition, undergraduates who wish to be certified to teach Speech and Drama must meet the requirements for a major in Communication as well as requirements set by the Theatre faculty in the English department. Students must meet with the advisers in English and in Communication to plan their individual programs.

Minor in English
A student may minor in English by taking at least 18 hours of English courses exclusive of Basic Writing, English 10, Freshman Composition, and English 11, Freshman Composition for International Students. English 209 is required, and 12 of the 18 hours must be in literature courses, 9 of which must be in courses at the 200 or 300 level. Every student taking a minor in English must consult with an adviser in the English department to ensure a coherent program of studies. The GPA in courses for the minor must be 2.0 or better. Nine of the 18 hours must be taken in residence at UM-St. Louis. No more than 3 hours taken on a satisfactory/unsatisfactory basis may be counted toward the 18-hour minimum.

Certificate Program in Writing
A student may receive the Certificate in Writing by completing a total of 18 hours in writing courses chosen from the following:

Comm 212, Broadcast Writing and Reporting
Comm 217, Script Writing for Business and Industry
English 103, Poetry Writing
English 104, Short Story Writing
English 105, Play Writing
English 108, or Comm 108 Advertising Copywriting
English 112, Topics in Writing
English 209, Practical Criticism: Writing About Literature
English 210, Advanced Expository Writing
English 211, Advanced Expository Writing for International Students
English 212, Business Writing
English 213, Technical Writing
English 214 or Comm 214, News Writing
English 215, Feature Writing
English 216, Writing in the Sciences
English 218, Reporting

English 228 or Comm 228, Writing for Public Relations
English 303, Advanced Poetry Writing
English 304, Advanced Fiction Writing
English 305, Writing for Teachers
English 313, Advanced Business and Technical Writing
English 317, Topics in Teaching Writing
English 319, Editing
English 320, Independent Writing Project (This course is required. It is to be taken as the last course a student will take in the program, and it is to be used to generate an extensive final project or internship.)

Technical Writing Emphasis
The technical writing emphasis provides a more career-specific strategy for students enrolled in the Writing Certificate program. The technical writing emphasis is composed of three required courses:

213, Technical Writing
319, Editing
313, Advanced Business and Technical Writing or 320, Independent Writing Project

In addition, students take three electives for a total of 18 hours chosen from the following:

Business Administration
103, Computers and Computer Information
205, Contemporary Business Communication

Communication
65, Introduction to Information Technology

Computer Science
125, Introduction to Computer Science (Prerequisite: Math 30, College Algebra)

English
212, Business Writing
214, News Writing
215, Feature Writing
216, Writing in the Sciences
228, Public Relations Writing
313, Advanced Business and Technical Writing (if 320 is taken as requirement)
320, Independent Writing Project (if 313 is taken as requirement)

Courses taken to fulfill requirements for the Writing Certificate may not be taken on a satisfactory/unsatisfactory basis.
Graduate Studies

Admission Requirements
To enter the graduate program in English, a candidate must satisfy the requirements both of the Graduate School and of the Department of English. A candidate should have a bachelor's degree, with at least 24 hours in English courses. Normally only students with a grade point average of at least 3.0 in undergraduate English courses and with an overall undergraduate average of 2.75 will be considered.

In addition, the English department requires letters of recommendation from two of the applicant's former English instructors. The graduate committee will use the letters, the undergraduate record, and the scores on the GRE general test as the basis for its decision. Applications to the master of arts program should be submitted according to the following schedule: May 1 for the fall semester; May 1 for the summer session; and December 1 for the winter semester. Late applications will be considered for the upcoming semester only if all spaces for that semester have not been filled.

Teaching Assistantships
A number of teaching assistantships are available for qualified applicants. 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, 27 hours of which must be in 400-level courses. Nine hours may be taken in 300-level courses approved by the department and Graduate School.

At the outset of the program, students in both the literature and writing theory tracks must take English 400, Introduction to Graduate Study in English, which focuses upon bibliography, research methods, and literary criticism. Students must receive graduate credit for English 400.

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 composition track must take 18 hours in literature courses (including Eng 400) and 18 hours in composition courses (including Eng 485). The literature courses should provide broad coverage, rather than a narrow focus on a particular genre or historical period. If students choose the thesis option (6 hours) they will take 15 hours in literature and 15 hours in composition.

Thesis Option
Students in literature or writing theory may elect the thesis option, which requires a total of 6 hours of thesis credit. The thesis should demonstrate original thought and substantial research and may be a critical study of literary works, a theoretical exploration of issues related to literature or writing, or a descriptive assessment of fieldwork related to writing and pedagogy. 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.

Further information may be found in The Master of Arts in English, available from the English department.

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); at least 18 hours of English courses above the freshman level is required, 9 of them in literature; 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 400-level courses. Nine hours may be taken in 300-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: (a) 18-21 hours in creative writing courses: 15 hours of workshops (at least one course outside the genre), and 3-6 hours of English 494; (b) 15 hours of courses in literature, language, writing theory, or literary journal editing offered by the department; (c) 3-6 hours of electives: another workshop or literature/language/writing theory/literary journal editing course or a relevant offering in another discipline. Students may not take a 300-level writing course in their genre for graduate credit. At least two of the writing workshops and English 494 must be taken at UM-St. Louis. Complete information may be found in The Master of Fine Arts in Creative Writing, available from the English department.
Career Outlook

In addition to traditional employment as teachers at the primary, secondary, and community-college levels, recent UM-St. Louis 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.
Course Descriptions

Courses in this section are grouped as follows: Composition; Language; Literature; and Special Offerings.

English 10, Composition, or its equivalent, is a general prerequisite for all English courses numbered 131 and above. This, and other specific prerequisites, may be waived by consent of the department.

English 210, Advanced Expository Writing, its equivalent or consent of the instructor is a general prerequisite for all literature courses numbered 300 and above for non-English majors.


Writing

10 Freshman Composition (3)
Teaches critical reading and thinking skills and emphasizes writing as a process. Enhances writing skills through a sequence of increasingly complex writing assignments. Class discussion and small-group workshops focus on problems of invention, organization, development, and revision in essay writing. Fulfills the campus freshman writing requirement. Does not count toward the major in English.

11 Freshman Composition for International Students (3)
Prerequisite: Essay proficiency test or a TOFEL score of 500 or above. Theory and practice of writing expository American prose. Special attention is given to verb tenses, idioms, articles, and syntax. Does not count toward the major in English. This course substitutes for English 10 in all university requirements.

103 Poetry Writing (3)
Prerequisite: English 10 or equivalent. Theory and practice of poetry writing.

104 Short Story Writing (3)
Prerequisite: English 10 or equivalent. Theory and practice of writing the short story.

105 Play Writing (3)
Prerequisite: English 10 or equivalent. Theory and practice of writing plays.

108 Advertising Copywriting (3)
(Same as Comm 108.) To give students a hands-on approach for writing advertising material for print and broadcast against tight deadlines in a professional setting.

112 Topics in Writing (3)
Prerequisite: English 10 or equivalent. This course will introduce the student to writing in specific areas. The department will announce topics and course content in the Schedule. 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.

209 Practical Criticism: Writing About Literature (3)
Prerequisites: English 10 or equivalent and junior standing or consent of the department. The course acquaints students with the techniques and terminology of literary criticism and trains them in the rudiments of writing about literature. Students compose eight to ten practical, critical essays on drama, poetry, fiction, and nonfictional prose. Explication of particular texts is emphasized. A longer critical paper incorporating secondary sources and introducing students to basic methods and resources for research is assigned. The course is required of English majors but is open to all qualified students. Course does not count toward the major in English. May not be taken on the satisfactory/unsatisfactory basis.

210 Advanced Expository Writing (3)
Prerequisites: Freshman Composition or equivalent (3-6 hours) and junior standing. This course further develops the experienced writer's style and analytical capabilities to the level of sophistication necessary for upper-division writing assignments and for academic and professional settings. The course includes complex readings, focuses on persuasion and argumentation, expands upon students' research and documentation skills, and requires research in university libraries. This course fulfills the university's requirement for a junior-level course in communicative skills. It may not be taken on a satisfactory/unsatisfactory basis.
211 Advanced Expository Writing for International Students (3)
Prerequisite: English 11 or equivalent. This course will develop the student's style and critical-analytical abilities in contemporary American English writing. The course will also offer an introduction to formal research and documentation methods for preparing papers in a variety of fields. Additional emphasis will be placed on improving the student's reading abilities, both in comprehension and vocabulary. Course satisfies the junior-level communicative skills requirement. May not be taken on the satisfactory/unsatisfactory option.

212 Business Writing (3)
Prerequisites: Freshman composition or equivalent (3-6 hours) and junior standing. This 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. Fulfills the university's requirement for a junior-level course in communicative skills. It may not be taken on a satisfactory/unsatisfactory basis.

213 Technical Writing (3)
Prerequisites: Freshman composition or equivalent (3-6 hours) and junior standing. The major elements of industrial technical writing. Writing assignments include technical definitions, abstracts and summaries, mechanism descriptions, instructions, process analyses, technical reports and proposals. Emphasis is placed on clarity, conciseness, organization, format, style, and tone. The course includes an introduction to research methods and documentation. All readings are selected from industrial material. Fulfills the university's requirement for a junior-level course in communicative skills, subject to the approval of the student's major department. May not be taken on the satisfactory/unsatisfactory option.

214 News Writing (3)
(Same as Comm 214.) Prerequisite: English 10 or equivalent. An introduction to news writing and reporting. Course covers basic components of news, reporting principles, and news writing style and structure. Daily writing assignments include coverage of speeches, meetings and interviews, accidents, deaths, courts, sports, consumer affairs, and government. Emphasis on clarity, accuracy, and speed.

215 Feature Writing (3)
Prerequisite: English 10 or equivalent. Study of free-lance 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. Fulfills the university's requirement for a junior-level course in communicative skills. May not be taken on the satisfactory/unsatisfactory option.

216 Writing in the Sciences (3)
Prerequisite: Freshman composition or equivalent (3-6 hours) and junior standing. Designed to teach students how to write effectively in the sciences. Writing assignments include short reports, proposals and a major project. Students are encouraged to select projects that will reflect work in a science course which may include a research or analytical report, a formal proposal or a procedures/instructions manual. Emphasis is placed on clarity, conciseness, organization, format, style, and tone. The course will include an introduction to research methods and documentation. Fulfills the university's requirement for a junior-level course in communicative skills, subject to the approval of the student's major department. May not be taken on the satisfactory/unsatisfactory option.

218 Reporting (3)
Prerequisite: English 214 or equivalent. Theory and practice of reporting news for publication in the print media. Includes one classroom session and one field assignment weekly. Stories must be filed within deadline limits. Writing emphasis is on clarity, conciseness, and accuracy.

228 Public Relations Writing (3)
(Same as Comm 228.) Prerequisite: English 214 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.

303 Advanced Poetry Writing (3)
Prerequisite: English 210 and English 103 or consent of instructor. Workshop in poetry writing.

304 Advanced Fiction Writing (3)
Prerequisite: English 210 and English 104 or consent of instructor. Workshop in fiction writing.

305 Writing for Teachers (3)
(Same as SEC ED 305.) Prerequisite: English 210 or a comparable course in advanced composition. Designed for prospective as well as in-service teachers, the course includes: (1) writing - short papers to be shared in workshop groups; (2) reading - current theory and research on writing and the implications for teachers; (3) teaching - classroom activities that foster growth in writing.
313 Advanced Business and Technical Writing (3)
Prerequisite: English 210 or its equivalent as judged by 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.

317 Topics in the Teaching of Writing (3)
(Also as Edu 317). Prerequisites: English 210 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.

319 Editing (3)
Prerequisites: English 210 or equivalent as judged by instructor, English 122 or 308. Introduction to language and processes of editing. Includes copy editing, study of style manuals, and overview of production process. Counts toward Certificate in Writing.

320 Independent Writing Project (3)
Prerequisite: English 210 or its 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 either individually or with an instructor to complete an extensive creative writing project or an internship.

329 Forms and Modes of Poetry (3)
Prerequisite: English 209 prerequisite or corequisite. An advanced critical study of formal poetry, from classical and Renaissance models to modern innovations and master-pieces. The course will cover scanion, figurative language, stanza form and convention, modes of occasional poetry, and studies of formal poets (e.g., Yeats, McKay, Bogan, Auden).

456 Graduate Workshop in the Novel (3)
Prerequisite: Consent of the instructor, based on submission of sample of novel manuscript. A writing workshop in which a novel written by the student is discussed and analyzed by the instructor and members of the class. Students must have a complete novel manuscript (50,000 words minimum) ready for discussion by the beginning of class. May be repeated for maximum graduate credit of fifteen (15) hours.

457 Graduate Workshop in Nonfiction (3)
Prerequisites: Open to students in the MFA program and to others with consent of the instructor. A variable-topics writing workshop focusing on one or more of the following forms: personal essay, memoir, travel writing, literary journalism, biography, or other types of literary nonfiction. May be repeated for maximum graduate credit of fifteen (15) hours.

459 Literary Journal Editing (3)
Prerequisite: 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 production of an issue of the magazine. May ordinarily be repeated for maximum graduate credit of 6 hours.

485 Theories of Writing (3)
An analysis of major modern theories in composition.

487 Writing/Reading Theory (3)
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.

488 Composition Research (3)
Students analyze and conduct research in composition. Course work teaches students to evaluate methodologies and implications, and to analyze data and to design research.

489 Teaching College Writing (3)
Provides the opportunity for practical application of composition theory with an emphasis on improving teaching skills. Strongly recommended for graduate teaching assistants.
490 Gateway Writing Project (1-6)
(Same as SEC ED 436.) 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' experiences as writers and as teachers. Topics may vary. May be repeated for credit. No more than six hours may be applied toward the M.Ed. Counts toward the Certificate in Writing.

491 Studies in Composition (3)
The study of special topics in composition. Topics may include history of composition, psychology of writing, reader-response theory, etc.

492 Graduate Workshop in Poetry (3)
Prerequisite: Open to students in the MFA 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 hours.

493 Graduate Workshop in Fiction (3)
Prerequisite: Open to students in the MFA 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.

494 Final Writing Project (3-6)
Prerequisite: Successful completion of 15 hours in graduate creative writing courses or permission from instructor. An independent writing tutorial taken by students after they have completed all other creative writing course work. Completion of the project requires a substantial body of original poetry or fiction. May be repeated for maximum graduate credit of six (6) hours.

Language

122 Traditional Grammar (3)
An introduction to the terms and concepts of traditional grammar, beginning with the parts of speech and moving to more complex structures such as participles, gerunds, and clauses. The course also deals with the conventions of formal usage and punctuation.

307 Linguistics (3)
Prerequisite: English 210; majors, English 209. 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.

308 English Grammar (3)
Prerequisite: English 210; majors, English 209. A study of modern English grammar from the perspectives of traditional, structural, and transformational grammar.

309 History of the English Language (3)
Prerequisite: Prerequisites: English 210 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.

410 Modern Linguistics (3)
A study of selected topics in the structure of the English language, combining readings in current linguistics publications with original research.

Literature

12 Literary Types (3)
The student is introduced to the various literary types, including poetry, drama, fiction, and the essay.

13 Topics in Literature (3)
Introduces 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.

15 Images of the Elderly in Film (3)
(Same as Gerontology 15.) Analysis of the portrayal of older adults in various films. Class discussions focus on the style and thematic content of the film, as well as intergenerational relationships.

16 Images of Age in Literature (3)
(Same as Gerontology 16.) Reading and discussion of literature that portrays aging and old age in various settings. Emphasis is on contemporary novels, but poetry and drama such as King Lear are read as well. Discussion and short essays enable consideration of how literature helps in the study of aging and also how the process of aging can be a creative force within literature.

17 American Literary Masterpieces (3)
An introduction to major themes and works in American literature from the nineteenth century to the present. Selected works from Hawthorne, Poe, Melville, Whitman, Twain, James, Frost, Hemingway, Faulkner, O'Connor, Plath, and Bellow.
20 Myth (3)
The nature of myth, with some consideration of the
various theories used to account for its origins. An
examination of central mythic motifs, images, and
characters. While some attention will be given to
comparing the mythologies of different cultures, the
emphasis will be on reading Classical Greek and Roman
mythology.

70 African-American Literature (3)
A survey of prose, poetry, and drama by black Americans
from the period of enslavement through the Harlem
Renaissance to the present.

71 Native American Literature (3)
(Same as Anthropology 71.) 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 College
of Arts and Sciences Cultural Diversity requirement.

120 Classical Literature in Translation (3)
The civilization of ancient Greece and Rome as reflected
by their major creative writers in some of their principal
works: the epics of Homer and Vergil; the plays of
Aeschylus, Sophocles, Euripides, Aristophanes, Plautus,
Terence, and Seneca; the lyrics of Sappho and Catullus;
the satire of Petronius; and Ovid's rendering of the
classical myths.

123 Jewish Literature (3)
Examines the traditional Jewish literature of the Bible and
later legends found in the Talmud and Midrash and also
considers later phases of Jewish literature, both sacred
and secular. These include medieval folklore and Hasidic
tales.

124 Literature of the New Testament (3)
A comprehensive understanding of the New Testament,
its literary background, and significance for Western
civilization.

125 Literature of the Old Testament (3)
Prerequisite: Sophomore standing or consent of instructor.
A comprehensive understanding of the Old Testament, its
literary background, and significance for Western
civilization.

128 The Contemporary World in Literature (3)
Selected world literature since the second World War
from the Middle East, Europe, Latin America, Africa,
India, and Asia with emphasis on non-European
literatures. This course excludes literature form the United
States and England and it satisfies the College of Arts and
Sciences Cultural Diversity requirement.

131 English Literature I (3)
The development of English literature from the Middle
Ages through the eighteenth century. Reading and
analysis of representative works of selected major writers.

132 English Literature II (3)
The development of English literature during the
nineteenth and twentieth centuries. Reading and analysis
of representative works of selected major writers.

133 Introduction to Poetry (3)
A close study of poems, with special emphasis on the
varieties of poetic forms, and the means of interpretation
and evaluation. The works studied will be primarily
English and American, and from at least three different
centuries.

134 Introduction to Drama (3)
A close study of major dramatic works in various modes,
to introduce the student to the forms and techniques of
dramatic literature. The works studied will be primarily
English and American, and from at least three different
centuries.

135 Introduction to Fiction (3)
A close study of major prose fiction, with particular
attention to the varieties of fictional forms and techniques.
The works studied will be primarily English and
American, and from at least three different centuries.

171 American Literature I (3)
Representative selections from American authors from the
middle of the seventeenth century to the middle of the
nineteenth century.

172 American Literature II (3)
Representative selections from American authors from the
middle of the nineteenth century to the present. Fulfills
the requirement for Missouri Teacher Certification of Aa
unit in literature of American ethnic groups" and Aa unit
in American literature for adolescents."
306 Adolescent Literature (3)
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; multiculturalism; 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.

321 History of Literary Criticism (3)
Historical survey of the principles of literary criticism from Plato to the present.

322 Old English Literature (3)
Prerequisite: English 210; or, for majors, English 209 prerequisite or corequisite and English 131 prerequisite or permission of instructor. An introduction to the literary culture of Anglo-Saxon England through study of the Old English language and close reading of a diverse group of Old English texts from the eighth to eleventh centuries.

323 Continental Fiction (3)
Prerequisites: Two college courses in literature. The development of the European novel in the nineteenth and twentieth centuries. Representative works of writers such as Balzac, Flaubert, Dostoevsky, Tolstoy, Kafka, and Proust, read in translation.

324 Chaucer (3)
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.

325 Medieval English Literature (3)
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.

327 Contemporary Critical Theory (3)
This course is to acquaint students with a range of critical methodologies that have gained currency since the 1960s. The kinds of criticism considered include formalist (New Critical, Russian, and Aristotelian), structuralist, poststructuralist, Marxist, reader-response, psycho-sexual, and feminist.

329 Forms and Modes of Poetry (3)
An advanced critical study of formal poetry, from classical and Renaissance models to modern innovations and masterpieces. The course will cover scansion, figurative language, stanza form and convention, modes of occasional poetry, and studies of formal poets (e.g., Yeats, McKay, Bogan, Auden).

332 Elizabethan Poetry and Prose (3)
Spenser, Sidney, Wyatt, and other poets of the later sixteenth century. The origin and development of prose fiction.

337 Shakespeare: Tragedies and Romances (3)
The development of Shakespeare's concept of tragedy and tragicomedy from Titus Andronicus to The Tempest. The plays will be related to the social and literary milieu of the period.

338 Shakespeare: Comedies and Histories (3)
Shakespeare's early work for the theater with some attention to the sonnets and longer poems. An historical background for a study of all the plays, including discussions of Elizabethan society, the world of the stage, and Shakespeare's biography.

339 Tudor and Stuart Drama (3)
A survey of the dramatic writings of the period from the interludes of John Heywood to the closing of the theaters in 1642, with particular attention to the plays of Marlowe, Jonson, Webster, and Ford. Though Shakespeare will not be studied in this course, connections between his works and those of his contemporaries will be discussed.

342 Early Seventeenth-Century Poetry and Prose (3)
Donne, Jonson, Marvell, Bacon, and other poets and essayists of the Metaphysical, Cavalier, and Baroque schools, exclusive of Milton.

345 Milton (3)
All the minor poems and the three longer poems with some attention to the major prose; Milton and his relation to the politics, theology, and literature of the seventeenth century.

346 Restoration and Eighteenth-Century Drama (3)
The principal tragedies and comedies from Dryden to Sheridan, including the plays of Congreve, Farquhar, Rowe, Gay, Fielding, and Goldsmith, among others.

352 Age of Dryden and Pope (3)
The beginnings of English neoclassic literature in the Restoration and its development through the first half of the eighteenth century, focusing on Dryden, Swift, and Pope.

353 Age of Johnson (3)
The breakdown of the neoclassic spirit and the introduction of the "new" poetry and novel. Consideration of Fielding, Johnson, Thompson, Young, Goldsmith, Sheridan, and others.

364 The Eighteenth-Century English Novel (3)
The origins and early development of the English novel, from Defoe to Jane Austen.
365 The Nineteenth-Century English Novel (3)
Novels of the Romantic and Victorian Periods, from
Austen to George Eliot.

368 Early Romantic Poetry and Prose (3)
The English romantic movement with special emphasis
on the early writers--Blake, Wordsworth, and Coleridge.
Additional readings in selected prose writers and minor
poets.

369 Later Romantic Poetry and Prose (3)
The English romantic movement with special emphasis
on the later writers--Byron, Shelley, and Keats.
Additional readings in selected prose writers and minor
poets.

371 Prose and Poetry of the Victorian Period (3)
Critical readings of selections from Tennyson, Browning,
Arnold, and others, in addition to selections from the
major prose writing.

372 Literature of the Late Nineteenth and Early
Twentieth Centuries (3)
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.

373 Selected Major American Writers I (3)
American literature of the nineteenth century: Emerson,
Thoreau, Hawthorne, Melville, Whitman, and others.

374 Selected Major American Writers II (3)
American literature of the late nineteenth and early
twentieth centuries: James, Twain, Stephen Crane,
Dreiser, and others.

375 American Fiction to World War I (3)
Development of the novel and short story in America.

376 Modern American Fiction (3)
The novel and short story in America since World War I.
There may be some attention to British and continental
influences.

380 Studies in Women and Literature (3)
The course examines feminist critical approaches to
literature, the appropriation or transformation of literary
genres by women writers, or the writings of women
during a particular historical period. Specific topics vary
from semester to semester. The course may be repeated
for credit if topics are substantially different.

383 Modern British Fiction (3)
Critical reading and analysis of British fiction of the
twentieth century. There may be some attention to
American and continental influences.

384 Modern Poetry (3)
Critical reading and analysis of poetry of the late
nineteenth and early twentieth centuries: Yeats, Eliot,
Frost, Williams, and others.

385 Modern Drama (3)
British, American, and European drama of the last one
hundred years: the well-made play, the problem play,
verse drama, new definitions of tragedy, the angry theater,
theater of the absurd.

386 Poetry Since World War II (3)
Reading and analysis of contemporary poetry.

387 The Two Cultures: Literature and Science (3)
Prerequisite: English 132; English 209 (may be taken
concurrently). Surveys the history of the debate about the
relations between literature and science, beginning with
the exchange between Arnold and Huxley in the Victorian
period, continuing through the debate between Leavis and
Snow at mid-century, and concluding with current
controversies and with current efforts at interdisciplinary
synthesis.

388 Narrative, Cognition, and Emotion (3)
Prerequisite: English 132; English 209 (may be taken
concurrently). Examines narrative theory in the light of
recent research into cognitive organization and the
structure of the emotions. Traditional and contemporary
theories of narrative--of realism, symbolism, point of
view, tone, and genre--are developed through recent
findings in empirical science. A variety of stories and
novels are used as test cases for theoretical propositions.

391 Special Topics in Jewish Literature (3)
Intensive readings, critical discussion, and writing on
topics relating to Jewish literature. Topics to be
announced. This course may be repeated for credit if the
topics are substantially different.

395 Special Topics in Literature (3)
Special topics in literature that are not covered in other
300-level English courses. Since the topics of English 395
may change each semester, the courses may be repeated
for credit if the topics are substantially different.

400 Introduction to Graduate Study in English (3)
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.
415 Literary Criticism (3)
An examination of selected theories of literature.

416 Feminist Critical Theory (3)
Prerequisite: Graduate standing and consent of instructor. A consideration of feminist critical theory as a means of reassessing literary texts and our cultural heritage. After exploring the roots of feminist criticism, the seminar will examine Anglo-American and continental debates on theories of language, writing and representation. In providing an interdisciplinary context the course will consider studies in psychology, anthropology, history, and philosophy/theology which have influenced and enriched feminist approaches to literature.

421 Studies in Middle English Literature (3)
Special topics in English literature before 1500.

430 Renaissance Literature (3)
Special topics in English literature from 1500 to 1660.

450 Eighteenth-Century Literature (3)
Studies in Augustan poetry and prose, including drama and fiction, with emphasis on background and major figures.

460 Studies in Poetry (3)
Study of a few selected British and American poets.

465 Studies in Fiction (3)
Study of a few selected British and American novelists and short story writers.

467 Studies in Drama (3)
Study of a few selected British and American dramatists.

470 Nineteenth-Century Literature (3)
Special topics in English romanticism, in Victorian life and thought, and in the development of the novel and of poetry between 1879 and 1914.

475 American Literature Before 1900 (3)
Selected American writers or topics from the Colonial period to 1900.

476 Twentieth-Century American Literature (3)
Selected American writers or topics from 1900 to the present.

480 Twentieth-Century British Literature (3)
Selected British and Commonwealth writers of the twentieth century.

495 Seminar in Special Topics (1-3)
Special topics which are not covered in other graduate-level English courses.

497 Independent Reading (1-3)
Directed study in areas of English for which courses are not available.

499 Thesis (6)
Prerequisite: 3.5 graduate G.P.A. Thesis research and writing on a selected topic in English studies.

Special Offerings

250 Special Studies (1-3)
Prerequisites: A course in the 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 three hours credit.

262 The Curriculum and Methods of Teaching English (3)
(Same as Sec Ed 232.) Prerequisites: Completion of Level II courses and a near-major in the subject matter. 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. Includes field experiences. 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 Sec. Ed. 291, Internship. This course must be completed in residence.

270 English Student Teaching Seminar (2)
(Same as Sec Ed 270.) Prerequisite: SEC ED 290. A seminar in the integration of English curricula, educational philosophy, teaching strategies, and instructional technology in the classroom setting. To be taken concurrently with Secondary Student Teaching, SEC ED 291.

390 Seminar (3)
Prerequisite: Consent of instructor. Intensive reading, critical discussion, and writing on topics to be announced each semester. Since the topics of English 390 may change each semester, the course may be repeated for credit if the topics are substantially different. Enrollment limited to twelve students.

398 Internship in Theater (3)
Prerequisite: Senior standing with at least 12 hours of coursework in theater. Supervised practical work at a theater off-campus in one of the following areas: acting, directing, design stage management. Repeatable, but no more than 6 hours total credit may be earned in internship courses.
Faculty

Roland A. Champagne, Professor*, French, Chairperson
Ph.D., Ohio State University
Lorna V. Williams, Professor*, Spanish
Ph.D., Indiana University
Jeanne Morgan Zarucchi, Professor*, French and Art History
Ph.D., Harvard University
Marcus Allen, Associate Professor Emeritus*, French
Ph.D., University of Pittsburgh
Albert J. Camigliano, Associate Professor Emeritus, German
Ph.D., University of Wisconsin
Alfred F. Goessl, Associate Professor Emeritus*, German
Ph.D., Tulane University
Ingeborg M. Goessl, Assistant Professor Emerita,
Ph.D., University of Kansas
Paul R. Hoffman, Assistant Professor Emeritus, German
M.A., University of Michigan
Rolf R. Mueller, Assistant Professor, German
Ph.D., University of Kansas
Zayda Arrillaga, Lecturer, Spanish
M.A., Harvard University
Deborah Baldini, Senior Lecturer, Spanish
M.A., Washington University
Rita Bergoudian, Senior Lecturer, French
M.A., University of South Carolina
Geremie Hoff, Senior Lecturer, Italian and Spanish
M.A., Webster University
Anne-Sophie Blank, Senior Lecturer, French
M.A., Washington University
Martha Caeiro, Lecturer, Spanish
M.A., Washington University
Donna Cays, Lecturer, Spanish
M.A., Saint Louis University
Elizabeth Eckelkamp, Lecturer, Japanese
M.A., Washington University
Nancy Mayer, Lecturer, ESL
M.A.T., Webster University
Denise Mussman, Lecturer, ESL
M.A., University of Illinois-Chicago
Birgit Noll, Lecturer, German
M.A., Washington University
Margaret B. Phillips, Lecturer, Latin
Ph.D., Saint Louis University
Sandra Trapani, Lecturer, French
M.A., University of Missouri-Columbia
Susana Walter, Senior Lecturer, Spanish
M.A., Washington University
Susan Yoder-Kreger, Lecturer, Spanish
M.A., University of Virginia, Charlottesville

*members of Graduate Faculty

General Information

Degrees and Areas of Concentration
The Department of Foreign Languages and Literatures offers course work in French, German, and Spanish, leading to the B.A. degree, and a field of concentration in each of these languages for students seeking the B.S. degree in education. In addition, the department offers lower-level courses in Chinese, English as a Second Language, Modern Greek, Italian, Japanese, and Latin.

Courses in Chinese and Japanese are offered on the UM-St. Louis campus in conjunction with Washington University faculty, as part of the Joint Center for East Asian Studies. A minor in French, German, or Spanish may also be earned in the department. For details, see specific requirements for the minor, which appears later in this section.

The department maintains a library where books, journals, magazines, and other foreign language realia are available to students and a language resource center with audiovisual and computer materials.

Cooperative Study
Courses in other languages are available to UM-St. Louis students through Washington University and Saint Louis University. For information, consult the UM-St. Louis registrar's office.

Study Abroad
Language students who have been at the University of Missouri-St. Louis at least one semester and have studied the language at least one year may receive 3-6 credits for formal study abroad during the summer. Prior consent of the department must be obtained for summer courses abroad, and the student must present a transcript for evaluation. Exchange programs are available with several universities in foreign countries. For information, contact the study abroad office.

Alumni Scholarship
Qualified junior and senior language majors may apply for the Foreign Language Alumni Scholarship that is renewable each semester on a competitive basis. For information, contact the department.

Community College Scholarship
Qualified community college students may apply for the Foreign Language Community College Scholarship to be applied for educational fees toward the enrollment in third semester or higher courses in French, German, or Spanish. This scholarship must be used within one semester of the award. For information, contact the department.
German Majors

Students of German may apply for UM-St. Louis Summer Abroad scholarships that will partially finance their summer studies abroad.

Qualified German majors with junior or senior standing may apply for educational fee waivers. For information, contact the department.

Departmental Honors

Candidates for departmental honors in French, German, or Spanish 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 001 and 002).
2) Maintain an overall GPA of 3.2.
3) Successfully complete an honors thesis or project.

Undergraduate Studies

General Education Requirements

Each language major must satisfy the general education requirements of the university and the general education requirements of the College of Arts and Sciences. Any literature or civilization course offered by the department may be used to meet the humanities requirement.

Satisfactory/Unsatisfactory Option

Students who have fulfilled the language requirement (13 hours: Language Courses 001, 002, and 101) may enroll in a second language on a satisfactory/unsatisfactory basis.

Specific Requirements or Restrictions

Students entering with no high school language units must enroll in Language 001 or may enroll in Language 115. Language 115 (a, b, and c) is the intensive study of a language and will satisfy the foreign language requirement.

A grade of D in a Language 001 course is a passing grade but not an entrance grade for a Language 002 course. A grade of D in a Language 002 course is a passing grade but not an entrance grade for a Language 101 course or its equivalent. A grade of D in a Language 101 course fulfills the language requirement, but is not an entrance grade for a higher-level course.

Demonstration of a high level of proficiency may reduce the number of hours required for the major. Native speakers of a foreign language should consult with the department concerning appropriate placement.

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

Students electing to major in the department must have completed the 002 course in the language selected with a grade of C- or better. Any major who receives a grade of D in any course required for the major must repeat that course. No course required for the major may be taken on a satisfactory/unsatisfactory (S/U) basis.

Bachelor of Arts

All students seeking a B.A. in a foreign language must meet the departmental requirement of a minimum of 33 hours (excluding Language 001 and 002). The maximum number of hours that may be taken in the major is 45 (including Language 001 and 002). In addition, students seeking the B.A. in a foreign language who desire a teaching certificate must also take Course 264 (same as SEC ED 274), Curriculum and Methods of Teaching Foreign Languages, Course 364 (same as SEC ED 374), Foreign Language Teaching Seminar, and fulfill the professional secondary education requirements of the College of Education.

Bachelor of Science in Education

Those students seeking the B.S.Ed. degree, with a concentration in a foreign language, are required to complete 30 hours of work (excluding credit for Language 001 and 002), of which 12 hours must be on the 300 level. Students working toward a degree in elementary education, with related work in a foreign language, should consult the College of Education concerning their program.

Transfer Students

Transfer students majoring in one of the foreign languages must complete at UM-St. Louis a minimum of 12 graded hours in language courses at the 200 level or above with a grade point average of 2.0 or better in these courses.

Native Speakers

Native speakers must complete five courses in the 200 level or above to obtain a major in their native language.

Specific Requirements for the Major

French

Each major in French must complete the following courses:

101, Intermediate French Language and Culture, or the equivalent
170, Composition and Conversation
180, Readings in French
200, Advanced Grammar
211, Contemporary French Civilization
280, French Literature I: Middle Ages to Eighteenth Century
281, French Literature II: Nineteenth and Twentieth Centuries

and four courses at the 300 level.
The following courses are also strongly recommended:

**German 110**, Masterpieces of German Literature in Translation  
**Spanish 110**, Spanish Literature in Translation  
**History 345**, Europe 1763-1871  
**History 351**, Contemporary France: Since 1870

**German**

Each major in German must complete the following courses:

101, Intermediate German Language and Culture  
170, Composition and Conversation  
180, Readings in German  
201, Masterpieces of German Literature  
202, The German Novelle and Drama  
208, Intermediate Composition and Conversation  
210, German Culture and Civilization  
and four courses at the 300 level.

In addition to fulfilling the general education and specific major degree requirements, each German major is advised to take 15 hours of electives from two or more of the following areas: art, economics, English, history, music, philosophy, or political science. Listings of recommended courses may be obtained in the department office. The remaining hours should be selected from university-level courses at UM-St. Louis in one or more of the areas listed below or their university-quality equivalents at other institutions: anthropology/archaeology, art (appreciation, history, studio), astronomy, biology, chemistry, communication, criminology and criminal justice, economics, English, foreign languages/ literatures, geology, history, mathematics/computer science, music (appreciation, history, performance), philosophy, physics, political science, psychology, social work, sociology, business, education, engineering, and interdisciplinary.

The following courses are also strongly recommended:

**English 120**, Classical Literature in Translation  
**English 337**, Shakespeare: Tragedies and Romances  
**French 110**, Modern French Literature in Translation, or  
150, European Literature in Translation: Special Topics  
**German 110**, Masterpieces of German Literature in Translation  
**History 355**, History of Spain  
**History 371**, History of Latin America: to 1808  
**History 372**, History of Latin America: Since 1808  
**PolSci 253**, Political Systems of South America  
**PolSci 254**, Political Systems of Mexico, Central America and the Caribbean

Specific Requirements for the Minor

A minor in French, German, or Spanish may be earned by completing six courses in the language beginning with Language 101 or its equivalent. These courses must be completed with a grade of C- or better. Transfer students must complete at least two courses for the minor at UM-St. Louis. After Language 101, students must complete the following courses in the language of their chosen minor:

**French**

170, Composition and Conversation  
180, Readings in French  
200, Advanced Grammar  
280, French Literature I, or 281, French Literature II  
Plus one additional course on the 200 level or above.

**German**

170, Composition and Conversation  
180, Readings in German  
201, Masterpieces of German Literature, or  
202, The German Novelle and Drama  
Plus any two additional courses on the 200 level or above.

**Spanish**

Two of the following three:  
171, Conversation and Pronunciation  
172, Composition  
180, Readings in Spanish  
200, Syntax of the Spanish Language, or  
271, Advanced Spanish Conversation  
280, Introduction to Hispanic Literature: Spain, or
281, Introduction to Hispanic Literature: Spanish America
Plus one additional course on the 200 level or above.

Students pursuing a graduate degree in secondary education
may select an emphasis area in French, German, or Spanish.
These required eighteen hours may be selected from 300-
and 400-level courses in these languages.

Career Outlook

Graduates with a foreign language degree may elect to enter
the fields of teaching, business, journalism,
communications, or government, or to pursue advanced
degrees in their specialty. It is especially recommended that
students consider a double major or another discipline and a
language. A language then becomes an asset that makes
graduates more adaptable to the demands of international
communication in their second major discipline and hence
more competitive and marketable upon completion of the
B.A. degree.
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Course Descriptions

Prerequisites may be waived by consent of the department.

The following courses fulfill the Humanities [H] breadth of study requirements:
SPANISH: 110, 111, 150, 180, 210, 211, 280, 281, 310, 315, 320, 321, 325, 330, 331, 335, 340, 345, 351, 360, 399.

111 Love in the Western World (3)
This course will examine concepts of love in western literary traditions. Its main focus will be concepts of love from Greek and Roman antiquity and Christianity, and the ways that these concepts have shaped modern ideas of love. Emphasis on language and culture is also important in interpreting the texts.

264 Curriculum and Methods of Teaching Foreign Languages (3)
(Same as SEC ED 274.) Prerequisites: SEC ED 213 and passing the departmental language skills test. 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. Attention is also directed toward learning the techniques and research tools of the scholar in the field of foreign languages. To be taken prior to student teaching. This course must be completed in residence.

300 Language Acquisition and Analysis (3)
The nature of human language, including language universals, sounds and sound patterns, word formation, and language processing. Students will be acquainted with first and second language acquisition, and will analyze data from various languages. Recommended for teachers of English and foreign languages.

364 Foreign Language Teaching Seminar (2)
(Same as SEC ED 374.) Prerequisite: Concurrent enrollment in SEC ED 290 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 FLL 264, Curriculum and Methods, with an emphasis on specific practical skills. To be taken concurrently with SEC ED 290, Student Teaching.

399 Standards-Based Foreign Language Instruction (3)
Prerequisites: Teacher certification and one year teaching experience. Designed to provide inservice foreign language teachers with the background to enable them to design instructional units which incorporate the standards for foreign language learning. May be applied toward the Master's in Secondary Education with an emphasis in foreign language teaching.

464 Issues in Foreign Language Methodology (3)
Prerequisite: Foreign language education certification and teaching experience. Designed for secondary foreign language teachers, this course addresses recent developments in approaches and methods in the teaching of foreign languages. Emphasis is on curriculum design, teaching strategies, and evaluation.

Chinese

Courses in Chinese are taught on the UM-St. Louis campus by faculty of Washington University, through the Joint Center for East Asian Studies.

001 Chinese I (5)
Emphasis is placed upon the understanding, speaking, reading, and writing of Mandarin Chinese and upon the acquisition of the fundamentals of grammar and syntax.

002 Chinese II (5)
Emphasis is placed upon the understanding, speaking, reading, and writing of Mandarin Chinese. Continuation of the acquisition of the fundamentals of grammar and syntax.

101 Intermediate Chinese I (5)
Prerequisite: Chinese II or equivalent. Grammar review and continued development of language skills.

102 Intermediate Chinese II (5)
Prerequisite: Chinese 101 or equivalent. Continuation of Chinese 101.

190 Special Readings (1-3)
Prerequisite: Chinese 102 or consent of the department. Independent study through readings, reports, and conferences.

English as a Second Language

201 ESL Listening and Speaking Skills (3)
Prerequisite: Minimum TOEFL score of 450 or placement by examination. This course is for international students. They gain skills in conversational level listening and speaking. Students improve comprehensive and discrete listening skills, conversation in various situations, strategies and pronunciation. In addition, students will practice these skills and learn about American culture by participating in local field trips. This course does not count toward a degree.

203 Intermediate ESL Reading and Writing (3)
Prerequisite: Minimum TOEFL score of 450 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.
205 Intermediate ESL Grammar (3)
Prerequisite: Minimum TOEFL score of 450 or placement by examination. A course for international students who have already studied basic English grammar. The content covers intensive study of verb tenses; their forms, meanings an integrated use; and other grammatical structures. This course does not count toward a degree.

301 Advanced ESL Conversation and Pronunciation (3)
Prerequisite: Successful completion of ESL 201, minimum TOEFL score of 500 or placement by examination. Designed for non-native speakers who need to improve their fluency and pronunciation in American English. Conversation strategies, oral presentations and extensive practice to reduce accent are included. This course does not count toward a degree.

302 Advanced ESL Listening and Note-taking (2)
Prerequisite: Successful completion of ESL 201, minimum TOEFL score of 500 or placement by examination. Listening and note-taking skills are developed through practice. Students learn to recognize the organization and emphasis of class lectures. Strategies include vocabulary building, test-taking, and participation in class discussions. This course does not count toward a degree.

303 Advanced ESL Reading and Writing (3)
Prerequisite: Successful completion of ESL 203, minimum TOEFL score of 500 or placement by examination. To prepare students for English 10 or English 210, writing skills include organization of essays, rhetorical forms and their structure works, revision of ideas, research techniques, grammar use and editing. For reading development, students read articles and a novel, practice reading strategies and learn how to summarize articles. This course does not count toward a degree.

307 Advanced Pronunciation and Accent Reduction (3)
Prerequisites: ESL 301, placement or consent of instructor. Designed for non-native speakers who have fluency in speaking English but need to reduce their accent to be better understood and feel confident expressing ideas. Course includes review and practice of the pronunciation of the consonants and vowels in American English; accent reduction, achieved through extensive practice of the stress, rhythm and intonation patterns; speaking skills through presentations.

305 Advanced ESL Grammar (3)
Prerequisites: Minimum TOEFL score of 500. This course is for ESL students who need review and applied practice of English grammar for oral and written work. This course does not count toward a degree. Placement by assessment or consent of program coordinator.

390 Special Readings (1-3)
Prerequisites: Consent of instructor. Independent study through readings, reports and conferences.

400 International Teaching Assistant Seminar (1-3)
Prerequisites: Consent of instructor. 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.

French

001 French I (5)
Emphasis will be placed upon the speaking and understanding of French and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

002 French II (5)
Prerequisite: French 1 or equivalent. Emphasis will be placed upon the speaking and understanding of French and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

101 Intermediate French Language and Culture (3)
Prerequisite: French 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

110 Modern French Literature in Translation (3)

111 Francophone Culture (3)
Prerequisites: French 101 or equivalent and permission of instructor. Analyzes and discussions of cultural issues in the French-speaking world through the critical reading of representative texts.

115A, 115B, 115C Intensive French (15)
Prerequisites: Aptitude test and permission of department. An intensive study of French. 115a, 115b, 115c are corequisites and must be taken concurrently. All three sections must be completed with a grade of C- or better in each section to satisfy the foreign language requirement of the College of Arts and Sciences.

150 European Literature in Translation: Special Topics (3)
Major figures, works, or movements in the literature of Europe and their relevance to our own age. Topic is announced in advance by the department. Does not count toward major in French.

160 French Phonetics (3)
Prerequisite: French 101 or consent of instructor. An analytic and practical study of French pronunciation. Emphasis is placed upon the articulation and practice of contemporary French sounds.

170 Composition and Conversation (3)
Prerequisite: French 101 or equivalent. Emphasis will be placed on the development of speaking and writing skills in French.
180 Readings in French (3)
Prerequisite: French 170 or equivalent. Development of language skills through reading and discussion of literary texts.

190 Special Readings in French (1-3)
Prerequisites: French 101 and consent of the department. Independent study on mutually acceptable topics through readings, reports, and conferences.

200 Advanced Grammar (3)
Prerequisite: French 170 or equivalent. Problems in grammatical analysis.

205 Commercial French (3)
Prerequisite: French 170 or equivalent. Introduction to French business language with emphasis on technical vocabulary and correct French usage in business affairs.

211 Contemporary French Culture (3)
Prerequisite: French 180 and 200 or equivalent. Aspects of contemporary French culture, studied through a variety of authentic cultural materials and readings of fiction and nonfiction. All readings and class work are in French.

271 Intermediate French Conversation (3)
Prerequisites: French 170 or consent of department. Emphasis will be placed upon the further development of oral skills in French.

280 French Literature I: Middle Ages to Eighteenth Century (3)
Prerequisite: French 180 and 200 or equivalent. Designed to acquaint the student with the development of French literature from the Middle Ages to the eighteenth century. Critical reading of representative texts.

281 French Literature II: Nineteenth and Twentieth Centuries (3)
Prerequisite: French 180 and 200 or equivalent. Designed to acquaint the student with the development of French literature from the nineteenth century to the present. Critical reading of representative texts.

290 Special Readings (1-3)
Prerequisite: Consent of department. Independent study through readings, reports, and conferences.

300 Syntax and Stylistics (3)
Prerequisite: French 200 or equivalent. Advanced theoretical and practical study of modern French syntax. Analysis of French prose style.

311 Special Topics in French Culture (3)
Prerequisite: Junior standing or French 280 or 281 for French majors. Selected topics in French culture. May be taught in English or French. If taught in English, French majors will do course assignments in French. This course may be repeated for credit.

331 Medieval and Renaissance Literature (3)
Prerequisite: French 280 or 281. A study of the development of French literature from the Middle Ages to the end of the sixteenth century. Texts for reading and discussion will include medieval romances, lyric poetry, and works of humanist philosophy.

341 Seventeenth-Century French Theater and Poetry (3)
Prerequisite: French 280 or 281. Critical reading and analysis of French Classical Age theater and poetry, including works by Corneille, Moliere, Racine, and La Fontaine.

342 Seventeenth-Century French Prose (3)
Prerequisite: French 280 or 281. A study of moralists and social commentators in the age of Louis XIV, with critical reading and analysis of texts by Pascal, La Rochefoucauld, and others.

353 Eighteenth-Century French Literature (3)
Prerequisite: French 280 or 281. The philosophic movement. Selected readings of the eighteenth century, including Montesquieu, Voltaire, Diderot, and Rousseau.

354 Eighteenth-Century French Theater and Novel (3)
Prerequisite: French 280 or 281. Critical reading and discussion of representative novels and plays of the eighteenth century.

362 Nineteenth-Century French Novel (3)
Prerequisite: French 280 or 281. Critical reading of selected works by the major novelists of the period. Discussion of realism and naturalism.

365 Modern French Poetry (3)
Prerequisite: French 280 or 281. A study of French poetry in the nineteenth and twentieth centuries through critical readings of selected works by major poets.

371 Twentieth-Century French Novel (3)
Prerequisite: French 280 or 281. A study of selected works by the principal novelists of the modern period.

375 Modern French Theater (3)
Prerequisite: French 280 or 281. A study of French drama in the nineteenth and twentieth centuries through critical study of selected works by major dramatists.

390 Special Readings (1-3)
Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences.

399 French Seminar (3)
Prerequisite: French 280 or 281. Specialized topic in French literature. Subject to be announced by instructor in charge of seminar.
400 Contemporary French Thought (3)
Prerequisite: B.A. or permission of instructor. Analyses and discussion of contemporary cultural French issues through a representative sample of journals and pamphlets. In French.

German

001 German I (5)
Emphasis will be placed upon the speaking and understanding of German and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

002 German II (5)
Prerequisite: German I or equivalent. Emphasis will be placed upon the speaking and understanding of German and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

101 Intermediate German Language and Culture (3)
Prerequisite: German 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

110 Masterpieces of German Literature in Translation (3)
Prerequisite: Sophomore standing. Representative readings in German literature from the beginning to the present. Emphasis to be placed upon German literature in the general context of European culture. No credit toward major in German.

115A, 115B, 115C Intensive German (15)
Prerequisites: Aptitude test and permission of department. An intensive study of German assuming no previous knowledge of German. 115a, 115b, 115c are co-requisites and must be taken concurrently. All three sections must be completed with a grade of C- or better in each section to satisfy the foreign language requirement of the College of Arts and Science.

150 European Literature in Translation: Special Topics (3)
Major figures, works, or movements in the literature of Europe and their relevance to our own age. Topic announced in advance by the department. Does not count toward major in German.

170 Composition and Conversation (3)
Prerequisite: German 101 or equivalent. Emphasis will be placed on the development of speaking and writing skills in German.

180 Readings in German (3)
Prerequisite: German 170 or equivalent. May be taken concurrently. Further development of language skills through readings and discussions of literary texts.

190 Special Readings (1-3)
Prerequisites: German 101 and consent of department. Independent study on mutually acceptable topics through readings, reports, and conferences.

201 Masterpieces of German Literature (3)
Prerequisite: Two years of college German or equivalent. Introduction to German literature. Readings and critical analysis of selected works of German literature.

202 The German Novelle and Drama (3)
Prerequisite: German 201 or equivalent. Reading and critical analysis of selected German Novellen and dramas.

208 Intermediate Composition and Conversation (3)
Prerequisite: German 170 or equivalent. Emphasis on speaking and writing German.

210 German Culture and Civilization (3)
Prerequisite: German 180 or equivalent. A survey of the development of German culture and civilization. All reading and class work in German.

290 Special Readings: German (1-3)
Prerequisite: Consent of department. Independent study through readings, reports, and conferences.

308 Advanced Composition and Conversation (3)
Prerequisite: German 208 or equivalent. Continuation of German 208. Designed to develop accuracy and fluency of expression in German.

311 Special Topics in German Culture (3)
Prerequisites: At least one 200-level German course and/or consent of instructor. Discussion of selected topics of German current events. This course may be repeated for credit.

315 German Classicism and Romanticism (3)
Prerequisites: German 201 and one other 200-level course in German. Representative writers from the classical and romantic periods of German literature, including works by Lessing, Goethe, Kleist, and E.T.A. Hoffmann.

320 German Realism and Naturalism (3)
Prerequisites: German 201 and one other 200-level course in German. Representative writers of realism and naturalism in German literature, including works of Grillparzer, Hebbel, Stifter, Keller, and Hauptmann.

345 Modern German Literature (3)
Prerequisites: German 201 and one other 200-level course in German. Representative works from modern German literature.

390 Special Readings (1-3)
Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences.
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397 Survey of German Literature Part I (3)
Prerequisite: German 201 or 202. Special emphasis on the summary and synthesis of trends and characteristics of major periods in German literature, considered in the general context of European culture.

398 Survey of German Literature Part II (3)
Prerequisite: German 201 or 202. Special emphasis on the summary and synthesis of trends and characteristics of major periods in German literature, considered in the general context of European culture.

399 German Seminar (3)
Prerequisite: German 201 or 202. Specialized topic in German literature.

Ancient Greek

001 Ancient Greek 1 (5)
Study of grammar, syntax, and vocabulary, accompanied by readings of simple prose selections.

002 Ancient Greek 2 (5)
Prerequisite: Ancient Greek 1 or equivalent. The study of vocabulary, grammar, and syntax is continued from Greek 1. Readings and discussion from selected classical authors.

101 Intermediate Ancient Greek Language and Culture (3)
Prerequisite: Ancient Greek 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

151 Greek and Latin in English Today (3)
(Same as Latin 151.) Language and culture of Greece and Rome reflected in modern English. Emphasis on vocabulary derived from Greek and Latin. Included will be the Greek alphabet and an introduction to historical language change involving the relationship among Greek, Latin and Romance languages, and Germanic languages (particularly English). Attention will be paid to terms used in law, medicine, science, liberal arts, and to general vocabulary enrichment.

190 Special Readings (1-3)
Prerequisites: Greek 101 and consent of department. Independent study through readings, reports, and conferences.

Modern Greek

001 Modern Greek I (5)
Emphasis is placed upon the understanding, speaking, reading, and writing of Modern Greek and upon the acquisition of the fundamentals of grammar and syntax.

002 Modern Greek II (5)
Prerequisite: Modern Greek 001 or equivalent. Emphasis is placed upon the understanding, speaking, reading, and writing of Modern Greek and upon the acquisition of the fundamentals of grammar and syntax.

101 Intermediate Modern Greek Language and Culture (3)
Prerequisite: Modern Greek 002 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

150 Modern Greek Literature in Translation (3)
This course is an exploration of significant works by major Modern Greek authors, dealing with relevant issues of Western literary traditions. Authors include Cavafy, Kazantzakis, Seferis, Solomos, Elytis.

190 Special Readings (1-3)
Prerequisite: Modern Greek 101 or consent of the department. Independent study through readings, reports, and conferences.

Hebrew

Courses in Biblical and Modern Hebrew are available at Washington University for UM-St. Louis students. Consult Washington University and UM-St. Louis Registrar's Office for details.

101D Beginning Biblical Hebrew (3)
102D Beginning Biblical Hebrew (3)
211D Intermediate Biblical Hebrew (3)
212D Biblical Literature (3)
105D Beginning Modern Hebrew I (5)
106D Beginning Modern Hebrew II (5)
213D Intermediate Modern Hebrew I (5)

Note: Course 101 at Washington University is equivalent to Course 001 at UM-St. Louis.

Italian

001 Italian I (5)
Fundamentals of Italian grammar, pronunciation, and diction for students with no previous acquaintance with the language. One-hour laboratory per week required.

002 Italian II (5)
Prerequisite: Italian 1 or equivalent. Continuation of grammar and conversation with introductory readings centering on Italian contributions to art, literature, and music. One-hour laboratory per week required.

101 Intermediate Italian Language and Culture (3)
Prerequisite: Italian 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.
190 Special Readings (1-3)
Prerequisite: Italian 101 or equivalent. Readings on literary topics mutually acceptable to student and instructor.

Japanese

001 Japanese I (5)
Emphasis is placed upon the understanding, speaking, reading, and writing of Japanese and upon the acquisition of the fundamentals of grammar and syntax.

002 Japanese II (5)
Prerequisite: Japanese I 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.

101 Intermediate Japanese I (5)
Prerequisite: Japanese II or equivalent. Grammar review and continued development of language skills.

102 Intermediate Japanese II (5)
Prerequisite: Japanese 101 or equivalent. Continuation of Japanese 101.

190 Special Readings (1-3)
Prerequisite: Japanese 102 or consent of the department. Independent study through readings, reports, and conferences.

Latin

001 Latin I (5)
A study of Latin grammar, syntax, and vocabulary, accompanied by reading selections from literary texts.

002 Latin 2 (5)
Prerequisite: Latin 1 or equivalent. The study of vocabulary, grammar, and syntax is continued from Latin 1. Readings and discussion from selected classical authors.

101 Intermediate Latin Language and Culture (3)
Prerequisite: Latin 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

151 Greek and Latin in English Today (3)
(Same as Ancient Greek 151.) Language and culture of Greece and Rome reflected in modern English. Emphasis on vocabulary derived from Greek and Latin. Included will be the Greek alphabet and an introduction to historical language change involving the relationship among Greek, Latin, and Romance languages, and Germanic languages (particularly English). Attention will be paid to terms used in law, medicine, science, liberal arts, and to general vocabulary enrichment.

Spanish

001 Spanish I (5)
Emphasis will be placed upon the speaking and understanding of Spanish and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

002 Spanish II (5)
Prerequisite: Spanish 1 or equivalent. Emphasis will be placed upon the speaking and understanding of Spanish and upon the acquisition of the fundamentals of grammar and syntax. One-hour language laboratory per week required.

101 Intermediate Spanish Language and Culture (3)
Prerequisite: Spanish 2 or equivalent. Grammar review and continued development of language skills with readings in their cultural context.

105 Commercial Spanish (3)
Prerequisite: Spanish 2 or equivalent. Grammar review and cultivation of language skills with emphasis on technical vocabulary and correct Spanish usage in business affairs. Designed for business majors, economics majors, or anyone interested in the commercial application of Spanish. This course is the equivalent of Spanish 101; both may not be taken for credit.

110 Spanish Literature in Translation (3)
Prerequisite: Sophomore standing. Lectures on the literature and culture of Spain from the Middle Ages to the contemporary period. Reading and discussion of works of representative Spanish writers: Cervantes, Calderon, Galdos, Unamuno, Garcia Lorca, Buero Vallejo, and others. No credit toward major in Spanish.

115A, 115B, 115C Intensive Spanish (15)
Prerequisites: Aptitude test and permission of department. An intensive study of Spanish assuming no previous knowledge of Spanish. 115a, 115b, 115c are co-requisites and must be taken concurrently. All three sections must be completed with a grade of C- or better in each section to satisfy the foreign language requirement of the College of Arts and Science.

171 Spanish Conversation and Pronunciation (3)
Prerequisite: Spanish 101 or equivalent. Emphasis will be placed upon the development of oral skills in Spanish and upon the problems of Spanish pronunciation and intonation.
180 College of Arts and Sciences
Foreign Languages and Literatures

150 European Literature in Translation: Special Topics (3)
Major figures, works, or movements in the literature of Europe and their relevance to our own age. Topic is announced in advance by the department. Does not count toward major in Spanish.

172 Spanish Composition (3)
Prerequisite: Spanish 101 or equivalent. Emphasis in developing the capacity and the ability to write in Spanish.

180 Readings in Spanish (3)
Prerequisite: Spanish 101 or equivalent. Development of language skills through reading and discussion of a variety of texts.

190 Special Readings (1-3)
Prerequisites: Spanish 101 and consent of department. Independent study through readings, reports, and conferences.

200 Syntax of the Spanish Language (3)
Prerequisite: Spanish 171, 172, 180 (2 of the 3 courses) or equivalent. Study of the syntactical and morphological characteristics of the Spanish language. Designed primarily for students majoring in Spanish. May be taken concurrently with any 200-level course.

210 Hispanic Culture and Civilization: Spain (3)
Prerequisite: Spanish 171, 172, 180 (2 of the 3 courses) or equivalent. The development of Spanish peninsular civilization from its Roman beginnings to the present.

211 Hispanic Culture and Civilization: Spanish America (3)
Prerequisite: Spanish 171, 172, or 180 (2 of the 3 courses) equivalent. The development of the cultures and civilization of the Spanish-speaking nations of the Western hemisphere.

271 Advanced Spanish Conversation (3)
Prerequisite: Spanish 171 or consent of department. Emphasis will be placed upon the further development of oral skills in Spanish.

280 Introduction to Hispanic Literature: Spain (3)
Prerequisite: Spanish 171, 172, 180 (2 of the 3 courses) or equivalent. Study of selected texts of Spanish writers from the Middle Ages to the present and the historical, cultural, and political factors which influence their writing. Required of Spanish majors. Spanish 180 is recommended for prerequisite.

281 Introduction to Hispanic Literature: Spanish America (3)
Prerequisite: Spanish 171, 172, 180 (2 of the 3 courses) or equivalent. Study of selected texts of Spanish-American writers from the colonial period to the present and the historical, cultural, and political factors which influenced their writings. Required of all Spanish majors. Spanish 180 is recommended for prerequisite.

290 Special Readings: Spanish (1-3)
Prerequisite: Consent of department. Independent study through readings, reports, and conferences.

300 Advanced Spanish Grammar (3)
Prerequisite: Spanish 200 or equivalent. Advanced theoretical and practical study of the form and syntax of the Spanish language, focusing especially on sentence structure. Analysis of texts which illustrate different linguistic levels and their values. Designed to develop accuracy and fluency of expression in Spanish.

310 Spanish Literature From 1898 to 1939 (3)
Prerequisite: Spanish 280. A study of cultural and literary characteristics of the period. Emphasis on leading novelists, poets, essayists, and dramatists.

311 Special Topics in Hispanic Culture (3)
Prerequisite: Junior standing or Spanish 280 or 281. Selected topics in Hispanic culture taught in Spanish. This course may be repeated for credit provided that the topic is different each time.

315 Spanish Literature From 1939 to the Present (3)
Prerequisite: Spanish 280. A study of cultural and literary development since the Spanish Civil War. Emphasis on leading novelists and dramatists.

320 Realism and Naturalism in the Nineteenth-Century Spanish Novel (3)
Prerequisite: Spanish 280. A study of the culture and literature of Spain in the nineteenth century with emphasis on the leading novelists of the epoch (Galdós, Clarín, Pardo-Bazán, Blasco-Ibáñez).

321 Poetry and Drama of the Nineteenth Century (3)
Prerequisite: Spanish 280. A study of the culture and literature of Spain in the nineteenth century with emphasis on the leading poets (Espronceda, Becquer) and playwrights (Zorrilla, Duque de Rivas).

325 Poetry and Drama of the Golden Age (3)
Prerequisite: Spanish 280. Selected readings from the drama of Lope de Vega, Tirso de Molina, Ruiz de Alarcón, and Calderón de la Barca, and from the poetry of Garcilaso, Fray Luis de León, San Juan de la Cruz, Gongora, Lope de Vega, and Quevedo.

326 Applied Linguistics in Spanish (3)
Prerequisites: Spanish 200 or equivalent. Study of the general principles of linguistics applied to the learning and teaching of Spanish with special emphasis on historical linguistics. The course will focus on the development of the Spanish language with emphasis on etymological and phonological changes. Recommended for prospective teachers of Spanish.
327 Spanish Dialectology (3)
Prerequisites: Spanish 200 or equivalent. The course will focus on the syntactical, lexical and phonological variations of modern Spanish from a sociolinguistic perspective. Regional variations may include Castilian, Mexican, and Caribbean Spanish, Spanish of the northern Andes region and the Southern Cone, and the Spanish spoken in the United States.

330 Cervantes (3)
Prerequisite: Spanish 280. A study of Don Quixote in relation to the author's life and with the cultural background of the Spanish Golden Age. Independent readings on other works of Cervantes.

331 Picaresque and Satirical Prose (1550-1650) (3)
Prerequisite: Spanish 280. A study of Renaissance and Baroque prose in its social context. All readings and discussions are in Spanish.

335 Masterpieces of Spanish Medieval and Renaissance Literature (3)
Prerequisite: Spanish 280. Designed to acquaint students with the cultural background of medieval and Renaissance Spanish traditions. Critical reading and discussion of representative works of these periods: Poema del Cid, El Conde Lucanor, Libro de Buen Amor, El Romancero, La Celestina, the Picaresque novel, and Don Quixote.

340 Spanish-American Literature of the Nineteenth Century (3)
Prerequisite: Spanish 281. A study of the culture and literature of Spanish America in the nineteenth century with emphasis on the leading novelists and essayists of the epoch.

341 Modernismo (3)
Prerequisite: Spanish 281. The genesis, development, and influence of this literary movement in Spanish-American letters with emphasis on Modernista poetry and prose.

345 Spanish-American Literature of the Twentieth Century (3)
Prerequisite: Spanish 281. A study of the leading Spanish American poets, essayists, and novelists of this period as interpreters of contemporary man's dilemma and the Apathy--and Aethos--of their culture.

351 Spanish-American Fiction in the Twentieth Century (3)
Prerequisite: Spanish 281. The role of prose fiction in Spanish American literary and cultural history from World War I to the present.

360 Spanish American Poetry From Modernismo to the Present (3)
Prerequisite: Spanish 281. A study of poetry and its role in the literary and cultural history of Spanish-American society from Modernismo to the present.

390 Special Readings (1-3)
Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences.

399 Seminar on Hispanic Literature (3)
Required of major students in the senior year. Subject to be announced every year by the instructor in charge of the seminar.

400 Spanish as Spoken Today (3)
Prerequisite: Graduate standing. Contemporary Spanish, including emphasis on standard and colloquial speech: slang, proverbs, and the mass media. Some attention will be given to the influence of English on twentieth-century spoken Spanish. Study of samples; oral practice.
Faculty

Louis Gerteis, Professor, Chairperson
Ph.D., University of Wisconsin
Alan F. J. Artibise, E. Desmond Lee Professor and
Director, Public Policy Research Center*
Ph.D., University of British Columbia
Richard H. Mitchell, Curators' Professor*
Ph.D., University of Wisconsin
Jay Rounds, E. Desmond Lee Professor of Museum Studies and Community History*
Ph.D., University of California, Los Angeles
Carlos A. Schwantes, Saint Louis Mercantile Library Professor of Transportation Studies*
Ph.D., University of Michigan
Mark A. Burkholder, Professor*
Ph.D., Duke University
Jerry M. Cooper, Professor*, Graduate Coordinator
Ph.D., University of Wisconsin
Walter Ehrlich, Professor Emeritus*
Ph.D., Washington University
John R. Gillingham, Professor*
Ph.D., University of California; Berkeley
Steven C. Hause, Professor*
Ph.D., Washington University
Charles P. Korr, Professor*
Ph.D., University of California; Los Angeles
William S. Maltby, Professor Emeritus*
Ph.D., Duke University
James Neal Primm, Curators' Professor Emeritus*,
Ph.D., University of Missouri-Columbia
Steven W. Rowan, Professor*
Ph.D., Harvard University
Arthur H. Shaffer, Professor*, Education Coordinator
Ph.D., University of California; Los Angeles
Blanche M. Touhill, Professor*, Chancellor
Ph.D., Saint Louis University
Robert M. Bliss, Associate Professor* and Dean, Pierre Laclede Honors College
Ph.D., University of Wisconsin
J. Frederick Fausz, Associate Professor*
Ph.D., William and Mary
Winston Hsieh, Associate Professor*
Ph.D., Harvard University
Andrew J. Hurley, Associate Professor*
Ph.D., Northwestern University
Adell Patton Jr., Associate Professor*
Ph.D., University of Wisconsin
Gerda W. Ray, Associate Professor*
Ph.D., University of California, Berkeley
John A. Works Jr., Associate Professor Emeritus*,
Ph.D., University of Wisconsin
Priscilla Dowden, Assistant Professor*
Ph.D., Indiana-Bloomington
Laura Westhoff, Assistant Professor*
Ph.D., Washington University
Robert Archibald, Adjunct Professor*, President, Missouri Historical Society
Ph.D., University of New Mexico
Louise B. Robbert, Adjunct Professor*
Ph.D., University of Wisconsin
Eric Sandweiss, Adjunct Associate Professor
Ph.D., University of California-Berkeley
Peter Acsay, Adjunct Assistant Professor
Ph.D., Saint Louis University
*members of Graduate Faculty

General Information

Degrees and Areas of Concentration The department offers work in Asian, African, European, Latin American, Middle Eastern, and United States history from ancient to modern times. At the bachelor's level, the department offers the B.A. in history, and, in cooperation with the College of Education, the B.A. in history with teacher certification and the B.S. in education with an emphasis in social studies.

At the graduate level, the department offers an M.A. in history with work in European, Latin American, East Asian, Middle Eastern, African, African-American, and United States history. The department also offers the option of an M.A. in history with a concentration in museum studies.

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.

Undergraduate Studies

General Education Requirements
History majors must meet the university and college general education requirements. History courses that will satisfy the university's state requirement are:
History 3, American Civilization
History 4, American Civilization
History 6, African-American History
History 7, The History of Women in the United States
History 207, The History of Missouri
History 302, United States History: Revolution and the New Nation, 1763 to 1815
History 311, Topics in American Constitutional History

Students may take any language that fulfills the college's foreign language requirement. 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.
Degree Requirements

Bachelor of Arts in History Students are encouraged to take programs which combine breadth of coverage with intensity. Two of the following are required:

Courses 1 to 199,
History 3, American Civilization
History 4, American Civilization
History 6, African-American History
History 7, The History of Women in the United States

Plus two of the following:
History 30, The Ancient World
History 31, Topics in European Civilization: The Emergence of Western Europe to 1715
History 32, Topics in European Civilization: 1715 to the Present

Plus:
Non-Euro/Amer survey: One 3-hour course

Courses 201 to 399.
One course in United States history
One course in European history
One course in Non-Euro-Amer history
History 390, Special Readings (1 credit hour)
History 393, Senior Seminar

Three additional 200 or 300-level courses

Other
Majors must complete at least 39, but not more than 45, hours in history with no grade below C in major. Courses 255 and 256 do not count toward major.

Undergraduate majors must complete a minimum of 15 hours of 300-level history courses, including History 390 (1 credit hour) and History 393 (5 credit hours) in residence.

Minor in History
Students may minor in history by taking 18 hours of history courses as follows:
1) One course numbered 1-199 in each of the following areas: United States history, European history, and Non-Euro-American history
2) One course numbered 201-399, except 255 and 256 in each of the following areas: United States history, European history, and Non-Euro-American history

No course in which a grade below a C is received shall count toward a minor.

Related Areas
Since history is a broad discipline, it can be combined with serious work in any other discipline. Courses in the humanities, social sciences, languages, and the natural sciences may complement the history program. Students should consult with faculty advisers to select courses suited to their individual interests.

Bachelor of Arts with Teacher Certification For information, refer to the College of Education section in this Bulletin.

Bachelor of Science in Education: Emphasis in Social Studies The history requirements are the same as for the B.A. degree except students fulfill the College of Education general education requirements rather than those of the College of Arts and Sciences. For information, refer to the College of Education section in this Bulletin.

Graduate Studies

Degree Requirements

The Department of History offers two options for graduate study, the Master of Arts in History and the Master of Arts in History with concentration in Museum Studies. These options are described below in separate sections.

Master of Arts in History
The Department of History offers students two ways of completing the master of arts degree: one path of study emphasizes depth of knowledge and research competence acquired through writing a substantial master's thesis; the second emphasizes breadth of historical knowledge acquired through graduate course work and the writing of research papers. Both paths include a core of substantive courses in history (see Core) to which the student adds either a thesis (see Thesis) or additional research papers and seminars (see Research Papers).

The M.A. program offers all students intermediate training preparatory to doctoral programs, advanced training leading to teaching and other careers, and disciplined advanced work.

The department offers study in European history, United States history, East Asian history, Latin American history, African history, and Middle Eastern history. Within these areas of study, students may specialize in the following fields:

Europe to 1715
Europe since 1715
Latin America
United States to 1865
United States since 1865
China and Japan since 1800
Africa and the Middle East
Africa and African American
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 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 sample may or may not be academic work, and length is not a consideration. Applicants for graduate teaching assistantships must take the GRE Aptitude Test; the Advanced Test is optional. The departmental Graduate Committee bases its admission decisions upon the undergraduate transcript, the letters of recommendation, and the sample of written work.

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 300 level (except History 393). 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, 400-level history readings course.

To earn the 26-hour core, candidates select three fields of study, the first with a minimum of four courses (each at 3 credit hours or more), the second and third with a minimum of two courses each (at 3 credit hours or more). Each field must include at least one 400-level course.

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 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. That faculty member will choose the test for translation. Candidates shall demonstrate quantitative methods competence by satisfactory completion of either Psychological Statistics 201 or Sociological Statistics 220, 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 400-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.

Master of Arts in History (Museum Studies) and Graduate Certificate in Museum Studies
These options are intended for students planning to pursue professional careers in museums. In addition to the core requirement of substantive courses in history, the Museum Studies program includes intensive training in the theory and practice of museology. This innovative program is a collaboration between the Department of History, Department of Anthropology, and Department of Art and Art History, and the Missouri Historical Society. It is taught by a combination of professors and practicing professionals from St. Louis-area museums. Recognizing that the museums field is in a period of rapid change, the program is designed to train students for leadership in the emergence of a new paradigm of museology that focuses on relationships between museums and the people and communities that they serve.

For most students this will be a terminal master of arts degree, fully preparing graduates for immediate entry into museum careers in a variety of positions. While the core requirement focuses on history studies, the museological training is applicable to employment in any type of museum.

Admission Requirements
Applicants wishing to enter the Museum Studies concentration must apply specifically for that concentration; successful application for the general M.A.
program in history does not automatically provide access to the museum studies program. Applications for the museum studies concentration will be accepted only for the fall semester. Because of the prescribed sequence of course work, no midyear entry into the program will be allowed.

In addition to the general criteria of the Graduate School, applicants for the Museum Studies concentration must meet several additional criteria of the Department of History and the museum studies program. Applicants' undergraduate studies need not have been in history, but they must demonstrate high academic potential. Normally, the history department admits only students with a 3.2 grade point average in their undergraduate major; most successful applicants have higher grades. Applicants must submit three letters of recommendation, preferably from former teachers and/or employers, and a sample of their written work. The sample may or may not be academic work, and length is not a consideration. Besides these departmental requirements, applicants must submit the Museum Studies Supplemental Application. The supplemental application includes a statement of intent for pursuit of a museum career.

The departmental Graduate Committee and the director of the museum studies program will base their admissions decisions upon the undergraduate transcript, the letters of recommendation, the sample of written work, and the GRE scores as evidence of ability to meet the academic demands of the training program, and the supplemental application as evidence of the will and ability to pursue a successful career in museums.

Applications for the museum studies program must be received by the university by no later than March 1.

Museum Studies Curriculum—39 hours total
All candidates for the M. A. in History with a Concentration in Museum Studies must complete History 434, 435, 436, and 437. (These courses are crosslisted under the same numbers in the Anthropology Department and the Art and Art History Department. Students may enroll through the department of their choice.) All candidates must also complete Art and Art History 488 (Museum Education and Visitor Research) and Anthropology 439 (Practicum in Exhibit and Program Development). Together, these courses provide a solid foundation in the theory and history of museology and in practical skills for museum work. As a final requirement, candidates must complete History (or Anthropology or Art and Art History) 438. This exit project will be the capstone demonstration of competence in museum studies. The specific nature of this demonstration will be customized to the interests and career aspirations of each student. It may take the form of a traditional thesis, an exhibit project, or some other appropriate form, as approved in advance by the candidate's advisory committee.

In addition to these requirements, all candidates must complete 15 hours of elective history course work, with no more than 6 hours of history at the 300 level (except History 393). Museum Studies students will take courses distributed in any proportion between the fields of "United States to 1865" and "United States Since 1865." Exceptions to this requirement (e.g., selections of courses from another field, such as European or African history) must be approved in advance by both the director of the Museum Studies Program and the graduate coordinator of the History Department.

Graduate Certificate in Museum Studies (19 hours)
A very limited number of slots may be available for students who wish to pursue only the Graduate Certificate in Museum Studies without seeking the M.A. in History. In most cases, these will be students who already hold an advanced degree and are currently working (or planning to work) in a museum but who have had no formal training in museum studies. Candidates for the Graduate Certificate must complete History 435, 436, 437, and 438, Art and Art History 488, and Anthropology 439. Contact the director of the Museum Studies Program for availability of slots in this option and for special application procedures.

Career Outlook for B. A. and M. A. graduates
An important rationale for the discipline of history is its centrality to the university curriculum and to the life experience. The ability to put events or developments into the context of the past is useful as well as pleasurable. Responses to a questionnaire sent to history graduates have indicated that 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. Men and women in business, lawyers, bankers, librarians, and foreign service officers have all found it relevant to their careers. Study and research in history sharpens organizational and writing skills important to success in business and the legal profession. A growing interest in local history has created employment opportunities in museum, archival, and preservation work.

Career Outlook for M. A. with concentration in Museum Studies
There are more than 8,000 museums in the United States. History museums constitute more than half of that total, and employ approximately one-third of the 150,000 paid staff working in U. S. museums. While job requirements vary widely among individual museums and specific professional roles, the M.A. degree offered by this program qualifies graduates for a wide range of career opportunities, in history museums and in other types of museums as well. The Museum Studies Program provides students with placement assistance and counseling and with access to a wide range of information on career opportunities in the field, and program faculty use their extensive networks in the field to help identify opportunities and to place students.
Course Descriptions

Students enrolled in variable credit reading courses for 5 credit hours must complete a seminar paper.


The following courses fulfill the Cultural Diversity requirement: 61, 62, 71, 72, 81, 82, 83, 84, 201, 252, 262, 358, 361, 362, 371, 372, 380, 381, 382, 385, 386.

3 American Civilization (3)
Evolution of the cultural tradition of the Americas from the earliest times to the mid-nineteenth century, with emphasis on the relationship of ideas and institutions to the historical background. Course fulfills the state requirement.

4 American Civilization (3)
Continuation of History 3 to the present. Course fulfills the state requirement. Either History 3 or History 4 may be taken separately.

6 African-American History (3)
A survey of African-American history from the beginning of the European slave trade to the modern Civil Rights era. This course meets the state requirement.

7 The History of Women in the United States (3)
A survey of women's history from the colonial era to the present. The course meets the state requirement.

30 The Ancient World (3)
Survey of ancient history in the near east, the Aegean, the central and western Mediterranean. Themes: politics and economy, war and society, culture, including art, literature, technology, religion and philosophy. The chronological span is from the neolithic period (7500-3000 B.C.) in the near east to the fall of the Roman Empire in the fifth century A.D.

31 Topics in European Civilization: Emergence of Western Europe to 1715 (3)
Lectures and discussions on the development of Western European society and tradition from approximately 800 to 1715.

32 Topics in European Civilization: 1715 to the Present (3)
Lectures and discussions on the development of Western European society and tradition from 1715 to the present. Either History 31 or History 32 may be taken separately.

61 East Asian Civilization (3)
The development of Asian civilization from earliest times to the Manchu conquest. This course fulfills the Cultural Diversity requirement.

62 East Asian Civilization (3)
Continuation of History 61 with emphasis on the Asian response to the Western incursion. Either History 61 or History 62 may be taken separately. This course fulfills the Cultural Diversity requirement.

71 Latin American Civilization (3)
A survey of selected topics important in the development of Latin America from pre-Columbian times to the twentieth century. This course fulfills the Cultural Diversity requirement.

72 Mexican Civilization (3)
This course will focus on the history and culture of Mexico from the Aztecs to the mid-twentieth century. Among the topics to be covered are: the Aztecs, Cortez and the Conquest of Mexico, colonial institutions and culture, the obtaining of political independence, disorder and dictatorship in the nineteenth century, the Mexican Revolution, contemporary Mexico. This course fulfills the Cultural Diversity requirement.

81 African Civilization to 1800 (3)
Introduction to African cultural history from the emergence of early man to the abolition of the Atlantic slave trade. This course fulfills the Cultural Diversity requirement.

82 African Civilization Since 1800 (3)
Survey of African initiative and response in the period spanning the loss and reassertion of independence. History 81 or History 82 may be taken separately. This course fulfills the Cultural Diversity requirement.

83 The African Diaspora to 1800 (3)
An examination of the major developments which have shaped the history of Africans and their descendants in the Atlantic, Mediterranean, and Indian Ocean areas from the earliest times to 1800. The course will survey the political, social, and religious foundations of the African continent and include a comparative analysis of other diasporas. Special attention will be given to themes and issues associated with: slavery, creolization, multiracialism, transformation from heterogeneous crowds to new homogeneous communities, and cultural linkages between Africans and their descendants in the Atlantic Communities. This course satisfies the Cultural Diversity requirement.
84 The African Diaspora Since 1800 (3)
An examination of the major developments which have shaped the history of Africans and their descendants in the Atlantic world from 1800 to contemporary times. The course will include a comparative analysis of other diaspora groups. Special attention will be given to themes and issues associated with: slavery, multiracialism, cultural clocks, the social transformation from heterogeneous crowds to the formation of new homogeneous communities, the new elite, and the modern cultural linkages between Africans and their descendants in the Atlantic Communities. This course satisfies the Cultural Diversity requirement.

150 The People's Century, Part I (3)
The course provides unique insight into the turbulent events of the last 100 years by combining rare archival film footage with the testimony of ordinary people who lived through the century’s sweeping changes and who recount their firsthand experiences.

200 Selected Topics in History (1-3)
Prerequisite: Consent of instructor. May be repeated for credit with consent of instructor.

201 History of Women in Comparative Cultures (3)
Prerequisite: Junior standing or the consent of the instructor. An introduction to the historical development of women's status in a variety of cultures and periods within the areas of Africa, Europe, the Far East, Latin America, and the Middle East. The course analyzes women's political, economic, familial, and sexual roles and the economic, demographic, ideological, and political forces which promoted change and continuity in those roles. This course fulfills the Cultural Diversity requirement.

203 U.S. Social Movements in the 20th Century
Prerequisite: Junior standing or the consent of the instructor. This course challenges students to analyze the historical sources, objectives, and techniques of social movements initiated by racial minorities, women, gays and lesbians, evangelical Christians, and many others.

205 History of American Economic Development (3)
Prerequisites: Econ 40 or 51 or consent of instructor. (Same as Econ 205). Uses economic concepts to explain historical developments in American economy, beginning with hunter-gatherers who crossed the Bering land bridge around 12,000 B.C. Main topics include Native American economies, European exploration and conquest, colonial economies, indentured servitude, American Revolution, U.S. Constitution, westward expansion, transportation, Industrial Revolution, state banking and free banking, slavery, Civil War, postbellum agriculture, rise of big business and antitrust, banking panics, Federal Reserve Act, First and Second World Wars, New Deal, and growth of government in postwar economy.

207 History of Missouri (3)
Prerequisite: Junior standing or the consent of the instructor. Lecture and readings. Seventeenth-century Spanish and French explorations and interaction with the Indians; settlement and organization of the Louisiana territory; lead mining and the fur trade; the Louisiana Purchase; the Missouri territory; the struggle for statehood and slavery; antebellum politics; banking and internal improvements; westward expansion; Civil War and reconstruction; postwar agrarian politics; industrialization; Irish, German, and southern European immigration; the Progressive reforms--political and economic change; and twentieth-century social changes and political developments. Course satisfies the state requirement.

208 The History of St. Louis (3)
Prerequisite: Junior standing or consent of the instructor. This course will provide an overview of the history of the St. Louis metropolitan region from its founding in 1764 to the present. Main topics will 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 St. Louis-style, school desegregation, the Schoemehl years, the emergence of St. Louis "Edge Cities," and St. Louis 2004.

210 African-American History: From Slavery to Civil Rights (3)
Prerequisite: Consent of the instructor. This course examines the impact of region, gender, and class on black activism by focusing on topics such as remembering slavery and emancipation, institution and community building during segregation, changing strategies in politics and protest, and the emergence of the direct action civil rights movement.

211 Sport and Society (3)
Prerequisite: Junior standing or the consent of the instructor. This course looks at sport in Western society as a form of social history. The first section of the course covers from early Olympic games through the end of the eighteenth century. The major part of the course deals with the role of organized sport in Europe and the United States since 1840, the political and economic aspects of sports, and the growth of international sports.
212 African-American History: From Civil Rights to Black Power (3)
Prerequisite: Consent of instructor. A seminar 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.

219 U.S. Labor History (3)
Examines the history of work and the working class in the United States. It focuses on the transformation of the workplace, the evolution of working class consciousness and the development of the labor movement, the role of race, gender and ethnicity in uniting or dividing the working class, and the nature of labor's relations with other social groups in the political arena. Particular emphasis on the political and economic conditions and strategies of periods when working class power was growing.

242 European Social History Since 1715
Prerequisite: Junior standing or the consent of the instructor. This is a survey course examining the life of ordinary people in modern Europe. It begins with an examination of economic conditions and the social classes that derive from them. Most of the course explores the conditions of every day life. Topics include demography, marriage and the family, sexuality, children and old age, the roles of women, disease and death, diet, drink and drugs, clothing and housing, leisure and entertainment, and popular attitudes.

245 Advanced History of Natural History: Systematics, Ecology, and Natural History in the Strict Sense (3)
Prerequisites: At least 3 biology courses beyond the introductory level or consent of instructor. Topics include principles of ethnobiological classification, Aristotle and Theophrastus and their incorporation in western science, and natural history in the Renaissance. Focuses on breakup of natural history after 1750; integration of natural history and botany in popular culture and its consequences for professional disciplines; relationships between new botany and classification botany, among botany, zoology and biology at the end of 19th century, and between field and laboratory science; and conflict between systematic schools in later 20th century. Three hours of lecture per week. Paper on topic of student's choice required. Credit not granted for more than one of Biology 362, History 245, and Biology 462.

252 The World of Islam (3)
Prerequisite: Junior standing or consent of instructor. The development of Islam as a religion and a civilization will be traced from its Arabian origins to its present position as the major religion of Africa and Asia. Special emphasis on the Islamic state, Sufi mysticism, the Shariah and the Muslim confrontation with modernization. This course fulfills the Cultural Diversity requirement.

255 Curriculum and Methods of Teaching Secondary School History and Social Studies (3)
(Same as SEC ED 255.) Prerequisite: Junior standing and Sec Ed 213. 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. Attention is directed also toward learning the techniques and research tools of the scholar in the fields of history and social studies. May not count toward history hours required for history major. Must be completed prior to student teaching. This course must be completed in residence.

256 Social Studies Teaching Intern Seminar (1)
(Same as SEC ED 256.) Prerequisite: Must be enrolled concurrently in student teaching. Addresses the application of educational philosophy, social studies curriculum, teaching strategies, and instructional technology in the classroom setting. Offered concurrently with Secondary School Student Teaching, SEC ED 290

257 United States History for the Secondary Classroom (3)
(Same as Secondary Education 257.) 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.

258 World History for the Secondary School Classroom (3)
(Same as Secondary Education 258.) 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. Particular emphasis will be placed on defining the broad and connecting themes of World 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.
262 Modern History of the Pacific Rim
Prerequisite: Junior standing or the consent of the instructor. A survey course on the 20th-century history of the most rapid growth of a broad economic region in East and Southeast Asia as well as their interactions with America. For students who need to understand the political and economic dynamics of the countries around the Pacific Basin and the historical roots of various problems. This course fulfills the Cultural Diversity requirement.

300 Selected Topics in History (3)
Prerequisite: Junior standing or consent of instructor. Special topics in history. The course may be repeated for credit with the consent of the instructor.

301 United States History: Colonial America to 1763 (3)
Prerequisite: Junior standing or consent of instructor. English background of colonization; rise of distinctive New England and Southern societies; English colonial policy to the Peace of Paris.

302 United States History: Revolution and the New Nation, 1763 to 1815 (3)
Prerequisite: Junior standing or consent of the instructor. The American Revolution and the creation of the new nation. The young republic and the development of the first American party system. Course fulfills the state requirement.

303 United States History: Nationalism and Sectionalism, 1815 to 1860 (3)
Prerequisite: Junior standing or consent of the instructor. The Era of Good Feelings, the Age of Jackson, manifest destiny, the political and social developments of the antebellum period relating to the growth of sectionalism and the developing antislavery crusade.

304 United States History: 1860-1900 (3)
Prerequisite: Junior standing or consent of the instructor. The Civil War, Reconstruction, industrial and urban expansion and their impact on American life.

305 United States History: 1900-1940 (3)
Prerequisite: Junior standing or consent of the instructor. The economic, political, and social developments and crises of the mature industrial United States. The growing importance of foreign relations.

306 United States History: 1940 to the Present (3)
Prerequisite: Junior standing or consent of instructor. The economic, political, and social developments and crises of postindustrial United States. The role of foreign affairs in American life.

311 Topics in American Constitutional History (3)
Prerequisite: Junior standing or consent of instructor. Origins and development of principal institutions and ideas of American constitutional system; role of Constitution and Supreme Court in growth of the nation; important Supreme Court decisions; great American jurists and their impact on the law; historical background to current constitutional issues. Fulfills state requirement.

312 The Indian in American History, 1600-1900 (3)
Prerequisite: Junior standing or the consent of instructor. Investigates Native American encounters with non-Indian peoples between 1600 and 1900, analyzing how traditional Indian cultures changed to meet a variety of new challenges introduced to North America by Europeans and Africans. The approach will be interdisciplinary and ethnohistorical with emphasis placed on case studies of important native nations at key turning points in their history.

313 American Military History to 1900 (3)
Prerequisite: Junior standing or consent of instructor. A study of American military institutions from colonial times to 1900. The impact of the military upon major aspects of American life. The place of war in American history to 1900.

314 American Foreign and Military Affairs, 1900-Present (3)
Prerequisite: Junior standing or consent of instructor. A survey of American foreign and military affairs since 1900, with particular emphasis on the major wars during the period and the Cold War Era. Consideration of the nation's changing place in a changing world.

315 History of Women in the United States (3)
Prerequisite: 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 theorists and activists; images of women.

316 U.S. Urban History (3)
Prerequisite: Junior standing or consent of the instructor. The physical and spatial growth of U.S. cities from colonial times to the present with special attention to the impact of industrialization, public policy, and advances in transportation technology.

317 Comparative Urban History (3)
Prerequisite: Junior standing or consent of the instructor. Reviews and analyzes the development of cities from a North American perspective focusing on the 19th and 20th centuries. Attention will be given to the issue of why North American cities appear and function differently from urban areas on other continents, including Europe, Asia, and South America.
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318 African-American Women's History (3)
Prerequisite: Junior standing or consent of the instructor.
This course introduces some of the themes of African-American women's history. By examining the impact of region, gender, and class on African-American women's experiences across time, the course highlights black women's applied and theoretical contributions to feminist politics and activism as well as the black struggle for freedom and equality. Topics covered include: slavery and emancipation, institution and community building, the family and work, electoral politics and direct action protest, civil rights, and contemporary issues.

319 Topics in African-American History (3)
Prerequisite: Junior standing or consent of instructor. Will explore a salient topic in African-American history. Such historical documents as personal narratives, letters, government documents, and autobiographies as well as monographs, articles, and other secondary sources will be used to explore topics such as slavery and slave culture in the United States; blacks and America's wars; the African-American intellectual tradition; or, African-Americans and the Great Migration.

320 History of Crime and Justice (3)
Prerequisite: Junior standing or consent of the instructor. (Same as CCJ 330). 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.

321 Medieval England (3)
Prerequisite: Junior 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.

323 Yorkist and Tudor England (3)
Prerequisite: Junior standing or consent of instructor. The turmoil over the monarchy and consolidation of the Tudor dynasty. A study of the English Reformation and the political and economic changes of the sixteenth century.

324 Stuart England (3)
Prerequisite: Junior standing or consent of instructor. A study of the English revolutions, religious controversy, and the rise of parliamentary power; the social and economic changes of the century; and the role played by England in the European struggles of the period.

325 History of the Church: The Middle Ages (3)
Prerequisite: Junior standing or consent of the instructor. A topical study of the Christian church in Europe as an autonomous and central institution from the sixth century through the reformation crisis. Special attention will be given to the relations between the church and the secular world, and the contributions of medieval Christianity to the development of European institutions and ideas.

326 Europe in Early Middle Ages (3)
Prerequisite: Junior 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.

327 Europe in the High and Late Middle Ages (3)
Prerequisite: Junior 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.

341 The Age of the Renaissance (3)
Prerequisite: Junior standing or consent of the instructor. The Italian and Northern Renaissance as a distinct age; political, socioeconomic, intellectual, religious, and artistic movements attending the decline of medieval society, and the transition to the early modern period.

342 The Age of Reformation (3)
Prerequisite: Junior standing or consent of the instructor. Religious, intellectual, political, and socioeconomic developments of the sixteenth century.

348 Europe 1900-1950: War and Upheaval (3)
Prerequisite: Junior standing or consent of the instructor. The impact of World Wars I and II and the search for equilibrium.

349 Europe, 1950-Present: Peace and Prosperity (3)
Prerequisite: Junior standing or consent of instructor. A survey of the main social, economic, political, military, and cultural trends since the outbreak of World War II.

350 The People's Century, Part I (3)
The course provides unique insight into the turbulent events of the last 100 years by combining rare archival film footage with the testimony of ordinary people who lived through the century's sweeping changes and who recount their firsthand experiences. As an upper-division course, History 350 requires substantially more work than its lower-division counterpart, History 150.
351 Contemporary France: Since 1870 (3)
Prerequisite: Junior standing or consent of instructor. The history of Republican France. Topics discussed include the creation of a liberal-democratic government; the scandals and crises of the Third Republic; the Dreyfus affair; the rise of imperialism, socialism, and feminism; the impact of World War I, the popular front, defeat, collaboration, and resistance during World War II; and the reestablishment of France as an important power.

352 Germany in the Modern Age (3)
Prerequisite: Junior standing or consent of instructor. The course deals with whether or not the Third Reich should be considered the culmination of German history. Problems of national unification, economic development, representative government, and cultural modernism will be considered.

355 History of Spain (3)
Prerequisite: Junior standing or consent of the instructor. A survey of Spanish history from the fifteenth century to the present, emphasizing its period of imperial greatness and examining the effects of empire on national development.

361 Modern Japan: 1850 to Present (3)
Prerequisite: Junior standing or consent of instructor. The economic, social, and political development of modern Japan. This course fulfills the Cultural Diversity requirement.

362 Modern China: 1800 to Present (3)
Prerequisite: Junior standing or consent of instructor. The economic, social, and political development of modern China. This course fulfills the Cultural Diversity requirement.

371 History of Latin America: To 1808 (3)
Prerequisite: Junior standing or consent of instructor. Latin America from the pre-Columbian civilizations to 1808, stressing social, political, and economic institutions in the Spanish colonies. This course satisfies the Cultural Diversity requirement.

372 History of Latin America: Since 1808 (3)
Prerequisite: Junior standing or consent of instructor. Emphasis on the attainment of political independence and social, political, and economic developments of the nineteenth and twentieth centuries in Latin America. This course satisfies the Cultural Diversity requirement.

380 West Africa to 1800 (3)
Prerequisite: Junior standing or consent of instructor. This course discusses both the history and historiography of Africa's most populous and ethnically diverse region. Beginning with the prehistoric era prior to the desiccation of the Sahara, the course explores climatology and population movement, changes in food production and technology, state formation, the spread of Islam, cultural and political diversity in the forest region, domestic slavery, the Atlantic slave trade and abolition. This course fulfills the Cultural Diversity requirement.

381 West Africa Since 1800 (3)
Prerequisite: Junior standing or consent of instructor. Analysis of change in the savanna/forest societies occasioned by Islamic reform and the end of the slave trade, the imposition of colonial rule and African response, growth of nationalist protest, and postindependence development. This course fulfills the Cultural Diversity requirement.

382 History of Southern Africa (3)
Prerequisite: Junior standing or consent of instructor. Historical roots of apartheid and black nationalism in South Africa and Rhodesia/Zimbabwe. Foundation of white African societies, Khoisan resistance, the Mfecane and African state formation, the mineral revolution, colonialism versus autonomy, and the current confrontation of rival ideologies. This course fulfills the Cultural Diversity requirement.

385 Africa Diaspora to 1800 (3)
Prerequisite: Junior standing or consent of instructor. Comparative in scope, the course examines major themes in West and Central Africa and their impact on the history of Africans in the Atlantic diaspora up to 1800. Themes include: slavery, multiracialism, economics of the South Atlantic system, political dimensions and the social transformation from heterogeneous crowds to new and homogenous communities. Linkages between Africans and their descendants in the Atlantic communities of Latin America, the Caribbean, as well as North America will be stressed. This course fulfills the Cultural Diversity requirement.

386 African Diaspora Since 1800 (3)
Prerequisite: Junior standing or consent of instructor. Comparative in scope, this course uses a comparative methodology to examine the major themes in West and Central Africa and their impact on the history of Africans in the Atlantic diaspora after 1800. This course fulfills the Cultural Diversity requirement.

390 Special Readings (1-10)
Prerequisite: Consent of the instructor. Independent study through readings, reports, and conferences.

392 Collaborative Research (3-6)
Prerequisite: Consent of instructor. Faculty-student collaboration on a research project designed to lead toward publication of a jointly authored article. Faculty member will direct the research.
393 Senior Seminar (5)
Prerequisite: Consent of department and presentation of three examples of formal written work submitted in prior upper-division courses in history. 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. Senior Seminar is required for all history majors. May not be taken for graduate credit.

394 Internship (3-6)
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. This elective course supplements but does not replace requirements for baccalaureate degree in history. May not be taken for graduate credit.

400 Readings in American History to 1865 (3 or 5)
Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in American history to 1865.

403 Mercantile Library Seminar and Readings in American History (3-5)
Prerequisite: Consent of instructor and advanced graduate standing. Directed readings and writing on selected topics and areas in American history that draw heavily upon resources in the St. Louis Mercantile Library.

405 Readings in American History Since 1865 (3 or 5)
Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in American history since 1865.

407 Readings in African-American History (3-5)
Prerequisite: Graduate standing and consent of instructor. Directed readings and writings on selected topics and areas in African-American history.

410 Readings in European History to 1715 (3 or 5)
Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in European history to 1715.

415 Readings in European History Since 1715 (3 or 5)
Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in European history since 1715.

420 Readings in East Asian History (3 or 5)
Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in East Asian history.

425 Readings in Latin American History (3 or 5)
Prerequisite: Graduate standing and consent of instructor.

Directed readings and writing on selected topics and areas in Latin American history.

430 Readings in African History (3 or 5)
Prerequisite: Graduate standing and consent of instructor. Directed readings and writing on selected topics and areas in African history.

434 History Curatorship (5)
Prerequisite: Graduate standing and consent of instructor. Principles and practices of curatorship in history museums. Historiography and research in material culture; theoretical foundations; methodologies for collecting and curating collections; legal and ethical issues, interpretation, role of the history curator in exhibit and program developments; and responsibilities to the community.

435 Foundations of Museology I (3)
Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 435 and Anthropology 435.) Concepts for understanding museums in their social and cultural context; history of museums; museology and general social theory; information transfer vs. meaning-making models; museums and communities; the changing role of museums; museums as complex organizations; process models of museology.

436 Foundations of Museology II (3)
Prerequisite: History 435 and consent of Director of Museum Studies Program. (Same as Art 436 and Anthropology 436.) Audience-centered approaches to museology; visitor research and learning theory: philosophical and practical considerations in museum planning; the physical design of museums; creativity; exhibit and program development; collections and curation; the challenge of diversity; the future of museums.

437 Effective Action in Museums (3)
Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 437 and Anthropology 437.) The nature of the work done in museums; how museums are organized to accomplish this work; professional roles and practices; technology and resources used by museums, skills for creative and effective leadership in project management and administration in museums; planning, flow charting, budgeting, team dynamics, and related skills. The course will include several site visits to area museums and guest lectures by a variety of museum professionals.

438 Museum Studies Master's Project (4)
Prerequisite: Consent of Director of Museum Studies Program. (Same as Art 438 and Anthropology 438.) Research and writing/exhibit development on a selected topic.
440 United States History for the Secondary Classroom (3-6)
Prerequisite: Graduate standing or consent of instructor. The intent of this course is to adapt the themes and subject matter of American history to the secondary classroom and to train teachers in the methodology of Socratic symposium, techniques particularly 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 American history, on expanding bibliography and on methods for choosing primary sources for use in an interactive classroom. History 440 may not be used to meet History degree requirement.

441 World History for the Secondary Classroom (3-6)
Prerequisite: 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 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. History 441 may not be used to meet History degree requirement.

447 Collaborative Research (3-6)
Prerequisites: Graduate standing and consent of instructor. Faculty-student collaboration on a research project designed to lead toward publication of a jointly authored article. Faculty member will direct the research.

448 Thesis Seminar (2-6)
Prerequisite: Graduate standing and consent of instructor. Thesis research and writing on a selected topic in history.

449 Directed Readings (1-3)
Prerequisite: Consent of a member of the doctoral faculty. Directed research at the graduate level.

450 Doctoral Proseminar in American History to 1865 (3)
Prerequisite: Consent of instructor and advanced graduate standing. Syllabi-oriented review of the literature and methods of the field.

451 Doctoral Research Seminar in American History to 1865 (3)
Prerequisite: Consent of the instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

452 Doctoral Proseminar in African-American History (3)
Prerequisite: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

453 Doctoral Research Seminar in African-American History (3)
Prerequisite: Consent of the instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

454 Doctoral Proseminar in American History Since 1865 (3)
Prerequisite: Consent of the instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

455 Doctoral Research Seminar in American History Since 1865 (3)
Prerequisite: Consent of the instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

456 Doctoral Proseminar in European History to 1715 (3)
Prerequisite: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

457 Doctoral Research Seminar in European History to 1715 (3)
Prerequisite: Consent of the instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

458 Doctoral Proseminar in East Asian History (3)
Prerequisite: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

459 Doctoral Research Seminar in East Asian History (3)
Prerequisite: Consent of instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.
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475 Doctoral Proseminar in Latin American History (3)
Prerequisite: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

476 Doctoral Research Seminar in Latin American History (3)
Prerequisite: Consent of instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

480 Doctoral Proseminar in African History (3)
Prerequisite: Consent of instructor and advanced graduate standing. Systematic review of the literature and methods of the field.

481 Doctoral Research Seminar in African History (3)
Prerequisite: Consent of instructor and advanced graduate standing. Discussion and presentation of research on a special topic within the field.

491 Dissertation Research (1-18)
Prerequisite: Completion of the doctoral qualifying examination. Dissertation research and writing on a selected topic in history.

492 Doctoral Presentation Seminar (1-3)
Prerequisite: Previous enrollment in History 491 and consent of department. Discussion and presentation of research in progress for the doctoral dissertation. Normally taken in the final year.

499 Directed Readings for Doctoral Students (1-6)
Prerequisite: Consent of a member of the doctoral faculty. Directed research at the doctoral level.
Mathematics and Computer Science

Faculty

Raymond Balbes, Professor*, Chairperson
Ph.D., University of California, Los Angeles
Chal Benson, Professor*
Ph.D., Yale University
Charles Chui, Distinguished Professor*
Ph.D., University of Wisconsin
William Connett, Professor*
Ph.D., University of Chicago
Richard Friedlander, Professor*, Associate Chairperson
Ph.D., University of California, Los Angeles
Deborah Tepper Haimo, Professor Emerita*
Ph.D., Harvard University
Wayne L. McDaniel, Professor Emeritus*
Ph.D., Saint Louis University
A Prabhakar Rao., Professor*
Ph.D., University of California, Berkeley
Gail Ratcliff, Professor*
Ph.D., Yale University
Alan L. Schwartz, Professor*
Ph.D., University of Wisconsin-Madison
Stephen Selesnick, Professor Emeritus*
Ph.D., University of London
Jerrold Siegel, Professor*
Ph.D., Cornell University
Grant V. Welland, Professor*
Ph.D., Purdue University
Sanjiv K. Bhatia, Associate Professor*
Ph.D., University of Nebraska-Lincoln
Haiyan Cai, Associate Professor*
Ph.D., University of Maryland
Ronald Dotzel, Associate Professor*
Ph.D., Rutgers University
Cezary Janikow, Associate Professor*
Ph.D., University of North Carolina at Chapel Hill
Kyungho Oh, Associate Professor*
Ph.D., Purdue University
Joachim Stöckler, Associate Professor*
Ph.D., Universität Duisburg
Frederick Wilke, Associate Professor Emeritus*
Ph.D., University of Missouri-Columbia
Shiying Zhao, Associate Professor*
Ph.D., University of South Carolina
Uday K. Chakraborty, Assistant Professor*
Ph.D., Jadavpur University
Wenjie He, Assistant Professor*
Ph.D., University of Georgia
Chengjun Liu, Assistant Professor*
Ph.D., George Mason University
John Antognoli, Senior Lecturer; Coordinator of Evening Program
M.A., University of Missouri-St. Louis
Dorothy Gotway, Lecturer
M.A., University of Kansas-Lawrence

Marlene Gustafson, Senior Lecturer
M.A., Western Reserve University
Mary Kay McKenzie, Senior Lecturer
M.S., Saint Louis University
Shahla Peterman, Senior Lecturer
M.S., University of Wisconsin-Madison
Gillian Raw, Senior Lecturer Emerita
M.A., Washington University
Paul Schneider, Senior Lecturer
M.A., Saint Louis University
Cynthia Siegel, Senior Lecturer Emerita
M.A., University of Chicago
*members of Graduate Faculty

General Information

Degrees and Areas of Concentration

The Department of Mathematics and Computer Science offers work leading to the B.A. in mathematics, the B.S. in applied mathematics, the B.S. in computer science, and in cooperation with the College of Education, the B.S. in secondary education with a major in mathematics. The applied mathematics program has three emphasis areas: statistics, classical applied mathematics, and computational mathematics. The department also offers minors in computer science, mathematics, and statistics.

The program leading to the B.A. in mathematics is flexible, providing a broad introduction to the important branches of mathematics while giving students the depth necessary to pursue graduate study successfully. The B.S. in applied mathematics provides a solid foundation for the student interested in applications of mathematics, including computer-related mathematics. The B.S. in computer science prepares students for employment in modern computing technology and applications of computer science. The B.S. in secondary education introduces students to those branches of mathematics most relevant to teaching secondary-school mathematics.

The Department of Mathematics and Computer Science also offers a master's of arts (M.A.) degree in mathematics, a master of science (M.S.) degree in computer science and a Ph.D. in applied mathematics. Students pursuing the M.A. degree in mathematics may choose an emphasis in either pure or applied mathematics. The pure mathematics emphasis is well-suited for students preparing to teach at the high school, junior college, or four-year liberal arts college level. Those who concentrate on applied courses in the M.A. program build a foundation for the application of mathematics in industry and the continuation of their education in the Ph.D. program in applied mathematics. The M.S. degree in computer science emphasizes practical aspects of the field. Students may enroll in any of these graduate programs on a part-time basis.
Department Scholarships

The Department of Mathematics and Computer Science offers two scholarships for students who are majoring in mathematics or computer science.

The Mathematical Sciences Alumni Scholarship is a monetary award for outstanding undergraduates at the junior or senior level. The Donald Hankinson Memorial Scholarship is a monetary award for outstanding students at the sophomore level or higher, including graduate students. Applicants for each of these scholarships must have a grade point average of 3.5 or higher in at least 24 hours of graded course work at the University of Missouri-St. Louis, and show superior achievement in courses in the mathematical sciences. Application forms may be obtained from the Department of Mathematics and Computer Science. The deadline for application for both scholarships is March 15, and the scholarships must be used for educational fees or for books at UM-St. Louis starting in the fall semester following the application.

Undergraduate Studies

General Education Requirements
All majors must satisfy the university and appropriate school or college general education requirements. 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
Majors in mathematics and computer science 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 mathematical sciences courses presented to meet the degree requirements must be completed with a grade of C- or better. At least four courses numbered 250 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. The dates on which this test is administered are given in the Schedule of Classes. 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.

Bachelor of Arts in Mathematics and Bachelor of Science in Education Majoring in Secondary Education with Emphasis in Mathematics

Candidates for either the B.A. degree or the B.S. in Education are required to complete the following course work:

1) All of the following mathematics courses:
   80, Analytic Geometry and Calculus I
   175, Analytic Geometry and Calculus II
   180, Analytic Geometry and Calculus III
   202, Introduction to Differential Equations
   245, Elementary Linear Algebra
   255, Discrete Structures

2) Probability and Statistics
   132, Applied Statistics I

3) Five courses from at least three of the following blocks.

Analysis and Topology
   310, Advanced Calculus I
   311, Advanced Calculus II
   316, Functions of a Complex Variable
   380, Introduction to Topology

Algebra
   335, Theory of Numbers
   340, Introduction to Abstract Algebra I
   341, Introduction to Abstract Algebra II
   345, Linear Algebra

Applications
   303, Applied Mathematics I
   306, Applied Differential Equations
   320, Mathematical Statistics I
   321, Mathematical Statistics II
   323, Numerical Analysis I
   324, Numerical Analysis II
   327, The Calculus of Variations
   355, Combinatorics

Geometry and Logic
(B.S. in secondary education majors must complete 366 or 367.)
   358, Mathematical Logic
   362, Projective
   364, Introduction to Differential Geometry
   366, Foundations of Geometry
   367, Introduction to Non-Euclidean Geometry
One of the following computer science courses is required:
Computer Science 122, Computers and Programming or Computer Science 125, Introduction to Computing

Bachelor of Science in Applied Mathematics

The following coursework is required:
1) Mathematics
80, Analytic Geometry and Calculus I
175, Analytic Geometry and Calculus II
180, Analytic Geometry and Calculus III
202, Introduction to Differential Equations
245, Elementary Linear Algebra
255, Discrete Structures
345, Linear Algebra
310, Advanced Calculus I, or
340, Introduction to Abstract Algebra I

2) Probability and Statistics
132, Applied Statistics I

3) All the courses in option a, b, or c:

a) Classical Applied Mathematics Option
The following courses in mathematics are required:
303, Applied Mathematics I
316, Functions of a Complex Variable
320, Mathematical Statistics I
323, Numerical Analysis I

One of the following computer science courses is required:
CS 122, Computers and Programming, or
CS 125, Introduction to Computing

Also required are two additional courses in mathematical sciences, numbered above 250, as well as Physics 111, Physics: Mechanics and Heat, and Physics 112, Physics: Electricity, Magnetism, and Optics.

b) Probability and Statistics Option
The following courses in probability and statistics are required:
232, Applied Statistics II
320, Mathematical Statistics I
321, Mathematical Statistics II
330, Multivariate Analysis
333, Nonparametric Methods in Statistics

Also required are the following computer science courses:
125, Introduction to Computing
225, Programming and Data Structures

Two related courses should be chosen with the approval of the adviser.

c) Computational Mathematics Option
The following courses in mathematics and computer science are required:
125, Introduction to Computing
225, Programming and Data Structures
278, Design and Analysis of Algorithms
323, Numerical Analysis I
324, Numerical Analysis II
355, Combinatorics

Also required are three additional courses numbered above 250, one of which must be in computer science, and two in mathematics.

Bachelor of Science in Computer Science

The following coursework is required:
1) Computer Science
125, Introduction to Computing
225, Programming and Data Structures
240, Computer Systems: Architecture and Organization
241, Computer Systems: Programming
255, Discrete Structures
274, Object-Oriented Programming with C++
275, Advanced Programming with Unix
278, Design and Analysis of Algorithms
325, Programming Languages
328, Program Translation Techniques
376, Operating Systems

2) Mathematics and Statistics
80, Analytic Geometry and Calculus I
175, Analytic Geometry and Calculus II
180, Analytic Geometry and Calculus III
245, Elementary Linear Algebra
132, Applied Statistics I

3) Philosophy
258, Ethics and the Computer

4) Five more elective courses, numbered above 300 if in computer science, and above 200 if in mathematics or statistics. At least three of these elective courses must be in computer science, and at least one must be in mathematics or statistics.

Related Area Requirements
To broaden student understanding of the sources and uses of mathematics, the department requires all candidates for the B.A. in mathematics, B.S. in education, B.S. in applied mathematics, and B.S. in computer science to complete all courses in any two of the groups below with a grade of C- or better.

Restrictions Related area requirements may not be taken on a satisfactory/unsatisfactory (S/U) basis. Students in either the computer science degree program or the statistics or computational mathematics emphasis areas for the applied mathematics degree program may not
choose group 5; students in the classical applied math emphasis area may not choose group 8. Candidates for the B.S. in applied mathematics and the B.S. in computer science who choose group 9 must satisfy group 9 requirements with Physics 221, Mechanics, and Physics 223, Electricity and Magnetism. Students in the computational mathematics emphasis area for the applied mathematics degree are strongly encouraged to choose group 8 as one of their related areas.

Related Area Courses
1) Biology:
220, General Ecology
222, General Ecology Laboratory

2) Biology:
224, Genetics
342, Population Biology

3) Chemistry:
11, Introductory Chemistry I
12, Introductory Chemistry II

4) Chemistry:
231, Physical Chemistry I
and another 200-level, or above, chemistry course.

5) Computer Science
225, Programming and Data Structures
and one of either:
240, Computer Systems: Architecture and Organization,
or 278, Design and Analysis of Algorithms

6) Economics:
365, Introduction to Econometrics, and one of either:
366, Applied Econometrics, or 367 Econometric and Time Series Forecasting

7) Philosophy:
160, Formal Logic
260, Advanced Formal Logic
280, Philosophy of Science

8) Physics:
111, Physics: Mechanics and Heat
112, Physics: Electricity, Magnetism, and Optics

9) Physics:
221, Mechanics
and another 200-level, or above, physics course

10) Business Administration:
Two of the following courses:
308A, Production and Operations Management
308B, Production and Operations Management - Logistics

308C, Production and Operations Management - Manufacturing
308D, Production and Operations Management - Service Systems
329, Business Forecasting
330, Quality Assurance in Business
375, Operations Research
385, Operations Research II

11) Engineering:
144, Statics
145, Dynamics

Many students are qualified, as a result of having studied calculus in high school, to begin their major with Math 175, Analytic Geometry and Calculus II, or Math 180, Analytic Geometry and Calculus III. These students are urged to consult with the department before planning their programs. Credit for Mathematics 80, Analytic Geometry and Calculus I, will be granted to those students who complete Mathematics 175 with a grade of C- or better.

Similarly, students who are ready to begin their computer science studies with Computer Science 225, Programming and Data Structures, will be granted credit for Computer Science 125, Introduction to Computing, once they complete Computer Science 225 with a grade of C- or better.

Students preparing for graduate study should take eight or nine mathematics courses at the junior-senior level. The department recommends the following mathematics courses:

310, Advanced Calculus I
316, Functions of a Complex Variable
340, Introduction to Abstract Algebra I
345, Linear Algebra
380, Introduction to Topology

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 Computer Science
The requirements for the minor are:
125, Introduction to Computing
225, Programming and Data Structures
240, Computer Systems: Architecture and Organization

and two additional courses in Computer Science numbered above 240. At least one of these must be either Computer Science 241, Computer Systems: Programming, or Computer Science 278, Design and Analysis of Algorithms. A minimum of two computer science courses numbered above 240 must be taken in
residence in the Department of Mathematics and Computer Science at UM-St. Louis.

Minor in Mathematics
The requirements for the minor are:
80, Analytic Geometry and Calculus I
175, Analytic Geometry and Calculus II
180, Analytic Geometry and Calculus III

and one additional three-hour mathematics course numbered above 180. A minimum of two mathematics courses numbered 180 or above must be taken in residence in the Department of Mathematics and Computer Science at UM-St. Louis.

Minor in Statistics
The requirements for the minor are:
132, Applied Statistics I
232, Applied Statistics II
320, Mathematical Statistics I
321, Mathematical Statistics II

A minimum of two statistics courses numbered above 200 must be taken in residence in the Department of Mathematics and Computer Science at UM-St. Louis.

Graduate Studies
The Department of Mathematics and Computer Science offers an M.A. degree in mathematics, Ph.D. degree in applied mathematics, and an M.S. degree in computer science.

Admission
Applicants must meet the general admission requirements of the Graduate School, described elsewhere in this Bulletin. Additional admission requirements for specific programs are listed below.

Mathematics Programs
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, economics, engineering and physics. An applicants 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 to concentrate in either pure or applied mathematics. A student in the M.A. program may petition the department for transfer to the Ph.D. program upon successful completion of 15 credit hours and fulfillment of additional requirements as listed below.

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 reference and scores from the Graduate Record Examination (GRE) general aptitude test and the subject test in mathematics. Applicants who did not major in mathematics may substitute the subject test in another field.

Computer Science Program
Applicants for the M.S. Degree in Computer Science must have at least a bachelor's degree, preferably in computer science or in a related area. Students with bachelor's degrees outside computer science must demonstrate significant proficiency in computer science, either by taking the GRE subject area examination or by explicitly showing competence in the following areas. (Any area requirement can be satisfied through suitable experience or completed coursework, if approved by the Graduate Director.)

- Programming experience equivalent to at least two semesters, including knowledge of a modern structured language and a modern object-oriented language.
- Elementary data structures.
- Assembly language programming, computer architecture, or computer organization.
- Design and analysis of algorithms
- Basic knowledge of the Unix operating system and program development environment.

Students must also have completed mathematics courses equivalent to the following:

1. Two semesters of calculus.
2. Elementary linear algebra.
3. Discrete mathematical structures.
4. Elementary probability or statistics

A student missing some of the above requirements may be admitted on restricted status if there is strong supportive evidence in other areas. Special regulations of the Graduate School applying to students while they are on restricted status are described elsewhere in this Bulletin.

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.
Degree Requirements

Master of Arts in Mathematics
Candidates for the M.A. degree must complete 33 hours of course work. All courses numbered below 400 must be completed with grades of at least B. The courses taken must include those listed below in either group A) or group B), together with additional courses discussed in C). Students who have already completed courses equivalent to those in A) or B) may substitute other courses numbered above 300. All substitutions of courses for those listed in A) or B) require the prior approval of the graduate director.

A) Pure mathematics core:
310, Advanced Calculus
316, Functions of a Complex Variable
340, Introduction to Abstract Algebra I
345, Linear Algebra
380, Introduction to Topology

B) Applied mathematics core:
310, Advanced Calculus
316, Functions of a Complex Variable
320, Mathematical Statistics
323, Numerical Analysis I
345, Linear Algebra

C) M.A. candidates must also complete 18 hours of course work numbered 400 or above, chosen with the prior approval of the graduate director. Courses may be chosen to develop expertise in either pure or applied mathematics.

Thesis Option Part of C) 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 490, 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.

M.A. degree students may have several of the courses in B) as part of their undergraduate record. Those who anticipate enrolling in the Ph.D. program are advised to use the opportunity to replace courses in B) they have had at the undergraduate level with courses such as

311, Advanced Calculus II
380, Introduction to Topology and if possible
331, Analysis of Variance and Design of Experiments
340, Introduction to Abstract Algebra I
364, Introduction to Differential Geometry

Doctor of Philosophy in Applied Mathematics
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 300 or above is required, including dissertation work. At least 33 hours must be in courses numbered 400 or above. All courses numbered below 400 must be completed with a grade of at least B. In addition to course work, all Ph.D. students are required to attend and participate in applied mathematics seminars.

Distribution Requirement
Among the courses presented for the degree there must be six courses from the following list such that at least three areas are represented and at least two courses are chosen from each of two of these areas:

I. Analysis and Applied Mathematics
402, Classical Applied Mathematics
403, Topics in Applied Mathematics
410, Theory of Functions of a Real Variable
416, Functions of a Complex Variable
418, Topics in Analysis
430, Partial Differential Equations
470, Functional Analysis

II. Numerical Analysis
423, Topics in Numerical Analysis
427, Numerical Linear Algebra

III. Optimization and Operations Research
435, Operations Research - Deterministic Models
436, Operations Research - Stochastic Models
437, Quality Management
460, Calculus of Variations

IV. Computational Mathematics
404, Topics in Computation
405, Computational Curves and Surfaces
406, Computational Harmonic Analysis
407, Time-Frequency Analysis
408, Advances in Wavelet Analysis

V. Probability and Statistics
420, Probability Theory
428, Topics in Probability Theory
432, Applied Statistics
2. Advancement to Ph.D. Candidacy
Advancement to Ph.D. candidacy is a four-step process consisting of:

A) Completing distribution requirement.
B) Passing the comprehensive examinations.
C) Selecting a Ph.D. committee and preparing a dissertation proposal.
D) Defending the dissertation proposal.

Comprehensive Examinations
Comprehensive examinations are offered in the following areas:

- Applied Mathematics
- Real Analysis
- Complex Analysis
- Numerical Analysis
- Optimization
- Operations Research
- Computational Mathematics
- Probability
- Statistics

The examinations are given on a rotating basis through the academic year; more detailed information on the individual examinations can be found in the Department of Mathematics and Computer Science Graduate Student Handbook. Each student must pass four comprehensive examinations. Upon permission by the Graduate Director and the Graduate School, a student may take one examination in a field which is not fully represented by any one of the above areas. This exam is created by a panel of three professors in consultation with the Graduate Director. The panel may include one professor from another department if special expertise outside mathematics and computer science is needed. This examination may be administered as an oral exam.

Students must apply to take each examination at least 45 days before the examination is offered. A student may attempt a comprehensive examination over a particular area no more than twice; the second attempt must be within 13 months of the first attempt.

Selection of a Ph.D. Committee and Preparation of a Dissertation Proposal.
The student is required to identify a dissertation adviser and an area of specialization for the dissertation. The area of specialization can be in a discipline complementary to mathematics. Usually, students select an adviser from contacts made through course work or in the seminar series. The adviser and student will then form a Ph.D. committee which may include faculty from other departments at UM-St. Louis. The committee advises the student on course work and research.

Each student must prepare a dissertation proposal. This is a substantial document describing the problem to be worked on and the methods to be used. It should also demonstrate the student's proficiency in written communication. The proposal is to be submitted to the Ph.D. committee for approval.

Dissertation Proposal Defense. If the Ph.D. committee finds the student's dissertation proposal acceptable, a defense is scheduled. This is a public event in which the student demonstrates mastery of the necessary skills to begin research.

3. Dissertation and Dissertation Defense
Each Ph.D. candidate must write a dissertation which 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 Math 499, Ph.D. Dissertation Research; a maximum of 9 hours in Math 499 can be used toward the required hours of work in courses numbered 400 or above.

Master of Science in Computer Science
Candidates for the M.S. degree in Computer Science must complete 30 hours of course work, subject to the Graduate School regulations. All courses numbered below 400 must be completed with grades of at least B. Outside computer science, up to 6 hours of related course work is allowed upon permission of the Graduate Director.

Students must receive credit in all areas of the following core requirements. Waiving or substituting for a specific requirement can be done on the basis of prior course work or experience (at the discretion of the Graduate Director), but it will not reduce the total hours required for the degree.

- Operating Systems (CS 376 or CS 476)
- Programming Languages (CS 325)
- Computer Systems (CS 470)
- Software Development (one of CS 450, CS 452, CS 454, or CS 456)
- Advanced Data Structures and Algorithms (CS 413)

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.
Career Outlook

Graduates from the Department of Mathematics and Computer Science have little difficulty in finding positions in industry, government, and education. The demand for individuals well-trained in statistics, computer science, and applied mathematics is greater than the available supply. In addition, a number of graduates in mathematics have elected careers in business and other related fields where they have found their logical and analytical skills to be well-rewarded.
Course Descriptions

Courses in this section are grouped as follows: Mathematics, Computer Science, and Probability and Statistics.

Students enrolling in introductory mathematics courses should check the prerequisites to determine if a satisfactory score on the Mathematics Placement Test is necessary. The dates on which this test is administered are given in the Schedule of Courses. 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.

The following courses fulfill the Natural Sciences and Mathematics [SM] breadth of study requirements:


*Mathematics 50 and 151 fulfill this requirement only for students seeking the B.S. in education degree in Early Childhood Education, Elementary Education, and Special Education.

Mathematics

**20 Contemporary Mathematics**
Prerequisites: A satisfactory ACT Math score, or a grade of A or B in high school algebra II, or a grade of C or better in a two or four year intermediate algebra course, or a satisfactory score on the university's mathematics placement examination. 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. May be taken to meet the mathematical proficiency requirement, but may not be used as a prerequisite for other mathematics courses. Designed for students who do not plan to take Calculus. Credit will not be granted for Math 20 if credit has been granted for Math 31, 80, 100 or 102. Concurrent enrollment in Math 20 and any of these courses is not permitted. (This course counts toward the [SM] requirement for breadth of study).

**30 College Algebra (3)**
Prerequisites: A satisfactory ACT Math score, or a grade of A or B in high school algebra II, or a grade of C or better in a two or four year college intermediate algebra course, or a satisfactory score on the university's mathematics placement examination. Topics in algebra and probability, polynomial functions, the binomial theorem, logarithms, exponentials, and solutions to systems of equations.

**35 Trigonometry (2)**
Prerequisite: Math 30 or concurrent registration. A study of the trigonometric and inverse trigonometric functions with emphasis on trigonometric identities and equations.

**50 Structure of Mathematical Systems I (3)**
Prerequisites: 45 hours of college credit and one of the following: Math 30, a satisfactory ACT Math score, or a satisfactory score on the university's mathematics proficiency examination. A study of sets, relations, functions, whole numbers, the integers and their properties, and the rational and real number systems. Credit will be granted only toward the B.S. in Education degree in Early Childhood Education, Elementary Education, and Special Education.

**70 Applied Mathematics of Interest (2)**
Prerequisites: Math 30. An introduction to the role of interest in applied mathematics. Topics include simple and compound interest, mathematics of annuities, amortization bonds, sinking funds, and mortgages.

**80 Analytic Geometry and Calculus I (5)**
Prerequisites: Math 30 and 35, or a satisfactory ACT Math score along with a satisfactory score on the university's trigonometry examination, or a satisfactory score on both the university's mathematics proficiency examination and the university's trigonometry examination. Introduction to analytic geometry, differential calculus, and integral calculus. Math 80, 175, and 180 form the calculus sequence.

**100 Basic Calculus (3)**
Prerequisite: Math 30, or a satisfactory ACT Math score, or a satisfactory score on the university's mathematics proficiency examination. Introduction to plane analytic geometry and basic differential and integral calculus with application to various areas. No credit for Mathematics majors. Credit not granted for both Math 80 and 100.

**102 Finite Mathematics I (4)**
Prerequisite: Math 30, or a satisfactory ACT Math score, or a satisfactory score on the university's proficiency examination. Introductory logic and set theory, partitions and counting problems, elementary probability theory, stochastic processes, Markov chains, vectors and matrices, linear programming, and game theory.
105 Basic Probability and Statistics (3)
Prerequisites: Math 30, or a satisfactory ACT Math score, or a satisfactory score on the university's mathematics proficiency examination. An introduction to probability and statistics. Topics 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 not granted for more than one of Stat 31, Stat 132 and Math 105.

132 Applied Statistics I
See Statistics 132 in Probability and Statistics section that follows.

151 Structure of Mathematical Systems II (3)
Prerequisite: Math 50. An introduction to probability and statistics. An intuitive study of elementary geometry. Introduction to the deductive theory of geometry and to coordinate geometry. Credit will be granted only toward the B.S. in education degree in Early Childhood Education, Elementary Education, and Special Education.

152 Structure of Mathematical Systems III (3)
Together with Math 50 and 151, this course teaches mathematics necessary for middle school mathematics certification. Topics from Math 50 and 151 are continued. Other topics include geometric constructions, similarity, coordinate geometry, normal distribution, combinatorics, and trigonometry. Credit granted only toward B.S. in Education degree in Early Childhood Education, Elementary Education, Special Education, and Middle School Education.

175 Analytic Geometry and Calculus II (5)
Prerequisite: Math 80. Selected topics from plane analytic geometry and calculus.

180 Analytic Geometry and Calculus III (5)
Prerequisite: Math 175. Solid analytic geometry and selected topics in calculus.

202 Introduction to Differential Equations (3)
Prerequisite: Math 180. Topics will be chosen from linear differential equations, equations with constant coefficients, Laplace transforms, power series solutions, systems of ordinary differential equations.

245 Elementary Linear Algebra (3)
Prerequisites: Math 100 or 175. 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.

255 Discrete Structures (3)
Prerequisite: Math 175 or 100, and CS 125 or equivalent. (Same as CS 255) Treats fundamental ideas in discrete structures and serves as a foundation for subsequent course in both Mathematics and Computer Science. Provides an introduction to techniques of mathematical reasoning with examples derived from computer science. Topics include logic, set algebra, equivalence relations and partitions, functions, mathematical induction, elementary number theory, cardinality, recurrence relations, basic combinatorial methods, trees and graphs. Credit not granted for more than one of CS 255, Math 250, and Math 255.

303 Applied Mathematics I (3)
Prerequisites: Math 202 and 245. Topics chosen from Fourier series, special functions, partial differential equations, and boundary value problems.

306 Applied Differential Equations (3)
Prerequisite: Math 202 and 245. The study of ordinary differential equations and partial differential equations is continued with applications in such areas as physics, engineering and biology.

310 Advanced Calculus I (3)
Prerequisite: Math 255 and 180. Limits, continuity, and differentiability of functions of one and several variables, sequences and series, and the Riemann Stieltjes integral.

311 Advanced Calculus II (3)
Prerequisite: Math 310. Continuation of Math 310

316 Functions of a Complex Variable (3)
Prerequisite: Math 202 or both CS/Math 255 and Math 180. Complex numbers and their geometrical representation, point sets, analytic functions of a complex variable, complex integration, Taylor and Laurent series, residue theorem, conformal mapping.

320 Mathematical Statistics I (3)
(Same as Statistics 320) See Statistics 320 Probability and Statistics section that follows.

321 Mathematical Statistics II (3)
(Same as Statistics 321) See Statistics 321 in Probability and Statistics section that follows.

323 Numerical Analysis I (3)
Prerequisites: Math 202, 245, and ability to program in an upper-level language. Solutions of equations, interpolation and approximation, numerical differentiation and integration, and numerical solution of initial value problems in ordinary differential equations. Selected algorithms will be programmed for solution on computers.
324 Numerical Analysis II (3)  
Prerequisite: Math 323 or consent of instructor. Topics chosen from: the numerical solution of systems of linear equations; the eigenvalue/eigenvector problem; numerical solution of Partial Differential Equations (PDE); numerical solution of stiff Ordinary Differential Equations (ODE); boundary value problems; sparse matrix methods; approximation theory; optimization theory; digital filters; integral equations.

327 The Calculus of Variations (3)  

335 Theory of Numbers (3)  
Prerequisite: CS/Math 255 and Math 180 or consent of instructor. Properties of integers, multiplicative functions, congruences, primitive roots, and quadratic residues.

340 Introduction to Abstract Algebra I (3)  
Prerequisite: CS/Math 255 and Math 180 or consent of the department. Introduction to groups, rings, and fields, with emphasis on groups and rings.

341 Introduction to Abstract Algebra II (3)  
Continuation of Math 340 with emphasis on fields.

345 Linear Algebra (3)  
Prerequisites: CS/Math 255, Math 180 and Math 245. Topics selected from vector spaces, bases, linear transformations, matrices, canonical forms, eigenvalues, hermitian and unitary matrices, inner product spaces, and quadratic forms.

350 Special Readings (1-10)  
Prerequisites: CS/Math 255, Math 180 and consent of instructor.

355 Combinatorics (3)  
Prerequisite: CS/Math 255 and Math 180. Advanced counting methods are introduced, 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.

358 Mathematical Logic (3)  
Prerequisite: CS/Math 255 and Math 180 or Philosophy 260, or consent of the department. 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.

362 Projective Geometry (3)  

364 Introduction to Differential Geometry (3)  

366 Foundations of Geometry (3)  
Prerequisite: CS/Math 255 and Math 180 or consent of the department. 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.

367 Introduction to Non-Euclidean Geometry (3)  
Prerequisite: CS/Math 255 and Math 180 or consent of the department. A summary of the history of the non-Euclidean geometries and a study of hyperbolic plane geometry.

380 Introduction to Topology (3)  
Prerequisite: CS/Math 255 and Math 180 or consent of the department. A study of topological spaces, including the concepts of limit, continuity, connectedness, compactness, etc. Special emphasis placed on, and examples taken from, the space of real numbers.

389 Topics in Mathematics (3)  
Prerequisite: Consent of instructor. A seminar on special topics in mathematics to be determined by the interests of the instructor. May be repeated for credit provided different topics are studied.

401 Theory of Ordinary Differential Equations (3)  
Prerequisite: Math 310. A theoretical treatment of ordinary differential equations including the existence and uniqueness of solutions of differential equations and systems of differential equations. The course treats such topics as systems of linear differential equations, eigenvalue problems, autonomous systems, and boundary value problems.

402 Classical Applied Mathematics (3)  
Prerequisites: Math 310, 316, and 345 or consent of instructor. The course gives the derivation of equations of mathematical physics such as Navier-Stokes' equations, Euler's equations, equations of elastic materials, and equations of electrodynamics, using scaling and conservation principles. The course also includes elements of the calculus of variations, the Euler-Lagrange equations and Hamiltonian theory.
403 Topics in Applied Mathematics (3)
Prerequisite: Consent of instructor. The course will cover various advanced topics in applied mathematics, and can be taken more than once for credit. Examples of such topics are: Fast transforms, digital filters, etc.

404 Topics in Computation (3)
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.

405 Computational Curves and Surfaces (3)
Prerequisite: Math 310, 323 and 345, or consent of instructor. Construction of curves and surfaces using subdivision algorithms. Iterative refinement of discrete data in an easily programmable manner. Discussion of issues of convergence, shape control, relation to spline functions with uniform knots, multi resolution analysis, and wavelets.

406 Computational Harmonic Analysis (3)
Prerequisites: Math 303, Math 310, and Math 345. The course covers the basic of Fourier analysis and wavelet analysis. Topics include discrete 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.

407 Time-Frequency Analysis (3)
Prerequisites: Math 406. The course covers theoretical and practical aspects of several time-frequency methods. Included are linear transformations such as filtering, Zak, Gabor and wavelet transforms; bilinear transformations include the Winger-Ville distribution and other distributions of Cohen's class. Statistical methods of feature extraction and applications to signal compression are outlined as well.

408 Advances in Wavelet Analysis (3)
Prerequisite: Math 406. The course describes recent developments in several research areas connected with wavelet analysis. Included are frames, wavelet vectors, wavelet packets, wavelets on compact intervals and manifolds, adaptive (nonlinear) methods, and methods of computational physics. Applications include the sparsification of matrices, denoising and compression of signals.

411 Differentiable Manifolds (3)
Prerequisites: Math 310, 345, and 380. An introduction to smooth manifolds and maps. Topics will include the Implicit Function Theorem, Sard's Theorem, transversality, intersection and degree theory, differential forms and integration on manifolds.

416 Functions of a Complex Variable (3)
Prerequisites: Math 310, 316, and 380. Complex numbers, topology of the complex plane, analytic functions, conformal mappings, Taylor series, Laurent series, complex integration, residues, analytic continuation, representation of analytic functions, elliptic functions, normal families, Riemann theorem, majorization.

418 Topics in Analysis (3)
Prerequisite: Consent of instructor. Topics selected from the areas of Fourier analysis, harmonic analysis, Hilbert spaces, Banach algebras, special functions, generalized functions, partial differential equations. May be taken more than once for credit with consent of department.

420 Probability Theory (3)
Prerequisite: Math 410 (may be taken concurrently). Combinatorial analysis, random walks, stochastic independence, random variables, laws of large numbers, generating functions, and branching processes.

423 Topics in Numerical Analysis (3)
Prerequisite: Consent of instructor. The course will cover various advanced topics in numerical analysis and can be taken more than once for credit. Examples of such topics are: A.D.I. Techniques for solving p.d.e., finite element techniques, the algebraic eigenvalue problem, the software, etc.

427 Numerical Linear Algebra (3)
Prerequisite: Math 323 and Math 345 or consent of the instructor. The course includes solution of general and special linear systems. Techniques include methods (such as splitting or Krylov subspaces). Additional topics are the eigenvalue problem and the method of least squares.

428 Topics in Probability Theory (3)
Prerequisite: Consent of instructor. The course will cover advanced topics in probability theory and may be taken more than once for credit with the consent of the department.

430 Partial Differential Equations (3)
Prerequisites: Math 310, 316, 345, and 380. Classification of partial differential equations: Cauchy, Dirichlet, and Neumann problems; the fundamental solution; existence theorems of potential theory; eigenvalue problems; and Tricomi's problem.
432 Applied Statistics (3)
Prerequisites: Statistics 321 or consent of instructor. The course studies classical and recently developed statistical procedures selected from areas including analysis of variance, multivariate analysis, nonparametric or semiparametric methods and generalized linear models. Emphasis is on application of procedures, including the rationale underlying choice of procedures.

435 Operations Research-Deterministic Models (3)
Prerequisites: Math 345 or equivalent. (Same as MSIS 428). A study of deterministic methods and models in operations research. This course provides an introduction to operations research and focuses on model building, solution and interpretation of results. Topics include formulation, solution, duality and sensitivity analysis in linear programming, integer programming, network flow models, nonlinear optimization, and dynamic programming.

436 Operations Research-Stochastic Models (3)
Prerequisites: Stat 320 or equivalent. (Same as MSIS 429). A study of stochastic methods and models in operations research. Provides an introduction to probabilistic models for decision making under uncertainty. Topics include stochastic processes, queuing theory and models, probabilistic inventory theory and models, Markovian decision problems, simulation and reliability.

437 Quality Management (3)
Prerequisite: MSIS 481 or Stat 320 or consent of instructor. (Same as MSIS 430.) An applied course on total quality management. Quality improvement approaches are presented and the managerial implications and responsibilities in implementing these approaches are discussed. Topical coverage includes the construction and interpretation of control charts, graphical methods, quality function deployment, robust experiments for product design and improvement, mistake-proofing (poke-yoke), the Deming approach, Baldrige award criteria, quality cost audits, worker empowerment and reward systems. Cases involving both business processes and physical processes are used to illustrate successful quality improvement efforts.

439 Topics in Number Theory (3)
Prerequisite: Consent of instructor. Topics selected from elementary, algebraic, analytic, and other branches of number theory. Examples of topics include the distribution of primes, the Riemann Zeta function, averages of arithmetic functions, the theory of partitions, ideal theory, and representations of integers by quadratic forms.

442 Algebra (3)
Prerequisites: Math 340 and 345. Basic fundamentals of the theory of groups, rings and fields.

444 Lie Groups (3)
Prerequisites: Math 340 and 411. The course provides an introduction to Lie Groups, Lie Algebras, and their representations.

448 Topics in Algebra (3)
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.

450 Directed Readings (1-6)
Prerequisite: Consent of instructor. Independent readings at an advanced level.

452 Topics in Advanced Mathematics for the Teacher (3)
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.

460 Calculus of Variations (3)
Prerequisites: Math 202, 310 and 345. Classical functionals, minimization of functionals, Euler-Lagrange equations, appropriate function spaces, weak solutions, existence of solutions, approximation theory, practical applications and finite element approach to solutions will be covered.

470 Functional Analysis (3)
Prerequisites: Math 345 and 410. Algebraic and topological tools applied to problems in analysis. The topics chosen will usually include topological vector spaces, metric spaces, Banach spaces, Hilbert spaces, and Banach algebras.

488 Topics in Topology (3)
Prerequisite: Consent of instructor. The course will cover topics selected from algebraic or differential topology and may be taken more than once for credit with the consent of the department.

490 Master's Thesis (1-6)
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 490 to a degree.

499 Ph.D. Dissertation Research (1-9)
Prerequisites: Completion of comprehensive exams. May be taken for no more than nine hours.
Computer Science

101 Introduction to Computers and the Internet (3)
Prerequisites: Same as for Math 20 and Math 30. Covers basic concepts and components of a PC, including microprocessor, disk, display, multimedia, printers, scanners, backup; survey of popular applications including e-mail, personal information managers, word processors, spreadsheets; brief discussion of computer languages; networking, terminology, methods for accessing information on remote computers; dial-up access to computers including use of modems; overview of the Internet, popular browsers, World Wide Web, search engines, FTP, utilities, Hyper Text Markup Language, tools for Web page construction, security, privacy. Credit not granted for both CS 101 and BA 103.

122 Computers and Programming (3)
Prerequisite: Math 80 or 100, or a grade of at least B in Math 30. An overview of a computer system is presented. Structured design techniques are considered and applied to the development of computer programs. Aspects of the FORTRAN language will be studied including basic data types, subroutines and functions, arrays, and files. Credit not granted for both BA 104 and CS 122.

125 Introduction to Computing (3)
Prerequisite: Math 80 or 100, or a grade of at least B in Math 30. An overview of a computer system is presented. Structured design techniques are considered and applied to the development of computer programs. Aspects of a high level language such as Pascal or C will be studied, including elementary and advanced data types and subprograms. Various features of the UNIX operating system will also be discussed.

170 User Interface Design and Event-Driven Programming with Visual Basic (3)
Prerequisite: Computer Science 125 or knowledge of some programming language and consent of the instructor. This course explores programming in Visual Basic for event-driven applications. Design and implementation of graphical user interfaces (GUI) are explored as primary examples. Additional topics may include DDE, OLE, and interactions with databases.

201 An Introduction to Java and Internet Programming (3)
Prerequisite: Math 30. Introduces the Java programming language and its use in Internet programming. This course will involve programming assignments in Java and their interface with browsers using applets. Students will also be exposed to the Java= s windows toolkit B the AWT. A brief introduction to object-oriented programming concepts will be provided. Other topics will include threads, virtual machines, byte code, and the Java security model.

225 Programming and Data Structures (3)
Prerequisite: CS 125. A continuation of CS 125. Advanced programming techniques including recursion, divide-and-conquer, and backtracking will be considered. A discussion of dynamic data structures such as lists, binary trees, stacks, queues, and symbol tables will be presented. An introduction to modular programming, program specification and verification, and analysis of algorithms will be given.

240 Computer Systems: Architecture and Organization (3)
Prerequisite: CS 225. Introduces details of computer systems from architectural and organizational points of view. Topics discussed may include data representation, digital logic and basic circuits such as ALU, multiplexers, decoders, flip-flops, registers, RAM and ROM memory, memory hierarchies, I/O devices, pipelining, parallel and RISC architectures, etc.

241 Computer Systems: Programming (3)
Prerequisite: CS 240. Continues introduction of computer systems, with assembly programming and its application. Topics covered may include addressing modes, stack manipulations and applications for reentrant and recursive modules, memory interfacing, I/O device interfacing, and serial and parallel communication.

255 Discrete Structures (3)
Prerequisites: Math 175 or 100, and CS 125 or equivalent. (Same as Math 255). Treats fundamental ideas in discrete structures and serves as a foundation for subsequent course in both Mathematics and Computer Science. Provides an introduction to techniques of mathematical reasoning with examples derived from computer science. Topics include logic, set algebra, equivalence relations and partitions, functions, mathematical induction, elementary number theory, cardinality, recurrence relations, basic combinatorial methods, trees and graphs. Credit not granted for more than one of CS 255, Math 250, and Math 255.

273 The C Programming Language (3)
Prerequisite: CS 225 or the equivalent without C. The C language is introduced together with the associated tools which make up the UNIX C programming environment. The course is project-oriented and a portion of the practical work will involve UNIX systems programming. This course is intended for students who have completed the equivalent of CS 125 and CS 225 but without the C language. It may not be taken for credit if the student has taken CS 225 with C.
274 Object Oriented Programming with C++ (3)
Prerequisite: CS 225. Introduces object-oriented concepts, terminology, and notation. The C++ language is explored, including topics such as dynamic memory, exception handling, function and class templates, operator overloading, inheritance, polymorphism, and generic programming with the standard template library. Additional topics may include GUI libraries.

275 Advanced Programming with Unix (3)
Prerequisite: CS 225. Exploration of the Unix operating system, including its tools and utilities for program development, such as makefile, piping and redirection, shell scripts, regular expressions, and symbolic debuggers. In addition, this course explores advanced features of the C programming language, including various file processing, command-line and variable arguments, exception handling and generic interfacing.

278 Design and Analysis of Algorithms (3)
Prerequisites: CS 225, CS/Math 255, Math 245 and Stat 132. Addresses the design and mathematical analysis of fundamental algorithms in computer science. Algorithms studied may involve search, sorting, data compression, string manipulation, graph traversal and decomposition, and algebraic and numeric manipulation.

301 Web Programming Techniques (3)
Prerequisites: CS 275. Provides an introduction to Web page development using current technologies such as HTML and XML. Programming in such languages as Perl, CGI scripting, Java script and Java. The current Web servers are compared for issues such as technology, capacity planning, and installation.

302 Java and Internet Programming (3)
Prerequisites: CS 301. A projects-oriented course using the Java programming language for Internet programming. The course focuses on current technologies in Java such as GUI toolkits, threads, the Java security model, and JavaBeans. Other topics may include sockets, IO Streams, server-side Java, and remote method invocation.

304 Electronic Commerce Protocols (3)
Prerequisites: CS 275 and Math 245. Provides a technical introduction to electronic commerce over the Internet, examining topics such as electronic data interchange, digital currency, and electronic catalogs. The course discusses technical issues such as telecommunications infrastructure, data warehousing, software agents, and storage retrieval of multimedia information. Other topics may include cryptographic techniques as applicable to web-site development, management of data in a secure manner, authentication and confidentiality, different levels of security (transaction, network, and protocol), and digital signatures.

305 User Interface Development (3)
Prerequisites: CS 275. Focuses on user interface design standards as a programming problem. It covers topics such as functional vs. aesthetic concerns, elegance and simplicity, interference between competing elements, visual variables, perceptual organization for visual structure, grid-based design of module and program, semiotics with images and representation.

314 Theory of Computation (3)
Prerequisites: CS 274. Covers finite state machines and pushdown automata, and their relationship to regular and context-free languages. Also covers minimization of automata, Turing machines, and undecidability. Other topics may include Church's Thesis, uncomputability, computational complexity, propositional calculus and predicate calculus.

325 Programming Languages (3)
Prerequisites: CS 274. A study of the principles of modern programming languages. The students perform a comparative study of syntax, semantics, and pragmatics of high-level programming languages. Also provides a discussion of list-processing, object-oriented, functional, procedural, or other programming paradigms.

328 Program Translation Techniques (3)
Prerequisites: CS 240, CS 274, CS/Math 255, Math 245. Looks at the theory of programming languages as well as the theory of program translation as a means for dealing with the conceptual gap introduced by the levels of abstraction. Program translation mechanisms are studies as a means to explore the tradeoff between language expressiveness, translation, and execution effectiveness. Particular attention is paid to compilers, with emphasis on constraints induced by syntax and semantics.

330 Introduction to Artificial Intelligence (3)
Prerequisites: CS 274, CS 275 and CS 278. An overview of AI applications is presented. An AI programming language, such as Prolog or Lisp, is introduced. Fundamental AI problem solving techniques are applied to heuristic search and game playing. An introduction to knowledge representation and expert systems is given. Topics such as theorem proving, neural networks, and natural language processing may also be studied.

341 Computer Graphics (3)
Prerequisites: CS 274, CS 275 and CS 278. The basic architecture of various types of graphics systems is presented. Also presents a detailed description of the basic algorithms for 2-dimensional and 3-dimensional graphics systems. Algorithms for shading, hidden line removal, and rendering in the 3-D systems will be examined. The course involves significant project work.
344 Digital Image Processing (3)
Prerequisites: CS 274, CS 275 and CS 278. Focuses on low-level image processing data structures and algorithms for binary image processing, region and texture analysis, image filtering, edge detection, and contour following. Other topics include coding for storage, retrieval, transmission, and image restoration.

350 Software Engineering (3)
Prerequisites: CS 274 and CS 275. Introduces software engineering as a discipline, discusses stages of software lifecycle, compares development models such as waterfall, prototyping and incremental/iterative, and compares structured and object-oriented methods. It also discusses software documentation, both internal and external verification/validation, quality assurance, testing methods, maintenance, project management and team structure, metrics, and available tools.

352 Object-Oriented Analysis and Design (3)
Prerequisites: CS 350. Concentrates on modeling using a visual language such as UML, in the context of a generic object-oriented development process. Discusses the object world, analysis/design goals as the driving development force, different system views, use cases, static and dynamic models, diagrams, modeling with patterns, and principles of responsibility assignments. The course may be supplemented with a CASE tool.

354 Software System Architectures (3)
Concerned with the design, modeling, and evaluation of complex software systems at the architectural level of abstraction. Covers basic principles of architectural system design, and may cover topics such as multi-tiered and packaged architectures, model-view and model-service separation, design supports for distributed and client-server applications, design patterns, package interfaces, notation, persistence, and GUI frameworks.

356 Software Development Processes (3)
Prerequisites: CS 350 or CS 352. This course is an in-depth study of software development processes, in the context of an actual project. Discussion includes object-oriented processes such as Rational Unified Process, as well as process management issues such as scheduling, risk-assessment, various metrics, and the selection of appropriate development methodology and tools.

361 Database Management Systems (3)
Prerequisites: CS 275 and CS 278. Presents the foundations, concepts and principles of database design. Various models of data representation are considered, including the hierarchical and relational models. Also considers some of the implementation issues for database systems.

362 Information Retrieval (3)
Prerequisites: CS 275 and CS 278. Presents deterministic models of information retrieval systems, including

conventional Boolean, fuzzy set theory, p-norm, and vector space models. Other topics include probabilistic models, text analysis and automatic indexing, automatic query formulation, system-user adaptation and learning mechanisms, evaluation of retrieval, review of new theories and future directions, and intelligent information retrieval.

373 Computer Networks and Communications (3)
Prerequisite: CS 275 and Statistics 132. Communication systems will be considered in the context of the ISO standard for systems interconnection. Various types of networks will be studied including wide area networks, local area networks, and fiber optic networks.

374 Client-Server Architectures (3)
Prerequisites: CS 275 and Math 245. Studies communications systems in the context of the ISO standard for systems interconnection. There is hands-on exposure to development of client-server applications.

376 Operating Systems (3)
Prerequisites: CS 275, CS 240, Statistics 132 and Math 245. Studies 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. Topics in security may also be examined. Examples from pertinent operating systems are presented throughout, and use of the algorithms in modern operating systems is examined. Substantial practical work, using the UNIX operating system is required.

377 Operating Systems for Telecommunications (3)
Prerequisites: CS 352 or MS/IS 423. The structure of a general operating system will be studied. The various components, including the interface with the underlying hardware, will be considered in detail. UNIX and Windows/NT will be considered as case studies throughout the course. The course will also emphasize hands on experience as a power user of at least one modern operating system.

378 Systems Administration and Computer Security (3)
Prerequisites: CS 275. Identifies and studies major issues of relevance to systems and networks management. Covers a wide range of topics from a basic primer on networking topics from the systems perspective to advanced technical issues of user authentication, encryption, and mail privacy. Discusses the latest advances in network management tools and computer security protocols.
388 Individual Studies (1-3)
Prerequisites: CS 275 and consent of instructor. Allows a student to pursue individual studies under the supervision of a faculty member. May include development of a software project. May be repeated for credit.

389 Topics in Computer Science (3)
Prerequisite: Consent of instructor. A seminar on special topics in computer science to be determined by recent developments in the field and the interests of the instructor. May be repeated for credit with departmental consent.

413 Advanced Data Structures and Algorithms (3)
Prerequisites: An elementary course in analysis of algorithms or consent of the instructor. This course covers analysis of time and space complexity of iterative and recursive algorithms along with performance bounds, design of data structures for efficient performance, sorting algorithms, probabilistic algorithms, divide and conquer strategies, various algorithms on graphs, and NP completeness.

427 Systems Administration (3)
Prerequisite: (CS 376 or 377) and MSIS 496. The course will identify and study major issues of relevance to systems and networks management. It covers a wide range of topics from a basic primer on networking topics from the systems perspective to advanced technical issues of user authentication, encryption, and mail privacy. The course will discuss the latest advances in network management tools and computer security protocols.

432 Introduction to Evolutionary Computation (3)
Prerequisite: CS 330, or consent of instructor. This course introduces the concepts of nature-inspired problem solving population dynamics, Darwinian selection, and inheritance. It discusses problems applicable to evolutionary algorithms, overviews the existing models and instances, and analyzes specific instances such as genetic algorithms and genetic programming.

434 Introduction to Machine Learning (3)
Prerequisite: CS 330, or consent of instructor. This course introduces both symbolic and sub-symbolic approaches to machine intelligence. Specific topics covered may include data mining, supervised learning such as decision trees, and approximate methods such as fuzzy reasoning.

436 Expert Systems (3)
Prerequisites: CS 330, or consent of instructor. This course concentrates on issues related to building expert systems mimicking human-level expertise, including knowledge engineering processes leading to the design, construction, and evaluation of systems, relevant languages, tools, and shells, as well as representation, quality, and inference methods.

438 Introduction to Neural Networks (3)
Prerequisites: CS 330 or consent of instructor. This course introduces the concepts of connectionism, along with algorithms for simulating neural networks, discussion of alternative networks architectures and training algorithms.

440 Computer Vision (3)
Prerequisites: Graduate standing and consent of instructor. This course introduces computational models of visual perception and their implementation on computer systems. Topics include early visual processing, edge detection, segmentation, intrinsic images, image modeling, representation of visual knowledge, and image understanding.

442 Visual Data Processing (3)
Prerequisites: Graduate standing and consent of instructor. This course introduces low-level concepts and techniques used in image processing, including methods for image capture, transformation, enhancement, restoration, and encoding.

444 Pattern Recognition (3)
Prerequisites: Graduate standing and consent of instructor. This course provides an introduction to statistical decision theory, adaptive classifiers, and supervised and unsupervised learning. Different types of pattern recognition systems are introduced, including transducers, feature extractor, and decision units. Students are exposed to the application of the techniques to optical character recognition, speech processing, and remote sensing.

450 Software Engineering (3)
Prerequisites: Graduate standing and consent of the instructor. This course introduces software engineering as a discipline, discusses stages of the software lifecycle, compares development models such as waterfall, prototyping and incremental/iterative, and compares structured and object-oriented methods. It also discusses software documentation, both internal and external, verification/validation, quality assurance, testing methods, maintenance, project management and team structure, metrics, and available tools. Topics are the same as CS 350 but material is covered at a greater depth and additional projects are required. Credit not granted for both CS 350 and CS 450.
452 Object Oriented Analysis and Design (3) 
Prerequisites: CS 350, CS 450, or consent of the instructor. This course concentrates on modeling using a visual language such as UML, in the context of a generic object-oriented development process. It introduces the object world, analysis/design goals as the driving development force, different system views, use cases, static and dynamic models, diagrams, modeling and patterns, and principles of responsibility assignments. The course may be supplemented with a CASE tool. Topics are the same as CS 352 but material is covered at a greater depth and additional projects are required. Credit not granted for both CA 352 and CS 452.

454 Software Systems Architectures (3) 
Prerequisites: One of the following: CS 350, CS 450, CS 352, CS 452, or consent of the instructor. This course is concerned with the design, modeling, and evaluation of complex software systems at the architectural level of abstraction. It covers basic principles of architectural system design, and may cover topics such as multi-tiered and packaged architectures, model-view and model-service separation, design support for distributed and client-server applications, design patterns, package interfaces, notation, persistence and GUI frameworks. Topics are the same as CS 354 but material is covered at a greater depth and additional projects are required. Credit not granted for both CS 354 and CS 454.

456 Software Development Processes (3) 
Prerequisites: One of the following: CS 350, CS 450, CS 352, CS 452, or consent of the instructor. This course is an in-depth study of software development processes, in the context of an actual project. Discussion will include object-oriented processes such as the Rational Unified Process, as well as process management issues such as scheduling, risk-assessment, various metrics, and the selection of appropriate development methodology and tools. Topics are the same as CS 356 but material is covered at a greater depth and additional projects are required. Credit not granted for both CS 356 and CS 456.

461 Advanced Databases (3) 
Prerequisites: Graduate standing and consent of instructor. This course is an in-depth study of database techniques, including normalization theory, object-oriented databases, statistical databases, distributed databases, and failure recovery. The course will also involve substantial readings from the current literature.

462 Intelligent Information Retrieval (3) 
Prerequisites: CS 330 or consent of instructor. This course studies the use of AI techniques for the development of adaptive information retrieval systems. Techniques for analysis of information by statistical syntactical, and logical methods are also studied. Topics related to multimedia information are also discussed.

464 Multimedia Information Systems (3) 
Prerequisites: CS 341 or CS 440. This course studies the technical and human issues related to the design, construction, and use of computer programs that combine text, audio, video, graphics, animation, and graphical user interfaces. It also surveys applications and tools.

470 Computer Systems (3) 
Prerequisites: Background in computer organization or architecture or consent of instructor. 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.

473 Client/Server Computing (3) 
Prerequisite: CS 377 or MSIS 496. The course will study communications systems in the context of ISO standards for systems interconnection. There will be hands on exposure to development of client-server applications.

474 Parallel and Distributed Computing (3) 
Prerequisites: Background in computer organization or architecture, or consent of instructor. This course introduces the fundamentals of parallel computation and algorithm design. It discusses general techniques for designing efficient parallel algorithms for fixed-connection parallel network architectures such as arrays, trees, and hypercubes.

476 Advanced Operating Systems and Network Management (3) 
Prerequisites: CS 376 or consent of instructor. This course provides a survey of contemporary operating systems principles, including overall design strategies for operating systems. The course also discusses communication and synchronization techniques for concurrent processes, and statistical analysis of job scheduling, process scheduling, I/O scheduling, and memory management.

487 Computer Science Seminar (1-3) 
Prerequisites: Graduate standing and consent of instructor. 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.

488 Computer Science Independent Project (1-3) 
Prerequisites: Graduate standing and consent of instructor. This course offers the student an opportunity to work on an adviser-supervised project, individually or in a group. A student may repeat the course for up to 6 credit hours total, but at most 6 hours can be accumulated for CS 488 and CS 490.
489 Topics in Computer Science (1-3)
Prerequisites: Graduate standing and consent of instructor. This course offers various topics not offered on a regular basis. It may be taken more than once for credit with the consent of the department.

490 Thesis (1-6)
Prerequisites: Completion of at least 12 graduate credits and approval of research topic by thesis advisor. This course is designed for those students intending to present a thesis as part of their M.S. program. At most 6 hours can be accumulated for CS 488 and CS 490.

Probability and Statistics

31 Elementary Statistical Methods (3)
Prerequisite: Math 30. An introduction to the basic ideas and tools of statistics. Introductory data analysis, statistical modeling, probability and statistical inference. Includes topics in estimation, prediction, and hypothesis testing. A major focus of the course is analysis of data using a computer software package such as SAS. A student may not receive credit for more than one of Statistics 31, Statistics 312, and Math 105.

330 Multivariate Analysis (3)
Prerequisites: Math 245 and Statistics 320, or consent of instructor. Multivariate normal distribution and related sampling distributions. Procedures of statistical inference for the multivariate normal distributions, such as hypothesis testing, parameter estimations, multivariate regression, classification and discriminant analysis and principal components analysis.

331 Analysis of Variance and Design of Experiments (3)
Prerequisites: Math 245 and Statistics 320 or consent of instructor. An introduction to the analysis of variance with applications in completely randomized designs, randomized block designs, factorial experiments and split-plot type designs. Mathematics and Computer Science (continued)

490 Thesis (1-6)
Prerequisites: Completion of at least 12 graduate credits and approval of research topic by thesis advisor. This course is designed for those students intending to present a thesis as part of their M.S. program. At most 6 hours can be accumulated for CS 488 and CS 490.

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Prerequisites: Math 245 and Statistics 320, or consent of instructor. Multivariate normal distribution and related sampling distributions. Procedures of statistical inference for the multivariate normal distributions, such as hypothesis testing, parameter estimations, multivariate regression, classification and discriminant analysis and principal components analysis.

331 Analysis of Variance and Design of Experiments (3)
Prerequisites: Math 245 and Statistics 320 or consent of instructor. An introduction to the analysis of variance with applications in completely randomized designs, randomized block designs, factorial experiments and split-plot type designs. Mathematics and Computer Science (continued)

331 Regression Models in Statistics (3)
Prerequisites: Statistics 232 or consent of instructor. A rigorous course focused on the applications of regression. The course is rigorous in that the basic regression models in one and several variables are carefully developed using matrix notation. Topics such as the extra sums of squares principle, the general linear hypothesis, and partial and sequential F-tests are carefully presented. The course will focus on using these tools to analyze many different data sets.

333 Nonparametric Methods in Statistics (3)
Prerequisite: Statistics 320 or consent of instructor. An introduction to nonparametric statistical procedures. Order statistics, rank order statistics and scores, tests of goodness of fit, linear rank tests for the location and scale problems and applications.

Mathematics and Computer Science (continued)

339 Topics in Probability and Statistics (3)
Prerequisite: Consent of instructor. A seminar on special topics in probability and statistics to be determined by the interests of the instructor. May be determined by the interests of the instructor. May be repeated for credit provided different topics are studied.
Faculty

Leonard Ott, Associate Professor*, Chairperson
Ph.D., Michigan State University

John Hylton, Interim Associate Vice Chancellor of Academic Affairs, Professor*,
D.Ed., Penn State University

Gearoid O’Hallmhurain, Jefferson Smurfit Professor of Irish Studies (Social Anthropology, Ethnomusicology)
Ph.D., The Queen’s University of Belfast

Douglas Turpin, E. Desmond Lee Professor of Music Education*
D.Ed., Washington University

Kenneth E. Miller, Professor Emeritus
Ph.D., Northwestern University

Evelyn Mitchell, Professor Emerita

Arnold Perris, Professor Emeritus
Ph.D., Northwestern University

Robert J. Ray, Professor*
B.M., Northwestern University

James Richards, Professor*
Ph.D., University of Rochester, Eastman School of Music

Diane Touliatos, Professor*
Ph.D., Ohio State University

Fred Willman, Professor*
Ph.D., University of North Dakota

Mark Madsen, Associate Professor*
D.M.A., University of Arizona

Don N. Parker, Associate Professor
D.M.A., The University of Texas, Austin

Alan C. McClung, Assistant Professor
Ph.D., Florida State University

William Richardson, Assistant Professor*
Ph.D., University of Kansas

Kurt S. Baldwin, Artist in Residence (Violincello)
Performers’ Certificate, Northern Illinois University

Sheila Browne, Arianna String Quartet, Artist-in-Residence
M.M., Rice University

Mahoko Eguchi, Artist in Residence (Viola)
D.M.A., Yale University

John McGrosso, Artist in Residence (Violin)
Performers’ Certificate, Northern Illinois University

Rebecca Rhee, Artist in Residence (Violin)
M.A., Northern Illinois University

William Hammond, Affiliate Associate Professor (World Music/Music Appreciation, Theory/Aural Training, French Horn)
D.Ed. Boston University

Terry Martin, Adjunct Associate Professor (World Music/Music Appreciation)
Ph.D., Washington University

David Bruenger, Adjunct Assistant Professor, Director, Premiere Performance Concert Series
D.M.A., University of North Texas

Kathryn Haggans, Adjunct Assistant Professor (Voice)
Ph.D., University of Arizona

Joan Whittemore, Adjunct Assistant Professor (Music History, Conducting)
D.M.A., University of Illinois-Urbana/Champaign

Carol Koch, Senior Lecturer (Music Ed./Piano)
M.M.E., University of Missouri-St. Louis

Glen Blattman, Lecturer (Clarinet)
B.M., University of Missouri-St. Louis

Michael Buerke, Lecturer (Saxophone)
B.M.M., Northwestern University

William Hammond, Lecturer (French Horn)
D.Ed., Boston University

Jeffrey Hoard, Lecturer (Tuba)
B.A., California State University

Ann Homann, Lecturer (Oboe)
M.M., St. Louis Conservatory of Music

Joseph Kaminsky, Lecturer (Viola)
M.M., Southern Illinois University-Edwardsville

Katharine Lawton-Brown, Lecturer (Voice)
M.M., James Madison University

James Martin, Lecturer (Tuba)
M.M., University of Rochester, Eastman School of Music

Robert Mottl, Lecturer (Bassoon)**
M.M., Indiana University

Maria Pinckney, Lecturer (Harp)

Alan Rosinkoetter, Lecturer (Guitar)
B.S., Washington University

Robert Souza, Lecturer (Trumpet)
B.M.E., University of Missouri-St. Louis

Sue Stubbs, Lecturer (Double Bass)
M.M., University of Missouri-Columbia

John Walsh, Lecturer (Organ)
M.M., Washington University

James Warfield, Jr., Lecturer (Saxophone, Jazz Ensemble)
M.M., Southern Illinois University-Edwardsville

Mary Wilson, Lecturer (Voice)
M.M., Washington University

Jeanine York-Garesche, Lecturer (Clarinet)
M.M., St. Louis Conservatory of Music

Milton Zoth, Lecturer (Directing)
M.F.A., Webster University

Mieko Hironaka-Bergt, Specialist (Piano)
M.M., Toho Academy of Music

Amanda Kirkpatrick, Specialist (Piano)
M.M., University of Missouri-Columbia

Alia Voskoboynikova, Specialist (Piano)
M.M., Gnesin’s Academy of Music (Russia)

Susan Wells-Souza, Specialist (Piano)
M.M., Washington University

*members of graduate faculty

**member, St. Louis Symphony Orchestra

Music faculty members have received recognition for distinguished achievements in conducting, composition, and performance. The faculty is also recognized for research in musicology and music education. Part-time applied music lecturers are all professional musicians.

The music department is accredited by the National Association of Schools of Music.
General Information

Degrees and Areas of Concentration
The Department of Music offers programs of study leading to the B.M. degree in music education (and state teaching certification in grades K-12); the B.M. degree with an emphasis in performance; the B.M. degree 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 part-time professional musicians, many of whom are members of the St. Louis Symphony Orchestra. Faculty recitals are regularly scheduled.

Music Minors Three minors in music are available: a minor in music; a minor in music education (choral/vocal, grades K-9); and a minor in jazz studies.

Facilities All of the department’s facilities, classrooms, rehearsal rooms, studios, practice rooms, and listening labs are located in the Music Building.

Ensembles Thirteen performing ensembles are open to all by audition with credit optional:
40, University Chorus
41, The University Singers
50, University Orchestra
52, University Band
53, University Wind Ensemble
54, Chamber Ensemble: a, brass; b, jazz combo; c, percussion; d, strings; e, voice; f, woodwinds
55, Jazz Ensemble
56, Opera Workshop

Each year about 40 recitals and concerts are presented.

Undergraduate Studies

General Education Requirements
General education requirements apply to all majors, except students in the B.M. with elective studies in business and B.M. in music education degree programs who are not required to take a foreign language. Courses required for degree programs may not be taken on a satisfactory/unsatisfactory basis. All music courses presented to meet non-Euro-American study requirement are Music 9, Non-Western Music I, and Music 10, Non-Western Music II.

Degree Requirements

Admission to all music degree programs is by audition and interview 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, examinations in music theory and music history must be taken. Students in applied music must pass a junior-standing examination to confirm their level of performance skills for enrollment in Music 244 or Music 254. This examination is usually taken at the same time as the applied music jury for the fourth semester of enrollment in Music 044.

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 bachelor of music-performance emphasis fulfill this requirement with junior and senior recitals. Those in all other degree programs must satisfy the requirement by participating in three regularly scheduled student recitals during the last two semesters of applied music study, or by performing for a special jury of faculty members. The faculty may invite students who are not in the bachelor of music-performance emphasis program to give public senior recitals with the recommendation of the applied music instructor.

Music majors are required to participate in an approved ensemble (Symphonic Band, University Singers, University Chorus, or Orchestra) and to study one applied area progressively each semester, and to attend pedagogy and literature seminars 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--Symphonic Band; string students--University Orchestra; voice students--University Singers; keyboard and guitar students--any approved ensemble, but those in the bachelor of music in music education program must enroll in an ensemble.
The music department may require students to pass a placement 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.

Core Curriculum
The following core courses are required for all music majors:

Music Theory
30A, Theory of Music I
30B, Aural Training I
31A, Theory of Music II
31B, Aural Training II
130A, Theory of Music III
130B, Aural Training III
131A, Theory of Music IV
131B, Aural Training IV
141, Orchestration

Piano Proficiency
14, Piano Proficiency
15, Piano Proficiency
116, Piano Proficiency
118, Piano Proficiency

Music History and Literature
101, History of Western Music I
102, History of Western Music II
and at least one 300-level course.

Applied Music
44Z, 244Z, 254Z, Seminar in Pedagogy and Literature
In addition to the core curriculum, students must fulfill the requirements for the specific degree program or emphasis area as listed below:

Bachelor of Arts in Music
In addition to the required core curriculum, candidates must complete the following:
151, Conducting I
192, Senior Research
09, Non-Western Music I, or 10, Non-Western Music II

Applied Area 8 credit hours of private lessons

Ensemble 4 hours maximum credit

Bachelor of Music in Music Education
In addition to the required core curriculum, candidates must complete the following:

Applied Area 12 credit hours of applied music, including 8 hours at the Music 254 level (junior and senior recitals required). Students in Applied Music must pass a junior standing exam to confirm their level of performance skills for enrollment in Music 254.
Professional Education and Student Teaching
The following education courses are required:
ED FND 111, The School in Contemporary Society
ED PSY 312, The Psychology of Teaching and Learning
SEC ED 213, Techniques of Secondary School Teaching
SEC ED 293, Student Teaching in Music Education, K-6
SEC ED 294, Student Teaching in Music Education, 7-12
SP ED 313, The Psychology and Education of Exceptional Individuals
SEC ED 386, Teaching Reading in Secondary School

Bachelor of Music with an Emphasis in Performance
In addition to the required core curriculum, candidates must complete the following:
311, Analysis of Twentieth-Century Techniques
312, Tonal Counterpoint
151, Conducting I
152, Conducting II
192, Senior Research
119, Intermediate Piano Proficiency (voice majors only)
120, Intermediate Piano Proficiency (voice majors only)
09, Non-Western Music I, or 10, Non-Western Music II
156 Piano Pedagogy (Keyboard students only)

Music History and Literature
An additional 300-level course is required.

Applied Area
12 credit hours of private lessons (junior and senior recitals required).

Ensemble Participation required as follows:
Large Group Four hours maximum credit
Chamber Ensemble/Accompanying Six hours

Foreign Language Candidates pursuing this emphasis area with an applied area in voice must complete two semesters of one foreign language selected from French, German, or Italian 1 and Italian 2.

Bachelor of Music with Elective Studies in Business
In addition to the required core curriculum, candidates must complete the following:

Applied Area 8 hours of private lessons

Music History and Literature: An additional 300-level course is required.
09, Non-Western Music I, or 10, Non-Western Music II

Practicum
151, Conducting I

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Ensemble 4 hours maximum credit
Internship
292, Internship (replaces Music 192 in Core Curriculum)

English One of the following English courses is required:
210, Advanced Expository Writing
212, Business Writing
213, Technical Writing

Music (continued)

Business Administration The following courses in business administration are required:
140, Fundamentals of Financial Accounting
145, Managerial Accounting
206, Basic Marketing
210, Management as a Behavioral Science I

Two courses selected from the following list must also be taken:
103, Computers and Information Systems
156, Legal Environment of Business
204, Financial Management
256, Business Law: Contracts, Sales, Secured Transactions, Bankruptcy
270, Management of Promotion
301, Consumer Behavior
309, Human Resource Management
311, Advanced Management and Organizational Behavior
312, Industrial and Labor Relations
347, Income Taxes

Note: The following courses fulfill general education requirements and are prerequisites to the required business administration courses:
Psych 3, General Psychology, or
Sociology 10, Introduction to Sociology
Economics 51, Principles of Microeconomics

Curricula for Minors

Minor in Music
Candidates must complete the following courses (26 hours):

Music Theory
30A, Theory of Music I
31A, Theory of Music II
30B, Aural Training I
31B, Aural Training II

Music History and Literature
101, History of Western Music I
102, History of Western Music II

Applied Area 4 credit hours of private lessons

Ensemble 2 credit hours (4 hours maximum credit)
Six additional credit hours to be chosen from courses such as the following:
130A, Theory of Music III
130B, Aural Training III
131A, Theory of Music IV
131B, Aural Training IV
141, Orchestration
116, Intermediate Piano Proficiency (Prerequisite: Music 15)
118, Intermediate Piano Proficiency
Any 300-level music history and literature course
Applied Music courses in sequence
Any ensemble course

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 (Music 15 or equivalent).

A GPA of 2.5 for all music hours is required to complete this minor.

Minor in Music Education (choral/vocal, grades K-9)
The minor in music education is designed to provide a second classification area for students enrolled in other education programs that lead to initial teaching certification.

Candidates must complete the following courses (41 hours):

Music Theory
30A, Theory of Music I
31A, Theory of Music II
30B, Aural Training I
31B, Aural Training II

Music History and Literature
101, History of Western Music I
102, History of Western Music II

Music Education
*257, Curriculum and Methods of Teaching Elementary School Music
*267, Philosophic and Practical Foundations of the Secondary Music Education Curriculum
*269, Curriculum and Methods of Teaching Middle School/Junior High School General Music

*Elementary education majors will omit Music 177 from their regular elementary program to take these courses. Also required, as applicable, is SEC ED 393, Student Teaching.

Ensemble
40/41, Chorus or University Singers

Applied Music, voice (at least 2 hours must be private rather than class voice)

The student must receive at least a C in each music course and maintain a 2.5 GPA in all music courses (Chorus/Singers is not included in the GPA).

Minor in Jazz Studies Candidates must complete 31 credit hours from the following:

Music Theory
30A, Theory of Music I
31A, Theory of Music II
32, Theory of Jazz
30B, Aural Training I
31B, Aural Training II

Music History and Literature
7, Introduction to Jazz
102, History of Western Music II

Applied Area 4 credit hours of private lessons

Jazz Improvisation
20, Jazz Improvisation Laboratory (2 credit hours/Music 20 repeated)

Piano Proficiency
14/15, Piano Proficiency
116, Intermediate Piano Proficiency
117, Jazz Keyboard Harmony

Ensemble 2 credit hours minimum, to be selected from:
54b, Jazz Combo
54e, Voice
55, Jazz Ensemble

Graduate Study

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: choral, general music, instrumental, or music technology.

Admission Requirements

Admission to the program requires a bachelor of music in music education (or equivalent) degree, admission to the Graduate School, and three letters of recommendation.

A written examination in music education (including applications of music history and music theory/ear-training) will be taken during the first semester or term of enrollment.
in the program for advising purposes and to identify the possible need for review in the areas of music theory and history.

The program requires completion of 32 hours of graduate credit, 22 of which must be earned in residence.

Required Courses and Options:
Each candidate will choose one of the following emphasis areas:

- Choral music education
- Instrumental music education
- General music education
- Music education and technology

The minimum 32-hour program includes the following requirements.

**Major Area (9 credit hours)**
- 481 Foundations of Music Education (3)
- 491 Music Education Research (3)
- 499 Master's Project in Music Education (3)

**Advanced Methods (3 credits from the following)**
- 451 Advanced Instrumental Methods (3)
- 461 Advanced Choral Methods (3)
- 471 General Music: A Model for Multi-Faceted Musical Learning (3)

Choose 9 credits from the following:
- 401 Studies in Style and Performance (3)
- 402 Choral Literature (3)
- 403 Band Literature (3)
- 404 Orchestra Literature (3)
- 411 Scoring and Arranging (3)
- 421 Advanced Conducting (3)
- 462 Guitar in the Classroom (3)
- 475 Micro-Computer Applications in Music (3)
- 476 Micro-Computer Assisted Instruction: Curriculum Development in Music (3)

**Electives**
Choose 5 credits from elective courses such as:
- 301 Marching Band Techniques (3)
- 401 Studies in Style and Performance (3)
- 402 Choral Literature (3)
- 403 Band Literature (3)
- 404 Orchestra Literature (3)
- 406 Graduate Workshop in Music Education (1-3)
- 407 Techniques and Literature for the Jazz Ensemble (3)
- 411 Scoring and Arranging (3)
- 412 Advanced Composition Techniques (3)
- 413 Teaching Music Theory in the High School (3)
- 421 Graduate Conducting (3)
- 431 Graduate Chamber Ensemble (0)
- 443 Special Applied Studies (1)
- 444 Graduate Applied Music I (1)
- 449 Graduate Ensemble (1)
- 451 Graduate Instrumental Methods (3)
- 452 Instrumental Music Administration (3)
- 461 Graduate Choral Methods (3)
- 462 Guitar in the Classroom (3)
- 465 Music Theater in the School (3)
- 471 General Music: A Model for Multi-Faceted Musical Learning (3)
- 472 Electronic Music Techniques for Teachers (3)
- 473 Individualizing Music Instruction (3)
- 474 Techniques of Group Keyboard Instruction (3)
- 475 Micro-Computer Applications in Music (3)
- 476 Micro-Computer Assisted Instruction: Curriculum Development in Music
- 477 Graduate Micro-Computer Applications in Music (3)
- 482 School Music Administration and Supervision (3)
- 483 Contemporary Music Education (3)
- 484 Problems of Urban Music Education (3)
- 492 Psychology of Music (3)
- 495 Special Problems in Music Education (3)
- Ed Tec 340 Selection and Utilization Education Media (3)
- Ech Ed 410 Foundations of Pre-School Education (3)
- Spec Ed 412 Psychology of Exceptional Children (3)
- Sec Ed 414 Teaching the Gifted/Talented in the Secondary School (3)
- Sec Ed 418 The Junior High/Middle School (3)
- Sec Ed 427 Supervision of Clinical Experiences in Teacher Education (3)
- Sec Ed 429 The Department Head (3)
- Ed Rem 431 Educational Research Methods (3)
Career Outlook

Undergraduate

A music degree builds the foundation for a career in professional performance, for teaching in a school or private studio or for serving as a church music director. A music degree may also prepare one for positions in the music industry (recording, publishing, radio programming, manufacturing, or music retail). A trained artistic mind can also be valuable in the fields of advertising, public relations, and consumer services.

A number of UM-St. Louis music graduates have been readily accepted into outstanding graduate programs, including that at UM-St. Louis. Many are pursuing successful careers in music education, business, and industry, or as professional performers.

Graduate

Many graduate students in music education will already hold full-time music teaching positions. A graduate degree in music education allows for continued professional growth. Music specialists may refine their teaching expertise, add to their understanding and knowledge about music and educational processes, become more specialized in a specific emphasis area of music education (choral, instrumental, general music or music technology), or any combination of these professional growth areas.

Graduate-level work in music education is often required to renew a teacher's certificate or to satisfy professional growth requirements specified by an employing school or school district or to advance to new positions within the field of music education.
Course Descriptions

Prerequisites may be waived by consent of the department.

The following courses fulfill the Humanities [H] breadth of study requirements: 1, 6, 7, 8, 9, 10, 19, 30A, 31A, 32, 101, 102, 103, 105, 108, 130A, 131A, 177, 192, 202, 300, 321, 322, 323, 324, 325, 326, 327, 375, 400.

Applied Music

43 Secondary Applied Music (1)
Prerequisites: By audition and consent of department. Courses are offered in the following areas: a, bassoon; b, clarinet; c, classical guitar; d, euphonium; e, flute; f, French horn; g, harp; h, oboe; i, organ; j, percussion; k, piano; l, saxophone; m, trombone; n, trumpet; o, tuba; p, violin; q, viola; r, violoncello; s, string bass; t, voice. Not applicable to the applied music requirement for music majors or music minors. May be repeated for credit.

43Y Secondary Applied Music: Jazz Studies (1)
Prerequisites: By audition and consent of department. Individual instruction in jazz performance and literature on designated instrument. Not applicable to applied music requirement for music major or music minor degrees. May be repeated for credit.

44, Applied Music (1)
Prerequisites: By audition and consent of department. Courses offered in the following areas: a, bassoon; b, clarinet; c, classical guitar; d, euphonium; e, flute; f, French horn; g, harp; h, oboe; i, organ; j, percussion; k, piano; l, saxophone; m, trombone; n, trumpet; o, tuba; p, violin; q, viola; r, violoncello; s, string bass; t, voice. May be repeated, up to 4 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar (Music 244Z).

244 Applied Music (1)
Prerequisite: Completion of Junior Standing Exam in major applied area. Courses offered in the following areas: a, bassoon; b, clarinet; c, classical guitar; d, euphonium; e, flute; f, French horn; g, harp; h, oboe; i, organ; j, percussion; k, piano; l, saxophone; m, trombone; n, trumpet; o, tuba; p, violin; q, viola; r, violoncello; s, string bass; t, voice. May be repeated, up to 6 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar (Music 244Z).

254 Applied Music (2)
Prerequisites: Completion of Junior Standing Exam in major applied area and admission to Performance Degree Program. Courses offered in the following areas: a, bassoon; b, clarinet; c, classical guitar; d, euphonium; e, flute; f, French horn; g, harp; h, oboe; i, organ; j, percussion; k, piano; l, saxophone; m, trombone; n, trumpet; o, tuba; p, violin; q, viola; r, violoncello; s, string bass; t, voice. May be repeated, up to 12 credit hours. Applied Music registration requires concurrent registration in a large ensemble and seminar (Music 254Z).

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44Z, Seminar in Pedagogy and Literature (0)
Prerequisites: Concurrent registration with parallel Applied Music course. Seminars are offered in pedagogy and literature for all areas of Applied Music. May be taken on a satisfactory/unsatisfactory grading basis.

244Z Seminar in Pedagogy and Literature (0)
Prerequisite: Concurrent registration with parallel Applied Music course. Seminars in pedagogy and literature are offered for all areas of Applied Music. May be taken on satisfactory/unsatisfactory grading basis.

443 Special Applied Studies (1)
Prerequisites: Graduate standing in music and consent of department. Individual instruction in performance and literature of an instrument or instrumental family for pedagogical or review purposes in applied area other than student's primary performance study. No jury examination required. May be repeated for credit.

444 Graduate Applied Music I (1)
Prerequisite: Graduate standing in music and consent of department. Instruction 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.

Ensemble Performance

40 University Chorus (1)
Prerequisite: Consent of instructor. Preparation and performance of choral literature.

41 The University Singers (1)
Prerequisite: Consent of instructor. The study and performance of music for vocal chamber ensemble.

50 University Orchestra (1)
Prerequisite: Consent of instructor. Study, preparation, and performance of orchestral repertory.

52 University Band (1)
Prerequisite: Consent of instructor. Study, preparation, and performance of music for the wind ensemble and band.
53 University Wind Ensemble (1)
Prerequisite: Consent of instructor. The study, preparation, and performance of music for wind ensemble and chamber band.

54 Chamber Ensemble (1)
Prerequisite: Consent of instructor. Study, preparation, and performance of music for small ensembles: a, brass; b, jazz combo; c, percussion; d, strings; e, voice; f, woodwinds; g, accompanying.

55 Jazz Ensemble (1)
Prerequisite: Consent of instructor. Study, preparation, and performance of jazz music for big band.

56 Opera Workshop (1)
Prerequisite: Consent of instructor. Instruction in movement, basic stage techniques, technical theater, repertory and performance techniques and preparation. May be repeated for credit.

356 Advanced Opera Workshop (1)
Prerequisite: Consent of instructor. Instruction in movement, stage technique, technical theater, repertory, and performance based on advanced vocal skills. May be repeated for credit.

431 Graduate Chamber Ensemble (1)
Prerequisite: Graduate standing in music and consent of department. Study and performance of traditional and nontraditional chamber literature.

449 Graduate Ensemble (1)
Prerequisite: Graduate standing in music or consent of department. Study, preparation, and performance of ensemble literature from the choral, orchestral, or band/wind ensemble repertory. May be repeated for a total of four hours of credit.

Music Education

177 An Introduction to Music for the Elementary School Teacher (3)
An introduction to the elements of music and the expressive nature of music. Includes application of fundamentals to appropriate literature and activities for use with children in a classroom setting. This course will not apply toward requirements for a music major.

257 Curriculum and Methods of Teaching Elementary School Music (3)
(Same as Ele Ed 277.) Prerequisites: Music 131 and Ed Fnd 111. For the music education major. A study of the elementary school music curriculum emphasizing the objectives, methods of teaching and staffing music classes, and analysis of instructional materials and resources. This course must be completed in residence.

267 Philosophic and Practical Foundations of the Secondary Music Education Curriculum (1)
(Same as Sec Ed 275.) Prerequisites: Music 131, Music 257/Ele Ed 277, and Ed Fnd 111. Concurrent registration in Music 268/Sed Ed 276 and Music 270/Sed Ed 278 or Music 271/Sec Ed 279. For the music education major. A study of the secondary school music program: curricular objectives, philosophy, and general administrative procedures common to all secondary music classes. This course must be completed in residence.

268 Curriculum and Methods of Teaching Instrumental Music I (2)
(Same as Sec Ed 276.) Prerequisites: Music 131, 145, 151, 161, Ed Fnd 111, two of the following: Music 25, 26, 27, 28. Concurrent registration in Music 257/ Ele Ed 277. 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.

269 Curriculum and Methods of Teaching Middle School/Junior High School General Music (2)
(Same as Sec Ed 277.) Prerequisites: Music 131, Music 257/Ele Ed 277, and Ed Fnd 111. Concurrent registration in Music 267/Sec Ed 275 and Music 271/Sec Ed 279. For the music education major. A study of the middle school/junior high school general music program emphasizing a conceptually based curriculum: objectives, methodologies, materials, innovations, classroom organization, and management. This course must be completed in residence.

270 Curriculum and Methods of Teaching Instrumental Music II (2)
(Same as Sec Ed 278.) Prerequisites: Music 131, Music 152a, Music 162, Music 257/ELE Ed 277, Music 268/Sec Ed 276, Ed FND 111, three of the following: Music 25, Music 26, Music 27, Music 28. Concurrent registration in Music 267/Sec Ed 275. A continuation of Music 268/Sec Ed 276. Topics include large group rehearsal techniques, program development, administrative procedures, and evaluation. This course must be completed in residence.

271 Curriculum and Methods of Teaching Secondary Choral Music (2)
(Same as Sec Ed 279.) Prerequisites: Music 131, Music 257/ELE Ed 277, and Ed FND 111. Concurrent registration in Music 267/Sec Ed 275 and Music 269/Sec Ed 277. For the music education major. A study of the secondary school choral music program: curriculum, methods, teaching techniques, organization, and administrative procedures for choral performance classes. This course must be completed in residence.
300 Advanced Techniques in Music Education (1-2)  
Prerequisite: A 200-level music education course or permission of the department. Intensive study for advanced music education students and music teachers, emphasizing specialized techniques and innovative concepts. Topics to be announced. May be repeated for credit.

301 Marching Band Techniques (3)  
Prerequisite: Junior Standing. Techniques for organizing and training school marching bands. Content will include planning and charting shows, rehearsal problems, corps and traditional styles, and auxiliary units.

306 Advanced Workshop in Music Education (1-5)  
Prerequisite: Junior Standing and consent of the instructor. An intensive variable-topic workshop in music education presenting knowledge and skills to supplement specific areas in existing courses.

300 Directed Research in Music: Variable Topic (1-5)  
Prerequisite: Consent of instructor. Directed independent research in music through readings, conferences, writings, and projects. This course may be repeated, but no more than 5 hours may be applied toward a degree.

406 Graduate Workshop in Music Education (1-5)  
Prerequisite: 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.

407 Techniques and Literature for the Jazz Ensemble (3)  
Prerequisite: Graduate standing in music. An examination of jazz music education. Includes methods, materials, improvisational techniques, and administration.

413 Teaching Music Theory in the High School (3)  
Prerequisite: Graduate standing in music. A study of the course content and pedagogical techniques for high school music theory courses.

451 Graduate Instrumental Methods (3)  
Prerequisite: 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.

452 Instrumental Music Administration (3)  
Prerequisite: Graduate standing in music. Study of the organizational problems of the instrumental program; library management; budgeting; awards and incentive systems; selection, care, and handling of uniforms and equipment; instrumental balance; seating plans; and operation of festivals and contests.

461 Graduate Choral Methods (3)  
Prerequisite: 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.

462 Guitar in the Classroom (3)  
Prerequisite: 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.

465 Music Theater in the School (3)  
Prerequisite: Graduate standing in music. Techniques appropriate for school musical productions. Aspects of production and planning, including makeup, staging, lighting, and costuming.

471 General Music: A Model for Multifaceted Musical Learning (3)  
Prerequisite: Graduate standing in music. An exploration of the general music class as a learning laboratory model designed to actively engage the learner in a series of comprehensive music learning experiences. Emphasizes techniques and materials that will motivate the nonperformance-oriented student.

472 Electronic Music Techniques for Teachers (3)  
Prerequisite: Graduate standing in music. Basic electronic music instruments, their operation and use as teaching tools. Materials and techniques suitable for use with students in both elementary and secondary school settings will be presented.

473 Individualizing Music Instruction (3)  
Prerequisite: Graduate standing in music. The development of learning strategies, materials, and evaluation techniques suitable for better accommodating the varying interests, abilities, and learning styles of individual students in music classes.

475 Microcomputer Applications in Music Education (3)  
(Same as ED 475.) Prerequisites: Graduate Standing in Music. An examination of the potential of microcomputers in the music education field. Experiences with available hardware and software, and software applications that include inventory, budget, music library cataloging, digital music synthesis, and computer-assisted instruction at all levels.
476 Microcomputer-Assisted Instruction Curriculum Development in Music (3)
(Same as ED 476.) Prerequisites: Graduate Standing in Music. Design and development of Computer-Assisted Instruction (CAI) lessons in music. Commercial courseware and various CAI models will serve as the basis for creating original programs that can be used effectively to implement objectives of the music curriculum for a specific school or school district. The design, refinement, and production of a major CAI program for use in an elementary, secondary or postsecondary setting is required.

477 Graduate Microcomputer Applications in Music (3)
(Same as ED 477.) Prerequisite: Graduate Standing in Music. The study of complex microcomputer applications including music synthesis, MIDI, music-oriented graphics, voice and pitch recognition, administrative applications and computer-assisted instruction.

481 Foundations of Music Education (3)
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 the total school music program.

482 School Music Administration and Supervision (3)
Prerequisite: Graduate standing in music. Theory and practice of administration and supervision of school music programs.

483 Contemporary Music Education (3)
Prerequisite: Graduate standing in music. A study of recent trends and issues in music education.

484 Problems of Urban Music Education (3)
Prerequisite: Graduate standing in music. An analysis of current practices, problems, trends, and research involved in developing strategies for the improvement of music programs in inner-city schools.

491 Music Education Research (3)
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.

492 Psychology of Music (3)
Prerequisite: Graduate standing in music. A study of the effects of music on behavior. Tuning and temperament, psychoacoustics, measurement of musical behavior, aesthetic response to music, and functional music.

495 Special Problems in Music Education (1-3)
Prerequisite: Graduate standing in music. Selected problems to meet the needs of the individual student.

499 Master's Project in Music Education (3)
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 and Literature

1 Introduction to Music (3)
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.

6 Introduction to African-American Music (3)
A survey of the African-American musical heritage from its African origins through its role and development in twentieth-century American society. All genres will be discussed, including African-American composers who wrote in the European tradition. This course will not apply toward requirements for a music major or minor.

7 Introduction to Jazz (3)
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.

8 Introduction to Irish Traditional Music (3)
Survey of rich tapestry of Irish traditional music, song, and dance. Attention to cultural history of traditional music makers in Irish society, as well as among constituent communities of Irish diaspora in Europe and North America. Introduction to instruments, performance settings, and regional styles of Irish traditional music. Using field recordings and archive materials collected in Ireland and North America, course will focus on celebrated folk performers of past and present and will evaluate impact of contemporary media on ancient, yet evolving, musical genre. No prior experience of Irish traditional music necessary.

9 Non-Western Music I (3)
The music of Oceania; folk and classical music and dance of East Asia, Tibet and Southeast Asia; the influence of Buddhism, Islam, and Western acculturation on the functions of music in these societies. This course fulfills the Cultural Diversity requirement.

10 Non-Western Music II (3)
Music of the African continent, West Asia, and South Asia; a survey of the tribal, folk, and classical music and performing arts of these cultures. This course fulfills the Cultural Diversity requirement.
11 Introduction to Irish Traditional Music in North America (3)
Cultural history of Irish traditional music and music makers in North America since the end of the 18th century. Drawing on a diversity of ethnomusicological sources, will evaluate contribution of Irish musicians, singers, and dancers to growth of American popular culture in the 19th and 20th centuries. Will explore role of Irish musicians in rural communities from Newfoundland and Quebec to Midwestern states and California. In reviewing music history of Irish diaspora in North America, will compare and contrast historical recordings of Irish music made in 1920s with those produced by modern masters of Irish music. No prior knowledge of Irish traditional music is necessary.

101 History of Western Music I (3)
Prerequisite: Music 30 or consent of department. A general survey of the history of Western music. Includes the evolution and development of styles, forms, and their social setting.

102 History of Western Music II (3)
Prerequisite: Music 30 or consent of department. A continuation of Music 101.

300 Directed Studies: Variable Topic (1-5)
Prerequisite: 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.

321 Music of the Middle Ages (3)
Prerequisite: Music 101 or consent of department. A study of music and musical thought from the beginning of Christianity to 1450. Gregorian chant, polyphonic music, the Ars Antiqua, and the Ars Nova.

322 Music of the Renaissance (3)
Prerequisite: Music 101 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.

323 Music of the Baroque (3)
Prerequisite: Music 101 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.

324 Music of the Classic Period (3)
Prerequisite: Music 102 or consent of department. A study of the growth of classical style; galant and expressive styles; Mozart, Haydn, and Beethoven.

325 Music of the Romantic Period (3)
Prerequisite: Music 102 or consent of department. Composers, forms, and styles in nineteenth-century music. The literary and social background of musical romanticism.

326 Music of the Twentieth Century (3)
Prerequisite: Music 102 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.

327 A History of Byzantine Music and Hymnography (3)
Prerequisite: Music 102 or consent of department. A study of the liturgical and secular music of the Byzantine Empire and post-Byzantine period during the Ottoman occupation; a historical investigation of the Oriental and Ancient Greek origins of the music along with an evolution of the types of music and poetical forms. A study of the types of notation and transcription analyses from the Medieval neumes into Western staff notation is included.

400 Directed Research in Music: Variable Topic (1-5)
Prerequisite: Consent of instructor. Directed independent research in music through readings, conferences, writings, and projects. This course may be repeated, but no more than 5 hours may be applied toward a degree.

Music Theory and Composition

19 Fundamentals of Music (3)
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.

30A Theory of Music I (3)
Prerequisite: Consent of the department. The basic materials of music and their use in analyzing and writing music. Concurrent registration in Music 30B is required for music majors and minors.

30B Aural Training I (1)
Prerequisite: Consent of the department. Systematic instruction in ear training and sight singing. 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.

31A Theory of Music II (3)
Prerequisites: Music 30A and Music 30B or consent of department. The study of seventh chords, secondary dominants, and modulation; composition in small forms. Concurrent registration in Music 31B is required for music majors and minors.
31B Aural Training II (1)
Prerequisites: Music 30A and Music 30B or consent of department. The systematic instruction in ear training and sight singing begun in Music 30B is continued. Includes further diatonic melodic and rhythmic dictation, primary chord progressions, sight singing of diatonic melodies, and the reading of unit subdivisions in simple and compound meters.

130A Theory of Music III (3)
Prerequisites: Music 31A and Music 31B or consent of department. Study of chromaticism in eighteenth and nineteenth centuries; composition in simple part forms. Concurrent registration in Music 130B is required for music majors and minors.

310 Directed Studies: Variable Topic (1-5)
Prerequisite: 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.

311 Analysis of 20th Century Technique (2)
Prerequisite: Music 131 or consent of department. Study of compositional devices in tonal and atonal music of the twentieth century.

312 Tonal Counterpoint (2)
Prerequisite: Music 131 or consent of department. Study of tonal counterpoint with emphasis on the eighteenth-century style. Composition in two and three parts.

330 Seminar in Composition (2)
Prerequisite: Music 311 or consent of instructor. The study of composition in theory and practice.

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Pedagogy

25 Brass Techniques (2)
Prerequisite: 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.

26 Woodwind Techniques (2)
Prerequisite: 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.

27 String Techniques (2)
Prerequisite: 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.

28 Percussion Instrument Techniques (2)
Prerequisite: Consent of the department. The objective of the 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.
123 Intermediate Vocal Techniques (1)
Prerequisite: Permission of department. Instruction for non-voice majors in the choral option of the music education curriculum.

124 Intermediate Vocal Techniques (1)
Prerequisite: Consent of department. Instruction for non-voice majors in the choral option of the music education curriculum.

156 Piano Pedagogy (2)
Prerequisite: Equivalent of Music 45k or permission of instructor. A study of methods, repertoire, and technical problems pertaining to private studio teaching for all levels of performance ability.

221 Pedagogy of Jazz Improvisation (1)
Prerequisites: Music 131 and permission of instructor. Study of the techniques, systems, and instructional materials used in teaching jazz improvisation.

300 Directed Studies: Variable Topic (1-5)
Prerequisite: 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.

400 Directed Research in Music: Variable Topic (1-5)
Prerequisite: Consent of instructor. Directed independent research in music through readings, conferences, writings, and projects. This course may be repeated, but no more than 5 hours may be applied toward a degree.

Practicum

14, 15 Piano Proficiency (2)
Prerequisite: Permission of department. Group instruction for music majors who do not meet beginning keyboard requirements.

20 Jazz Improvisation Laboratory (1)
Prerequisite: Consent of instructor. The study and application of the theoretical, technical, and performance aspects of jazz improvisation. May be repeated for credit.

116, 118, 119, 120 Intermediate Piano Proficiency (1)
Prerequisite: Music 15 or permission of department. Continuation of piano proficiency study.

117 Jazz Keyboard Harmony (1)
Prerequisite: Applied Music 116 or consent of department. Group keyboard instruction in the application of chordal structures and harmonic functions commonly used in mainstream jazz performance.

125 Singer's Diction: English, Italian, and German (1)
Prerequisite: Music 44 or Music 124. A study of English, Italian, and German pronunciation using the International Phonetic Alphabet.

126 Singer's Diction: Latin, French, and Spanish (1)
Prerequisite: Music 44 or Music 124. A study of Latin, French, and Spanish pronunciation using the International Phonetic Alphabet.

151 Conducting I (2)
Prerequisite: Music 130, Concurrent registration in Music 161 required for bachelor of music in music education program. Techniques and problems in conducting.

152a Conducting IICInstrumental (2)
Prerequisite: Music 151. Concurrent registration in Music 162 required for bachelor of music in music education program. Advanced study of instrumental conducting and rehearsal techniques, score reading, and interpretation.

152b Conducting IICChoral (2)
Prerequisite: Music 151. Concurrent registration in Music 162 required for bachelor of music in music education program. Advanced study of choral conducting and rehearsal techniques, score reading, and interpretation.

153 Accompanying I (1)
Prerequisite: Consent of department. Accompanying and ensemble practices, including rehearsal techniques, for keyboard majors. Public performance of works studied is required.

154 Accompanying II (1)
Prerequisite: Consent of department. A continuation of Music 153.

155 Accompanying III (1)
Prerequisite: Consent of department. A continuation of Music 154.

161 Elementary School Materials: Conducting Laboratory (1)
Prerequisite: Music 130. Active conducting experience while analyzing and evaluating selected instructional and concert materials for elementary grades.

162 Junior-Senior High School Materials Laboratory (1)
Prerequisite: Music 131. Analysis and evaluation of selected instructional and concert materials for junior and senior high school performance groups.

192 Senior Research (2)
Prerequisite: Consent of department. Required of all senior music majors. Directed readings and research in an area mutually acceptable to the student and instructor.
292 Internship (1-3)
Prerequisites: Senior standing in bachelor of music business emphasis program and permission of the instructor. Supervised experience in the area of the student's career objective, such as music or instrument merchandising, arts management, mass communication, publishing, manufacturing or other, as available. May be repeated once for credit in different area.

300 Directed Studies: Variable Topic (1-5)
Prerequisite: 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.

400 Directed Research in Music: Variable Topic (1-5)
Prerequisite: Consent of instructor. Directed independent research in music through readings, conferences, writings, and projects. This course may be repeated, if topic is substantially different, but no more than 5 hours may be applied toward a degree.

402 Choral Literature (3)
Prerequisite: Graduate standing in music. Study of choral literature appropriate for ensembles from elementary to senior high school. Criteria for evaluating choral literature will be developed, and pedagogical implications of choral music as a means of developing comprehensive musicianship will be discussed.

403 Band Literature (3)
Prerequisite: Graduate standing in music. Study of band literature appropriate for soloists and ensembles from elementary to senior high school. Criteria for evaluating the literature will be developed, and related technical problems will be studied.

404 Orchestra Literature (3)
Prerequisite: Graduate standing in music. Study of orchestral literature appropriate for soloists and ensembles from elementary to senior high school. Criteria for evaluating the literature will be developed, and technical problems will be studied.

421 Graduate Conducting (3)
Prerequisite: Graduate standing in music. Conducting techniques, score reading, and interpretation of choral, orchestral, and band literature.

448 Graduate Applied Conducting (1-2)
Prerequisite: Music 421 and consent of the department. Private conducting study of the choral, orchestral, or band repertoire. Does not fulfill the applied music requirement for the master of music education degree.
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 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 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.

General Information

Degrees and Areas of Concentration
The philosophy department offers two options leading to the B.A. degree in philosophy. The first is for students intending to enter graduate school in philosophy, for students seeking a general liberal arts education as their ultimate academic objective, or preparing for professional degrees such as law. Each option offers a balance between training in the techniques of logical analysis, study of philosophical classics, and examination of selected problems in philosophy. The department also offers a minor in philosophy for students wishing to pursue a particular interest in philosophy in an organized way.

Undergraduate Studies

General Education Requirements
Majors must meet the university and college general education requirements. Any course in philosophy will satisfy the humanities requirement. Philosophy 120, Asian Philosophy, and Philosophy 125, Islamic Philosophy, also satisfies the college Cultural Diversity requirement. Majors may not count philosophy courses taken on a satisfactory/unsatisfactory basis toward the degree requirements.

Degree Requirements

Bachelor of Arts in Philosophy
Students must complete one of the following programs. At least 30, but not more than 45, hours are required for a major. A minimum of 18 hours must be taken in residence from the Philosophy Department at UM-St. Louis, including all courses for the major at or above the 200 level.
Option One: Thirty hours of course work are required:

1) Philosophy 160, Formal Logic

2) History of Philosophy
12 hours in history of philosophy, at least 6 hours of which must be at the 300 level. Choose from the sequences Philosophy 101-107; Philosophy 301-322 (excluding 315). Philosophy 10 and 11 together count as one 100-level history course.

3) Normative Philosophy
   One course from the following:
   Philosophy 330: Social and Political Philosophy
   Philosophy 335, Classical Ethical Theories
   Philosophy 338, Recent Ethical Theory
   Philosophy 274, Topics in Aesthetics, or
   Philosophy 374, Philosophy of Art (Philosophy 374 cannot be used to satisfy both the normative requirement and requirement #5 below—the "other disciplines" requirement.

4) Core Requirement
   One course from the following:
   Philosophy 340, Theories of Knowledge
   Philosophy 345, Metaphysics

5) Philosophy and Other Disciplines
   One course from the Philosophy 370 - 390 sequence.

6) Philosophy 391, Senior Seminar

7) Other than the courses specified above, only courses at the 200 level or above satisfy the course work requirement for the major. Video courses cannot be used to satisfy course requirements for this program.

When appropriate, Philosophy 351: Special Topics in Philosophy, may be used to satisfy the requirement of number 3, 4, or 5.

Students in this program should take Greek, Latin, French, or German to satisfy the foreign language requirement.

Option Two: The double major: 24 hours of course work are required.

1) Philosophy 160, Formal Logic or Philosophy 60: Logic and Language (Formal Logic is strongly recommended)

2) History of Philosophy: 6 hours in history of philosophy, at least 3 hours of which must be at the 300 level. Choose from the sequences Philosophy 101-107; Philosophy 301-322 (excluding 315).

3) A total of 9 hours or more at the 300 level other than courses used to satisfy #2 and #4. Video courses cannot be used to satisfy course requirements for this program.

4) Philosophy 391, Senior Seminar

Departmental Honors Majors with a 3.2 grade point average or higher in philosophy and overall may, with the department's consent, earn departmental honors by:

1) Completing at least 6 hours, but not more than 9, of Philosophy 350, Special Readings.

2) Submitting an acceptable thesis before the end of the senior year.

3) Passing an oral examination.

In such cases, the 30 hours required for the major will include the credit earned in Philosophy 350, Special Readings, for the senior thesis.

Related Area Requirements
Majors are urged to acquire a familiarity with some other field above the introductory level.

Transfer students planning to major in philosophy should consult the chairperson of the department as soon as possible in order to have their transcripts evaluated.

Requirements for the Minor
Fifteen hours of course work in philosophy are required. All course work except Philosophy 160 must be taken in residence from the Philosophy Department at UM-St. Louis.

- Philosophy 160: Formal Logic.
- A total of 12 hours at or above the 200 level, at least 6 of which must be at the 300 level. Video courses cannot be used to satisfy course requirements for this program.
- Minors are strongly encouraged, though not required, to take Philosophy 391; Senior Seminar.

Minors are encouraged, though not required, to take Philosophy 391, Senior Seminar. 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.

Graduate Studies

Master of Arts in Philosophy

To earn an M.A. in philosophy, students must complete at least 36 hours of graduate-level work and pass two comprehensive exams. Entering students must demonstrate a competence in logic, either by having passed the relevant course(s) prior to admission or by passing a departmental exam. Students may elect to write a thesis, in which case up to 6 of the 36 hours may be
devoted to research and writing. Two-thirds (24 credit hours) of the degree program, including the thesis for students taking that option, must be completed in residence at UM-St. Louis. In addition, the courses taken are subject to two distribution requirements:

- At least half of the courses must be at the 400 level.
- At least one course (3 credit hours) must be chosen from each of the following four subject areas: epistemology/metaphysics, history of philosophy, value theory (including aesthetics courses only with departmental approval), and logic/philosophy of science.

Cooperative arrangement with Saint Louis University. The strengths of the UM-St. Louis Philosophy Department 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, UM-St. Louis 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 UM-St. Louis during their first semester.
Course Descriptions

Prerequisites may be waived by consent of the department.


*Course may fulfill the [H] or Social Sciences [SS] breadth of study requirement.

10 Western Philosophy I: Antiquity to the Renaissance (3)
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.

11 Western Philosophy II: Descartes to the Present (3)
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.

30 Approaches to Ethics (3)
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.

50 Major Questions in Philosophy (3)
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 worldview.

60 Logic and Language (3)
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.

85 Philosophy of Religion (3)
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.

90 Telecourse: Philosophy and Other Disciplines (3)
Prerequisites: Video course offering. General introduction to philosophy examines its connections to works of art and related areas. Course does not satisfy any requirements for philosophy major or minor.

91 Telecourse: Significant Figures in Philosophy (3)
Video course introduces philosophy through a survey of the ideas of some of the important figures in the history of the discipline. Course cannot be used to satisfy any requirements for philosophy major or minor.

101 Ancient Philosophy (3)
Freshmen admitted by consent of department. The principal 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.

102 Medieval Philosophy (3)
A critical study of the important philosophies of the period from Augustine to the Renaissance. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

103 Early Modern Philosophy (3)
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.

104 Kant and Nineteenth-Century Philosophy (3)
A study of Kant and such major nineteenth-century figures as Hegel and Nietzsche, Mill, and Peirce. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

105 Twentieth-Century Philosophy (3)
Representative topics in contemporary philosophy, with readings selected from pragmatism, logical positivism, linguistic analysis, and existentialism. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course.

107 American Philosophy (3)
Prerequisite: Six hours of philosophy or consent of instructor. A study of selected American philosophers.

120 Asian Philosophy (3)
Critical study of selected philosophical classics of India and China. This course fulfills the Cultural Diversity requirement.
125 Islamic Philosophy (3)
Introduction to Arabic philosophy in the Islamic classical period (roughly from mid-9th through 12th centuries). Considers philosophical and theological background and examines the thought of such notable Islamic philosophers as al-Kindi, Ibn Sina, al-Ghazali, and Ibn Rushd. Topics 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 distinction between essence and existence. Fulfills cultural diversity requirement.

150 Philosophy and Current Issues (3)
A careful examination of such current social controversies as women's liberation, the ethics of abortion, public accountability of holders of high offices, and the subtler forms of racism and other prejudices. Although there is no formal prerequisite, it is recommended that students have taken, or be concurrently enrolled in, at least one other philosophy course.

152 Philosophical Foundations of Criminal Justice (3)
(Same as CCJ 152). Addresses fundamental conceptual and ethical issues that arise in the context of the legal system. Questions may include: How does punishment differ from pre-trial detention? How, if at all, can it be justified? Is the death penalty ever justified? When is it morally permissible for juries to acquit defendants who are legally guilty? Is plea bargaining unjust? Why might people be morally obligated to obey the laws? Are laws restricting civil liberty (e.g., laws against abortion, homosexuality, or drug use) permissible?

153 Philosophy and Feminism (3)
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.

154 Business Ethics (3)
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.

156 Bioethics (3)
(Same as Gerontology 156.) 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.

158 Medicine, Values, and Society (3)
Social, conceptual, and policy issues connected with medicine form the focus of the course. Topics may include: role played by race and gender in design of research and distribution of care; whether diseases are socially constructed categories reflecting the values of society; development of social policies that offer universal access to health care; the legitimacy of using psychotropic drugs to enhance life, rather than treat disease. The course differs from Bioethics by emphasizing policy issues and their conceptual basis. Content of this course may vary.

160 Formal Logic (3)
An introductory study of logical truth and deductive inference, with emphasis on the development and mastery of a formal system.

174 Philosophy and Literature (3)
Critical reading and discussion of selected literary works in terms of the philosophical problems they present.

175 Philosophy and Film (3)
Study of selected films with emphasis on philosophical problems they address. Attention will be paid to film as an artistic medium and the capacities that distinguish it from other visual, and narrative, arts.

180 Minds, Brains, and Machines (3)
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.

183 The History of Science in Philosophical Perspective (3)
Course describes philosophical underpinnings of science, including assumptions about the nature of reality and about scientific methods, the role of logic and mathematics in science, and revolutions in science. These issues will be studied by exploring concrete examples of science, and tracing developments and changes in understandings of science. Content will vary, but the particular periods of science studied will typically include two or three of the following: ancient science, medieval science, early modern science, 19th century science, and/or 20th century science.

185 Issues in Philosophy of Religion (3)
Prerequisite: Philosophy 85 or Philosophy 50 or permission of instructor. A careful examination of a selected topic in philosophy of religion or of philosophical issues arising in a selected religion. The topic or religion to be considered will be announced before registration. This is a variable content course and may be taken again for credit with consent of instructor and department chair.
258 Ethics and the Computer
Prerequisites: 6 hours of course work above the level of Math 30 in Math/Computer Science or at least 6 hours of philosophy or consent of instructor. 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.

269 The Marxist Heritage (3)
(Same as Political Science 269 and Interdisciplinary 269.) Study of Marx and leading Marxists. Designed to evaluate their influence on recent political, economic, and social thought and institutions.

274 Philosophy of Art (3)
(Same as Art 274.) A study of issues concerning the definition of art, meaning and truth in the arts, aesthetic experience, and criticism.

280 Philosophy of Science (3)
An examination of logical and methodological problems related to the sciences, including the structure of scientific explanations, laws and theories; methods of concept formation; and confirmation and the problem of induction.

301 Plato (3)
Prerequisite: Six hours of philosophy, a course in Ancient Philosophy recommended, graduate standing, or consent of instructor. A study of selected Platonic dialogues.

302 Aristotle (3)
Prerequisite: Six hours of philosophy, a course in Ancient Philosophy, recommended, graduate standing, or consent of instructor. A selective study of Aristotle's major works.

305 The Rationalists (3)
Prerequisite: Six hours of philosophy, a course in Ancient Philosophy recommended, graduate standing, or consent of instructor. An examination of the philosophies of such major figures as Descartes, Spinoza, and Leibniz.

306 The British Empiricists (3)
Prerequisite: Six hours of philosophy, a course in Early Modern Philosophy recommended, graduate standing, or consent of instructor. An examination of the philosophies of such major figures as Locke, Berkeley, and Hume.

307 Kant (3)
Prerequisite: Six hours of philosophy, Phil 104 or equivalent recommended, graduate standing, or consent of instructor. A systematic study of the Critique of Pure Reason.

308 Hegel (3)
Prerequisite: Six hours of philosophy, Phil 104 or equivalent recommended, graduate standing, or consent of instructor. A critical study of the writings and influence of Hegel.

309 Phenomenology and Existentialism (3)
Prerequisites: Six hours of philosophy, Phil 105 or equivalent recommended, graduate standing, or consent of instructor. A study of some major representatives of these schools from Kierkegaard to the present.

310 Significant Figures in Philosophy (3)
Prerequisite: Nine hours of philosophy, graduate standing, or consent of instructor. Examination of the work of an important twentieth-century philosopher or philosophical movement. The philosopher or movement to be studied will be announced prior to registration. This is a variable content course that may be taken again for credit with approval of instructor and department chair.

311 The Analytic Tradition I—Origins to Logical Positivism (3)
Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. Philosophy 105 and Philosophy 160 strongly recommended. Course studies in depth the development of analytic philosophy through about 1950. Topics include key philosophical writings in this tradition beginning with Frege, Moore, and Russell and concluding with basic texts in logical positivism, with emphasis on Carnap, Schlick, Neurath, and Hempel.

311 The Analytic Tradition II—Post-Positivism to Present (3)
Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. Philosophy 105 and Philosophy 160 strongly recommended. Study of reactions and responses to basic analytic techniques and positivist doctrines beginning with Wittgenstein, Quine, and Sellars. Implications of these critiques for style and substance of analytic philosophy are studied, including such contemporary developments as reassessment of positivism, revival of naturalism, and "death" of philosophy.
330 Social and Political Philosophy (3)
Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. An analysis of some fundamental concepts and assumptions involved in the theory and practice of social and political organization.

335 Classical Ethical Theories
Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. Significant contributions to moral philosophy from Plato and Aristotle to Bentham and Mill.

338 Recent Ethical Theory (3)
Prerequisite: Six hours of philosophy 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.

339 Topics in Ethical Theory (3)
Prerequisite: Philosophy 335, 338, nine hours of philosophy, graduate standing, or consent of instructor. Formulation and evaluation of major theories in normative ethics, metaethics, and axiology. Topics include egoism, moral realism, act and rule utilitarianism, and varieties of naturalism and non-naturalism in ethics. This is a variable content course and can be taken again for credit with consent of instructor and department chair.

340 Theories of Knowledge (3)
Prerequisite: 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.

345 Metaphysics (3)
Prerequisite: 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.

350 Special Readings in Philosophy (3)
Prerequisite: Special consent required. Independent study through readings, reports, and conferences. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

351 Special Topics in Philosophy (3)
Prerequisite: 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 course may be repeated for credit on approval by the department.

352 Feminism and Science (3)
Prerequisite: 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 hypotheses and theories; the nature and consequences of science's cognitive authority; and the relationship between science and values.

353 Feminist Ethical Theory (3)
Prerequisite: Philosophy 153, six hours of philosophy, or consent of instructor. Examines two classic 18th century statements of sympathy-based moral theory in the works of Adam Smith and David Hume. The course, then looks at a number of contemporary works that attempt to delineate a decisively feminist ethical theory, e.g., the work of Carol Gilligan, Nel Nodding, and Virginia Held. The course explores as well differences among female, feminist, and lesbian ethical standpoints.

357 Media Ethics (3)
Prerequisite: nine hours of philosophy or nine hours of communication or consent of instructor. (Same as Communication 357). This course is concerned with some of the issues that arise from the intersection of ethics and modern media communications. Attention is given to some of the more specific concerns of media ethics, such as truth, honesty, fairness, objectivity and bias; personal privacy and the public interest; advertising; conflicts of interest; censorship and offensive or dangerous content (pornography, violence). Particular attention will be given to problems posed by the development of personal computer communications through bulletin boards, online services, and the Internet.

360 Advanced Formal Logic (3)
Prerequisite: Philosophy 160, 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.

365 Theory of Decisions and Games (3)
Prerequisite: Six hours of Philosophy and junior standing, PolSci 401 (or the equivalent) or consent of instructor. (Same as PolSci 306). 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 is strongly recommended.
369 Topics in Political Philosophy (3)  
Prerequisite: Nine hours of philosophy, graduate standing, or consent of instructor. Critical examination of philosophical theories of democracy, individual autonomy, political community, social justice, and other selected issues in political philosophy.

370 Topics in Philosophy of Language (3)  
Prerequisite: Six hours of philosophy, graduate standing, or consent of instructor. Intensive examination of selected problems encountered in developing philosophical accounts of truth, reference, propositional attitudes, and related concepts. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

374 Topics in Aesthetics (3)  
Prerequisite: Philosophy 274, graduate standing, or consent of instructor. Selected topics, such as vision and representation, musical aesthetics, and recent theorists. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

376 Philosophy of History (3)  
Prerequisites: Six hours of philosophy, graduate credit, or consent of instructor. Discussion and analysis of some philosophical problems raised by historical inquiry, such as subjectivity, relativism, the role of value judgments, and the nature of historical explanation.

378 Topics in Philosophy of Mind (3)  
Prerequisite: Six hours of philosophy, graduate standing, or consent of instructor. 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 consent of instructor and department chair.

379 Philosophy of Cognitive Science (3)  
Prerequisite: Philosophy 378, nine hours of philosophy, or consent of instructor. An exploration of the philosophical foundations and implications 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.

380 Topics in Philosophy of Science (3)  
Prerequisite: Philosophy 280, graduate standing, or consent of instructor. Intensive study of selected problems in philosophy of science. This is a variable content course and can be taken again for credit with consent of instructor and department chair.

381 The Darwinian Heritage (3)  
Prerequisites: Six hours of philosophy (preferably including Phil 280, Philosophy of Science, as 3 of these), graduate standing, or consent of instructor. Examines contributions to science made by Darwin's Origin and Descent, reception of Darwinism by scientists, and its continuing influence in biological, bio-behavioral, and social sciences. Also considers public reactions to Darwinism, including ways in which Darwin's views, and contemporary research in evolutionary theory and genetics, have been regarded as challenging long-held beliefs about "meaning and purpose" of human life.

382 Philosophy of Social Science (3)  
Prerequisite: Six hours of philosophy or consent of instructor. An intensive examination of selected topics such as the nature of explanation in social science and the postmodernism debate (e.g., Habermas, Foucault, Clifford). This course may be repeated for credit on approval by the department.

383 Topics in History and Philosophy of Science (3)  
Prerequisites: Six hours of philosophy, Phil 280; Philosophy of Science strongly recommended, graduate standing, or 3 hours of history, or consent of instructor. Explores research methods and interpretative approaches in history of science and problems and schools of thought in philosophy of science and recent developments in which links have deepened between the two disciplines. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

384 Topics in History and Philosophy of Medicine (3)  
Prerequisites: Six hours of philosophy, graduate standing, or consent of instructor. Focuses on rise of philosophical issues associated with scientific medicine, including emergence of physiology; identification of infectious and genetic diseases; development of effective drugs; rise of diagnostic and therapeutic technologies. Topics may include disease concepts, classification of diseases, logic of clinical diagnosis, medical explanation, and clinical decision making. May also include development of special medical areas such as immunology cancer treatments, or organ transplantation. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

385 Topics in Philosophical Theology (3)  
Prerequisite: Philosophy 185, nine hours of philosophy, or consent of instructor. An intensive study of problems arising out of traditional and contemporary philosophical theology. This is a variable content course and may be taken again for credit with the consent of the instructor and the department chair.

387 Topics in Philosophy of Law (3)  
(Same as CCJ 233.) Prerequisite: CCJ 010 and 3 hours of philosophy, 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.
390 Philosophical Issues in Other Disciplines (3)
Prerequisite: Nine hours in philosophy, graduate standing, or consent of instructor. An examination of selected philosophical issues in a discipline other than philosophy. One or more such disciplines as history, political science, Psychology, sociology, biology, physics, or mathematics will be chosen, and philosophical issues selected and announced prior to registration, usually in consultation with the other department concerned. This course is normally taught as a seminar and attempts to serve advanced students in other departments without previous background in philosophy.

391 Senior Seminar (3)
Prerequisites: Senior standing; at least 12 hours of philosophy at the 100 level or above; or consent of instructor. Intensive study of a central philosophical problem. The course emphasizes the fundamentals of philosophical writing and scholarship. Students will write a major paper to be evaluated by two members of the Philosophy Department and the course instructor.

410 Seminar in Significant Figures in Philosophy (3)
Prerequisites: Graduate standing. In-depth study of work of a single philosopher. Philosopher selected will be announced before registration. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

421 The Analytic Tradition (3)
Prerequisites: Graduate standing or consent of instructor. Course will focus on selected topics within the range of analytic philosophy. Topics may be historical or contemporary.

430 Seminar in Social and Political Philosophy (3)
Prerequisites: Graduate standing or consent of instructor. Intensive study of contemporary philosophical debate about such issues 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 consent of instructor and department chair.

431 The Nature of Punishment (3)
(Same as CCJ 431.) Prerequisite: Graduate standing. The historical development of punishment philosophies and techniques. Topics include the emergence of the modern prison, the joining of medical and legal treatment, and rationales for alternative forms of punishment.

433 Philosophy of Law (3)
(Same as CCJ 433.) 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.

438 Seminar in Ethical Theory (3)
Prerequisites: Graduate standing or consent of instructor. Answers questions from normative ethics or metaethics, which may include the following: 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?

440 Seminar in Epistemology (3)
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 consent of instructor and department chair.

445 Seminar in Metaphysics (3)
Prerequisites: 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 consent of instructor and department chair.

450 Special Readings in Philosophy (3)
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 consent of the instructor and the department chair.

451 Special Readings in Philosophy (3)
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 consent of instructor and department chair.

455 Ethical and Legal Issues in Criminal Justice (3)
(Same as Criminology and Criminal Justice 455.)
Prerequisite: Graduate standing or consent of instructor. Examination of the moral and legal aspects of the policies and practices of criminal justice agencies and agents. Issues may include treatment of offenders, the role of technology, and research and professional ethics.

460 Seminar in Logic (3)
Prerequisites: Graduate standing. Focused study of topics in logic and/or its history. Representative topics include Aristotelian logic, modal logic, Godel incompleteness theorems, relevance logic, paraconsistent logic, free logic. This is a variable content course and may be taken again for credit with consent of instructor and department chair.
473 Philosophy of Education (3)
Prerequisites: Graduate standing or consent of instructor. Same as Educational Foundations 473. Critical examination of selected issues in education from the perspective of Western philosophy. Topics may include the distinctive features of education as an activity and achievement, concepts of teaching and learning, relations between education and values, and the role of public educational institutions.

478 Seminar in Philosophy of Mind (3)
Prerequisites: Graduate standing. Topics may include functionalism and physicalism; representation and nature of propositional attitudes such as belief, desire, and 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 instructor and department chair.

479 Seminar in Philosophy of Cognitive Science (3)
General topics include role of computation in cognitive science, merits of symbolic computation and connectionism, aims and methods of artificial intelligence, and 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 consent of instructor and department chair.

480 Seminar in Philosophy of Science (3)
Prerequisites: Graduate standing or consent of instructor. Focus on recent issues and controversies. Topics may include theories and observation, models of explanation, confirmation, realism and antirealism, empiricism and naturalism, "social construction" and feminist views of science. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

482 Seminar in Philosophy of Social Science (3)
Prerequisites: Graduate standing of consent of instructor. Intensive examination of selected topics, e.g., nature of explanation in social science, postmodernism debate (e.g., Habermas, Foucault, Clifford), or relation of social to natural sciences. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

490 Philosophical Issues in Other Disciplines (3)
Prerequisites: Graduate standing or consent of instructor. Examination of selected philosophical issues in disciplines other than philosophy. One or more such disciplines as history, political science, psychology, sociology, biology, chemistry, physics, or mathematics will be chosen. The discipline(s) and issues selected will be announced before registration. This is a variable content course and may be taken again for credit with consent of instructor and department chair.

495 Thesis Research (3)
Prerequisites: Graduate standing or consent of instructor. May be repeated once for credit with consent of instructor and department chair.
Physics and Astronomy

Faculty

Bruce A. Wilking, Professor,* Chairperson
Ph.D., University of Arizona
Ta-Pei Cheng, Professor*
Ph.D., Rockefeller University
Bernard J. Feldman, Professor*
Ph.D., Harvard University
Ricardo Flores, Professor*
Ph.D., University of California-Santa Cruz
Peter H. Handel, Professor*
Ph.D., University of Bucharest
Bob L. Henson, Professor*
Ph.D., Washington University
Jacob J. Leventhal, Curators' Professor*
Ph.D., University of Florida
Frank E. Moss, Curators' Professor*
Ph.D., University of Virginia
Richard D. Schwartz, Professor*,
Ph.D., University of Washington
Phil Fraundorf, Associate Professor*
Ph.D., Washington University
Wilfred H. Sorrell, Associate Professor*
Ph.D., University of Wisconsin
Mark Spano, Adjunct Professor
Ph.D., University of Maryland
Daniel Leopold, Adjunct Associate Professor
Ph.D., Washington University
Lakshminarayanan Vasudevan, Adjunct Associate Professor
Ph.D., University of California-Berkeley
Lu Fei, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis
Mary Leopold, Adjunct Assistant Professor
Ph.D., Washington University
Jingye Liu, Adjunct Assistant Professor
Ph.D., Arizona State University
Lucio Mulestango, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis
Kimberly A. Shaw, Adjunct Assistant Professor
Ph.D., Florida State university
Peter Török, Adjunct Assistant Professor
Ph.D., Roland Eötvös University, Budapest, Hungary
Aleksandr B. Neyman, Research Associate Professor
Ph.D., Dr. Sc., Saratov State University, Russia

*members of Graduate Faculty

The department offers meritorious junior and senior students opportunities to participate in teaching and research to help prepare them for the independent effort required in industry or graduate school. The department's faculty members have a diversity of interests and are active in various experimental and theoretical research areas.

Graduate work leading to the Master of Science in physics is also offered. The M.S. in physics 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. The program is offered almost entirely in the evening to serve students who are employed locally. The department offers the Ph.D. degree in cooperation with the University of Missouri-Rolla Physics Department. Students must satisfy the UM-Rolla admission standards, and the UM-Rolla Qualifying Exam in Physics is required of UM-St. Louis Ph.D. students. However, all course work and dissertation research may be completed while the student is in residence at UM-St. Louis.

Undergraduate Studies

General Education Requirements: Majors must complete the university and college general education requirements. Any of the following courses may be used to satisfy the physical science requirement:

Astronomy: 1, 11, 12, 22, 50, 51, 121, 301, 322.
Atmospheric Science: 1.
Geology: 1, 2, 53.

Degree Requirements
All physics majors in all programs must complete the physics core curriculum. In addition to the core courses, each individual program has its own specific requirements.

Core Curriculum The following physics courses are required:
111, Mechanics and Heat
112, Electricity, Magnetism, and Optics
200, Survey of Theoretical Physics
221, Mechanics
223, Electricity and Magnetism
231, Introduction to Modern Physics I
Also required are:
Math 80, Analytic Geometry and Calculus I
Math 175, Analytic Geometry and Calculus II
Math 180, Analytic Geometry and Calculus III
Math 202, Introduction to Differential Equations
Chem 11, Introductory Chemistry I or equivalent
Computer Science 125, Introduction to Computer Science

Note Students are urged to begin the calculus sequence (Math 80, 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 Computer Science 125.

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 200 or 300 level must be completed. At least 31 hours of physics courses, but no more than 45 hours, are required.

Bachelor of Science in Physics The B.S. degree provides students with four options: general physics, astrophysics, engineering physics, or medical physics.

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 49 hours, but no more than 52, are required. In addition to the core curriculum, the following physics courses are required:
- 304, Modern Electronics
- 311, Advanced Physics Laboratory I
- 323, Modern Optics
- 331, Introduction to Quantum Mechanics
- 341, Thermal and Statistical Physics
and four electives at the 300 level in physics or astronomy.

Also required are:
Math
245, Elementary Linear Algebra
303, Applied Mathematics II
Chem
12, Introductory Chemistry II, or equivalent
and one elective in math or computer science at or above the 200 level.

Astrophysics Option
This option may be elected by students who have interests in the aerospace sciences or anticipate graduate studies in astrophysics. At least 47 hours, but not more than 51, must be taken. In addition to the core curriculum, the following courses are required:

Physics
323, Modern Optics
331, Introduction to Quantum Mechanics
341, Thermal and Statistical Physics
Astronomy
50, Introduction to Astronomy I
51, Introduction to Astronomy II
301, Astrophysics
322, Observational Astronomy
and one physics elective at the 300 level. With consent of the astronomy adviser, there may be substitution of Astronomy I, 11, or 12 for 50 or 51.

Also required are:
Math 245, Elementary Linear Algebra
Math 303, Applied Mathematics I

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:

Engineering
30, Engineering Graphics
124, Circuits I
144, Statics
145, Dynamics
Physics
304, Modern Electronics
311, Advanced Physics Laboratory I
323, Modern Optics
331, Introduction to Quantum Mechanics
341, Thermal and Statistical Physics

Also required are two additional courses in computer science or numerical analysis at or above the 200 level.

Medical Physics 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 physics core curriculum, the following physics and biology courses are required:

Physics
304, Modern Electronics
Biology
11, Introductory Biology I
12, Introductory Biology II
and two additional physics electives at the 300 level.

Also required are:
Chem
12, Introductory Chemistry II
261, Structural Organic Chemistry
262, Organic Reactions
263, Techniques of Organic Chemistry

Note: With approval of the chairperson of Physics and Astronomy, students with strong mathematical preparations who have already completed the Physics 11 and Physics 12 sequence in basic physics may substitute these courses for two required core courses Physics 111 and Physics 112, respectively. However, this is not the recommended route because Physics 111 and 112 give significantly better preparation for the required junior-level physics core courses. It would be the individual student's responsibility to make up any resulting deficiencies.

B.S. degree in Secondary Education with an Emphasis in Physics

All candidates must enroll in a program that includes Levels I, II, and III course work in the College of Education.

In addition, students must complete the following Science Core Courses and the courses listed under Physics Endorsement:

Science Core Courses:
Philosophy 280, Philosophy of Science
Biology
11, Introductory Biology I
12, Introductory Biology II
Chemistry
11, Introductory Chemistry I
12, Introductory Chemistry II
Geology 1, General Geology
Atmospheric Science 1, Elementary Meteorology
Biology 120, Environmental Biology or another environmental science
Physics
111, Physics: Mechanics and Heat
112, Physics: Electricity, Magnetism, and Optics

Physics Endorsement
Physics
200, Survey of Theoretical Physics
221, Mechanics
223, Electricity and Magnetism
231, Introduction to Modern Physics
304, Modern Electronics
311, Advanced Physics Laboratory I

280 or Education 240, Methods of Teaching Science in Secondary Schools
283, Teaching Intern Seminar

Minor in Physics
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:
111, Mechanics and Heat
112, Electricity, Magnetism, and Optics
200, Survey of Theoretical Physics
and two additional emphasis courses chosen from the following physics courses:
221, Mechanics
223, Electricity and Magnetism
231, Introduction to Modern Physics
304, Modern Electronics

A GPA of at least 2.0 is required in courses presented for a minor. It is required that a student complete a minimum of 6 hours of graded work in 100 level or above courses on the UM-St. Louis campus.

Graduate Studies

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.

Graduate Degree Requirements

Master's Degree
A student must complete 30 credit hours in graduate physics courses with at least 15 of these at the 400 level; of the latter 15, a maximum of 6 credit hours may be counted for thesis research. The writing of a thesis is optional. A comprehensive examination must be passed, which includes a defense of the thesis if the student has chosen to write one. A grade point average of 3.0 must be maintained during each academic year. The requirements must be fulfilled within six years from the time of admission. Two-thirds of required graduate credit must be taken in residence. No language requirement.

Doctorate
A minimum of 48 hours past the master's degree with satisfactory performance. Residency requirement of three years/six semesters (for those with master's degree, two years/four semesters) at UM-St. Louis and/or cooperating UM-Rolla campus. Ph.D. qualifying exam, dissertation,
dissertation exam administered in cooperation with UM-Rolla. Overall requirement of B grades or better. Dissertation may be written in absentia. No language requirement.

Special Equipment, Facilities, or Programs
The supporting facilities of the University of Missouri-St. Louis include a modern library with holdings in excess of 390,000 bound volumes, a microtext department containing 72,000 titles, and approximately 87,000 titles in the government documents section. Campus computing facilities include a UNIX system and workstations. The Department of Physics and Astronomy maintains a workstation for image processing. The physics department operates a machine shop and an electronics shop. In addition, the department maintains a library containing some of the most frequently used physics journals.

Typical Program:

First Semester
Physics: 400-level and 300-level course
Total: 6 hours

Second Semester
Physics: 400-level and 300-level course
Total: 6 hours

Third Semester
Physics: 400-level and 300-level course
Physics 490, Thesis Research or Seminar
Total: 9 hours

Fourth Semester
Physics: 400-level and 300-level course
Physics 490 Thesis Research or Seminar
Total: 9 hours

Career Outlook

Many of our students have been successful in subsequent graduate studies in astronomy and meteorology, as well as in physics. Our alumni have pursued graduate studies and earned doctorate degrees at institutions such as Cornell University, University of Wisconsin, Washington University, and University of Chicago. The many students who elected a career in industry are now working in a variety of settings for such firms as International Business Machines, Emerson Electric, Southwestern Bell, Hewlett-Packard, Boeing, and the National Center for Atmospheric Research. Several former students are currently teaching physics in high schools around the St. Louis area.
Course Descriptions

Prerequisites may be waived by consent of the department. Courses in this section are grouped as follows:
Astronomy; Atmospheric Science; Geology; and Physics.

The following courses fulfill the Natural Sciences and Mathematics [SM] breadth of study requirements:
ASTRONOMY: 1, 11, 12, 50, 51, 121, 301, 322.
ATMOSPHERIC SCIENCE: 1.
GEOL OGY: 1, 2, 53.

Astronomy

1 Cosmic Evolution/Introductory Astronomy (4)
Planets: A brief survey of their motions and properties. Stars: Observations, including stellar spectra and colors; stellar evolution, and star clusters. Galaxies: Structure and content of the Milky Way Galaxy, its relationship to other galaxies. Cosmology: The origin and evolution of the universe. Three lectures and a two hour laboratory per week.

11 Planets and Life in the Universe (3)
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.

12 The Violent Universe and the New Astronomy (3)
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.

22 Practical Astronomy (2)
Prerequisite: Astronomy 1 or 11. Designed to acquaint students with observational astronomy: constellations, planets, stars, nebulae, and galaxies. Students will become familiar with operation of a telescope and its use in visual observation and photography. The basics of astronomical nomenclature and coordinates will also be emphasized. This course is primarily for nonscientists.

50 Introduction to Astronomy I (3)
Prerequisites: Math 30 and 35. A survey of the history of astronomy from the ancient times to the present. The motions of the planets and stars, real and apparent, tools
2 Historical Geology (4)
Prerequisite: Geology 1. Study of changes in geography, climate and life through geological time; origin of continents, ocean basins, and mountains in light of continental drift. Laboratory primarily involves description and identification of fossils.

53 Oceanography (3)
The atmospheric and ocean circulations; the chemistry and geology of the deep sea; and their effects on the distribution of marine organisms.

Physics

1 How Things Work (3)
Provides 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.

11 Basic Physics (4)
Prerequisite: Math 80 or 100 may be taken concurrently. A survey course specifically designed for students in health and life sciences covering such topics as classical mechanics, heat, sound, electricity, magnetism, light, and radiation. Will not fulfill the Physics 111 requirement for physics, chemistry, and engineering majors. Three hours of lecture and two hours of laboratory.

12 Basic Physics (4)
Prerequisite: Physics 11. Continuation of Physics 11.

50 Introduction to Physics (4)
Prerequisite: Math 30. A laboratory survey course which introduces students to the fields of mechanics, heat and thermodynamics, optics, electricity and magnetism, and modern physics at the pre-calculus level. A problem-solving course, recommended for science and engineering students who have no physics background or who desire additional preparation for Physics 111. Three hours of lecture and two hours of laboratory per week.

111 Physics: Mechanics and Heat (5)
Prerequisite: Math 80 or 100. Physics 1, or Chem 12, or equivalent is recommended. An introduction to the phenomena, concepts, and laws of mechanics and heat for physics majors and students in other departments. Three hours of lecture, one hour of discussion, and two hours of laboratory per week.

112 Physics: Electricity, Magnetism, and Optics (5)
Prerequisites: Physics 111 and Math 175. 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, one hour of discussion, and two hours of laboratory per week.

200 Survey of Theoretical Physics (3)
Prerequisites: Physics 112 and Math 180. Mathematical techniques specifically used in the study of mechanics, electricity, magnetism, and atomic physics are developed in the context of various physical problems. In particular, statics problems in electricity and magnetism are emphasized as applications of vector analysis, solutions of Laplace’s equation, coordinate systems, and numerical techniques.

221 Mechanics (3)
Prerequisites: Physics 200 and Math 202. Math 202 may be taken concurrently. Advanced course covering rigid-body dynamics, damped and undamped oscillatory motion, with an introduction of Lagrange’s equations and variational principles. Three hours of lecture and one hour of discussion per week.

223 Electricity and Magnetism (3)
Prerequisites: Physics 200 and Math 202 (Math 202 may be taken concurrently). Electromagnetic fields, including electrostatics, dielectric materials, solution to Laplace’s equation, currents and magnetic fields, motion to charged particles, and introduction to electromagnetic waves. Three hours of lecture and one hour of discussion per week.

231 Introduction to Modern Physics I (3)
Prerequisite: Physics 111, 112, and Math 202 (may be taken concurrently) and Physics 200 strongly recommended. Photons and the wave nature of particles, wave mechanics, Schroedinger’s equations, with applications to atomic physics; and radiation; the physics of solids; elementary particles; relativity; health physics. Three hours of lecture and one discussion section per week.

280 Curriculum and Methods of Teaching Physical Sciences (3)
(Same as SEC ED 240.) Prerequisites: SEC ED 213 and a near-major in the subject matter. 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. To be taken prior to student teaching. This course must be completed in residence.

281 Directed Readings in Physics (1-5)
Prerequisite: Consent of instructor. A study of the literature of physics. A paper is required on an approved topic. Topics must be substantially different. Hours arranged.
283 Chemistry/Physics Teaching Intern Seminar (1)
(Same as Chemistry 283.) Prerequisite: Chem 280 or Physics 280. A seminar to accompany student teaching covering integration of physical science curricula and methods into the classroom setting. To be taken concurrently with Secondary Student Teaching, SEC ED 290. One hour discussion per week.

289 Seminar (1)
Presentation of selected papers by students and faculty members at weekly meetings. May be taken twice for credit.

301 Introduction to Mathematical Physics (3)
Prerequisites: Sixteen hours of physics. A course covering mathematical techniques as applied to the equations of theoretical physics, calculus of variations, Green's functions; linear vector spaces, and integral equations. Three hours of lecture and one hour of discussion per week.

304 Modern Electronics (3)
An integrated recitation/laboratory study of modern analog and digital electronics with emphasis on integrated circuits. Topics include circuit elements, operational amplifiers, logic gates, counters, adc/dac converters, noise reduction, microprocessors, embedded microcontrollers, and digital processing. Three hours of lecture/laboratory per week.

307 Scanning Electron Microscopy (3)
Prerequisite: Consent of instructor. A lecture/laboratory study of scientific research techniques using scanning electron microscopy (SEM). Course includes electron gun/lens optics, beam-specimen interactions, image formation, associated x-ray techniques, and analysis of images. Two hours lecture and two hours laboratory each week.

308 Transmission Electron Microscopy (3)
Prerequisite: Physics 307 or consent of instructor. A lecture/laboratory study of transmission electron microscopy (TEM) in conventional, analytical, and phase-contrast (high resolution) applications. Course includes advanced electron optics and image formation, defect structures, specimen preparation, contrast theory, diffraction/periodicity analysis, and electron energy loss/x-ray spectroscopy. Two hours lecture and two hours laboratory per week.

309 Scanning Probe Microscopy (3)
Prerequisite: Physics 307 or consent of instructor. A lecture/laboratory study of research techniques using scanning probe microscopy. Topics include atomic force microscopy, scanning tunneling microscopy, feedback control, scanning tip fabrication, scan calibrations, air/solution/vacuum imaging, image processing and analysis, near-field optical probes, metrology, and lateral force/displacement microscopy. Applications in physics, chemistry, biology, engineering, and surface science are discussed. Two hours lecture and two hours laboratory per week.

311 Advanced Physics Laboratory I (3)
Prerequisites: Advanced standing with at least nine completed hours of Physics at or above the 200 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 of laboratory per week.

323 Modern Optics (3)
Prerequisite: Physics 223. A study of modern optics including diffraction theory, polarization, light propagation in solids, quantum optics, and coherence. Three hours of lecture and one discussion per week.

325 Topics in Modern Applied Physics (3)
Prerequisites: Physics 304 and Math 202. Topics are taken from modern applications of physics which may include linear analysis, nonlinear analysis, Fourier transform spectroscopy, wavelet analysis, noise and fluctuation phenomena, material science, physical electronics, optical techniques, and scanning tip microscopy. Three hours of lecture and one hour of discussion per week.

331 Introduction to Quantum Mechanics (3)
Prerequisites: Physics 200 and 231. Photons and the wave nature of particles; wave mechanics, Schroedinger equation, and applications to single systems, atomic physics and spectroscopy; molecular physics, nuclear models and reactions, the physics of solids; elementary particles, relativity. Three hours of lecture and one discussion section per week.

335 Atomic and Nuclear Physics (3)
Prerequisite: Physics 331. Application of Schroedinger's equation to hydrogen-like atoms; atomic structure and spectra; nuclear masses, energy levels; alpha, beta, and gamma radiation, nuclear reactions, and models of the nucleus. Three hours of lecture and one hour of discussion per week.

341 Thermal and Statistical Physics (3)
Prerequisites: Math 180 and Physics 231. Introduction to statistical mechanics, laws of thermodynamics, kinetic theory. Three hours of lecture and one hour of discussion per week.
343 Selected Topics in Physics I (3)
Prerequisites: Physics 221, 223, 231, 341, and Math 316 (Math 316 may be taken concurrently). Topics include special phenomena such as scattering of waves, thermal motion in gases, atmospheric disturbances treated by methods of advanced mechanics, electromagnetism, and quantum mechanics. Three hours of lecture and one hour of discussion per week.

350 Computational Physics (3)
Prerequisites: Computer Science 125, plus Physics 221, 223, and 231. Computer analysis in physics; solutions of eigenvalue problems; coupled differential equations.

351 Elementary Solid State Physics (3)
Prerequisite: Physics 331. 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. Three hours of lecture and one hour of discussion per week.

353 Physics of Fluids (3)
Prerequisites: Physics 221, 223, and 341, or consent of instructor. Topics from the theory of gases, liquids, or plasmas. Dynamical properties of one of these forms of matter will be developed with contemporary applications stressed.

354 Atmospheric Physics (3)
Prerequisite: Physics 341. Topics from dynamic and physical meteorology including the ionosphere. Application of thermodynamics, optics, radiation, and mechanics to atmospheric phenomena.

356 Quantum Optics (3)
Prerequisites: Physics 200 and 231, and Math 202. Review of atomic theory and spectroscopy. Selected applications to modern optical phenomena such as optical pumping, lasers, masers, Mossbauer effect, and holography.

357 Subatomic Physics (3)
Prerequisites: Physics 223, 231 and 331, 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. Three hours of lecture and one hour of discussion per week.

365 Introduction to Plasma Physics (3)
Prerequisites: Physics 223 and 341. A study of the nonlinear collective interactions of ions, electrons, and neutral molecules with each other and with electric and magnetic fields. Topics include plasma confinement and stability, electrical discharges and ionization, kinetic theory of plasma transport, plasma waves and radiation, and controlled fusion. Solutions of the Boltzmann, Fokker-Planck, and Vlasov equations are discussed and methods of advanced electromagnetism and statistical physics are utilized. Three hours of lecture and one hour of discussion per week.

370 Relativity and Cosmology (3)
Prerequisites: Physics 221, 223, and 231. 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, Riemannian geometry and tensor analysis, Einstein Field Equation and cosmology. Three hours of lecture and one hour of discussion per week.

381 Directed Readings in Physics (1-10)
Prerequisite: Consent of instructor. A study of special topics in physics for senior undergraduates or graduate students.

390 Research (1-10)
Prerequisite: Consent of department. Independent research projects arranged between student and instructor. Hours arranged.

395 Principles of Mathematical Physics (4)
Boundary value problems; Green's function techniques; and introduction to group theory with emphasis on representations of Lie Algebras.

400 Special Problems (1-5)
Prerequisites: Must have a faculty mentor and approval of the department chair. A study of special topics in physics for graduate students.

401 Special Topics (1-4)
Prerequisite: Consent of instructor. This course is designed to give the department an opportunity to test a new course.

404 Experimental Research Techniques (3)
Prerequisite: Graduate standing. Experiments in various fields of physics designed to stress techniques and experimental approach.

405 Theoretical Physics I (3)
Prerequisites: Physics 221 and 223 or equivalent. Newton's laws applied to simple systems, central force problem, variational principles. Lagrangian and Hamiltonian formulations, electrostatics. Maxwell field operations, wave propagation.
406 Theoretical Physics II (3)
Prerequisites: Physics 231, 341, or equivalent, and
Physics 405. Schroedinger equation and wave mechanical
treatment of simple systems: perturbation theory; identical
particles and spin. Laws of thermodynamics, canonical
systems; thermodynamic potentials and Maxwell
equations, open systems, and chemical potential.
Clausius-Clapeyron equation.

407 Modern Physics (3)
Prerequisite: Physics 331. A study of some of the more
important concepts of modern physics.

409 Theoretical Mechanics I (3)
Prerequisite: Physics 221. Classical mechanics, methods
of Newton, Lagrange, and Hamilton, applied to motion of
particles and rigid bodies, elasticity, and hydrodynamics.

410 Seminar (variable hours)
Prerequisite: Approval of department chair. Discussion of
current topics.

411 Electrodynamics I (3)
Prerequisite: Physics 223. A rigorous development of the
fundamentals of electromagnetic fields and waves.
Electrostatics, magnetostatics, Maxwell's equations,
Green's functions, boundary value problems, multipoles,
and conservation laws.

413 Statistical Mechanics (3)
Prerequisites: Physics 331 and 341. A study of statistical
ensembles; Maxwell-Boltzmann, Fermi-Dirac, and
Einstein-Bose distribution laws, application to some
simple physical systems.

415 Theoretical Mechanics II (3)
Prerequisite: Physics 409. Transformation theory of
mechanics, Lagrange and Poisson brackets, Hamilton-
Jacobi theory, introduction to the classical theory of
fields.

417 Advanced Statistical Mechanics (3)
Prerequisite: Physics 413. A continuation of Physics 413.
Further applications as to such topics as the imperfect gas,
condensation and the critical region, magnetism, liquid
state, and transport phenomena.

423 Electrodynamics II (3)
Prerequisite: Physics 411. A continuation of Physics 411.
Applications of time-dependent Maxwell's equations to
such topics as plasmas, wave guides, cavities, radiation:
fields of simple systems and multipoles. Relativity:
covariant formulation of Maxwell's equations and
conservation laws, fields of uniformly moving and
accelerated charges.

425 Plasma Physics (3)
Prerequisites: Physics 341 and 411. Fundamentals of
kinetic theory, fluid equations, MHD equations, and
applications; wave propagation, shielding effect, diffusion
stability, and charged particle trajectories.

435 Cloud Physics (3)
Prerequisites: Physics 223 and 341. A study of cloud
microphysics and dynamics, atmospheric condensation
and freezing nuclei, phase, precipitation mechanisms,
aerosol scavenging, role of electrification, current
dynamical models, and review of diagnostic techniques.

455 Theoretical Nuclear Physics (3)
Prerequisite: Physics 461. A study of the basic properties
of nuclei, nuclear scattering and forces, nuclear reactions,
and models.

461 Quantum Mechanics I (3)
Prerequisite: Physics 331. A study of the Schroedinger
wave equation, operators and matrices, perturbation
theory, collision, and scattering problems.

463 Quantum Mechanics II (3)
Prerequisite: Physics 461. Continuation of Physics 461 to
include such topics as Pauli spin-operator theory,
classification of atomic states, introduction to field
quantization. Dirac electron theory.

465 Quantum Mechanics III (3)
Prerequisites: Physics 461 and 463. Topics chosen from
such fields as: relativistic quantum mechanics, potential
scattering, formal collision theory, group theoretical
methods in quantum mechanics, electrodynamics.

467 Quantum Statistical Mechanics (3)
Prerequisites: Physics 413 and 463. Techniques for
calculation of the partition function with examples drawn
from interacting Fermi gas, interacting Bose gas,
superconductors, and similar sources.

471 Atomic and Molecular Structure (3)
Prerequisite: Physics 461. Applications of quantum
mechanics to the structure of atoms and molecules;
perturbation and variational calculations, self-consistent
fields, multiplets, angular momenta, Thomas-Fermi
model, diatomic molecules, spectral intensities.

473 Atomic Collision Theory (3)
Prerequisite: Physics 471 or 463. Basic quantum
mechanical concepts involved in atomic scattering theory.
Topics
include elastic and inelastic collisions of electrons and
ions with neutral atoms and molecules; collisions between
heavy particles; curve crossing; photo-processes; and
Coulomb wave functions.
475 Molecular Spectroscopy (3)
Prerequisite: Physics 461. Introduction to classical and quantum treatment of the vibrational and rotational structure and spectra of diatomic, linear triatomic, and simple polyatomic molecules: vibrational-rotational interactions, point group symmetry in simple infrared spectra analysis, calculations of vibrational frequencies, and normal coordinates of polyatomic atoms.

481 Physics of the Solid State (3)
Prerequisite: Physics 461. Crystal symmetry, point and space groups, lattice vibrations, phonons, one-electron model, Hartree-Fock approximation, elementary energy band theory, transport properties, the Boltzmann equation, introduction to superconductivity, semiconductors, and magnetism.

483 Selected Topics of the Solid State (3)
Prerequisite: Physics 481. Introduction to many-body perturbation theory, the use of Feynman diagrams. Green's functions, treatment of the electron-electron, phonon-phonon, and electron-phonon interactions, theory of magnetism, and theory of superconductivity.

485 Advanced Quantum Mechanics (3)
Prerequisite: Physics 465. Selected topics such as many-body problems field theory, S matrix theory and symmetries.

490 Research (variable hours)
Prerequisites: 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.

493 Oral Examination
After completion of all other program requirements, oral examinations for on campus students may be processed during the first two weeks of an academic session or at any appropriate time for off-campus students upon enrollment in Physics 493 and payment of an oral examination fee. All other students must enroll for credit commensurate with uses made of facilities and/or faculties. In no case shall this be for less than three semester hours for resident students.

495 Continuous Registration
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. Billing will be automatic as will registration upon payment.
Political Science

Faculty

Lana Stein, Professor*, Chairperson
Ph.D., Michigan State University
David B. Robertson, Professor*, Chairperson
Ph.D., Indiana University
Timothy G. O'Rourke, Teresa M. Fischer Professor in Citizenship Education and Political Science*
Ph.D., Duke University
Werner F. Grunbaum, Professor Emeritus
Ph.D., University of Chicago
Kenneth F. Johnson, Professor Emeritus
Ph.D., University of California-Los Angeles
E. Terrence Jones, Professor*
Ph.D., Georgetown University
Dennis R. Judd, Professor Emeritus
Ph.D., University of Illinois
Carol W. Kohfeld, Professor Emerita
Ph.D., Washington University
Eugene J. Meehan, Curators' Professor Emeritus
Ph.D., London School of Economics
Joyce M. Mushaben, Professor*
Ph.D., Indiana University
J. Martin Rochester, Distinguished Teaching Professor*
Ph.D., Syracuse University
Lyman T. Sargent, Professor*
Ph.D., University of Minnesota
J. Fred Springer, Professor Emeritus
Ph.D., University of California-Davis
Andrew Glassberg, Associate Professor*, Director of MPPA Program
Ph.D., Yale University
Joel N. Glassman, Associate Professor*, Director, Center for International Studies
Ph.D., University of Michigan
Barbara L. Graham, Associate Professor*
Ph.D., Washington University
Jean-Germain Gros, Associate Professor*
Ph.D., University of California-Berkeley
Ruth Iyob, Associate Professor*
Ph.D., University of California-Santa Barbara
Richard L. Pacelle, Jr., Associate Professor*
Ph.D., The Ohio State University
G. Eduardo Silva, Associate Professor*
Ph.D., University of California-San Diego
Kenneth P. Thomas, Associate Professor*
Ph.D., University of Chicago
Brady Baybeck, Assistant Professor
Ph.D., Washington University
David C. Kimmell, Assistant Professor
Ph.D., Ohio State University
Nancy T. Kinney, Assistant Professor
Ph.D., University of Colorado at Denver
Bryan W. Marshall, Assistant Professor*
Ph.D., Michigan State University

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 Presidential Award for Research and Creativity, Chancellor's Award for Research and Creativity, Chancellor's Award for Excellence in Teaching, AMOCO Good Teaching Awards, Burlington Northern Faculty Achievement Award, and Emerson Excellence in Teaching 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 1987 the Department of Political Science was designated as a Center of Eminence by the Board of Curators. This makes political science one of only two such programs on the St. Louis campus and ten in the entire University of Missouri system to be so designated. The department was selected because of its excellence in research and teaching and the potential for the department to achieve even greater national and international recognition in the 1990s.

The Greek word for "idiot" was used in ancient times to refer to one who took no interest in public affairs. 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.

General Information

Degrees and Areas of Concentration

The political science department offers undergraduate work leading to the B.A. degree in political science, 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, and politics.

Principal areas of concentration include urban politics, American political processes 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. 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, 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 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, many of which are interdisciplinary. Internships, when appropriate, may be a component of many programs. 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 cooperates with the Department of Economics in the College of Arts and Sciences and the College of Business Administration in offering a master's degree in public policy administration (MPPA). For information on the MPPA degree program, see that section in this Bulletin.

Cooperative Programs
Political science students may also study overseas, or obtain a certificate in international studies, European studies, African Studies, East Asian studies, Latin American studies, women's studies, or writing, in conjunction with their political science major. See Certificate Programs in this Bulletin and consult with the Center for International Studies.

Research in political science is encouraged for students at all levels. Assistance is available at UM-St. Louis' Public Policy Research Centers, the Center for International Studies, and the Office of Computing. 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. Financial assistance is available for qualified students; details can be obtained from the department office.

Undergraduate Studies

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 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.

Degree Requirements

Bachelor of Arts in Political Science
All majors must complete at least 36, but not more than 45, hours of political science. All students are required to take the following core curriculum:

Pol Sci
11 Introduction to American Politics
12, Introduction to Comparative Politics
200, Political Analysis
395, Senior Seminar in Political Science

Majors are urged to take PolSci 11, 12, and 200 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 PolSci 395 change from semester to semester, the course can be repeated. 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 political science courses at the 100, 200, or 300 level whose last two digits are 20-29).
American Politics (chosen from among political science courses at the 100, 200, or 300 level whose last two digits are 30-39).
Public Policy and Administration (chosen from among political science courses at the 100, 200 or 300 level whose last two digits are 40-49).
Comparative Politics (chosen from among political science courses at the 100, 200, or 300 level whose last two digits are 50-59).
Political Theory (chosen from among political science courses at the 100, 200, or 300 level whose last two digits are 60-69).

International Relations (chosen from among political science courses at the 100, 200, or 300 level whose last two digits are 80-89).

Methodology (chosen from among political science courses at the 100, 200, or 300 level whose last two digits are 00-09).

At least 18 hours of political science course work must be at the 200 or 300 level, not including PolSci 200. 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.

Graduate School Preparation This program is designed for students planning to pursue graduate studies in political science, particularly the Ph.D. degree, with the aim of a career as either an academic or practitioner (working as a researcher, policy analyst, or in some other capacity calling for advanced knowledge and skills). In addition to the core curriculum and common requirements for all political science majors, students are advised to (1) take as many political science courses at the 200 and 300 level as possible in a variety of areas (public law, American politics, comparative and international politics, etc.), (2) complete a departmental honors project based on independent research and writing in PolSci 390, Special Readings, and (3) give special consideration to courses in normative political theory (such as PolSci 262, Modern Political Thought) and research methods (such as PolSci 401, Introduction to Policy Research, which is a graduate course open to undergraduates with Graduate School approval). Students are also encouraged to take course work outside the department in microeconomics, macroeconomics, and statistics.

Legal Studies: This is an ideal program of study for double majors in political science and criminal justice or for any student interested in law school and a career in the law. In addition to the core curriculum and common requirements for all political science majors, students are advised to take PolSci 20, Foundations of Law: An Introduction to Legal Studies, and at least four of the following political science courses:

129, Women and the Law
165, American Political Thought
190, Studies in Political Science (when appropriate)
226, Law and the Individual
227, State and Local Courts
228, The Federal Judicial System: Politics, Process, and Behavior
295, Public Affairs Internship (when appropriate)
320, Constitutional Law
321, Civil Liberties
326, Judicial Decision-making
329, Studies in Public Law
385, International Law
390, Special Readings (when appropriate)

Students are also advised to take political science course work that gives them a strong background in American political institutions and processes. Those students considering practicing law in the international arena should take course work in comparative and international politics. Political science course work may be supplemented by course work in criminal justice and criminology.

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 at least five of the following political science courses:

99, The City
130, State Politics
135, Introduction to Urban Politics
165, American Political Thought
190, Studies in Political Science (when appropriate)
228, The Federal Judicial System: Politics, Process and Behavior
230, The American Presidency
231, Congressional Politics
232, African Americans and the Political System
233, Introduction to Political Behavior
234, Politics and the Media
235, Political Parties and Elections
238, Women in U.S. politics
242, Introduction to Public Policy
248, Environmental Politics
282, United States Foreign Policy
295, Public Affairs Internship (when appropriate)
332, Studies in American Politics
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 coursework in comparative and international politics as well. Depending on their specific career interest, students may wish to round out their program with coursework in other social science departments such as criminal justice, communications, economics, or social work.

**Public Policy and Administration** Designed for students interested in working inside or outside government, in a career requiring familiarity with how public policies are formulated and implemented. (Students alternatively may wish to consider the B.S. in public policy and administration degree offered by the political science department.) In addition to the core curriculum and common requirements for all majors, students are advised to take PolSci 242, Introduction to Public Policy, and at least four of the following political science courses:

140, Public Administration  
190, Studies in Political Science (when appropriate)  
240, Bureaucratic Politics  
241, The Politics of Business Regulation  
245, Urban Administration  
246, The Politics of Poverty and Welfare  
248, Environmental Politics  
257, Women, Power, and Public Policy  
282, United States Foreign Policy  
295, Public Affairs Internship (when appropriate)  
308, Program Evaluation  
340, Organizational Politics  
342, Public Personnel Management  
343, Studies in Policy Formation  
344, Public Budgeting  
346, Urban Planning and Politics  
349 Studies in Public Administration  
351, Comparative Public Policy and Administration  
390, Special Readings (when appropriate)  
394, Leadership and Management in Nonprofit Organizations  

Depending on career interests, students should add coursework in American, comparative, or international politics. Students are encouraged to develop a policy concentration in a particular policy area, such as urban, labor, health, education, and business studies, with multidisciplinary coursework taken in political science and other departments.

**International and Comparative Studies** Designed for students interested in international careers in government service (not only the U.S. State Department but also other federal government agencies), intergovernmental and non-governmental organizations, business, education, and other areas of employment. In addition to the core curriculum and common requirements for all political science majors, students are advised to take PolSci 180, World Politics, or PolSci 150, Comparing Different Worlds, and at least four of the following political science courses (some of which are international politics courses that focus on conflict and cooperation between countries, and some of which are comparative politics courses that focus on political, economic, and social change within countries):

80, Global Issues  
85, Global Ecology  
155, East Asian Politics  
160, Contemporary Political Ideologies  
190, Studies in Political Science (when appropriate)  
251, Comparative Politics of Europe  
253, Political Systems of South America  
254, Political Systems of Mexico, Central America, and the Caribbean  
256, Russia and the New Republics  
257, Women, Power, and Public Policy  
258, African Politics  
269, The Marxist Heritage  
280, Model United Nations  
282, United States Foreign Policy  
283, International Political Economy  
284, European International Relations  
285, International Organizations and Global Problem-Solving  
289, Middle East Politics  
295, Public Affairs Internship (when appropriate)  
351, Comparative Public Policy and Administration  
355, Democratization in Comparative Perspective  
359, Studies in Comparative Politics  
385, International Law  
386, Studies in War and Peace  
388, Studies in International Relations  
390, Special Readings (when appropriate)  

Students interested in working for the U.S. foreign service, American-based multinational companies, and nonprofit organizations should also take coursework that familiarizes them with the American political system and how public policy is made. Students should explore the various interdisciplinary area studies and international studies certificate programs offered through the Center for International Studies.

**Bachelor of Science in Public Policy and Administration**  
The BSPA degree has two emphasis areas. The first is a public administration track 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 track 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.

All BSPA majors must complete at least 33, but no more than 45, hours in political science. The following core curriculum is required of all BSPA majors:

**Political Science**
11, Introduction to American Politics
12, Introduction to Comparative Politics
140, Public Administration
200, Political Analysis
242, Introduction to Public Policy
295, Public Affairs Internship
395, Senior Seminar in Political Science

**Econ 51,** Principles of Microeconomics
**Econ 52,** Principles of Macroeconomics
**CCJ 220,** Statistical Analysis in Criminology and Criminal Justice or
**Sociology 220,** Sociological Statistics or
**Econ 265,** Economic Statistics

In addition, students must provide a demonstration of computer proficiency through one of the following:
**BA 103,** Computers and Information Systems, extension courses, or other study approved by the BSPA coordinator.

BSPA 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): PolSci 11, 12, 140, 200, 242, 295, and 395.

**Public Administration Emphasis Area**
In addition to the core curriculum requirements for all BSPA majors, students in the public administration emphasis area are required to complete the following courses:
**PolSci 342,** Public Personnel Management
**PolSci 344,** Public Budgeting
**BA 140,** Fundamentals of Financial Accounting

Students in the public administration emphasis area also must take two of the political science courses listed under policy and institutions courses below, as well as take at least two additional elective courses chosen from among that list or any other political science offerings.

**Public Policy Emphasis Area**
In addition to the core curriculum requirements for all BSPA majors, students in the public policy emphasis area must take four political science courses, preferably selected from the policy and institutions courses listed below but which may include other political science course offerings as well.

Students will adopt a policy concentration of at least 15 credit hours. 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 BSPA coordinator, will select courses from related disciplines in addition to taking two more political science courses related to the policy area beyond the four political science courses already required.

**Policy and Institutions Courses:**
45, Introduction to Labor Studies
130, State Politics
135, Introduction to Urban Politics
228, The Federal Judicial System: Politics, Process, and Behavior
230, The American Presidency
231, Congressional Politics
240, Bureaucratic Politics
243, Union Leadership and Administration
245, Urban Administration
246, The Politics of Poverty and Welfare
248, Environmental Politics
340, Organizational Politics
343, Studies in Policy Formation
346, Urban Planning and Politics
351, Comparative Public Policy and Administration
394, Leadership and Management in Nonprofit Organizations

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.

**Requirements for the 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 (Political Science 295) may count no more than three hours of the internship toward the minor.

**Minor in Political Science, General**
Fifteen hours, chosen from among all political science courses.
Minor in American Politics
Fifteen hours, chosen from the following political science courses:
11, Introduction to American Politics
130, State Politics
135, Introduction to Urban Politics
165, American Political Thought
228, The Federal Judicial System: Politics, Process, and Behavior
230, The American Presidency
231, Congressional Politics
232, African Americans and the Political System
233, Introduction to Political Behavior
234, Politics and the Media
235, Political Parties and Elections
238, Women in U.S. Politics
240, Bureaucratic Politics
241, The Politics of Business Regulation
242, Introduction to Public Policy
282, United States Foreign Policy
295, Public Affairs Internship (when appropriate)
332, Studies in American Politics
333, Mock Constitutional Convention
390, Special Readings (when appropriate)

Minor in Comparative Politics
Political Science 12, Introduction to Comparative Politics, plus 12 hours from the following political science courses:
150, Comparing Different Worlds
155, East Asian Politics
251, Comparative Politics of Europe
253, Political Systems of South America
254, Political Systems of Mexico, Central America, and the Caribbean
256, Russia and the New Republics
257, Women, Power and Public Policy
258, African Politics
351, Comparative Public Policy Administration
355, Democratization in Comparative Perspective
359, Studies in Comparative Politics
390, Special Readings (when appropriate)

Minor in International Relations
Fifteen hours, chosen from the following political science courses:
80, Global Issues
85, Global Ecology
180, World Politics
282, United States Foreign Policy
283, International Political Economy
284, European International Relations
285, International Organizations and Global Problem-Solving
289, Middle Eastern Politics
295, Public Affairs Internship (when appropriate)
385, International Law
386, Studies in War and Peace
388, Studies in International Relations
390, Special Readings (when appropriate)

Minor in Political Theory
Fifteen hours, chosen from the following political science courses:
160, Contemporary Political Ideologies
165, American Political Thought
261, Ancient and Medieval Political Thought
262, Modern Political Thought
268, Feminist Political Theory
269, The Marxist Heritage
368, Studies in Political Theory
390, Special Readings (when appropriate)

Minor in Public Administration
Political Science 140, Public Administration, plus 12 hours chosen from the following political science courses:
240, Bureaucratic Politics
241, Politics of Business Regulation
242, Introduction to Public Policy
245, Urban Administration
295, Public Affairs Internship (when appropriate)
308, Program Evaluation
340, Organizational Politics
342, Public Personnel Management
343, Studies in Policy Formation
344, Public Budgeting
346, Urban Planning and Politics
349, Studies in Public Administration
351, Comparative Public Policy and Administration
390, Special Readings (when appropriate)

Minor in Public Law
Fifteen hours, chosen from the following political science courses:
20, Foundations of Law: An Introduction to Legal Studies
129, Women and the Law
226, Law and the Individual
227, State and Local Courts
228, The Federal Judicial System: Politics, Process, and Behavior
320, Constitutional Law
321, Civil Liberties
326, Judicial Decision-Making
329, Studies in Public Law
385, International Law
390, Special Readings (when appropriate)

Minor in Public Policy
Political Science 242, Introduction to Public Policy, plus 12 hours chosen from the following political science courses:
130, State Politics
135, Introduction to Urban Politics
140, Public Administration
230, The American Presidency
241, The Politics of Business Regulation
245, Urban Administration
246, The Politics of Poverty and Welfare
248, Environmental Politics
257, Women, Power, and Public Policy
295, Public Affairs Internship (when appropriate)
308, Program Evaluation
344, Public Budgeting
346, Urban Planning and Politics
351, Comparative Public Policy and Administration
390, Special Readings (when appropriate)

Minor in Urban Politics
Political Science 135, Introduction to Urban Politics, plus
12 hours chosen from the following political science
courses:
232, African-Americans and the Political System
245, Urban Administration
246, The Politics of Poverty and Welfare
295, Public Affairs Internship (when appropriate)
346, Urban Planning and Politics
390, Special Readings (when appropriate)

Bachelor of Arts with Teacher Certification

For information, refer to the College of Education section
in this Bulletin.

Bachelor of Science in Education: Emphasis in Social
Studies
The Political Science requirements are the same as for the
B.A. degree except students fulfill the College of
Education general education requirements rather than
those of the College of Arts and Sciences. For
information, refer to the College of Education section in
this Bulletin.

Graduate Studies

Master of Arts in Political Science
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 400
level and 12 hours must be in core courses in political
science, including:
401, Introduction to Policy Research

and three of the following political science courses:
410, Introduction to Policy Analysis
420, Proseminar in Public Law
430, Proseminar in American Politics
440, Proseminar in Public Policy Administration
450, Proseminar in Comparative Politics
460, Proseminar in Political Theory
470, Proseminar in Urban Politics
480, Proseminar in International Relations

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 midprogram 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.

Ph.D. in Political Science

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 precareer and midcareer
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
baccalaureate or graduate degrees. Past graduate work
will be credited toward degree requirements as
appropriate. Applicants must submit a) complete
academic transcripts, b) three letters of recommendation,
c) aptitude tests of the GRE and d) 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 intermediate economics during their course of study. Course requirements are as follows:

Core courses (21 credit hours)
21 credit hours will be required in the areas of research methods, normative and empirical theory, 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.

Policy Concentration (15 credit hours)
Students, in consultation with the program director, will develop expertise in a substantive policy area. Policy concentrations (many interdisciplinary) include:

- American National Policy
- Urban Politics and Planning
- Comparative/International Policy
- Policy Analysis and Research
- Public Budgeting and Finance
- Labor and Employment
- Criminal Justice
- 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 two general examinations, the first covering the fields of public policy institutions, processes, and analysis, and the second covering the student's chosen subfield and area of policy concentration. The degree is awarded upon completion and defense of the Ph.D. dissertation.

Career Outlook

Bachelor of Arts, Bachelor of Science, and Master of Arts in Political Science

Political science graduates have done well in obtaining appropriate employment and in pursuing graduate education. Majors develop communications and decision-making skills, learn to analyze complex policy issues, both domestic and international in scope, and have a thorough understanding of government and politics. Political science is a particularly good undergraduate major for prelaw students. Many other majors pursue graduate education in business, education, public administration, public policy administration, journalism, and many other fields. Guides to careers in political science are available in the department office.

Ph.D. in Political Science
The Ph.D. in political science prepares students for three career areas: 1) government leadership and management positions at the local, state, and federal levels (both for new employees and in-service employees); 2) careers in the private sector, particularly positions in public affairs, policy research, and governmental relations departments of corporations, as well as consulting firms and nonprofit organizations; and 3) research and teaching careers in academic institutions.

Requests for further information about the M.A. or Ph.D. program should be sent to the Director of Graduate Studies, Department of Political Science, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, MO 63121-4499.
Course Descriptions


* Course may fulfill the Humanities [H] or Social Sciences [SS] breadth of study requirement.

11 Introduction to American Politics (3)
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.

12 Introduction to Comparative Politics (3)
This course introduces students to the world of comparative systems of governance. It examines similarities and differences in the basic political structures, institutions and governmental processes in advanced industrial and industrializing countries. It also provides an understanding of fundamental comparative methods based on individual country or case studies. Particular attention is paid to ideologies, political parties, legislatures, and public policy.

15 Women and Politics in the Developing World (3)
Women play a central role in the transformation of political, economic, cultural and gender relations in developing nations. This course examines the political role of women in these transformations. In particular, the course examines ways that modernity, universal education, the market economy and globalization have widened the scope of women's public activities; the emergence of social movements driven by the transformation of economic and political roles brought about by the inclusion of women in the political arena; the re-interpretation of religious doctrines, especially those that emphasize women's "return" to the private sphere and legitimate the denial of women's political rights. Fulfills the cultural diversity requirement.

20 Foundations of Law: An Introduction to Legal Studies (3)
( Same as CCJ 20 and Interdisciplinary 20). 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.

45 Introduction to Labor Studies (3)
( Same as Interdisciplinary 45). This course covers many topics important to the role of unions in the American political system and American society from a labor perspective. Topics include the role of workers in current and future times, unions' institutional structure, collective bargaining strategies and obstacles for union organizing, recent union campaigns, labor's political role, and the relationship between labor and the media.

80 Global Issues (3)
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.

85 Global Ecology (3)
Prerequisite: Biology 001. Must be taken concurrently with Biology 130 for three hours biology credit and three hours of political science credit. A course team-taught by the Biology and Political Science departments, aimed particularly at elementary education majors. Combines natural science and social science perspectives in taking a global view of a variety of environmental concerns, such as air and water pollution, climate change, conservation of nonrenewable resources, and other issues. Examines the underlying scientific dimension, as well as the political-economic-social aspects of problem-solving at local, national, and international levels. Features labs and field trips in addition to lecture and discussion. Three hours of lecture, one hour and fifteen minutes discussion, and three and one-half hours laboratory per week.

99 The City (3)
( Same as CCJ 99, Sociology 99, and Interdisciplinary 99.) An interdisciplinary course. Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburbia and the metropolitan area, ethnic groups, stratification, and Psychological implications of urban living. This course is primarily for freshmen and sophomores. It is open to juniors and seniors with the instructor's permission.

129 Women and the Law (3)
Legal position of women in the United States, emphasizing constitutional law, criminal law, domestic relations, and fair employment practice laws. Course fulfills the state requirement.
130 State Politics (3)  
Prerequisite: PolSci 11 or consent of instructor. An examination of contemporary state politics in the United States; social, economic, and political determinants of policies; federal-state-local relations; elections, interest groups, and participation; executive, legislative, and judicial institutions and policies, and their impact. Course fulfills the state requirement.

135 Introduction to Urban Politics (3)  
Prerequisite: PolSci 11 or consent of instructor. Examination of structure and process of politics in the urban community, with emphasis on their relationships to community power structures. Course fulfills the state requirement.

140 Public Administration (3)  
Prerequisite: PolSci 11 or consent of instructor. Survey of public administration, with reference to organization, financial administration, personnel management, and judicial control of the administrative process. Course fulfills the state requirement.

150 Comparing Different Worlds (3)  
This course focuses on the role of political institutions, economic structures and social groups in explaining differences in forms of government and levels of socioeconomic development. It explores in detail one or more of these themes in cases drawn from developing and developed nations.

155 East Asian Politics (3)  
An introduction to the study of the Chinese and Japanese political systems. Examination of the cultural context that has shaped the path of political development for both states. This course fulfills the Cultural Diversity requirement.

160 Contemporary Political Ideologies (3)  
An introduction to the major political ideologies of the world today. Emphasis is placed on democracy, feminism, Marxism, and nationalism.

165 American Political Thought (3)  
History of political thought in the United States from colonial times to the present.

180 World Politics (3)  
An introduction to the field of international relations, covering such topics as nationalism, power, foreign policy-making, diplomacy, war, arms control and disarmament, interdependence, the regulation of conflict, and other aspects of politics among nations.

190 Studies in Political Science (3)  
Selected topics in political science.

200 Political Analysis (3)  
An introduction to political analysis, emphasizing both the logic of inquiry and practical methods. Students learn about the construction and evaluation of theories that relate to real-world politics. They 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.

209 American Government for the Secondary Classroom (3)  
(Same as Sec Ed. 209) Prerequisites: Secondary Education 213 and Political Science 11, Graduate standing or consent of 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 themes of American government, on expanding bibliography, and on choosing methods of inquiry for use in an interactive classroom. Either History/Sec Ed 257 or 258 or Political Science/Sec. Ed. 209 must be taken the same semester as History/Sec Ed 255 except with special consent of the Social Studies Coordinator. Can be counted towards the Political Science major requirement, but not the American Politics subgroup. Counts towards Social Studies Certification.

226 Law and the Individual (3)  
(Same as CCJ 226.) Prerequisite: PolSci 11, or 20, or consent of instructor. An examination of the formal and informal aspects and processes of the American judicial system and its effect on the individual. The course will cover criminal and civil law, public and private law, state and federal courts, and the processes by which disputes are transformed into legal actions. Topics include judicial selection and recruitment, plea bargaining, the impact and implementation of judicial decisions, the examination of a number of substantive areas of law like contracts and torts, and the role of courts in policymaking and dispute resolution. Course fulfills the state requirement.
228 The Federal Judicial System: Politics, Process, and Behavior (3)
Prerequisite: PolSci 11, or 20, or consent of instructor.
The study of the federal courts as a political system.
Analysis of organization, procedures, and norms of the Supreme Court and lower federal courts. Consideration of judicial recruitment, attitudes, and decision making as well as the impacts and limitations of judicial policy making. Course fulfills the state requirement.

230 The American Presidency (3)
Prerequisite: PolSci 11 or consent of instructor. Study of the constitutional, political, legislative, and administrative roles played by the American chief executive in the development of public policy. Course fulfills the state requirement.

231 Congressional Politics (3)
Prerequisite: PolSci 11 or consent of instructor. An examination of the Congress of the United States, its history and evolution, its contemporary politics, and its role in the national policy-making process. Topics 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 role of Congress in foreign policy, economic policy, and social-welfare policy will be examined. Course satisfies the state requirement.

232 African Americans and the Political System (3)
Prerequisite: PolSci 11 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.

233 Introduction to Political Behavior (3)
Prerequisite: PolSci 11 or consent of instructor. An introduction to political behavior employing perspectives from both political psychology and political sociology. Subjects include political socialization, the character of public opinion, citizen participation, group dynamics, the social determination of reality, and the underlying bases of leadership and authority. Course fulfills the state requirement.

234 Politics and the Media (3)
Prerequisite: PolSci 11 or consent of instructor. An analysis of the role the media play in shaping American political life. The first part of the course examines the organizational structures, the economic and psychic incentives, and the social and professional norms that define how television and newspapers report news about public affairs. The second part then considers the nature of a mass-communications society by looking at how reality is defined, the susceptibility of mass publics to persuasion and propaganda, the peculiar form of media election campaigns, and the manner in which the media link changes the basic character of a citizenry.

235 Political Parties and Elections (3)
Prerequisite: PolSci 11 or consent of instructor. An examination of the part played by parties and elections in American politics. Topics include the historical development of the party system, the organization and management of political parties and campaigns, contemporary changes in the nature of electoral politics, and the effects of elections on public policy. Course fulfills the state requirement.

238 Women in U.S. Politics (3)
Prerequisite: PolSci 11 or consent of instructor. This course focuses on the relationship between gender and organized politics in the United States. Topics to be addressed include the historical development of women's activism in politics, women as political candidates and elected officials, women's organizations in American politics, women and public policy, women's rights and issues, and women and political leadership. Throughout the class, emphasis will be placed not only on examining the role of women in politics, but also on understanding the role of gender in the construction and evaluation of political institutions, practices and public policies in the United States. Course fulfills the state requirement.

240 Bureaucratic Politics (3)
Prerequisite: PolSci 11 or consent of instructor. Examination of the policy-making process within public organizations and the forces influencing the making of bureaucratic policy. Study of the role of the bureaucracy as one of several "actors" in the larger policy process. Course fulfills the state requirement.

241 Politics of Business Regulation (3)
Prerequisite: PolSci 11 or consent of instructor. This course will examine the role of governmental decision-making processes in regulatory policy, including congressional politics, presidential initiatives, administrative rulemaking, and society wide constraints. The impact of government regulation and alternative means for accomplishing regulatory goals (e.g., mandatory standards or incentive systems) will also be considered. Bureaucratic incentives and the role of the courts will be emphasized. Selected areas of regulation which may be covered include: equal employment policies, occupational health and safety policies, environmental policies, employment policies, and urban policies.
242 Introduction to Public Policy (3)
Prerequisite: PolSci 11 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. Course fulfills the state requirement.

243 Union Leadership and Administration (3)
Prerequisite: Consent of instructor. This course will focus on the roles and challenges of union leadership in a changing environment. Topics will include the union leader's roles as representative, organizer and educator as well as administrative responsibilities within the union and the relationship with enterprise management in both adversarial and participatory situations. Options for leadership style and organizational models will be discussed and explored in both theory and practice. Leaders will develop their skills of motivation, speaking, strategic planning and managing complex campaigns and diverse organizations.

245 Urban Administration (3)
Prerequisite: PolSci 11 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. Course fulfills the state requirement.

246 The Politics of Poverty and Welfare (3)
Prerequisite: PolSci 11 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.

248 Environmental Politics (3)
Prerequisite: PolSci 11 or consent of instructor. This course examines the process of environmental policy-making and key environmental issues. Topics include national and international policies toward air and water pollution, energy use, solid and toxic waste disposal, global warming, overpopulation, and wilderness and wildlife conservation.

251 Comparative Politics of Europe (3)
Prerequisite: PolSci 12 or consent of instructor. An introduction to the major political systems of Europe. The course will emphasize political culture, political parties, interest groups, and political behavior. It will also focus on political institutions and policy making. While individual countries will be examined separately, the course will also emphasize comparison between systems.

253 Political Systems of South America (3)
Prerequisite: PolSci 12 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 fulfills the Cultural Diversity requirement.

254 Political Systems of Mexico, Central America, and the Caribbean (3)
Prerequisite: PolSci 12 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 fulfills the Cultural Diversity requirement.

256 Russia and the New Republics (3)
Prerequisite: PolSci 12 or consent of instructor. Examination of political-economic conditions responsible for the creation, collapse, and reconstruction of the former Soviet Union, with emphasis on new elites and interest groups, problems of democratic transition, ethnic conflict and socio-economic reform.

257 Gender, Race and Public Policy (3)
Prerequisite: PolSci 12 or consent of instructor. Compares women's day-to-day leadership and participation patterns across a wide variety of political-economic contexts, emphasizing their performance as elective and administrative office holders. It examines the experiences of individual female leaders, long-term nomination and recruitment strategies, and the larger political opportunity structure awaiting women beyond the year 2000.

258 African Politics (3)
Prerequisite: PolSci 12 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.

259 Politics, Leadership and the Global Gender Gap (3)
Prerequisites: PolSci 012 or consent of instructor. Compares women's day-to-day leadership and participation patterns across a wide variety of political-economic contexts, emphasizing their performance as elective and administrative office holders. It examines the experiences of individual female leaders, long-term nomination and recruitment strategies, and the larger political opportunity structure awaiting women beyond the year 2000.
261 Ancient and Medieval Political Thought (3)
Study of political thought from Plato to Machiavelli.

262 Modern Political Thought (3)
Study of political thought from Machiavelli to the present.

268 Feminist Political Theory (3)
A study of the history of feminist political thought with an emphasis on contemporary concerns. Issues to be considered include the feminist theories of the state, gender and justice, and equality and difference.

269 The Marxist Heritage (3)
(Same as Philosophy 269 and Interdisciplinary 269.)
Study of Marx and leading Marxists. Designed to evaluate their influence on recent political, economic, and social thought and institutions.

280 Model United Nations (1-3)
Prerequisite: Consent of instructor. Students in this course will be members of the UM-St. Louis delegation to the Midwest Model United Nations, a "mock UN" roleplaying experience involving various universities representing UN member countries. Students are expected to develop knowledge about the UN and do research on a selected country and issue area (for example, terrorism or economic development). May be repeated up to a maximum of three credit hours.

282 United States Foreign Policy (3)
Prerequisite: PolSci 11, or 12, or consent of instructor. Examination of the factors influencing the formation and the execution of United States foreign policy, with a focus on specific contemporary foreign policy issues.

283 International Political Economy (3)
Prerequisite: 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.

284 European International Relations (3)
Prerequisite: PolSci 11, or 12 or consent of instructor. European international relations since World War II. Emphasis upon developments from the Cold War to Détente emphasizing such concepts as containment, Truman Doctrine, Marshall Plan, NATO, WTO, community building, force structures, and security.

285 International Organizations and Global Problem Solving (3)
Prerequisite: PolSci 11 or 12, or consent of instructor. Introduction to the study of international organization. The course focuses on relationships between nation-states and "nonstate" actors (e.g., global intergovernmental organizations such as the United Nations, and nongovernmental organizations such as multinational corporations) in world politics and on the role of international institutions in such problem areas as economic development, management of resources, and control of violence across national boundaries.

289 Middle Eastern Politics (3)
Prerequisite: PolSci 11, or 12, 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 effects of oil and the military will also be considered. Course fulfills the Cultural Diversity requirement.

295 Public Affairs Internship (1-6)
Prerequisites: Junior standing and consent of instructor. Independent study involving work with an appropriate public or private agency. A maximum of 6 credit hours may be earned.

304 Survey Research Practicum (3)
(Same as Econ 304 and Sociology 304.) Prerequisites: 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.

306 Theory of Decisions and Games (3)
Prerequisite: Six hours of Philosophy and junior standing, PolSci 401 (or the equivalent) or consent of instructor. (Same as Philosophy 365). 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.

308 Program Evaluation (3)
Prerequisites: PolSci 11, or 140, and one of the following: BA 250, Sociology 220, Criminology and Criminal Justice 220, or consent of instructor. Study of techniques and applications for evaluating the impact of public programs.

318 Social Choice in Political-Economic Systems (3)
Prerequisites: Two courses in Economics, Political Science, or Sociology. A study of the mechanisms of social choice from the standpoint of individuals and institutions maximizing their objectives. This area draws on work done by sociologists, political scientists, and economists.
320 Constitutional Law (3)
Prerequisite: PolSci 11, or 20, or consent of instructor.
Study of leading American constitutional principles regarding legislative, executive, and judicial power, federalism, the commerce clause, and economic due process as they have evolved through the important decisions of the U.S. Supreme Court. Course fulfills the state requirement.

321 Civil Liberties (3)
Prerequisite: PolSci 11, or 20, or 320, or consent of instructor. Civil rights in the American constitutional context, emphasizing freedom of religion, freedom of expression, minority discrimination, and the rights of defendants. Course fulfills the state requirement.

322 Labor Law (3)
Prerequisite: Consent of instructor. In this course, participants will examine the role of government in the regulation of labor-management relations in the United States. While the focus of the course will be on federal laws regulating private sector labor relations, parallel issues addressed in the Railway Labor Act and state public sector labor relations law will also be covered. Specific topics include the legal framework for the organization of workers, definition of prohibited or unfair labor practices of employers and unions, legal regulation of the collective bargaining process, regulation of the use of economic weapons in labor disputes, enforcement of collective bargaining agreements and the regulation of internal trade union activities.

326 Judicial Decision-Making (3)
Prerequisite: PolSci 11, or 20, or consent of instructor. The purpose of this course is to investigate the processes by which cases get to the U.S. Supreme Court, are accepted or denied, and are decided. The means for investigating this process will be a semester-long simulation. Students will assume the roles of the current justices of the Supreme Court, the Solicitor General, and other litigants in the judicial system. Course fulfills the state requirement.

329 Studies in Public Law (3)
Prerequisite: PolSci 11, or 20, or consent of instructor. Selected topics in public law. May be repeated.

332 Studies in American Politics (3)
Prerequisite: PolSci 11 or consent of instructor. Selected topics in American politics. May be repeated.

333 Mock Constitutional Convention (3)
Prerequisite: PolSci 11 or consent of instructor. An active exercise in political imagination. Students make proposals and bargain with each other to write a constitution for the United States in the 21st century. Students are encouraged to develop new views of what is a desirable society and to gain a richer appreciation of how practical politics are conducted. The course is designed for majors and nonmajors who enjoy political discussion and have a genuine interest in political life. Course fulfills the state requirement.

340 Organizational Politics (3)
Prerequisite: PolSci 11, or 140, or consent of instructor. Examination of public sector organizations and the range of factors affecting their operation. Specific areas of attention will include theories of organization structure and management, decision theory, organizational/environment interactions, interorganizational relations, and theories of organizational change and development.

341 Collective Bargaining (3)
Prerequisite: Consent of instructor. This course involves a study of collective bargaining processes including contract negotiations, contract administration, and methods for the resolution of bargaining disputes. Both theoretical and applied issues in collective bargaining will be addressed. Specific topics include the economic determination of bargaining power, legal constraints on the bargaining process, negotiations strategies and techniques, and the use of mediation and arbitration in the resolution of bargaining disputes.

342 Public Personnel Management (3)
Prerequisite: PolSci 11, or 140, or consent of instructor. A study of personnel practices in the public sector, including recruitment, job development, labor relations, and administration of equal employment/affirmative action programs.

343 Studies in Policy Formation (3)
Prerequisite: Consent of instructor. Selected topics in policy formation. May be repeated.

344 Public Budgeting (3)
Prerequisite: PolSci 11 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.

346 Urban Planning and Politics (3)
Prerequisite: PolSci 11, or 140, or consent of instructor. Examination of the political processes of urban areas as they relate to the planning of services and facilities. Course fulfills the state requirement.
347 Introduction to Environmental Law and Policy (3)
Prerequisite: Senior or graduate standing or consent of instructor. Survey of the most prominent federal laws governing environmental compliance and pollution control. Examines laws applicable to environmental impact statements, air pollution, water pollution, and hazardous waste. Addresses policy concerning the relative merits of using technological capabilities as compared with health risks in setting environmental standards. Discusses the need for environmental regulation to protect societal resources.

349 Studies in Public Administration (3)
Prerequisite: PolSci 11, or 140, or consent of instructor. Selected topics in public administration. May be repeated.

351 Comparative Public Policy and Administration (3)
Prerequisite: PolSci 12 or consent of instructor. A comparative study of the characteristics of public administrators, their institutions and environments in Western democratic, developing nations, and communist political systems.

355 Democratization in Comparative Perspective (3)
Prerequisite: PolSci 12 or consent of instructor. This course explores the meaning of democracy and the nature of transitions to democracy, particularly the processes of political liberalization and democratization that follow the breakdown of authoritarian rule. Cases will be drawn from Latin America and other regions.

359 Studies in Comparative Politics (3)
Prerequisite: PolSci 12 or consent of instructor. Selected topics in comparative politics. May be repeated.

368 Studies in Political Theory (3)
Prerequisite: PolSci 11, or 12, or consent of instructor. Selected topics in political theory. May be repeated.

385 International Law (3)
Prerequisite: PolSci 11, or 12, 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.

386 Studies in War and Peace (3)
Prerequisites: Junior standing and PolSci 11, or 12, 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.

388 Studies in International Relations (3)
Prerequisite: PolSci 11, or 12, or consent of instructor. Selected topics in international relations. May be repeated.

390 Special Readings (1-10)
Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences. May be repeated.

391A Management Issues in Nonprofit Organizations: Staff Management Issues (1)
Prerequisite: Junior Standing. (Same as Social Work 391A and Public Policy Administration 391A). 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.

391B Management Issues in Nonprofit Organizations: Legal Issues in Governing and Managing Nonprofit Organizations (1)
Prerequisite: Junior Standing. (Same as Social Work 391B and Public Policy Administration 391B). 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.

391C Management Issues in Nonprofit Organizations: Financial Issues (1)
Prerequisite: Junior Standing. (Same as Social Work 391C and Public Policy Administration 391C). 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.

394 Leadership and Management in Nonprofit Organizations (3)
(Same as Public Policy Administration 394, Social Work 394, and Sociology 308.) Prerequisite: Junior standing. 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.
395 Senior Seminar in Political Science (3)
Prerequisites: Senior standing and consent of instructor.
Required of all political science majors in their last year of course work as an integrative capstone experience.
Emphasis is on 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.
Topics vary. May be repeated. This course is not available for graduate student credit.

396 American Philanthropy and Nonprofit Resources Development (3)
Prerequisite: Junior standing or consent of instructor.
(Same as Social Work 396 and Public Policy Administration 396). 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, from planning through donor relations.

400 Analytic Perspectives in Political Science (3)
An introduction to the graduate study of political science. The course presents a number of analytic approaches to the scientific examination of a wide variety of political phenomena.

401 Introduction to Policy Research (3)
(Same as Public Policy Administration 401.) Procedures for testing explanations, including research design, principles of measurement, probability sampling, methods of data collection, and techniques for analyzing data.

402 Intermediate Techniques in Policy Research (3)
Prerequisites: Graduate standing and PolSci 401.
Elementary distribution theory, statistical inference, and an introduction to multiple regression. Emphasis on practical applications.

403 Advanced Techniques in Policy Research (3)
Prerequisites: Graduate standing and PolSci 402. Selected topics in policy research emphasizing forecasting, modeling, and estimation.

404 Multi-Method Research Design (3)
Prerequisites: PolSci 403 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.

405 Directed Readings in Research Methods (1-10)
Independent study through readings, reports, research projects, and conferences.

406 Survey Research Methods (3)
Prerequisites: An introductory statistics course (such as Soc. 220) or consent of instructor. A course on the principles and procedures for conducting survey research. Topics include: forming questions and scales, survey design, sampling methods, data preparation and analysis, and presentation of results.

410 Introduction to Policy Analysis (3)
(Same as Public Policy Administration 410.) Systematic development of a critical/analytic base for dealing with public policy.

411 Seminar in Policy Analysis (3)
Prerequisite: PolSci 410. Evaluation and criticism of contemporary public policies in selected areas.

414 Topics in Public Policy Analysis (3)
Intensive analysis of a specific public policy area such as housing, budgeting, integration, planning, metropolitan reorganization. Course may be repeated.

415 Directed Readings and Research in Public Policy (1-10)
(Same as Public Policy Administration 415.) Prerequisite: Consent of Instructor. Independent study through readings, reports, research projects, and conferences. May be repeated for credit, provided the subject matter is different.

416 Family Policy (3)
Prerequisites: SW 410 or equivalent or consent of instructor and graduate standing. (Same as Social Work 452 and Sociology 452). 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.
417 Income and Pension Policy for the Aged (3)
Prerequisite: Graduate standing or consent of instructor.
(Same as GER 417 and PPA 417 and SW 417.) (MSW student normally take the social policy foundation course prior to enrolling in this course.) Examination of federal, state, and local policies that affect the economic well-being of the elderly. The development of social security programs and pension programs is explored within historical context. Emphasis is placed on the analysis of current policy problems and proposed solutions.

418 Social and Economic Development Policy (3)
Prerequisites: SW 410 or equivalent or consent of
instructor and graduate standing. (Same as SW 462).
Examines major trends and alternatives in social and
economic development policy in state, national, and
international perspectives. Students will develop skills in
policy analysis and development.

419 Cases in Public Policy Analysis (3)
(Same as Public Policy Administration 419.) Intensive
analysis of several public policy cases. Cases will be
problem-solving exercises in areas such as personnel
management, program financing, budget preparation, and
planning.

420 Proseminar in Public Law (3)
Prerequisite: Graduate standing. Study of judicial systems
and processes (judges, courts, litigants, and juries) and
evaluation of legal policies (compliance, impact, and
deterrence).

421 Seminar in Public Law (3)
Research problems and designs, models and approaches
to the study of public law. May be repeated for credit
when the subject matter is different.

422 Law, Courts, and Public Policy (3) Prerequisite:
Graduate standing. Analysis of public policies, as
represented by laws, court decisions, and agency
adjudication, judicial review, discrimination, affirmative
action, urban planning, social welfare, intergovernmental
relations, environmental law, freedom of information, and
privacy concerns will be surveyed. The relationship
between courts and the Constitution, courts and
legislatures, and courts and the administrative process will
be stressed.

425 Directed Readings and Research in Public Law (1-10)
Independent study through readings, reports, research
projects, and conferences.

430 Proseminar in American Politics (3)
Study of individual and group political behavior,
including socialization, participation, consensus
formation, representation, and legislative and judicial
behavior.

431 Seminar in American Politics (3)
Research problems and design in American political
process and behavior. May be repeated for credit when
the subject matter is different.

432 Intergovernmental Relations (3)
Prerequisite: Graduate standing. In the United States,
nearly all domestic policy is implemented through an
extremely complex intergovernmental system in which
the federal government administers grants-in-aid or sets
standards for states and localities that administer
programs. This course will analyze this policy system by:
(1) tracing the origins and evolution of American
federalism; (2) analyzing the grants-in-aid system,
especially the New Deal; (3) comparing the United States
system with federal and unitary policy systems in other
industrialized nations.

433 Elections, Public Opinion, and Public Policy (3)
Prerequisite: Graduate standing. This course provides an
opportunity for graduate students to examine electoral
politics and democratic governance. It includes an
historical review of the dynamics of the American party
system, paying particular attention to the ways that
politicians translate social and economic change into the
political system. It surveys the scientific community's
understanding about mass political behavior, covering
such topics as the nature of political beliefs, partisanship,
political trust, tolerance, ideology, motives for
participation, and so on. Then it gives particular attention
to the instruments that seem to shape public opinion - the
family, the social peer group, and the mass media.
Finally, it presents analyses of the contemporary political
system in terms of the links between citizen preferences,
electoral outcomes, and the government's provision of
public policies.

435 Directed Readings and Research in American
Politics (1-10)
Independent study through readings, reports, research
projects, and conferences.

440 Proseminar in Public Administration (3)
(Same as Public Policy Administration 440.) Examination
of major approaches to analyzing public policies and their
administration. Emphasis is on the effects of
administrative organization and procedures on policy
decisions and their impacts. Specific topics may include
administrative accountability, intergovernmental
relations, public-private interaction, implementation
processes, bureaucratic expertise, the legal environment
of public policy administration, and public service and
merit issues.

441 Seminar in Public Administration (3)
Research problems and design in public administration.
May be repeated for credit when the subject matter is
different.
442 The Policy Process (3)
Prerequisite: Graduate standing. The course will require a major research project using federal documents and other primary sources of information about the United States policy process. Topics will include the sources of public policy; the policy agenda; policy design, legitimation, and implementation.

443 Health Care Policy (3)
Prerequisite: Graduate standing or consent of instructor. (Same as PPA 443, GER 443 and SW 443.) (MSW students will normally take the social policy foundation course before enrolling in this course). 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.

444 Seminar in Public Policy and Aging (3)
(Same as Public Policy Administration 444 and Gerontology 444.) Prerequisite: 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.

445 Directed Readings and Research in Public Administration (1-10)
Independent study through readings, reports, research projects, and conferences.

446 Selected Topics in Health Care Policy (3)
(Same as Public Policy Administration 446 and Sociology 446.) Prerequisite: Consent of instructor. The study of specialized issues and methods relating to health care policy. May be repeated for credit, provided the subject matter is different.

447 Seminar in Public Policy (3)
Prerequisite: Graduate Standing. Research seminar aimed at producing a substantial research project in the areas of public policy processes and outcomes. The seminar may focus on specific policy processes such as agenda-setting, policy formulation, or policy adoption, or it may focus on the politics of specific policy areas such as environmental programs, social legislation or regulation. May be repeated for credit when the subject matter is different.

448 Political Economy and Public Policy (3)
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 policy-making 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.

449 Human Resources in the Public Sector (3)
Prerequisite: PPA 460 or consent of instructor. (Same as SW 469 and PPA 449.) Presents an overview of personnel and labor relations in the public sector. Particular emphasis placed 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. The topics 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.

450 Proseminar in Comparative Politics (3)
Classification and topology of political systems; structural-functional analysis; political culture, ideology, affiliation and participation; decision-making processes; political roles; organization of authority.

451 Seminar in Comparative Politics (3)
Research problems and design in comparative politics. May be repeated for credit when the subject matter is different.

452 Public Policy of Conservation and Sustainable Development (3)
(Same as Biology 445.) Prerequisites: Graduate standing in Political Science or Biology 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.

455 Directed Readings and Research in Comparative Politics (1-10)
Independent study through readings, reports, research projects, and conferences.

457 Seminar in East Asian Politics (3)
Prerequisite: Graduate standing or consent of instructor. Study of concepts and research on the political culture, ideology, groups, political processes and institutions, and policy outcomes in the Chinese and/or Japanese political systems.
458 Seminar in European Politics (3)
Prerequisite: Graduate standing or consent of instructor. Study of national political cultures, ideologies, regional security issues, national as well as supranational political institutions, and policy processes in Europe, with emphasis on post Cold-War developments.

459 Seminar in Latin American Politics (3)
Prerequisite: Graduate standing or consent of instructor. This course focuses on the twin issues of economic and political change in Latin America. It explores shifts from open free-market models and provides tools to assess recent transitions from authoritarianism to democracy. Country cases include Mexico, Brazil, Argentina, Chile. Two Central American countries, El Salvador and Nicaragua plus Cuba also will receive attention.

460 Proseminar in Political Theory (3)
Study of concepts and problems in normative political theory.

461 Seminar in Political Theory (3)
Research problems and design in political theory. May be repeated for credit when the subject matter is different.

462 Political Theory and Public Policy (3)
This course covers the ideological and ethical context of public policy and public policy analysis. Special attention is given to the way in which different contexts produce both different public policy and different ways of understanding public policy. Questions addressed include accountability, professionalism, freedom, justice, equality, and, in general, ethical issues faced by both the policy maker and the policy analyst.

465 Directed Readings and Research in Political Theory (1-10)
Independent study through readings, reports, research projects, and conferences.

470 Proseminar in Urban Politics (3)
Examination of the relationships among 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.

471 Seminar in Urban Politics (3)
Research problems and design in urban and regional politics. May be repeated for credit when the subject matter is different.

475 Directed Readings and Research in Urban Politics (1-10)
Independent study through readings, reports, and conferences.

480 Proseminar in International Relations (3)
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.

481 Seminar in International Relations (3)
Research problems and design in international politics. May be repeated for credit when the subject matter is different.

482 International Political Economy (3)
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.

485 Directed Readings and Research in International Relations (1-10)
Independent study through readings, reports, research projects, and conferences.

488 Studies in International Relations (1-6)
Prerequisite: Graduate standing. Selected topics in international studies. May be repeated for credit provided the topic of the course is different each time.

491 Strategic and Program Planning for Nonprofit Organizations (3)
Prerequisites: Graduate standing or consent of instructor. (Same as PPA 455 and SW 455). 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.

494 Thesis Research (1-10)
Arranged.

495 Internship (1-6)
Independent study involving work with an appropriate public or private agency.
Faculty

Miles L. Patterson, Professor*, Chairperson
Ph.D., Northwestern University

Gary K. Burger, Professor*
Ph.D., Loyola University

James A. Breaugh, Professor*+
Ph.D., Ohio State University

Robert J. Calsyn, Professor*, Director of Gerontology
Ph.D., Northwestern University

Michael Harris, Professor*+
Ph.D., University of Illinois-Chicago

James T. Walker, Professor Emeritus
Ph.D., University of Colorado

Dominic J. Zerbolio, Jr., Professor Emeritus
Ph.D., Michigan State University

Carl Bassi, Associate Professor**
Ph.D., Vanderbilt University

Therese M. Macan, Associate Professor*
Ph.D., Rice University

Samuel J. Marwit, Associate Professor*
Ph.D., State University of New York at Buffalo

Paul W. Paese, Associate Professor*+, Associate Chair, Director, Doctoral Program in Industrial/Organizational Psychology
Ph.D., University of Illinois

Jeffrey N. Wherry, Associate Professor#, Director, Kathy J. Weinman Children's Advocacy Centre
Ph.D., University of Southern Mississippi

Joel Ellwanger, Assistant Professor
Ph.D., Northwestern University

Michael G. Griffin, Assistant Professor*
Ph.D., University of Missouri-St. Louis

Donald D. Lisenby, Assistant Professor Emeritus
Ph.D., Washington University

Paul C. Notaro, Assistant Professor
Ph.D., University of Michigan

Michael J. Stevens, Assistant Professor+
Ph.D., Purdue University

Robert N. Harris, Clinical Associate Professor*
Ph.D., University of Kansas

Mindy Mechanic, Assistant Research Professor
Ph.D., University of Illinois-Urbana Champaign

Pallavi Nishith, Research Associate Professor
Ph.D., Washington State University

Allan G. Barclay, Adjunct Professor
Ph.D., Washington University

Larry O'Leary, Adjunct Associate Professor
Ph.D., Saint Louis University

John W. Rohrbaugh, Adjunct Associate Professor
Ph.D., University of Illinois-Urbana Champaign

David E. Smith, Adjunct Associate Professor
Ph.D., Colorado State University

Mark E. Bardgett, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis

Alene S. Becker, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis

Ruth Davies, Adjunct Assistant Professor
Ph.D., Washington University

Timothy J. Jovicck, Adjunct Assistant Professor
Ph.D., Saint Louis University

Leslie Kimball, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis

Lee Konzak, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis

Gary A. Morse, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis

Michael J. Schneider, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis

Sandra K. Seigel, Adjunct Assistant Professor
Ph.D., Saint Louis University

Linda Sharpe-Taylor, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis

Mary K. Suszko, Adjunct Assistant Professor
Ph.D., University of Missouri-St. Louis

James H. Wallhrmfechtel, Adjunct Assistant Professor
Ph.D., Saint Louis University

Terri Weaver, Adjunct Assistant Professor
Ph.D., Virginia Polytechnic Institute & State University

Audrey T. F. Wiener, Adjunct Assistant Professor
Ph.D., Saint Louis University

David F. Wozniak, Adjunct Assistant Professor
Ph.D., Washington University

* members of graduate faculty
+ Primary appointment in the College of Business Administration
# Primary appointment in Kathy J. Weinman Children's Advocacy Centre
General Information

Degrees and Areas of Concentration The Psychology department offers work leading to the B.A. degree in Psychology. In conjunction with course work in the department, students have the opportunity to do research in a variety of areas, including animal and human learning, physiological, industrial/organizational, cognitive, personality-social, developmental, clinical, and community Psychology. Students should consult with their adviser in selecting a program of study. However, the department offers a number of focused areas of study as an aid to students in selecting courses.

These include developmental Psychology, community mental health, and industrial/organizational Psychology.

The department also offers a terminal M.A., as well as three Ph.D. programs: clinical Psychology, experimental Psychology, and industrial/organizational Psychology.

Facilities Among the department's physical facilities are animal and human experimental laboratories and a wide range of research equipment, including portable videotaping systems. The department also has an electronics technician.

Minor in Psychology The department offers a minor in Psychology to students who have a special interest in this field but wish to major in another discipline.

Undergraduate Studies

General Education Requirements
Majors must satisfy the university and college general education requirements. Courses in Psychology may be used to meet the social sciences requirement.

Majors may not take Psychology courses on a satisfactory/unsatisfactory basis.

Undergraduate Psychology Office
Advisers in the Undergraduate Psychology Office (108 Stadler Hall, 516-6676) are available to answer questions regarding career options in Psychology, as well as provide specific information on degree requirements. The advisers can process all necessary materials for registration and graduation.

Degree Requirements

Bachelor of Arts in Psychology
At least 32, but no more than 45, hours must be completed in courses taught by or cross listed with the Psychology department. Candidates must have a cumulative grade point average of 2.0 or better in the major. Psychology courses taken on a satisfactory/unsatisfactory basis may not be applied to the major.

The following core curriculum is required:
Psych 3, General Psychology
201, Psychological Statistics
219, Research Methods

Note Students must fulfill the university's mathematical skills requirement before taking Psychology 201, Psychological Statistics. Psychology 201 is a prerequisite for Psychology 219.

In addition to the core curriculum, at least 22 additional credit hours in Psychology must be taken. At least three of these courses totaling a minimum of 9 hours must be at the 300 level. Multiple enrollments in Psychology 390, Directed Studies, count as no more than one 300-level course. No more than 6 hours of independent study courses (Psychology 295, Selected Projects in Field Placement, and Psychology 390, Directed Studies) may be counted toward the 32-hour minimum needed for graduation.

Graduate School Preparation This program is designed for students planning to pursue doctoral studies in Psychology. In addition to the core curriculum, students are advised to take Psych 361, History and Systems of Psychology, and at least one laboratory course in Psychology.

Students intending to pursue graduate programs in clinical Psychology should, in addition, take courses from the following group:

160, Social Psychology
211, Physiological Psychology
212, Principles of Learning
216, Personality Theory
245, Abnormal Psychology
270, Child Psychology
271, Adolescent Psychology
272, Adult Development and Aging

Students are also encouraged to become involved in independent research (Psych 390, Directed Studies).

Developmental Psychology This focus area is ideal for double majors in education and Psychology and for Psychology majors with a general interest in the area of development. In addition to the core curriculum, students are advised to take at least five of the following Psychology courses with at least two at the 300 level:

216, Personality Theory
268, Human Growth and Behavior
270, Child Psychology
271, Adolescent Psychology
272, Adult Development and Aging
295, Selected Projects in Field Placement
305, Cognitive Development
306, Social Development
Candidates must have a cumulative grade point average of 2.0 or better in the minor. Psychology courses taken on a satisfactory/unsatisfactory basis may not be applied to the minor.

Graduate Studies

Admission Requirements
In addition to meeting the general admission requirements of the Graduate School, applicants should have completed undergraduate courses in general psychology, psychological statistics, and research methods. Each doctoral program has additional admission requirements specific to the program.

Teaching Assistantships Stipends for teaching assistantships are available for the doctoral programs only. Educational fees are waived for teaching assistants.

Applications Each program has its own deadline for completed applications. They are as follows:

Ph.D. in Psychology:
Clinical Psychology--January 15
Industrial/Organizational Psychology--February 1
Experimental Psychology--February 1

M.A. in General Psychology--February 1

Master of Arts in Psychology

The University of Missouri-St. Louis offers a flexible program of studies leading to the master of arts degree in general Psychology. Course work is possible, depending upon student demand, in several areas of experimental and applied Psychology (e.g., Psychobiology and behavioral neuroscience; human learning, memory, and cognition; personnel and industrial and organizational Psychology). 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 either counseling or clinical Psychology.

There is no thesis or language requirement. Part-time or full-time enrollment is permissible. The M.A. degree is a terminal degree and is separate from the Ph.D. program in Psychology.

The M.A. in Psychology requires a total of 32 semester hours of course work. Students must take the following set of quantitative courses:

421, Quantitative Methods I, and
422, Quantitative Methods II

Elective courses will constitute the remaining hours needed for the degree. All programs of study for M.A.
students require the approval of a member of the departmental M.A. advisory committee.

Ph.D. in Psychology

The doctoral program is organized around courses and directed research experience that emphasize the scientific approach to the study of Psychology. Courses in the areas of quantitative methods, design and methodology, personality, motivation, social Psychology, learning, and cognition are focal in the program.

Ph.D. Programs

There are three distinct programs within the Ph.D. Each has its own specific course and research requirements. Handouts describing these requirements are available from the department on request. The following briefly describes each program.

Clinical Psychology 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. The clinical Psychology program requires five years of full-time study. Students are not considered for admission on a part-time basis. Through the medium of courses, practicum, and research experiences, this emphasis area prepares clinical psychologists for careers in research, teaching, and clinical practice.

Students in the clinical psychology program participate for three years in the Psychology Department's Community Psychological Service. 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.

General Experimental Psychology The general experimental program provides opportunities for study and research in the areas of cognitive Psychology and behavioral neuroscience. Full-time enrollment is encouraged, although part-time enrollment is possible.

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 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.

Clinical Psychology Respecialization-Advanced Graduate Certificate Program

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 UM-St. Louis Clinical Psychology Doctora 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.

Career Outlook

The undergraduate major in Psychology can lead to further training at the graduate level, function as a major within a general liberal arts degree, or offer some degree of specialization in such areas as developmental Psychology, industrial/organizational Psychology, and community mental health. Job opportunities with a bachelor's degree include working in business, social welfare, and probation and parole. For more career information see an adviser in the Undergraduate Psychology Office (Room 108 Stadler). To function specifically as a Psychologist, requires a graduate degree and students with such an interest should plan for this additional training.
Course Descriptions


The following course fulfills the Natural Science and Mathematics [SM] breadth of study requirements: 140.

3 General Psychology (3)
A broad introductory survey of the general principles of human behavior.

140 Female Sexuality (3)
(Same as Biology 140.) Prerequisites: Psych 3, or Biology 1, or its equivalent. This course will present a biological-psychological orientation toward the study of female sexuality. Topics include: sexual anatomy, hormonal influences on sexual behavior, psychosexual development, sexual attraction and relationships, sexual response and dysfunction, menstruation, pregnancy, menopause, reproductive health issues, and social issues in sexuality.

160 Social Psychology (3)
(Same as Sociology 160.) Prerequisite: Psych 3 or Sociology 10. Study of interaction between individuals and their social environment. Examination of basic principles, concepts, and methods.

161 Helping Relationships (3)
Prerequisites: Psych 3 and consent of instructor. Exploration of the basic elements contributing to effective helping skills. Course assignments include keeping a journal, writing papers, and a final exam. Readings, discussion, and guided experiences will be used to instill active listening and communication skills. Ethics of helping relationships will be emphasized.

200 Drugs and Behavior (3)
Prerequisites: Psych 3 and three other hours in Psychology or biology. The course is designed to provide an introduction to the relationship between drugs and behavior. The emphasis will be on psychoactive drugs, alcohol, nicotine, as well as drug-like substances produced naturally in the body.

201 Psychological Statistics (4)
Prerequisites: Psych 3 and satisfaction of the university's mathematical skills requirement. (With laboratory.) Statistical methods in Psychological measurement and analysis of Psychological data. Frequency distribution analysis, sampling, test of significance, and correlation methods.

211 Physiological Psychology (3)
Prerequisites: Psych 3 or equivalent and Biology 1. A survey of the major areas of physiological Psychology with an emphasis on their historical development.

212 Principles of Learning (3)
Prerequisite: Psych 3. A consideration of critical findings in learning.

216 Personality Theory (3)
Prerequisite: Six hours of Psychology. Structural and dynamic aspects of the human personality considered in the context of selected theoretical systems.

219 Research Methods (3)
(With laboratory.) Prerequisite: Psych 201. Research methods and analysis techniques used in Psychological inquiry. Special emphasis placed on the logic of research design. Includes laboratory study of, and analysis of, selected methods.

222 Group Processes in Organizations (3)
Prerequisite: Psych 3 or BA 210. Topics include theory, research, and practice in coordination, conflict, and decision making in groups and organizations, as well as the role of influence, power, and leadership effectiveness in understanding interpersonal and group relations.

225 Behavior Modification (3)
Prerequisite: Nine hours of Psychology or consent of instructor. Methods, applications, and ethics of the use of behavior theory (primarily Skinner's operant conditioning) to the control of human behavior in a variety of settings including mental institutions, grade schools, universities, individual treatment, and communal living.

230 Psychology of Women (3)
Prerequisite: Psych 3. Evaluation of Psychological theories and research regarding physiological, cognitive, and personality sex differences, female problems in adjustment, and clinical interventions for women.

232 Psychology of Victims (3)
Prerequisite: Psych 3. A review of the effects of crime, violence, natural disasters, and other traumas on Psychological functioning with attention to the relationship between gender and victimization. Prevention and therapy techniques will also be discussed.
235 Community Psychology (3)  
Prerequisite: Psych 3. The analysis of Psychological problems in terms of the social and situational forces that produce them. Community Psychology analyzes the situational problems in living. Epidemiology of mental illness; group, family, and crisis intervention; mental health-care delivery; program evaluation and demonstration project research; role of Psychologist as consultant and change agent; and utilization of nonprofessional manpower.

245 Abnormal Psychology (3)  
Prerequisite: Psych 3. Introduction to major symptom complexes, theories of etiology, and treatment of behavior disorders.

256 Environmental Psychology (3)  
Prerequisite: Psych 160 or Sociology 160. Analysis of environmental influences on behavior and man's influence, in turn, on the environment. Topics will include a consideration of both individual processes relating to the environment (such as the perception, evaluation, and adaptation to the environment) and social processes relating to the environment (such as privacy, territoriality, and crowding).

268 Human Growth and Behavior (3)  
Prerequisite: Psych 3. A survey of development over the life span, with an emphasis on the developmental tasks and hazards of each period.

270 Child Psychology (3)  
Prerequisite: Psych 3. Principles of biological, behavioral, and personality development from conception to puberty.

271 Adolescent Psychology (3)  
Prerequisite: Psychology 3. Principles of biological, behavioral, and personality development from puberty to maturity.

272 Adult Development and Aging (3)  
(Same as Gerontology 272.) Prerequisite: Psych 3. Personality, social, and physiological development from the onset of early adulthood through maturity and old age.

280 The Psychology of Death and Dying (3)  
(Same as Gerontology 280.) Prerequisite: Psych 3. This course will address the psychological aspects of death and dying for both adults and children. The psychological reactions of terminally ill patients and their families will also be examined, and therapeutic interventions will be discussed.

295 Selected Projects in Field Placement (3)  
Prerequisites: Junior standing, fifteen hours of Psychology, and departmental approval. Selected options in field work placement experiences in various local agencies with training and supervision by faculty. May be repeated once for credit.

300 Neuropharmacology and Behavior (3)  
Prerequisites: Psych 200 plus six additional hours of Psychology. The course is designed for advanced undergraduate students interested in a career in Psychopharmacology or related fields in the health sciences. Emphasis will be on (1) underlying neural processes, (2) traditional laboratory methods as they have been adapted to the study of drugs, and (3) the unique contributions made by psychopharmacologists to both areas.

301 Advanced Statistics and Experimental Design (3)  
Prerequisites: Twelve hours of psychology, including Psych 201. Statistical methods which are particularly useful in Psychological research and the design of experiments appropriate to these methods.

302 Computers in Psychology (3)  
Prerequisites: Nine hours of psychology including Psych 201 and junior or senior standing. The course is organized around computer applications in the behavioral sciences for the Macintosh machine. The goals for the course include familiarization with (1) MAC environment to prepare the student for the explosion of computer applications now and in the future, (2) the hardware and software products available for the working psychologist, and (3) the software programs of choice in the field through hands-on, individual use of the MAC. Some modest level of computer (MAC, PC, or mainframe) experience is recommended.

305 Cognitive Development (3)  
Prerequisites: Junior standing and Psych 270, or consent of instructor. Data and theory concerned with development of perceptual, language, and symbolic abilities in infants and young children, including discussion of deprivation and enrichment of cognitive development.

306 Social Development (3)  
Prerequisites: Junior standing and Psych 270, or consent of instructor. Data and theory concerned with development of social behavior in infants and young children. Discussion will include the formation and interruption of attachment, the effects of social isolation, sex-role development, identification, and development of moral judgments in children.

307 Psychology of Oppression (3)  
Prerequisite: Nine (9) hours of Psychology. Surveys the concept of oppression and Psychology's contribution to an understanding of this human reality. Definitions and the assumptions, liabilities, and contributions of specific theories of oppression are considered. Finally, the course examines the Psychological and mental health consequences of the individual's experience of oppression.
308 African American Psychology (3)
Prerequisites: 9 hours of Psychology or 6 hours of Black Studies minor, or consent of instructor. Provides an overview of the emergence of contemporary African American Psychology. It explores the implications of a Psychological perspective specific to African Americans. Traditional research theories are explored from a historical perspective. African American identity, socialization, personality, cognitive development, and mental health are discussed. Contemporary issues which impact African American behaviors and attitudes are also addressed.

310 Motivation Theory (3)
Prerequisites: Junior standing and twelve hours of Psychology, or consent of instructor. Survey of current theoretical material in the area of motivation.

311 Psychology of Nonverbal Behavior (3)
Prerequisite: Psych 160 or Sociology 160. Psychological perspective on the role of nonverbal behavior in social settings. Primary concerns of the course will include an analysis of a) functions of nonverbal behavior (e.g., communication, intimacy exchange, control), b) factors influencing nonverbal expression (e.g., culture, personality, relationships), and c) various theoretical views on nonverbal behavior and communication. Applications to various problems and settings in everyday life will also be pursued.

312 Social Cognition (3)
Prerequisites: Psych 160 or Sociology 160. Research and theory on the role of cognitive processes in social behavior. Topics include attitudes and attitude change, social inference, schemas, and cognitive links to behavior and affect.

314 Physiological Psychology (3)
(With laboratory.) Prerequisites: Psych 219, Biology 1, and Biology 3, or consent of instructor. The biological and physiological correlates of behavior. Special emphasis placed on the neural and endocrine systems.

317 Social Psychology of Conflict and Negotiation (3)
(Same as Sociology 317.) Prerequisite: nine hours of psychology or nine (9) hours of sociology, including Psych 160 or Soc 160. The purpose of this course is to understand how social Psychological phenomena affect the processes and outcomes of negotiation and other forms of social conflict. The course is designed to be relevant to the broad spectrum of conflict situations people face in their work and daily lives. A basic premise of this course is that while analytical skills are needed to discover solutions to social problems, negotiation skills are needed in order for these solutions to be accepted and implemented.

318 Industrial and Organizational Psychology (3)
(Same as BA 318.) Prerequisites: Bus 210 and Math 105 or Psych 201. This course introduces the student to Psychological research and theories pertaining to human behavior in the work setting. Topics covered include: selection, performance appraisal, training, leadership, motivation, job satisfaction, and organizational design.

320 Personnel Assessment (3)
Prerequisite: Psych 318 or BA 309. This course will provide an in-depth study of several topics in the area of personnel psychology. Consideration will be given to issues such as assessment centers, employment interviewing, personnel appraisal, employment test validity, and legal issues relevant to personnel assessment.

340 Clinical Problems of Childhood (3)
Prerequisites: A total of twelve hours of Psychology including Psych 3 and Psych 270. This course will address the clinical disorders and difficulties of children and the treatment of these disorders. Topics that will be addressed include autism, childhood schizophrenia, behavior disorders, drug abuse, euraxis, encopresis, and childhood co-compulsive and phobic reactions. Treatments designed for specific use with children, including behavioral, drug, and community mental health approaches will be addressed.

345 Lesbian Psychology (3)
Prerequisites: Junior standing, 9 hours of Psychology or Women's Studies, or consent of instructor. Explores Psychological, social, cultural, and historical aspects of lesbianism. Topics include development of lesbian identity historically and individually, causes of sexual orientation, coming out, relationships and friendship, sexuality, roles, prejudice and discrimination, race and class, legal and economic issues, politics and feminism, health, and community.

346 Introduction to Clinical Psychology (3)
Prerequisites: Nine hours of Psychology, including Psych 216 or Psych 245. A conceptual framework for research, description, and understanding of clinical phenomena. Assessment, interviewing, the clinical use of tests, and Psychological approaches to treatment.

349 Human Learning and Memory (3)
Prerequisites: Nine hours of Psychology or consent of instructor. A survey of contemporary research, theory, and facts pertaining to the acquisition, retention, and forgetting of information.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>356</td>
<td>Thinking and Cognition (3)</td>
<td>Nine hours of psychology or consent of instructor. An introduction to modern analytical approaches to the Psychology of thinking: problem solving, reasoning, categorizing, judgment, attention, and consciousness. Particular attention is paid to the mental structures and operations involved in the encoding, abstraction, representation, transformation, and retrieval of knowledge.</td>
<td>focus is on major Psychological disorders prevalent among the elderly and on treatment approaches for elders.</td>
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<tr>
<td>357</td>
<td>Psychology of Learning (3)</td>
<td>Psych 219. Major theoretical positions and experimental conditions of learning. Includes laboratory study of selected problems.</td>
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<tr>
<td>361</td>
<td>History and Systems of Psychology (3)</td>
<td>At least fifteen hours of psychology. The course should be taken no sooner than the winter term of the junior year. Historical antecedents of contemporary Psychology, including a survey of systems and schools of Psychology.</td>
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<tr>
<td>365</td>
<td>Psychological Tests and Measurements (3)</td>
<td>Psych 201 and Psych 219, or consent of instructor. Survey of Psychological testing and principles of test construction and evaluation. Laboratory experience in construction, administration, and interpretation of selected tests.</td>
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<tr>
<td>373</td>
<td>Psychology of Aging (3)</td>
<td>Nine hours of Psychology or consent of instructor. This course focuses on the developmental changes associated with aging including sensation, memory, emotions, and attitudes.</td>
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<tr>
<td>374</td>
<td>Introduction to Clinical Neuropsychology (3)</td>
<td>Nine hours of Psychology. A survey of neuropsychological findings concerning relationships between brain and behavior. Topics will include brain function, neuroanatomy, neurological syndromes, and methods of neuropsychological assessment.</td>
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<tr>
<td>375</td>
<td>The Social Psychology of Disabilities (3)</td>
<td>S 160 or Psych 160 or consent of instructor. A social Psychological and micro-sociological examination of attitudes and behaviors affecting persons with disabilities. Topics include stigma and empowerment, adaptive behaviors, stereotypes and prejudices, and images of disabilities in popular culture and mythology. The course will address the experience of disability and its social consequences for the lives of persons with disabilities.</td>
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<tr>
<td>376</td>
<td>Mental Health and Aging (3)</td>
<td>Psych 272, Psych 373, or graduate standing. (Same as SW 376 and GER 376.) (MSW students normally take all foundation courses prior to enrolling in this course). A survey of recent theory and research in mental health issues for older populations. The primary</td>
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<tr>
<td>390</td>
<td>Directed Studies (1-5)</td>
<td>Consent of instructor. Directed reading and research. May be repeated for a maximum total of ten hours.</td>
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<tr>
<td>392</td>
<td>Selected Topics in Psychology (1-3)</td>
<td>Twelve hours of Psychology and consent of instructor. A seminar of selected issues and methods in Psychology. May be repeated once for credit.</td>
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<tr>
<td>398</td>
<td>Child Maltreatment: A Multidisciplinary Approach (3)</td>
<td>Focuses on clinical aspects of child abuse with attention to identification, reporting, intervention, and prevention. Perspectives from the disciplines of Psychology and social work are provided.</td>
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<tr>
<td>399</td>
<td>Seminar: Child Sexual Abuse (1)</td>
<td>Provides intensive study in interviewing, legal issues, assessment, medica! issues, and therapeutic intervention in cases of child sexual abuse.</td>
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<tr>
<td>403</td>
<td>Psychopathology (3)</td>
<td>Admission to Clinical Psychology program or permission of instructor. A critical examination of the clinical-experimental literature on Psychopathology. Etiologies of cognitive/affective functions and dysfunctions are explored, and implications for therapeutic intervention are considered.</td>
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<tr>
<td>404</td>
<td>Introduction to Clinical Assessment I (3)</td>
<td>Admission to Clinical Psychology program. Fundamentals of clinical assessment with emphasis on interviewing and the measurement of cognitive functioning.</td>
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<tr>
<td>405</td>
<td>Personality (3)</td>
<td>Admission to Clinical Psychology program or permission of instructor. Current theories and research in personality. Major psychodynamic, trait, phenomenological, cognitive, and social learning approaches are covered, with a focus on personality structure and individual differences, personality processes and dynamics, development, Psychopathology, and change.</td>
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<tr>
<td>406</td>
<td>Introduction to Clinical Assessment II (3)</td>
<td>Psych 404. Theory and techniques of personality assessment with emphasis on projective personality tests.</td>
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</table>
407 Psychopharmacology (3)
Prerequisite: 12 units of graduate-level Psychology courses and consent of instructor. 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.

408 Psychological Perspectives on Death and Dying (3)
Prerequisites: Graduate standing. Addresses a variety of end-of-life issues including death attitudes, funeral practices, ethics, grief theory, family communication patterns, and health care systems. Research findings and theoretical approaches will be emphasized.

410 Women and Mental Health (3)
Prerequisite: Admission to the doctoral program in Clinical Psychology or consent of instructor. This course will focus on contemporary research on the Psychology of women pertaining to mental health issues. Etiology and treatment of disorders disproportionately affecting women will be emphasized.

412 Social Psychology (3)
Prerequisite: Admittance to psychology doctoral program or consent of instructor. A review of key areas in contemporary theory and research in social psychology.

418 Seminar in Human Sexuality (3)
Prerequisite: Admission to the doctoral program in Clinical Psychology or consent of instructor. Review of theory and research in human sexuality from physiological, Psychological, and social perspectives. Implications for the assessment and treatment of sexual dysfunction are considered.

419 Existential Issues in Clinical Psychology (3)
Prerequisite: Admission to the doctoral program in Clinical Psychology or consent of instructor. This course will review existential thought in Psychology and its application to understanding clinical problems and treatment. Particular attention will be given to how Psychotherapy can be understood within an existential framework that focuses on the issues of death, freedom, responsibility, and isolation.

421 Quantitative Methods I (4)
(With laboratory.) A comprehensive study of the use of analysis of variance procedures in analyzing data. Topics include completely randomized designs, randomized blocks, factorial designs, and the analysis of covariance.

422 Quantitative Methods II (4)
(With laboratory.) A comprehensive study of the use of multivariate statistics in data analysis. Topics include multiple regression, canonical correlation, factor analysis, discriminant analysis, and the multivariate analysis of variance.

429 Psychometric Theory (3)
Prerequisite: Consent of instructor. A consideration of test reliability, validity, and construction from the standpoint of modern Psychometric theory and a survey of unidimensional and multidimensional scaling procedures.

431 Clinical Supervision (1-3)
Prerequisite: Admission to Clinical Psychology program. Supervised experience in clinical practice. May be repeated six times for credit.

432 Mental Health Administration and Professional Issues (1)
Prerequisites: Admittance to Clinical Psychology Program. Supervised experience in a clinical placement. Review of current issues in professional psychology.

433 Mental Health Administration and Professional Issues II (1)
Prerequisites: Psych 432. Supervised experience in a clinical placement. Review of current issues in professional psychology.

434 Seminar: Introduction to Psychotherapy (3)
Prerequisite: Admittance to Clinical Psychology program and Psych 406. This course considers theories of personal change and their practical application in Psychotherapy. Topics include the development of the therapist-client relationship, case management, process and outcome research, and ethical principles for the psychotherapist.

435 Mental Health Administration and Professional Issues III (1)
Prerequisites: Psych 432 and 433. Supervised experience in a clinical placement. Review of current issues in professional psychology.

439 Summer Supervision (1)
Prerequisite: Psych 431. Supervision experience in clinical practice at all graduate year levels during the summer months. Can be repeated for credit.

440 Principles of Family Therapy (3)
Prerequisite: Psych 434. Survey of research and theory underlying models of family interaction. Practical application of specific techniques to the family system is emphasized.

441 Seminar: Cognitive and Behavior Theories (3)
Prerequisite: Admission to Clinical Psychology program or permission of instructor. A course on cognitive and behavioral theories and their applications to clinical populations. Emphasis is on a critical review of research on cognitive and behavioral therapy procedures.
442 Seminar: Cognitive and Behavior Therapy (3)
Prerequisites: Admittance to doctoral program in Clinical Psychology and Psych 441. The practice of behavior therapy. Students will learn to implement behavioral assessment and therapy strategies in clinical settings.

444 Clinical Geropsychology (3)
Prerequisite: Graduate Standing or consent of instructor. This course examines major predictors of Psychosocial functioning in older adults. The emphasis is on assessment and research methods appropriate to studying developmental issues in late life. Topics include interpersonal relationships, mental health, and a critique of interventions designed to increase life satisfaction.

448 Multicultural Issues in Clinical Psychology (3)
Prerequisite: 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.

449 Research Methods in Applied Psychology (3)
Prerequisite: One graduate course in statistics. This course focuses on the basics of conducting research in applied Psychology. Topics include: philosophy of science; reliability and validity; experimental, quasi-experimental, and nonexperimental designs; power; and meta-analysis.

450 Clinical Internship I (1)
Prerequisite: Consent of adviser. Supervised training in an affiliated agency or organization following completion of two years of course work.

451 Clinical Internship II (1)
Prerequisites: Psych 450 and consent of adviser. Supervised training in an affiliated agency or organization following completion of two years of course work.

454 Seminar: Personnel Psychology (3)
An analysis of theories and research in personnel and industrial Psychology. Topics include testing, assessment centers, performance appraisal, and interviewing.

455 Seminar: Organizational Psychology (3)
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.

457 Seminar: Special Topics in Industrial Psychology (3)
A seminar of selected issues and methods in personnel Psychology.

458 Seminar: Special Topics in Organizational Psychology (3)
A seminar of selected issues and methods in organizational Psychology.

459 Practicum in Industrial/Organizational Psychology (1-4)
Supervised experience in personnel or human resource management.

460 Internship in Industrial/Organizational Psychology (1-4)
Prerequisite: Consent of adviser and admission to the graduate program in I/O Psychology. Supervised field experience in human resource management or organizational Psychology areas following completion of at least two years of course work.

461 Seminar: Learning (3)
A critical examination of contemporary problems in learning.

465 Seminar: Physiological Psychology (3)
A critical examination of contemporary problems in physiological Psychology.

466 Seminar: Developmental Psychology (3)
A critical examination of contemporary problems in developmental Psychology.

468 Seminar: Cognitive Processes (3)
Prerequisite: Admittance to doctoral program in psychology or consent of instructor. A critical examination of contemporary problems in cognitive processes.

472 Special Topics in Psychology (3)
A seminar of selected issues and methods in Psychology.

474 Clinical Research in Applied Settings (3)
Prerequisite: Psychology 421 and 422. 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.

475 Introduction to Evaluation Research Methods (3)
(Same as Sociology 475, Public Policy Administration 475, and CCJ 475.) Prerequisite: At least one course in research design and statistics at the graduate level. 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.
476 Seminar in Clinical Child Psychology (3)
Prerequisite: 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.

477 Principles of Child Psychotherapy (3)
Prerequisites: Psych 434 and 476. The course will focus on treatments for children with clinical problems. Play therapy, family therapy, and behavioral therapy techniques will be reviewed. Special attention will be given to differentiating when to use each modality, as well as how they can be effectively combined.

478 Directed Research in Industrial/Organizational Psychology (1-4)
Independent study of an issue in industrial/organizational Psychology through the application of research techniques.

479 Directed Readings in Industrial/Organizational Psychology (1-4)
Independent literature review of a topic in industrial/organizational Psychology.

480 Research Methods in Clinical Psychology (3)
Prerequisite: Psychology 421 or equivalent. An overview of research methods that are appropriate for clinical and other nonlaboratory settings.

482 Ethics for Psychologists (1)
Prerequisite: Admittance to doctoral program in Clinical Psychology. A study of ethical standards as they relate to teaching, research, and professional practice.

483 Directed Research (1-10)

484 Directed Readings (1-10)

485 Research Team I (2)
Prerequisite: Admittance to doctoral program in Clinical Psychology. Group supervision of beginning research leading to the Independent Research Project.

486 Research Team II (1)
Prerequisite: Completion of Independent Research Project or Third Year standing in doctoral program in clinical Psychology. Group supervision of advanced research leading to the dissertation proposal.

491 M.A. Thesis Research (1-10)

492 Ph.D. Thesis Research (1-10)

494 Integrative Research Seminar in Gerontology (3)
(Same as Gerontology 494.) Prerequisite: A graduate level research methods course (e.g., PPA 401) This seminar requires students to critically examine research in gerontology in terms of methodology. Topics covered include: reliability and validity of measures; internal and external validity; needs assessment; treatment implementation and process evaluation; and qualitative methods.
Social Work

Faculty

Lois Pierce, Professor*, Chairperson
Ph.D., Washington University
Norman Flax, Associate Professor Emeritus*
Ph.D., Saint Louis University
Joan Hashimi, Associate Professor Emeritus*,
Ph.D., Washington University
Cynthia Sanders, Assistant Professor
Ph.D., Washington University
Uma Segal, Associate Professor*
Ph.D., Washington University
Margaret Sherraden, Associate Professor*
Ph.D., Washington University
Ann Dinan, Assistant Professor*
Ph.D., Washington University
Sharon Johnson, Assistant Professor
Ph.D., Washington University
Patricia Rosenthal, Lecturer
M.S.W., Washington University
Beverly Sporleder, Lecturer
M.S.W., Washington University
John McClusky, Visiting Associate Professor
Ph.D, University of California-Berkley

* members of Graduate Faculty

Social work faculty members are committed to excellence in teaching and scholarly research in a wide range of specialties. These include child welfare, gerontology, community organization, addictions, and social service policy. Faculty also serve on the executive and advisory boards of many area social service agencies.

General Information

Degrees and Areas of Concentration The Department of Social Work offers courses leading to a bachelor of social work degree (B.S.W.), a master of social work (M.S.W.), and a minor in social work. The B.S.W. program is fully accredited, and the M.S.W. is in the first phase of accreditation (candidacy) 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.

Undergraduate social work majors and Master's students should obtain a copy of the Student Handbook (also available on the social work department's Web page http://www.umsl.edu/~socialwk). BSW students must see a social work adviser for advisement each semester. Students in the B.S.W. or the M.S.W. program must set up an appointment with the practicum office one semester prior to enrolling in the practicum and attend a series of prepracticum orientation sessions.

Undergraduate Studies

General Education Requirements

 Majors must satisfy the university and college general education requirements, except that proficiency in a foreign language is recommended but not required.

Courses required for the B.S.W. degree may not be taken on a satisfactory/unsatisfactory basis except Social Work 320 and Social Work 321.

Admission Requirements

Students entering UM-St. Louis as freshman and as transfer students should indicate a pre-social work major. Students must apply to the program concurrent with SW 210. Admission to the program is conditional upon the successful completion of all necessary requirements.

Requirements for Admission to the Social Work program:

1. Junior standing
2. Submission of:
   • Application for admission to social work program.
   • Transcript of all university work.
   • Two letters of reference: one from a college or university professor and one other, preferably from a work or volunteer experience supervisor.
3. Completion of Social Work 100, 150, and 151 or their equivalents or completion of an A.A. in Human Services.
4. Satisfactory completion of all courses listed as prerequisites for Social Work 210, 280, and 285.
5. Applicants may be asked to meet with the social work admissions committee.

Degree Requirements

Undergraduate Studies

Bachelor of Social Work

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:

150, Social Welfare as a Social Institution
151, Social Welfare as a Social Institution Laboratory
210, Introduction to Interventive Strategies
280, Human Behavior in the Social Environment
285, Social Issues and Social Policy Development
300, Interventive Strategies for Social Work with Individuals, Families, and Groups
305, Interventive Strategies for Social Work with Organizations and Communities
315, Diversity and Social Justice  
320 and 321, Supervised Field Experience in Social Work I and II  
320a and 321a, Integrative Field Experience Seminar I and II

A minimum of 34 hours and a maximum of 50 hours may be taken in social work. A minimum of 36 hours is required in related area departments.

Evaluation of social work transfer credits will be done by a social work advisor on an individual basis.

Related Area Requirements
The following courses, or their alternatives, are required:

- Biology
  One course from the following:
  110, Human Biology
  113, Human Physiology and Anatomy I
  114, Human Physiology and Anatomy II
  115, Human Heredity and Evolution
  120, Environmental Biology
  140, Female Sexuality

- Econ
  40, Introduction to the American Economy

- Polisci
  11, Introduction to American Politics

- Psych
  3, General Psychology

- Sociology
  10, Introduction to Sociology
  160, Social Psychology
  220, Sociological Statistics

Either Sociology

- 230, Research Methods and
- 231, Research Methods Lab or

Social Work

330, Research Design in Social Work

At least 9 additional hours must be taken in social work, sociology, political science, psychology, women's and gender studies, anthropology, criminology and criminal justice, or economics at the 100 level or above. Hours taken in social work will apply toward the maximum of 50 hours that may be taken in social work courses. The social work department 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 cumulative grade point average of 2.5 or better in all course work specifically required for the major, with satisfactory grades in practicum.

Note: Taking anthropology, biological sciences, economics, and Spanish courses is strongly recommended by graduate social work schools.

Requirements for the Minor in Social Work
Candidates must complete the following social work courses:

- 150, Social Welfare as a Social Institution
- 210, Interventive Strategies in Social Work Practice
- 285, Social Issues and Social Policy Development

and two additional social work courses.

Graduate Studies

Master of Social Work

Admission Requirements
Admission to the M.S.W. Program requires admission to the University of Missouri-St. Louis Graduate School and acceptance by the Department 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, including a course in human biology.

- Attainment of a cumulative grade point average of at least 2.75 on a 4.0 scale for all undergraduate course work and attainment of a grade point average of 2.75 on a 4.0 scale in the major field.

- Submission of the following documents by the admission deadline:

  1. Three letters of reference.
  2. A completed application to the UM-St. Louis Graduate School and a completed M.S.W. supplemental application
  3. Three written essays.
  4. Official transcripts from all colleges and university attended.
  5. Applicable fees.

Application Deadline
The deadline for application to the MSW program is March 15 for admission in the following fall semester.

Admissions to the Advanced Standing Program
Applicants with a B.S.W., B.A.S.W., or B.S.S.W., from an accredited social work program may be given up to 24 credit hours of advanced standing for foundation social work courses. Admissions 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 accredited by the Council on Social Work Education within five years of applying to the M.S.W. 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 B.S.W. program within the last five years will be given course waivers and be allowed to take electives instead of these courses.

Students from nonaccredited B.S.W. programs or students who have taken comparable course work in other undergraduate programs may take place-out examinations for select foundation courses; waivers will be given if students successfully pass place-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 previous work experience, in whole or in part, in lieu of field practicum or foundation year courses.

Degree Requirements
The M.S.W. 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 45 must be at the 400 level and 45 must be in social work or crosslisted with social work, including the following foundation courses:

315, Diversity and Social Justice
410, Social Policy and Social Services
418, Foundations of Human Behavior in the Social Environment
430, Generalist Social Work Practice
431, Social Work and Human Service Organizations
432, Community Practice and Social Change
440, Research Methods and Analysis I
449, Research Methods and Analysis II
489, Graduate Field Practicum Seminar
490, Graduate Field Practicum I

Upon completion of the 30 credits of foundation year requirements, students move into a year of specialization, called the concentration. The concentration year requires 30 hours of course work that includes 9 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:
Children and Families
Organizations and Community Development

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 240 hours (two days of full-time work each week) of M.S.W.-supervised practice in an agency during the Winter semester of the foundation year, and 660 hours (three days of full-time work per week) in both the fall and winter semesters in the concentration year.

A student must receive a grade of satisfactory on a satisfactory/unsatisfactory basis in the first-year field instruction course in order to be eligible to enter the second year field 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 M.S.W. in four years.

Career Outlook
The bachelor of social work program prepares persons 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 B.S.W. and M.S.W. degree.
Course Descriptions

The following courses fulfill the Social Sciences [SS] breadth of study requirements: 100, 150, 210, 280, 285, 290, 312, 315, 316, 322, 350, 376, 390.

100 Social Work and Social Problems (3)
Prerequisite: Sociology 10 or Psychology 3. 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 helping professions. Introduction to basic values, skills, and training involved in a helping relationship, as well as characteristics of clients seeking help and professionals engaged in the helping process.

150 Social Welfare as a Social Institution (3)
Prerequisite: Social Work 100 or consent of instructor. A study of the: 1) development of social welfare services and the philosophy underlying the present practices and systems; 2) present social welfare programs with particular emphasis given to public income-maintenance provisions; 3) special welfare needs of blacks, elderly, women, Hispanics, and Native Americans; and 4) the development of social work as a profession. This course may be taken by non-social work majors.

151 Social Welfare as a Social Institution Laboratory (1)
Prerequisites: Simultaneous with Social Work 150. The lab session will be used for field trips to social agencies. This course is required for all Social Work majors.

210 Introduction to Interventive Strategies for Social Work Practice (3)
Prerequisites: Social Work 150, Sociology 10 and Psychology 03, or permission 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 also will be to teach students how to help clients negotiate systems effectively, and to use resources, services, and opportunities.

280 Human Behavior in the Social Environment (3)
Prerequisite: Biology 1 and Sociology 160 or Psych 160 or permission of instructor. This course will focus on the normative stages in the life span, 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.

285 Social Issues and Social Policy Development (3)
Prerequisites: Social Work 150, PolSci 11, and Econ 40. 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.

290 Selected Topics in Social Work Practice (3)
Prerequisite: Social Work 210 or Social Work 285, or consent of instructor. A course examining special topics in social work practice. Relative theories, strategies, and skills will be presented for topics selected. Course may be taken more than once for credit as different topics are offered.

300 Interventive Strategies for Social Work with Individuals, Families, and Groups (3)
Prerequisites: Social Work 210, and Social Work 280. This course continues the presentation of basic knowledge and practice skills for entry level professional practice begun in Social Work 210. It builds on the generalized helping model, incorporating specialized skills for working with specific groups of clients (e.g., children, aged, mentally ill, and physically handicapped), with families and small groups.

305 Interventive Strategies for Social Work with Organizations and Communities (3)
Prerequisites: Social Work 285 taken prior to or concurrently, senior standing. Continuation of basic practice skills with emphasis given to analysis and intervention at the organization and community levels. Includes assessment of available services, organization of client groups, efforts to modify resources for a client group unable to intervene effectively on its own behalf. Also emphasis on helping the practitioner evaluate the impact of intervention.

310 Abused and Neglected Children (3)
Prerequisite: Social Work 280 or equivalent. This course explores the major concepts necessary for understanding abused and neglected children and their families. Emphasis is placed on (1) defining the problem, including societal stresses which contribute to the abuse and neglect; (2) examining existing practice methods; and (3) understanding the role of the social worker on interdisciplinary teams.
312 Women's Social Issues (3)  
Prerequisite: Social Work 280 or equivalent. This course will help students become more sensitive to the social and welfare concerns of women. The topics include work, education, family responsibilities, violence against women, and special health and mental health service needs. Emphasis will be placed on understanding how social action can be used to bring about positive change.

315 Diversity and Social Justice (3)  
(Same as Sociology 315.) Prerequisite: Sociology 10 or equivalent. 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.

320 Supervised Field Experience in Social Work I (4)  
Prerequisites: Social Work 300 must be taken prior to or concurrently, Social Work 320a must be taken concurrently, 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.

320a Integrative Field Experience Seminar I (2)  
Prerequisites: Consent of instructor and concurrent registration in Social Work 320. 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.

321 Supervised Field Experience in Social Work II (4)  
Prerequisites: Social Work 320, Social Work 320a, and consent of instructor. This is a continuation of agency practice experience. Students work at the agency approximately 20 hours per week and may continue at the same agency as Social Work 320 or change agencies with the consent of the instructor.

321a Integrative Field Experience Seminar II (2)  
Prerequisites: Consent of instructor and concurrent registration in Social Work 321. This seminar is a continuation of Social Work 320a. Classroom discussion will emphasize administration and community organization issues.

322 Child Welfare Practicum Seminar (3)  
Prerequisites: Social Work 320 and consent of instructor. This seminar allows students to integrate previous course work with their experience in child welfare agencies. Classroom discussion will emphasize core competencies needed for child welfare practice.

330 Research Design in Social Work (3)  
Prerequisites: Satisfaction of Math Proficiency requirement and Sociology 220. 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.

350 Special Study (1-10)  
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.

376 Mental Health and Aging (3)  
Prerequisites: Psyc 272, 373, or graduate student status. (Same as Psyc 376 and GER 376). (MSW students normally take all foundation courses prior to enrolling in this course.) A survey of recent theory and research in mental health issues for older populations. The primary focus is on major Psychological disorders prevalent among the elderly and in treatment approaches for elders.

381a Mechanisms of Aging I: The Aging Body (1)  
Prerequisites: Bio 1 or Bio 110 or equivalent. (Same as GER 300a). (MSW students normally take all foundation courses prior to enrolling in this course). Provides students with a social sciences/humanities background to the normal changes in the biology and chemistry of the aging human body.

381b Mechanisms of Aging II: The Aging Brain (1)  
Prerequisites: GER 300a or SW 381a or equivalent or consent of instructor. (Same as GER 300b). (MSW students normally take all foundation courses prior to enrolling in this course). Provides students with a social sciences/humanities background a basic introduction to the biology and chemistry of the aging human brain and nervous system.

381c Mechanisms of Aging III: Diseases of Aging (1)  
Prerequisites: GER 300a and 300b or SW 381a and 381b or equivalents or consent of instructor. (Same as GER 300c). (MSW students normally take all foundation courses prior to enrolling in this course.) Provides students with a social sciences/humanities background with information on how diseases associated with aging exacerbate the effects of aging on the human body and mind.

382 Theory and Practice with Older Adults (3)  
(MSW students normally take all foundation courses prior to enrolling in this course.) Examines theory and empirically-based assessment and intervention models for work with the elderly. It includes the life circumstances of older adults and how that differs from younger adult populations; how ethnicity, gender, social class, and sexual orientation interact 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, and interventions with physically or mentally disabled elders and elders in residential settings.
390 Seminar in Social Work Issues (1-3)
Prerequisite: Consent of instructor. A variable-credit course examining current and future considerations in designing and implementing social work service and delivery arrangements. Issues will be selected according to interests of the class. Course may be taken more than once for credit as different topics are offered.

391A Management Issues in Nonprofit Organizations: Staff Management Issues (I)
Prerequisite: Junior Standing. (Same as Political Science 391A and Public Policy Administration 391A). 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.

391B Management Issues in Nonprofit Organizations: Legal Issues in Governing and Managing Nonprofit Organizations (I)
Prerequisite: Junior Standing. (Same as Political Science 391B and Public Policy Administration 391B). 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.

391C Management Issues in Nonprofit Organizations: Financial Issues (I)
Prerequisite: Junior Standing. (Same as Political Science 391C and Public Policy Administration 391C). 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.

394 Leadership and Management in Nonprofit Organizations (3)
Prerequisite: Junior standing. (Same as PPA 394, PolSci 394, Soc 308.) 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 voluntarism 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.

396 American Philanthropy and Nonprofit Resources Development (3)
Prerequisite: Junior standing or consent of instructor. (Same as Political Science 396 and Public Policy Administration 396). 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.

398 Child Maltreatment: A Multidisciplinary Approach (3)
(Same as Psyc 398). Focuses on clinical aspects of child abuse with attention to identification, reporting, intervention, and prevention. Perspectives from the disciplines of Psychology and social work are provided.

399 Seminar: Child Sexual Abuse (1)
(Same as Psyc 399). Provides intensive study in interviewing, legal issues, assessment, medical issues, and therapeutic intervention in cases of child sexual abuse.

410 Social Policy and Social Services (3)
Prerequisite: Social Work 285 or PolSci 242 or PolSci 246 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.

417 Income & Pension Policy for the Aged (3)
Prerequisites: Graduate standing or consent of instructor. (Same as PPA 417, GER 417 and Pol Sci 417). (MSW students normally take the social policy foundation course prior to enrolling in this course.) Examination of federal, state, and local policies that affect the economic well-being of the elderly. The development of social security programs and pension programs is explored within a historical context. Emphasis is placed on the analysis of current policy problems and proposed solutions.
418 Foundations of Human Behavior in the Social Environment (3)
Prerequisites: Social Work 280 or Psych 268 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.

430 Generalist Social Work Practice (3)
Prerequisite: Social Work 300 or equivalent or admission to the 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.

431 Social Work and Human Service Organizations (3)
Prerequisites: Social Work 366 or Psych 318 or Bus Admin 311 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.

432 Community Practice and Social Change (3)
Prerequisites: SW 305 or Sociology 344 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.

435 Diagnosis and Related Pharmacology for Social Work Practice (3)
Prerequisites: SW 430 or equivalent or consent of instructor. Designed for social work students, course will provide overview of development and treatment of selected mental health disorders classified by the Diagnostic and Statistical Manual of Mental Disorders. In particular, course will examine, from a systems perspective, psychological and neuropsychological etiologies of mood, psychotic, personality, and other disorders and their preferred pharmacological treatment.

440 Social Work Research Methods and Analysis I (3)
Prerequisites: Social Work 330 or Sociology 230 and 231 or equivalent and Sociology 220 or equivalent or admission to the MSW program. The first of a two-course sequence designed to provide students with the knowledge base and skills for using scientific method to advance social practice, knowledge and theory. Focuses on research methods at different levels (e.g., individual, group, organization, and community). Covers quantitative and qualitative methods, research design, sampling, measurement, use of results, impact of research, and ethical considerations.

443 Health Care Policy (3)
Prerequisites: Graduate standing or consent of instructor. (Same as Pol Sci 443, GER 443 and PPA 443.) (MSW students will normally take the social policy foundation course prior to enrolling in this course.) 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.

444 School Social Work (3)
Prerequisites: SW 430 or equivalent or graduate standing and consent of instructor. Examines role of social worker in school settings and includes work with youth, families, and communities in relation to the child or adolescent's functioning in school.

449 Social Work Research Methods and Analysis II (3)
Prerequisites: Social Work 440 or equivalent. Advanced course, focusing on analysis of qualitative and quantitative data to advance 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.

450 Theory and Practice with Children and Youth (3)
Prerequisite: SW 430 or equivalent or consent of instructor and graduate standing. Examines theory and empirically-based assessment and intervention models for work with children and adolescents. The effects of family, peers, and societal context (e.g., poverty, racism) will be stressed in understanding youth problems such as drug abuse, academic failure, delinquency, adolescent pregnancy, and gang participation. The course will emphasize a multi-disciplinary approach using inter-agency collaboration and negotiation skills.
451 Theory and Practice with Families (3)  
Prerequisites: SW 430 or equivalent or consent of instructor and graduate standing. Examines theoretical approaches to social work with families, including the impact of the social environment. Skills will include assessment, and multidisciplinary 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.

452 Family Policy (3)  
Prerequisites: SW 410 or equivalent or consent of instructor and graduate standing. Examines major trends and alternatives in social and economic development policy and practice in state, national, and international perspectives. Students will develop skills in policy analysis and development.

462 Social and Economic Development Policy (3)  
Prerequisites: SW 410 or equivalent or consent of instructor and graduate standing. Examines major trends and alternatives in social and economic development policy and practice in state, national, and international perspectives. Students will develop skills in policy analysis and development.

469 Human Resources in the Public Sector (3)  
Prerequisites: PPA 460 or consent of instructor. (Same as PolSci 449 and PPA 449). Presents an overview of personnel and labor relations in the public sector. Particular emphasis placed 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. The topics 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.

455 Strategic and Program Planning for Nonprofit Organizations (3)  
Prerequisites: Graduate standing or consent of instructor. (Same as PolSci 491 and PPA 455). 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.

461 Human Services Leadership and Management (3)  
Prerequisites: Graduate standing. Addresses leadership and management in public and nonprofit human service agencies, focusing on the role of the social work practitioner as administrator. Students will be introduced to theory and practice in human service organization and program planning, management, and development. Specific skill areas include strategic planning, volunteer management, team building and conflict management, fund development, leadership, information technologies, community relations, and evaluation in human service organizations. Attention will be given to social work values and ethics and effective practice with a diverse workforce and constituencies.

473 Practice and Program Evaluation (3)  
Prerequisites: SW 440 and 449 or equivalent or consent of instructor and graduate standing. 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.

489 Foundation Field Practicum Seminar (3)  
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 practice.

490 Graduate Field Practicum I (2-4)  
Prerequisites: Graduate standing and consent of instructor. Provides integrative field experience in generalist social work practice. May be taken for 2-4 hours' credit depending on time in agency during semester; 50 contact hours=1 credit hour. May be repeated once.

491 Graduate Field Practicum II (2-6)  
Prerequisites: SW 489 and SW 490. Provides integrative field experience in students' graduate social work practice concentration. May be taken for 2 to 6 hours' credit depending on time in agency during semester; 55 contact hours=1 credit hour. May be repeated once and/or taken concurrently with SW 492.
492 Graduate Field Practicum III (2-6)
Prerequisites: SW 491. Provides advanced integrative field experience in students' graduate social work practice concentration. May be taken for 2 to 6 hours' credit depending on time in agency during semester; 55 contact hours=1 credit hour. May be repeated once and/or taken concurrently with SW 491.

495 Directed Study in Professional Social Work (1-10)
Prerequisites: 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.

499 Advanced Seminar in Professional Social Work (1-3)
Prerequisites: Graduate standing and consent of instructor. Focused study on selected issues, concepts, and methods of professional social work practice. May be taken more than once for credit provided the course topic is different each time.
Faculty

Nancy M. Shields, Associate Professor*, Chairperson
Ph.D., Southern Illinois University-Carbondale
K. Peter Etzkorn, Professor Emeritus*, Ph.D., Princeton University
Jerome Himelhoch, Professor Emeritus*, Ph.D., Columbia University
George J. McCall, Professor*, Ph.D., Harvard University
Herman W Smith, Professor*
Ph.D., Northwestern University
Harry H. Bash, Associate Professor Emeritus*
Ph.D., University of Pennsylvania
Sarah L. Boggs, Associate Professor Emerita*
Ph.D., Washington University
Chikako Usui, Associate Professor*
Ph.D., Stanford University
Teresa J. Guess, Assistant Professor
Ph.D., University of Missouri-Columbia
Susan Tuteur, Adjunct Assistant Professor
Ph.D., University of Chicago
Robert Keel, Lecturer
M.A., Washington University
Adinah Raskas, Lecturer
M.A., Saint Louis University
*members of Graduate Faculty

The faculty prides itself on its commitment to high standards of teaching and sound scholarly research. Systematic course evaluations by students each semester are taken seriously, and individual faculty have been singled out as nominees and recipients of university Excellence in Teaching awards. The ongoing scholarly research of the faculty is reflected in the department's upper-level and graduate courses, as well as in the numerous publication credits of faculty in journals and books or presentations at national and international meetings. Information on current academic activities of the faculty is posted on the departmental Web page http://www.umsl.edu/sociolog.

General Information

Degrees and Areas of Concentration
The sociology department offers courses leading to the B.A. in sociology and the B.S. in sociology; in cooperation with the College of Education, the B.A. in sociology with teacher certification; in cooperation with the College of Business Administration, the B.A. in sociology with a business option; and cooperative minor or certificate programs in American studies, black studies, legal studies, urban studies, religious studies, women's and gender studies, and international studies.

Students completing the B.A. or B.S. degree in sociology are well-prepared for graduate study in sociology or careers in industry, health and social services, and urban, intergroup, political, or community issues.

Since the sociology department also offers work leading to the M.A. degree in sociology (see below), opportunities are available for graduate-level instruction to selected undergraduate students. The graduate emphasis areas include (1) demography and population; (2) social problems and social change; (3) social and family networks; and (4) applied analysis, measurement, and program evaluation. Undergraduate students with exceptional records at UM-St. Louis are encouraged to enroll in graduate-level classes in the last year of their undergraduate program. Graduate credit for such course work is given only in the student's last undergraduate semester, and each course must be approved in advance by the Graduate School on the recommendation of the department.

In addition to a balanced program of basic undergraduate to advanced graduate courses, the department provides a range of opportunities for students to develop specialized research methods seminars, and internship placements are offered in support of this goal and are typically designed around the ongoing research interests of department faculty. The department provides students with opportunities for intensive direction and guidance from faculty. Students and faculty working in particular subject areas consult freely with members working in other areas. Research interests of sociology faculty extend beyond the department into a wide variety of joint projects with faculty in other departments and programs, including criminology and criminal justice, engineering, political science, trauma studies, women's and gender studies, gerontology, public policy research centers, the Bush Center for Law, Social Change and Conflict Resolution, the Center for International Studies, and the Dispute Resolution Program.

A minor in sociology from courses taken in sociology at UM-St. Louis is available to students majoring in related areas.

Department Honors The sociology department will award departmental honors to those B.A. and B.S. degree candidates in sociology with an overall grade point average of 3.2 or better. They must also successfully complete an independent study through Sociology 350, Special Study.

Undergraduate Studies

General Education Requirements
Students must satisfy the university and college general education requirements. Courses in sociology may be used to meet the social science requirement. The foreign language requirement for the B.A. degree may be satisfied in any language. Not more than 12-15 hours of junior college transfer credit may be applied toward the combined minimum of required credit hours for the B.A. (31 credit hours) or B.S. (37 credit hours) major. No
course in which a grade below a C- is received will count toward satisfying the core requirement.

**Satisfactory/Unsatisfactory Restrictions** Sociology majors may not take courses counting toward their major requirements on a satisfactory/unsatisfactory basis.

**Degree Requirements**

**Bachelor of Arts in Sociology**
In addition to specific baccalaureate degree requirements of the College of Arts and Sciences, candidates must complete 31 hours of sociology course credit including the following required core courses:

1. Introduction to Sociology
2. Sociological Theory
3. Sociological Statistics, or
4. Math 31, Elementary Statistical Methods, or
5. Math 102, Finite Mathematics I
6. Research Methods
7. Laboratory in Research Methods

**Bachelor of Science in Sociology**
For the B.S. in sociology candidates are required to take the core courses, and complete the following requirements.

1. Six credit hours from sociology research courses such as:
   - Sociology 298, Practicum in Field and Laboratory Research
   - Sociology 304, Survey Research Practicum
   - Sociology 330, Field Research in Criminology
   - Sociology 331, Qualitative Methods in Social Research
   - Sociology 346, Demographic Techniques
   - Sociology 370, Selected Topics in Techniques of Sociological Research

Courses in other departments may be applied to the required six hours of research courses with the written consent of the student's faculty advisor.

2. Six additional sociology courses (18 hours), chosen with the approval of the student's faculty advisor, are required for the B.S. degree in sociology, including a minimum of two courses (six hours) at the 300 level (no more than three hours of either Soc 350, Special Study or Soc 385, Internship in Sociology may be applied to this 300 level requirement). No more than three hours in sociology below the 100 level can count toward this 18-hour requirement.

Related Area Requirements:
Candidates for the B.S. in sociology also must complete five courses from at least four of the following nine areas: computer science, economics, mathematics, philosophy, political science, probability and statistics, psychology, public policy administration, and international studies. Specific course selections must be approved by a faculty advisor.

**Combined Degree: Bachelor of Science in Civil Engineering and Bachelor of Science in Sociology**
Students pursing the combined degree are simultaneously enrolled in the College of Arts and Sciences and the Joint Undergraduate Engineering Program. They have an engineering faculty adviser as well as a faculty adviser in the Department of Sociology.

A program of 159 semester hours is required for the B.S. in civil engineering and the B.S. in sociology. Earned alone, the B.S. in engineering requires 137 semester hours. Because of the overlap in required courses for the two curricula, the combined degree program requires only 22 additional semester hours.

For additional information, see the section in this *Bulletin* labeled UM-St. Louis/Washington University Joint Undergraduate Engineering Program or contact: Associate Dean of the Joint Undergraduate Engineering Program, 228 Benton Hall, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, MO 63121.

**B.A. or B.S. in Sociology with Teacher Certification**
Students must complete the B.A. or B.S. in sociology requirements, as well as the requirements for teacher certification. (See the College of Education section of this *Bulletin*.)

**B.A. or B.S. in Sociology with an Interest in Business**
The following courses are suggested for students seeking careers in sales, market research, and so forth. In addition to the B.A. or B.S. in sociology requirements, the following core courses are suggested:
Students may then choose to complete one of the following three sets of courses:

1) **Marketing Management**
   - 206, Basic Marketing
   - 275, Marketing Intelligence
   - 303, Industrial Marketing

2) **Financial Management**
   - 204, Financial Management
   - 334, Investments
   - 350, Financial Policies

3) **Accounting**
   - 145, Managerial Accounting
   - 340, Intermediate Accounting I
   - 345, Cost Accounting

**Requirements for the Minor**

Students must apply for the minor in sociology. Candidates must complete at least 15 hours of departmental course work in sociology, of which at least 9 must be completed at UM-St. Louis' department of sociology and must be beyond those applied to the candidate's major. At least 6 hours must be at the 300 level (no more than 3 hours of either Soc 350, Special Study, or Soc 385, Internship may be applied to this 300 level requirement).

Candidates who anticipate that their background in sociology may play a substantial role in their career plans are strongly encouraged to take some or all of the core requirements.

Candidates must have a cumulative grade point average of 2.0 or better in all courses pertaining to the minor. Department courses taken on a satisfactory/unsatisfactory basis may not be applied to the minor.

**Department Awards**

The department offers several annual awards to outstanding students on the basis of merit.

The Ray Collins Alumni Award is given annually by the Sociology Alumni Association to the top graduating senior. The awardee is selected by the faculty on the basis of GPA, and the award consists of first-year membership dues in the Sociology Alumni Association and a cash award.

Honors Program Student Association Awards are given annually to exceptional seniors and graduate students. The awards include student affiliate memberships in the Honors Program Student Association of the American Sociological Association to aid the establishment of a network of colleagues who are at similar points in their career development.

The Alumni Agent Scholarship and the Sociology Alumni Scholarship are given to deserving junior or senior sociology majors annually. The awardees are selected by the faculty on the basis of merit, and the scholarships consist of a stipend for books and educational materials.

A series of undergraduate awards are given to outstanding students. The Freshman Sociology Award is given to the outstanding freshman student in lower-division sociology course work; the Outstanding Junior Sociology Major Award is given to the outstanding junior sociology major; the Outstanding Sociology Minor Award is presented to the graduating student with the most outstanding minor GPA record; and the Outstanding Sociological Statistics and Methods Award is given to the junior sociology major with the best overall record in Sociology 220, 230, and 231. This award carries tuition remission for a 3-credit hour Sociology 350, Independent Study, to act as an undergraduate course assistantship for Sociology 220, 230, and 231.

**Department Honors**

The sociology department will award department honors for those B.A. and B.S. degree candidates in sociology with an overall grade point average of 3.2 or better. They must also successfully complete an independent study through Soc 350, Special Study.

**Graduate Studies**

**Curriculum**

The department offers a flexible program of studies leading to the master of arts degree in sociology with a general orientation toward "Urban Problems and Social Change." Course work combines intensive examination of the core areas of sociology with acquisition of the analytical skills of sociological investigation. A variety of career options are available to the master's-level graduate, including: program evaluation and research; field or case work related to community issues; administrative roles in social agencies and planning organizations; or doctoral studies in sociology or related fields.

The curriculum is designed to serve the needs of full-time students as well as working students who are able to engage only in part-time studies. This design allows pre-career and mid-career students to prepare for employment in education, service agencies, community organizations, government agencies, or businesses. The curriculum also invites students to take advantage of the university's urban setting through integration of selected work experiences with practicum courses and academic seminars under faculty guidance. The curriculum emphasizes theoretical, analytic, and substantive approaches to urban-related problem solving.
Admission Requirements
Individuals with at least the equivalent of the department’s B.A. or B.S. degree in sociology may be admitted to the Graduate School as candidates for the M.A. degree. Students with bachelor’s degrees in fields other than sociology may be admitted to pursue graduate sociology studies under the condition that they make up core deficiencies prior to graduate work.

In addition to meeting the general admission requirements of the Graduate School, a student should ordinarily have

- A baccalaureate degree with a minimum grade point average of 3.00.
- At least 15 hours in the social sciences, of which 12 should be in upper-level courses.
- Three letters of recommendation from persons qualified to judge the candidate’s potential for success in the program.
- A statement describing the applicant’s interest in graduate study in sociology.

Students who do not meet these requirements may be provisionally admitted upon approval of the department and the dean of the Graduate School. Admission and financial aid decisions are made on the basis of past academic record, program performance, and career commitment. Students wishing to continue regular employment outside the university may enroll on a part-time basis. Requests for further information about the program should be sent to:

Director of Graduate Studies
Department of Sociology
University of Missouri-St. Louis
8001 Natural Bridge Road
St. Louis, MO 63121-4499

Students admitted to the program are assigned a graduate adviser from whom they should obtain a copy of the Graduate Student Handbook and with whom they should consult periodically on academic and career considerations.

Degree Requirements

Master of Arts in Sociology Each student shall prepare an adviser-approved course of study during the first semester of enrollment. Candidates for the M.A. degree shall complete a minimum of 30 hours of approved study, at least 21 of which must be taken in courses offered by the department.

Core Curriculum
400, Proseminar in Sociology
402, Advanced Quantitative Techniques
404, Advanced Methodology

The sociology department participates in a joint quantitative techniques and methodology series of courses with the other social sciences which can be substituted for the above.

Concentration The department offers opportunities for intensive work in one of the several research areas of department faculty members, which allows the flexibility for comprehensive and coherent exposure to the methods and insights of the discipline. Matriculating students are encouraged to plan, with their advisers, a coherent program of studies consistent with their career interests.

Exit Requirements A student’s program must include one of the following exit projects: a 6-hour internship (Sociology 480, Individual Study) or a 6-hour preparatory sequence and an approved paper (Sociology 490, Supervised Research). 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 or thesis.

Career Outlook

The following career information is adapted from the American Sociological Society Web site. For more information, see http://www.asanet.org/.

A BA or BS in sociology is excellent preparation for graduate work in sociology for those interested in an academic or professional career as a professor, researcher, or applied sociologist.

The undergraduate degree provides a strong liberal arts preparation for entry level positions throughout the business, social service, and government worlds. Employers look for people with the skills that an undergraduate education in sociology provides. Since its subject matter is intrinsically fascinating, sociology offers valuable preparation for careers in journalism, politics, public relations, business, or public administration fields that involve investigative skills and working with diverse groups. Many students choose sociology because they see it as a broad liberal arts base for professions such as law, education, medicine, social work, and counseling. Sociology provides a rich fund of knowledge that directly pertains to each of these fields.

The MA offers students access to an even wider variety of careers. Sociologists become high school teachers or faculty in colleges and universities, advising students, conducting research, and publishing their work. Over 3000 colleges offer sociology courses. Sociologists enter the corporate, non-profit, and government worlds as directors of research, policy analysts, consultants, human resource managers, and program managers. Practicing sociologists with advanced degrees may be called research analysts, survey researchers, gerontologists, statisticians, urban planners, community
developers, criminologists, or demographers. Some MA sociologists obtain specialized training to become counselors, therapists or program directors in social service agencies.

Today, sociologists embark upon literally hundreds of career paths. Although teaching and conducting research remains the dominant activity among the thousands of professional sociologists today, other forms of employment are growing both in number and significance. In some sectors, sociologists work closely with economists political scientists, anthropologists, psychologists, social workers and others reflecting a growing appreciation of sociology's contributions to interdisciplinary analysis and action.
Course Descriptions


10 Introduction to Sociology (3)
An introduction to sociological approaches to human behavior, including types of social organizations, patterns of social interaction, and social influences on individual conduct.

40 Social Problems (3)
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.

99 The City (3)
(Same as Criminology and Criminal Justice 99, Political Science 99, and Interdisciplinary 99.) Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburbia and the metropolitan area, ethnic groups, stratification, and psychological implications of urban living. This course is for freshmen and sophomores. It is open to juniors and seniors with the consent of instructor.

100 Women in Contemporary Society (3)
Prerequisite: Sociology 10 or Interdisciplinary 50 or consent of instructor. An introduction to the sociological analysis of the status of women in society, including their work, family, and political roles. Socialization, education, and the women's movement will also be considered, as these affect the position and participation of women in a variety of social arenas.

102 Women, Gender, and Diversity (3)
Same as Interdisciplinary 102. An introduction to the study of women's roles in a diverse and gendered culture and society. Through a variety of disciplinary perspectives in the humanities, social sciences, and natural sciences, it seeks to understand gender as a concept that affects both women and men. Explores issues of power, identity, and relationships in women's lives.

103 Sex Roles in Contemporary Society (3)
Prerequisite: Sociology 10 or Interdisciplinary 50 or consent of instructor. The study of social processes through which sex roles are developed and acquired; the impact of gender and sex roles on personal identity and social conduct; the relationship between sex roles and social inequality; and individual and social consequences of changing sex roles in contemporary society.

160 Social Psychology (3)
(Same as Psych 160.) Prerequisite: Sociology 10 or Psych 3. Study of the interaction between individuals and their social environment. Examination of basic principles, concepts, and methods.

180 Alcohol, Drugs, and Society (3)
(Same as Criminology and Criminal Justice 180.) Prerequisite: Sociology 10 or Psych 3. 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.

200 Sociology of Deviant Behavior (3)
Prerequisite: Sociology 10 or consent of instructor. Theories of the nature, causes, and control of deviance as a social phenomenon. Application of theories to specific substantive areas, such as mental disorder, delinquency, drug abuse, suicide, unconventional sexuality, and physical disability.

202 Urban Sociology (3)
Prerequisite: Sociology 10 or consent of instructor. Urbanization as a world phenomenon; urban social and ecological structures and changing life styles; the decision-making processes in urban problem-solving.

210 Sociological Theory (3)
Prerequisite: Sociology 10 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.

214 Juvenile Delinquency and Youth Crimes (3)
Prerequisite: Three hours of 100-level sociology. A theoretical and research-oriented approach to delinquency and youth crime, including types, trends, causation, correction, and prevention.

220 Sociological Statistics (3)
Prerequisites: Sociology 10 and Math 20 or 30. Issues and techniques of statistical analyses relevant to quantitative sociological research, e.g., elementary probability, measurements of central tendency and dispersion, measures of relationships including linear regression and correlation, inferential statistics.
224 Marriage and the Family (3)
(Same as Nursing 224.) Prerequisite: Sociology 10 or consent of instructor. The study of patterns of close relationships, and how these relationships are influenced by larger social forces. Topics include: love, dating, mate selection, cohabitation, alternative lifestyles, working families, parenting, single mothers, families in crisis, domestic violence, and divorce. Universal and variable aspects of family organization, family role systems, and changes in family social structure.

230 Research Methods (3)
Prerequisites: Sociology 10 and satisfaction of mathematics proficiency requirement and Sociology 220 or consent of instructor. Research planning and interpretation, principles of research design, measurement, and sampling. Techniques for the collection, analysis, and presentation of data.

231 Laboratory in Research Methods (1)
Prerequisite: Must be taken concurrently with Sociology 230. Laboratory course to accompany Sociology 230. The course will include practical experience in the conduct of research. Required for the B.A. in sociology.

241 Selected Topics in Macro-sociology (1-3)
Prerequisite: Sociology 10 or consent of instructor. Examination of a specific topic that focuses on large-scale social systems and the structural relationships among social organizations and institutions. May be taken more than once for credit provided the topic of the course is different each time.

245 Sociology of South Africa (3)
Prerequisite: Sociology 10 or consent of instructor. An analysis of South African society as a sociocultural system, with attention to its demographic, ecological, and social structures; its distinctive social institutions and lifestyles; and the social dynamics of modernization, urbanization, and ethnicity. This course satisfies the Cultural Diversity requirement.

250 Sociology of Victimization (3)
Prerequisites: Soc 10. Examines the role of social factors in a wide range of kinds of victimization—crime, violence, natural disasters, accidents, disease, etc. The topic of social reactions to various kinds of victimization is also covered. Sociological theories of victimization are emphasized.

262 Social Psychology of Urban Life (3)
Examines how people experience and give meaning to their lives as urban dwellers. Topics include: cognitive maps, crowding, sensory overload, lifestyle diversity, strangers, urban tolerance, social networks, segmentation of personal life, and quest for identity.

264 The Sociology of Religion (3)
Prerequisite: Sociology 10 or consent of instructor. Religion as a universal social institution, its development, forms, and influence in the world, including Western and Eastern religions. Sociological analysis of the effects of religion upon the individual and societies. Religion, its roles in social change, and contemporary trends.

268 The Sociology of Conflict (3)
Prerequisite: Sociology 10 or consent of instructor. The conditions under which social conflicts arise, develop, and are terminated (or in some cases resolved) are examined. The functions of different levels of conflict are studied to determine the potential effects and outcomes of planned intervention.

270 Socialization (3)
Prerequisite: Sociology 10 or consent of instructor. Analysis of the structural and social psychological aspects of roles and the self as a product of social interaction.

278 Sociology of Law (3)
Prerequisite: Sociology 10 or consent of instructor. A study of law and society with emphasis on the sociological analysis of specific problems of legal doctrines and legal institutions. The law is examined as an instrument of social control through study of the courts, the legal profession, the police, and various social institutions. Consideration is given to law as an instrument of social change.

280 Society and Technology (3)
Prerequisite: Sociology 10 or consent of instructor. Technology in industrial and post-industrial societies. The social shaping of technological systems. The role of technology in social change.

286 Society, Arts, and Popular Culture (3)
(Same as Anthro 286.) Prerequisite: Sociology 10 or Anthro 11. The relationship of artists, writers, and musicians; their traditions and modes of artistic expression to variant social structures and institutions; and social pressures and rewards.

290a, 290b, 290c Undergraduate Seminar in Sociological Issues (3)
Prerequisites: Sociology 10 and consent of instructor. Consideration of an issue or area of the instructor's choice not already covered by other undergraduate courses. May be taken up to three times for nine hours of credit, provided the subject matter is different each time the seminar is taken.

Note: Any 300-level course taken for major elective credit requires prior completion of two of the following: Sociology 210, Sociology 220, or Sociology 230.
298 Practicum in Field and Laboratory Research (1-3)
Prerequisites: Sociology 220 and Sociology 230, or consent of instructor. Intensive field or laboratory research to be taken subsequent to, or concurrent with, a specific substantive course. May be taken twice for credit.

300 Communities and Crime (3)
(Same as Criminology and Criminal Justice 300).
Prerequisite: Criminology and Criminal Justice 110, 120, 130, 210, 220, or consent of instructor. Analysis of the sources, consequences, and control of crime within communities. Emphasis on social and ecological theories of crime and on population instability, family structure, and the concentration of poverty as causes of crime. Community crime prevention efforts are also addressed.

304 Survey Research Practicum (3)
(Same as Econ 304 and PolSci 304.) Prerequisites: Junior standing, Sociology 220, Sociology 230, and consent of instructor. The execution of a sample survey, including establishing study objectives, sampling, questionnaire construction, interviewing, coding, data analysis, and presentation of results. May be taken more than once for credit provided the course topic is different each time.

308 Leadership and Management in Nonprofit Organizations (3)
(Same as SW 394, PolSci 394, and PPA 394.) Prerequisite: Junior standing. 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 mobilizations; and program development management and evaluation.

310 Selected Topics in Sociological Theory (1-3)
Prerequisite: Sociology 210. Focused examination of selected issues, the contributions of individual theorists, and methodological implications in the study of sociological theory. May be taken twice for credit.

312 Sociology of Wealth and Poverty (3)
Prerequisites: Sociology 10 and junior standing or consent of instructor. Theory and research on social stratification and inequality in contemporary societies.

314 Social Change (3)
Prerequisites: Sociology 10 and junior standing, or consent of instructor. Theories of social change applied to the analysis of small and large social systems, including the planning of change and projecting of alternative futures.

315 Diversity and Social Justice (3)
(Same as Social Work 315). Prerequisites: Sociology 10 or equivalent. 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.

316 Power, Ideology, and Social Movements (3)
Prerequisite: Sociology 10 and Junior Standing or consent of instructor. Effect of events and social processes on thought and action in the twentieth century. Social functions of ideologies as expressed in movements and formal and informal organizations seeking social change.

317 Social Psychology of Conflict and Negotiation (3)
(Same as Psychology 317.) Prerequisite: nine (9) hours of Psychology or nine (9) hours of sociology, including Psych 160 or Soc 160. The purpose of this course is to understand how social psychological phenomena affect the processes and outcomes of negotiation and other forms of social conflict. The course is designed to be relevant to the broad spectrum of conflict situations people face in their work and daily lives. A basic premise of this course is that while analytical skills are needed to discover solutions to social problems, negotiation skills are needed in order for these solutions to be accepted and implemented.

320 Forms of Criminal Behavior (3)
(Same as Criminology and Criminal Justice 320.)
Prerequisite: Criminology and Criminal Justice 110, 120, 130, 210, 220, or consent of instructor. Examination of major types of criminal behavior including violent, property, public order, and organizational offenses. Emphasis on theories of, and responses to, these crimes.

331 Qualitative Methods in Social Research (3)
Prerequisite: Sociology 220 and Sociology 230, or their equivalent, or consent of instructor. This course is devoted to such qualitative methods as participant observation, intensive interview, content analysis, and oral history, among others. The place of these kinds of techniques in social research, as well as the issues raised by them, will be considered. Students will participate in individual or group research projects using one or more of the methods discussed.

336 Organizations and Environments (3)
Prerequisites: Sociology 10 and junior standing or consent of instructor. Internal and external forces that influence the structures, adaptive flexibility, and actions of public and private organizations and agencies are examined. Specific foci include: organizational responses to environmental opportunities, constraints, and contingencies; sources of conflict and impediments to organizational goal attainment; and strategies for increasing organizational effectiveness, efficiency, and chances for survival.
338 Sociology of Health (3)
(Same as Nursing 338.) Prerequisites: Sociology 10 and junior standing. 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.

340 Race, Crime, and Justice (3)
(Same as Criminology and Criminal Justice 340.) Prerequisite: Criminology and Criminal Justice 110, 120, 130, 210, 220, 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.

342 World Population and Ecology (3)
Prerequisites: Sociology 10 and junior standing or consent of instructor. Sociological theories and research relating people to their ecological environments. Topics include fertility and population change in the non-Western world. Emphasis is directed to population policies in e.g., Africa and India and China.

344 Problems of Urban Community (3)
Prerequisites: Sociology 10 and junior standing, or consent of instructor. The urban community as an area of social action and problem solving with emphasis on the sociological aspects of urban problems.

346 Demographic Techniques (3)
Prerequisites: Sociology 220 and Sociology 230, or consent of instructor. Practicum experience with computation and analysis of major demographic measures of population size, growth, and shape; fertility; mortality; immigration; emigration; and morbidity. Special attention to comparisons of standard Western and non-Western demographic models, with emphasis on computer modeling.

350 Special Study (1-10)
Prerequisite: Consent of instructor. Independent study through readings, reports, and field work.

354 Sociology of Business and Work Settings (3)
Prerequisites: Sociology 10 and 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 work place and business behavior.

356 Sociology of Education (3)
Prerequisite: Sociology 10 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.

360 Sociology of Minority Groups (3)
Prerequisites: Sociology 10 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.

361 Social Gerontology (3)
(Same as Gerontology 361.) Prerequisites: Sociology 10 and junior standing, or consent of instructor. Topics include: sociological theories of aging, technological and social change and its effects on the environment of older people, and prejudice and discrimination against the elderly.

370 Selected Topics in Techniques of Sociological Research (1-3)
Prerequisite: Sociology 220, 230, or consent of instructor. The study of a specific research technique used in sociological analyses. May be taken more than once for credit provided the course topic is different each time.

375 The Social Psychology of Disabilities (3)
Prerequisite: Sociology 160 or Psych 160 or consent of instructor. (Same as Psychology 375). A social psychological and micro-sociological examination of attitudes and behaviors affecting persons with disabilities. Topics include stigma and empowerment, adaptive behaviors, stereotypes and prejudices, and images of disabilities in popular culture and mythology. The course will address the experience of disability and its social consequences for the lives of persons with disabilities.

378 Selected Topics in Social Psychology (1-3)
Prerequisite: Psych 160 or Sociology 160, or consent of instructor. Focused examination of selected issues, concepts, and methods in the study of social interaction. May be taken twice for credit.

380 Selected Topics in Social Policy (1-3)
Prerequisite: Sociology 10, Junior standing or consent of instructor. Examination of a specific sociological topic of current relevance in the community. May be taken more than once for credit provided the course topic is different each time.

385 Internship in Sociology (1-6)
Prerequisite: Junior standing and consent of instructor. Students participate in supervised placements in a position related to the profession of sociology.
400 Proseminar in Sociology (3) 
Required of all entering graduate students in the fall semester of the first year of residency. An overview of the field of contemporary sociology, with emphasis on the major theories, issues, research approaches, and ethical problems in the field today, and an introduction to theory construction, measurement, and design strategies.

402 Advanced Quantitative Techniques (3) 
Prerequisite: Sociology 220 or consent of instructor. A study of advanced quantitative analysis of sociological data, focusing on problems of multivariate analysis, sampling theory and techniques, and the use of electronic data processing in approaching these problems.

404 Advanced Methodology (3) 
Prerequisite: Sociology 230 or consent of instructor. A study of methodological problems on an advanced level, focusing on contemporary issues in the processes of inquiry with particular emphasis on the applicability of different modes of research to various types of theoretical problems. Consideration of ethical problems in social research.

406 Research Practicum (3) 
Prerequisites: Sociology 400 and consent of instructor. Involvement of students in an individual or group project culminating in a report, in order to provide firsthand experience in integration of theoretical concerns, methodological principles, and appropriate research techniques in an empirical study, the subject of which shall be determined in collaboration with the instructor.

410 Comparative Social Structures (3) 
Prerequisite: Sociology 400 or consent of instructor. Social institutions in selected societies are examined in terms of their similarities and differences. Typically, non-American and American social structures such as religion, education, politics, family, and economy are compared, along with population dynamics and change, myths, values, and norms. Societies are selected depending on specialty of faculty and interests of students. May be repeated for credit if the topic is different.

415 Foundations of Criminological Theory (3) 
(Same as Criminology and Criminal Justice 415.) 
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.

420 Theories of Conflict (3) 
Prerequisite: Sociology 400 or consent of instructor. The conflict perspective in sociology is contrasted with consensus models of society. Conflict theorizing is traced from the Classical social thought tradition in Western civilization to its modern Marxist and non-Marxist formulations in contemporary sociology. Ethical implications for social conflict intervention are considered.

422 Family and Interpersonal Conflict Resolution (3) 
Prerequisite: Sociology 420 or consent of instructor. The sources and functions of interpersonal conflict in family and neighborhood settings are analyzed. Mediation and conciliation strategies are developed in relation to primary and secondary structures, role systems, and social change.

424 Conflict Management in Organizations (3) 
Prerequisite: Sociology 420 or consent of instructor. Intrinsic sources of inter- and intraorganizational conflict and related methods of mediation are examined. Conflict management strategies and situational manifestations of conflict are analyzed within the context of antecedent conditions, such as domain dissensus, differential interests and goals, previously unresolved disputes, unbalanced power relations, structural barriers to communications, internal and external competition for resources, and environmental change.

426 Community and Regional Conflict Intervention (3) 
Prerequisite: Sociology 420 or consent of instructor. Community and regional conflicts are examined, with emphasis on paradigms for analyzing power, policy, and social change, and on developing intervention skills through simulation exercises. Intervention roles and approaches, such as mediation, conciliation, arbitration, and advocacy are discussed.

430 Policy Mediation Processes (3) 
Prerequisite: Sociology 426 or consent of instructor. Sociological theories of conflict are applied to public issues and policy-making, with an emphasis on building analysis and practice skills. Processes of mediated problem solving are studied and applied to conflict between jurisdictions, between citizens and governments, and between public and private sectors.

432 Survey Research Methods (3) 
(Same as Ed Rem 432, Pol Sci 406.) Prerequisites: An introductory statistics course (such as Soc 220) or consent of instructor. A course on the principles and procedures for conducting survey research. Topics include: forming questions and scales, survey design, sampling methods, data preparation and analysis, and presentation of results.

440 Seminar in Urban Sociology (3) 
Prerequisites: Nine hours of undergraduate course work in sociology and consent of instructor.
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442 Minority Aging (3)
(Same as Gerontology 442.) Prerequisite: Sociology 361 or consent of instructor. The experience of aging for racial and ethnic minority elderly will be examined in the context of their families, communities, and society. Key questions concerning minority elderly frame the course, such as the relative importance of culture versus social structure, and the applicability of gerontological theory to the minority aging experience.

444 Social Policy and Community Planning (3)
Prerequisite: Consent of instructor. Analysis of the formulation of policy as a social process with concentration on political as well as technical-rational elements. Relation of social policy formation to planning at the community level and analysis of the elements and dynamics of community planning. Analysis of and exposure to planning agencies in the St. Louis metropolitan area.

445 Sociological Dimensions of Chronic Illness (3)
(Same as Gerontology 445.) Prerequisite: Sociology 400 or consent of instructor. The consequences of chronic illness for social roles, family and organizational dynamics, and the functioning of society are examined. Chronic illness is presented as both a medical problem and a social phenomenon that is shaped by the changing age structure of society.

446 Selected Topics in Health Care Policy (3)
(Same as Public Policy Administration 446 and PolSci 446.) Prerequisite: Consent of instructor. The study of specialized issues and methods relating to health care policy. May be repeated for credit, provided the subject matter is different.

449 Issues in Retirement (3)
(Same as Gerontology 449.) Prerequisite: Graduate standing. This course examines macro and micro issues of retirement in the United States—its processes, causes, and consequences—in relation to economic market conditions, demographic changes, and programs and policies that are targeted to support the elderly (e.g., Social Security). It also examines issues relating to older women and retirement.

450 Seminar in Social Psychology (3)
Prerequisites: Nine hours of undergraduate course work in sociology and consent of instructor.

452 Family Policy (3)
Prerequisites: SW 410 or equivalent or consent of instructor and graduate standing. (Same as PolSci 416 and SW 452). 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.

461 Law and Social Control (3)
(Same as Criminology and Criminal Justice 430.) 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.

468 Negotiating Workplace Conflict (3)
(Same as Mgt. 419 and PPA 468.) Prerequisites: PPA/Mgt. 460, and Graduate Standing. Examines conflict and cooperation between individuals, groups, and organizations over control of work. A central theme is how this conflict is expressed, controlled, and resolved. Students participate in exercises to learn basics of two-party negotiations.

470 Seminar in Sociological Issues (1-3)
Prerequisites: Nine hours of undergraduate course work in sociology and consent of instructor. Consideration of an issue or area of the instructor's choice not already covered by one of the other 400-level courses. May be taken up to three times for up to nine hours of credit, provided the subject matter is different each time the seminar is taken.

475 Introduction to Evaluation Research Methods (3)
(Same as Psych 475, Public Policy Administration 475, and Criminology and Criminal Justice 475.) Prerequisite: At least one course in research design and statistics at the graduate level. 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.

476 Research Practicum in Evaluation Research Methods (3)
Prerequisites: Sociology 475 and consent of instructor. Instruction in, and supervision of, research design and data collection for evaluation of social-deviance action program research report. Concurrent with on-site participant observation.

480 Individual Study (3)
Prerequisite: Consent of adviser and instructor. Designed to give the student the opportunity to pursue particular interests within the discipline and/or to study areas not currently covered by formal courses. Guided by faculty with appropriate interests. May be taken only twice.
490 Supervised Research (1-10)
Prerequisites: Sociology 322, Sociology 332, Sociology 492, and consent of instructor. Individual supervision of research leading to the preparation of a thesis, research paper, or publishable article, in which the student demonstrates skills in the discipline of sociology.

492 Advanced Sociological Theory (3)
Prerequisite: Sociology 210 or consent of instructor. Recent and current developments in sociological theory in light of its tradition and methodological issues. The state of modern theory with regard to specific conceptual, substantive, and methodological concerns.

495 Sociological Reporting (3)
Prerequisites: Sociology 400, Sociology 402, and Sociology 404. As part of the M.A. degree exit requirement, the seminar offers directed practice in the interpretation and reporting of sociological data in a wide range of styles, including those appropriate for research reports, journal articles, policy papers, nontechnical magazines, books, and monographs, as well as oral reports to diverse consumers. Ethical dimensions of interpretation and dissemination are explored.
Minors in Interdisciplinary Studies

The College of Arts and Sciences offers a number of interdisciplinary programs leading to either a minor or a certificate in a designated area of study. There are also a number of courses which are designated as interdisciplinary and which may or may not be part of a particular interdisciplinary minor or certificate program.

These interdisciplinary courses and programs bring together the resources of two or more subject areas to focus on topics that benefit from being studied from the point of view of more than one discipline. In some cases, faculty from several departments teach as a team, giving students the opportunity to experience faculty dialogue in a crossdisciplinary fashion.

Minor in American Studies
American Studies is an internationally recognized academic field which involves an interdisciplinary approach to the study of the culture(s) of the United States, its colonial antecedents, and its indigenous peoples.

Students interested in this minor should contact the coordinator of American Studies for advice and information.

Candidates must have a cumulative grade point average of 2.0 or better in the 18 credit hours required for the minor. Three hours of the minor may be taken on a satisfactory/unsatisfactory basis. Candidates wishing to take American Studies courses from the Honors College (see below) must be members of the Honors College or must have a 3.0 cumulative grade point average.

Requirements for the minor.
Completion of the American Studies minor requires at least 18 semester credit hours, including at least two courses (6 hours) from Section A and at least two courses (6 hours) from Section B. The other 6 hours may be chosen from Section A, B, and/or C. Please read the special requirements below.

A. Core courses in American Studies (all courses are 3 credits except where otherwise indicated).
At least two of the following core courses are required to qualify for the minor. Of this minimal requirement, one course must be chosen from either American Studies or English and the other from either History or Political Science. Students may take up to two additional courses from this group, and these may be chosen from any department or discipline.

Interdisciplinary: American Studies
90, The Foundations of American Culture
295, Issues in American Culture

Anthropology
71, Native American Literature
120, Native Peoples of North America
121, Native Peoples of Eastern North America
122, Native Peoples of Western North America

Art and Art History
90, Freshman Seminar (when the topic is appropriate)
116, North American Indian Art
158, American Art
159, American Architecture

Criminology and Criminal Justice
99, The City

English
17, American Literary Masterpieces
70, African-American Literature
71, Native American Literature (Same as Anth 71)
171, American Literature I
172, American Literature II

History
3, American Civilization (to the mid-nineteenth century)
4, American Civilization (from the mid-nineteenth century)
6, African-American History
7, The History of Women in the United States

Honors
121, American Traditions: Humanities
122, American Traditions: the Fine and Performing Arts
123, American Traditions: Social Sciences
131, Non-Western Traditions: Humanities
132, Non-Western Traditions: the Fine and Performing Arts
133, Non-Western Traditions: Social Sciences
(Admission to these Honors Seminars requires consent of the dean of the Honors College: note that depending on instructor and content, Honors 121 can fulfill the requirements from this group in literature/American Studies and Honors 123 can fulfill the History/Political Science requirement. Honors 131-133 can qualify as additional Group A choices when their focus is on Native American traditions.

Music
6, Introduction to African American Music
7, Introduction to Jazz

Philosophy
107, American Philosophy

Political Science
11, Introduction to American Politics
99, The City
130, State Politics
135, Introduction to Urban Politics
165, American Political Thought
190, Studies in Political Science (when the topic is appropriate).

Sociology
99, The City

B. Option courses in American Studies (all courses are 3 credits except where otherwise indicated).
To complete the American Studies minor, students must choose at least two courses from this group, from any department or discipline, and may choose up to four courses in this group. Courses chosen from this group must be chosen from at least two departments.

Anthropology
250, American Folklore
291, Current Issues in Anthropology (when the topic is appropriate).

Art and Art History
65, Photography and Society (same as Interdisciplinary 65)
215, Topics in Tribal Art
258, Topics in American Art
291, Topics in Contemporary Art (when the topic is appropriate)

Communication
50, Introduction to Mass Media
243, Communications in American Politics
350, Mass Communication History
352, Mass Media Criticism

Economics
205, History of American Economic Development (same as History 205)

Education
Ed Fnd 251, Black Americans in Education
Ed Fnd 330, History of American Education
Ed Fnd 332, Progressivism and Modern Education

English
280, Topics in Women and Literature (when topic is appropriate)
373, Selected Major American Writers I
374, Selected Major American Writers II
375, American Fiction to World War I
376, Modern American Fiction
380, Studies in Women and Literature (when topic is appropriate)
395, Special Topics in Literature (when topic is appropriate)

History
203, U.S. Social Movements in the 20th Century
205, History of American Economic Development (Same as Economics 205)

210, African-American History: From Slavery to Civil Rights
212, African-American History: From Civil Rights to Black Power
219, U.S. Labor History
257, United States History for the Secondary Classroom
300, Selected Topics in History (when topic is appropriate)
312, The Indian in American History
315, History of Women in the United States
316, U.S. Urban History
318, African-American Women's History
320, History of Crime and Justice
393, Senior Seminar (5 credits: when topic is appropriate)

Honors College
(when topics are appropriate, any of the seminars below can qualify as an "option" course for the American Studies minor. Admission to these courses requires the consent of the dean of the Honors College.)
201, Inquiries in the Humanities
202, Inquiries in the Fine and Performing Arts
203, Inquiries in the Social Sciences
207, Inquiries in Education
301, Advanced Seminar in the Humanities
302, Advanced Seminar in the Fine and Performing Arts
303, Advanced Seminar in the Social Sciences
307, Advanced Seminar in Education
351, Research Seminar: Humanities
352, Research Seminar: Fine and Performing Arts
353, Research Seminar: Social and Behavioral Sciences
357, Research Seminar: Education

Interdisciplinary
65, Photography and Society (same as Art 65)

Philosophy
210, Significant Figures in Philosophy (when topic is appropriate)

Political Science
228, The Federal Judicial System: Politics, Process, and Behavior
230, The American Presidency
231, Congressional Politics
232, African Americans and the Political System
234, Politics and the Media
235, Political Parties and Elections
238, Women in U.S. Politics
320, Constitutional Law
321, Civil Liberties
332, Studies in American Politics (when topic is appropriate)

Sociology
40, Social Problems
100, Women in Contemporary Society
268, The Sociology of Conflict
316, Power, Ideology and Social Movements
369 Sociology of Minority Groups

Interdisciplinary Studies

369 Sociology of Minority Groups

282 United States Foreign Policy

333 Mock Constitutional Convention
History 81, African Civilization to 1800
History 82, African Civilization Since 1800
Music 6, Introduction to African-American Music

3. Students should select a minimum of three courses from the following list. One course must be a social science and one must be a humanities course.

Anthro 234, Cultural Continuity and Change in Subsaharan Africa
Anthro 235, Women in Subsaharan Africa: A Contemporary Perspective
History 318, African American Women's History
History 319, Topics in African-American History
History 380, West Africa to 1800
History 381, West Africa Since 1800
History 382, History of Southern Africa
History 385, African Diaspora to 1800
History 386, African Diaspora since 1800
PolSci 232, African Americans and the Political System
PolSci 258, African Politics
Psych 392, Selected Topics in Psychology: African American Psychology (Note: Students should only take Psych 392 when the topic is African American Psychology).

Sociology 245, Sociology of South Africa
Sociology 360, Sociology of Minority Groups
Comm 332, Intercultural Communication

Minor in Classical Studies
The minor in classical studies is an interdisciplinary course of studies intended to encourage undergraduates in various disciplines to come to a fuller awareness of the cultures of ancient Greece and Rome and of the classical tradition that underlies much of modern Western civilization. In addition to appealing to any students curiosity about the early stages of society in the West, the minor provides an especially valuable supplement to those who are majoring in many liberal arts areas including history, literature, philosophy, foreign languages, and art.

Students pursuing the minor will acquire a foundation in either Greek or Latin. They may choose to use either sequence to fulfill the foreign language requirement in the College of Arts and Sciences.

Requirements
Candidates for the minor must complete 19 credit hours of course work including:

Latin 1,
Latin 2, or
Ancient Greek 1,
Ancient Greek 2,
and three courses from the following list and any other course approved by the coordinator:
Ancient Greek 101, Intermediate Ancient Greek Language and Culture
Art 111, Art and Archeology of the Ancient World

College of Arts and Sciences
Interdisciplinary Studies

Art 112, Greek Art and Archeology
Art 113, Roman Art and Archeology
Art 212, Topics in Ancient Art and Archeology
English 20, Classical Mythology
English 120, Classical Literature in Translation
History 331, The Ancient World: Greece
History 332, Rome: The Republic
History 333, Rome: The Empire
Interdisciplinary 200, Special Topics in Classical Studies
Latin 101, Intermediate Latin Language and Culture
Philosophy 101, Ancient Philosophy
Philosophy 302, Aristotle
Philosophy 304, Plato

Minor in Legal Studies
The minor in legal studies is open to all undergraduate students at UM-St. Louis, whatever their major field. It offers a secondary field of concentration in one of the most important areas of social life. Students may use the minor as a complement to their major, as an additional qualification for career opportunities, or as general education.

This interdisciplinary minor coordinates liberal arts courses related to law. A faculty member in Legal Studies will advise students and will work with their major advisers in planning appropriate courses.

Candidates must take:


and five courses from the following list. At least three courses must be taken at the 200 level and above. No more than two courses from a single discipline may be included in the minor.

CCJ 10, Introduction to Criminology and Criminal Justice
CCJ 75, Crime and Punishment
CCJ 130, Criminal Justice Policy
CCJ 226, Law and the Individual
CCJ 227, Urban Law: Poverty and the Justice System
CCJ 345, Rights of the Offender
Comm 355, Media Law and Regulation
Econ 219, Law and Economics
History 311, Topics in American Constitutional History
History 321, Medieval England
Philosophy 287, Philosophy of Law
Philosophy 387, Seminar in Philosophy of Law
PolSci 129, Women and the Law
PolSci 226, Law and the Individual (crosslisted as CCJ 226)
PolSci 320, Constitutional Law
PolSci 321, Civil Liberties
Minor in Public Affairs Journalism

The minor in public affairs journalism provides students with an overview of media operations, including basic writing and reporting skills, as well as a specialty area of advanced study. Ordinarily the specialty or cognate area focuses on a particular field, such as consumer affairs, economics, or political science -- areas in which a journalist would specialize. Cognate areas are proposed by students seeking the minor and approved by a faculty committee.

A minimum grade point average of 2.0 is required in the minor. No more than 3 hours credit may be taken on a satisfactory/unsatisfactory basis. A total of 18 hours is required for the minor. At least 12 of the 18 required hours must be taken at UM-St. Louis.

Requirements

A. 9 hours in communication/English professional training:

English 214, or Comm 214, News Writing

English 218, Reporting or Comm 212, Broadcast Writing and Reporting

English 320, Independent Writing Project, or Comm 394, 396 or 397, Internship

B. 9 hours in public affairs at the 200 level or above

1. Students earning a writing certificate or majoring in communication with a mass communication emphasis must take 15 hours (at least 9 of these at the 200 level or above) in economics, political science, or sociology.

2. Students majoring in economics, political science, or sociology must take 9 hours (in addition to the required English/communication courses) at the 200 level or above in addition to English/communication courses chosen from those listed above and/or in the two cognate areas outside their major (i.e., economics, political science, or sociology).

A list of courses applicable to the minor is available from the coordinator.

Minor in Urban Studies

A minor in urban studies includes 18 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 relevant to urban studies may be included in the minor when approved in advance by the coordinator of the urban studies minor.

Requirements

Students must take:

Interdisciplinary 99, The City and five courses selected from the following list, at least three courses at the 200 level or above. No more than two courses from a single discipline may be included in the minor.

Courses Applicable to the Minor

Anthro 242, The Culture of Cities
Anthro 250, American Folklore
Art 159, American Architecture
Art 295, The Artist and the City
CCJ 227, Urban Law: Poverty and the Justice System
CCJ 230, Crime Prevention
CCJ 300, Communities and Crime
Econ 270, Urban and Regional Economics
Econ 317, Public Finance: State and Local
Geography 210, Urban Geography
Geography 211, Location Theory
History 300, Selected Topics in History (when urban or St. Louis history)
PolSci 135, Introduction to Urban Politics
PolSci 245, Urban Administration
PolSci 346, Urban Planning and Politics
Psych 235, Community Psychology
Psych 256, Environmental Psychology
Sociology 40, Social Problems
Sociology 202, Urban Sociology
Sociology 344, Problems of Urban Community
Course Descriptions

In addition to regular departmental offerings, the College of Arts and Sciences also offers several interdisciplinary courses, listed below. These courses bring together the resources of two or more disciplines to focus on topics that benefit from being studied from the point of view of more than one discipline. In many cases faculty from several departments teach an interdisciplinary course together, giving students the opportunity to experience faculty dialogue on issues in a cross-disciplinary fashion. Most interdisciplinary courses have no prerequisites. Freshman and sophomore students are especially encouraged to take these courses.

The following courses fulfill the Social Sciences [SS] breadth of study requirements: 10*, 20, 40, 45, 60, 75, 90*, 91*, 99, 101, 102, 120, 150++, 269*, 287, 295*, 350++. The following courses fulfill the Humanities [H] breadth of study requirement: 65, 70, 100, 150++, 160, 200, 265, 350++.

*These courses may fulfill the Humanities [H] or Social Sciences [SS] breadth of study requirements.
++ Depending on topic.

10 The Classical World (3)
A survey of the cultures of ancient Greece and Rome - from the beginning of Hellenic civilization during the second millennium B.C. to the start of the breakup of the Roman Empire in the West. Focuses on various central issues and trends; illustrated primarily by the history, literature, philosophy, and art of the period.

20 Foundations of Law: An Introduction to Legal Studies (3)
(Same as Criminology and Criminal Justice 20 and Political Science 20). 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.

40 The Black World (3)
A survey of the cultural life, historical experience, and contemporary sociopolitical issues facing the black peoples of Africa, the Caribbean, and United States.

45 Introduction to Labor Studies (3)
(Same as Pol Sci 45). This course covers many topics important to the role of unions in the American political system and American society from a labor perspective. Topics include the role of workers in current and future times, unions' institutional structure, collective bargaining strategies and obstacles for union organizing, recent union campaigns, labor's political role, and the relationship between labor and media.

60 Aging in America (3)
(Same as Gerontology 60.) An introduction to the major issues, research, problems, and current service approaches in the study of the aging process. An overview of information useful for students in the arts and sciences, business, education, and nursing schools. This course is primarily for freshmen and sophomores.

65 Photography and Society (3)
(Same as Art and Art History 65.) A study of photography as a means of information and expression, as an influence on culture, and as a reflection of concepts in politics, science, morality, and art.

70 Introduction to the Study of Religion (3)
The nature of religion and approaches to its study. Examples will be drawn from representative Western and non-Western traditions.

75 Crime and Punishment (3)
(Same as Criminology and Criminal Justice 75 and Sociology 75.) An introduction to sociological and psychological explanations of crime and punishment. An examination of private and governmental responses to the threats of crime and delinquent behavior.

90 The Development of American Cultures (3)
An examination of the conflict and amalgamation of diverse cultures in the origins and development of American society. Consideration is given to the emergence of a national political and economic system, national and regional cultures, racial and gender ideology, and sectional conflict. These developments will be examined through their impact on art, literature, religion, music, science, anthropology, architecture, political philosophy, and economic thought.

99 The City (3)
(Same as Criminology and Criminal Justice 99, Political Science 99, and Sociology 99.) Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburbia and the metropolitan area, ethnic groups, stratification, and psychological implications of urban living. This course is primarily for freshmen and sophomores. It is open to juniors and seniors with the instructor's permission.

100 Special Topics (3)
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.
101 Special Topics (3)
Topics may vary from semester to semester, however, material will be selected which will focus in the social, economic, historical or political institution of Great Britain.

101 AIDS: Myths, Threats, and Realities (3)
Issues regarding the AIDS threat are examined, along with their ramifications. Topics include biological aspects of HIV retroviruses, how they are contracted and spread; methods of testing for them, and issues of public health versus individual rights; similarities and differences with past plagues and epidemics; ethical and theological positions; projected and actual effects of AIDS on society including workplace, education, the law, insurance industry, and economy; problems of labeling and deviance, psychological stigma, interpersonal communication and counselor burnout; political responses and the rational promotion of political strategies and policies to control the spread of AIDS.

102 Women, Gender and Diversity (3)
An introduction to the study of women's roles in a diverse and gendered culture and society. Through a variety of disciplinary perspectives in the humanities, social sciences, and natural sciences, it seeks to understand gender as a concept that affects both women and men. This course explores issues of power, identity, and relationship in women's lives.

120 Special Topics in Gerontology (1-3)
(Same as Gerontology 120.) 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 for credit with permission of the Gerontology director.

150 Special Topics in Women's and Gender Studies (3)
An introduction to a particular topic area in women's 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 women's experience in social and cultural life. Course may satisfy the distribution requirement for Humanities or Social Sciences depending on the topic.

160 Monday Noon Cultural Seminar (2)
An interdisciplinary examination of topics in the Humanities. Students will attend the Monday Noon Cultural Series program of the Center for the Humanities each week and meet as a group to explore the nature and background of each presentation, e.g., fiction reading, musical event, presentation of scholarly research in the arts or culture, or social and historical analysis.

200 Special Topics in Classical Studies (3)
Prerequisite: Interdisciplinary 10 or consent of minor coordinator. Selected topics dealing with various aspects (e.g., literature, history, philosophy, politics, sociology, fine arts) of ancient Greece and Rome. The specific contents of this course will vary from semester to semester. The course may be repeated for credit with the consent of the Coordinator for the Minor in Classical Studies. Readings will be in English.

265 Topics in Photographic Studies (3)
(Same as Art and Art History 265.) Prerequisite: Permission of instructor. Advanced study of specific styles, periods, or issues within photographic history.

269 The Marxist Heritage (3)
(Same as Philosophy 269, and PolSci 269.) Study of Marx and leading Marxists. Designed to evaluate their influence on recent political, economic, and social thought and institutions.

287 The World Food Problem (3)
Prerequisite: Econ 40 or 51, or consent of instructor. An introduction to the world's food problem and an examination of the economic and political problems in distributing basic food-stuffs among the earth's people.

295 Issues in American Culture (3)
Prerequisites: Interdisciplinary 90 or consent of instructor. An examination of specific topics in American culture from the point of view of a number of disciplines. This exit seminar for the American Studies minor may be repeated for credit.

350 Topics in Women's and Gender Studies (3)
Prerequisite: Junior standing and one Women's and Gender Studies course. This course will focus on a particular aspect of women's conditions (to be announced prior to registration) and will draw upon recent theoretical and methodological work in the field of women's and gender studies from a variety of disciplines. Course may satisfy the distribution requirement for Humanities or Social Sciences depending on the topic.

351 Theories of Feminism (3)
Prerequisites: Junior standing and one Women's and Gender Studies course preferably ID 102 or consent of instructor. An analysis of contemporary theories of feminism, including liberal, radical, socialist, and women-of-color perspectives, and an exploration of the underpinnings of feminist theory in major systems of thought.

352 Independent Studies in Women's and Gender Studies (1-3)
Prerequisite: Junior standing; two courses in Women's and Gender Studies, including ID 102, 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.
353 Internship in Women's and Gender Studies (3)
Prerequisite: 90 hours, 2.5 GPA, 12 WGS hrs. Internship would place the student in a profit or nonprofit setting for approximately ten hours a week in an internship structured and supervised by the Institute; consent of Director required; may include biweekly seminar. Student must present appropriate course background for either option, plus the above pre/co-requisites.

390 Independent Studies in Photographic Studies (1-10)
Prerequisites: Twelve hours completed in photographic studies. Integrated individual projects conducted under photographic studies committee and departmental faculty supervision.

401 Inquiries in Women's and Gender Studies (3)
Introduces graduate students to the field of women's studies, with particular focus on its vocabulary and evolution, its location within and relationship to the academy, and its predominant theoretical and methodological frameworks. Specific content will vary year to year. Strongly encouraged for graduate students in Women's and Gender Studies.

450 Seminar in Women's and Gender Studies (3)
Critical examination of advanced topics in the humanities, social sciences, or natural sciences from women's and gender studies perspectives. May be taken more than once provided that the subject matter is different each time the seminar is taken.

452 Special Readings in Women's Studies/Gender Studies (3)
Prerequisite: Admission to Graduate Certificate program and consent of instructor. Directed independent work on a selected Women's and Gender Studies topic through readings, research, reports, and/or conferences.
To find the descriptions of the courses listed within a specific certificate program, refer to the individual departments.

Certificate programs are offered in biochemistry, biotechnology, photographic studies, studies in religions, women's studies, writing, and East Asian, Latin American, European, and international studies. These programs, which usually combine course offerings from different departments, make it possible for students to earn the equivalent of a minor in a given area in addition to their major.

**Biochemistry Certificate**

The university offers a certificate program for science majors who are interested in careers in biochemistry. The biochemistry certificate is an interdisciplinary specialization which may be earned either within a biology major or a chemistry major. The requirements for earning a biochemistry certificate within the biology major are:

**Biology**

11, Introductory Biology I  
12, Introductory Biology II  
224, Genetics  
232, Cell Structure and Function  
371, Biochemistry or Chem 371, Biochemistry  
375, Techniques in Biochemistry (lab)  
376, Topics in Biochemistry or Chem 372, Advanced Biochemistry  
378, Protein Biochemistry Lab or Chem 373, Biological Techniques  
389, Senior Seminar

**Chemistry**

11, Introductory Chemistry I  
12, Introductory Chemistry II  
122, Quantitative Analysis  
261, Structural Organic Chemistry  
262, Organic Reactions  
263 Techniques of Organic Chemistry

and three of the following biology courses:  
216, Microbiology  
218, Microbiology Laboratory  
235, Development  
310, Cell Physiology  
317, Immunobiology  
326, Gene Expression in Eukaryotes  
327, Introduction to Biotechnology  
335, Molecular Cell Biology  
338, Gene Expression in Prokaryotes

**Undergraduate Certificate in Biotechnology**

The university offers an undergraduate certificate program for biology majors who are interested in careers in biotechnology, including biochemistry, microbiology, molecular biology, cell biology, developmental biology, and molecular evolution.

**Requirements**

Undergraduate biology majors must enroll in the biotechnology certificate program after the completion of 60 credit hours. A student will receive the certificate in biotechnology by completing the requirements for the bachelor's degree and fulfilling all the science (biology, chemistry, math and computer science) course requirements of the B.S. in biology program. The required biology courses for the certificate are:

**Biology**

216, Microbiology  
218, Microbiology Laboratory  
226, Genetics Laboratory  
327, Introduction to Biotechnology  
375, Techniques in Biochemistry

One of the following two biology courses:  
326, Gene Expression in Eukaryotes  
338, Gene Expression in Prokaryotes

One of the following five biology courses:  
317, Immunobiology  
328, Techniques in Molecular Biology  
334, Virology  
335, Molecular Cell Biology  
376, Topics in Biochemistry, or

**Chemistry**

372, Advanced Biochemistry

**Photographic Studies Certificate**

UM-St. Louis students, graduates, and postbaccalaureate candidates may obtain a certificate in photographic studies by coordinating courses in and related to photography.

To be eligible for the certificate, undergraduates must complete a degree in a chosen major field. A faculty member of the Interdisciplinary Photographic Studies Committee will act as adviser to all students and will consult with the faculty adviser in the student's major to plan appropriate credits.

The Photographic Studies Certificate is the only such program in the country and should be of special interest to those considering a career in the arts, communications, history, science, business, advertising, or in photography itself. The program should also interest professional photographers, teachers, interested lay people, and
graduates who are returning to school. This certificate is designed for all who have an intense interest in the myriad aesthetic and practical aspects of the medium.

Requirements
The following courses are required:
Art
60, Photography I
160, Photography II
165, History of Photography, or
History
168, Photohistory
Interdisciplinary
65/Art 65, Photography and Society
Art
360, Photography III, or
Interdisciplinary
390, Independent Studies in Photographic Studies

Students must also take at least one 3-hour course selected from the following departmental offerings: (New courses will be reviewed periodically for inclusion.)
Art
5, Introduction to Art
161, Introduction to Digital Photography
261, Color Photography I
262, Non-Silver Photography
263, Photography Since 1945
264, Video Art I
274/Philosophy 274, Philosophy of Art
277, Printmaking: Photolithography
360, Photography III
361, Color Photography II
364, Video Art II
390, Special Studies
391, Advanced Problems in Photography I
392, Advanced Problems in Photography II

Biology 360, Techniques in Electron Microscopy

College of Arts and Sciences
Certificate Programs

Studies in Religions Certificate
A certificate in studies in religions requires the completion of 18 hours with a grade of C or better.

Courses must be chosen from two or more departments (interdisciplinary offerings excluded), and the program must include two or more courses which focus on different major religious traditions. (Courses which fulfill this requirement are marked with an asterisk [*] in the list below.)

In addition, students are encouraged to broaden their understanding of religions and religious experience by enrolling in several courses in which these subjects are studied in philosophical or cultural contexts.

Students must obtain the approval of the coordinator of studies in religions before completing 12 hours toward this certificate.

Requirements
Students must take 18 hours chosen from the following list in accordance with the guidelines above:

Anthropology
244, Religion, Magic, and Science
273, Archaeology and Cultures of the Biblical World
Art
125, Medieval Art
*114, Early Christian Art and Archaeology
English
*13, Topics in Literature
*123, Jewish Literature
*124, Literature of the New Testament
*125, Literature of the Old Testament
*391, Special Topics in Jewish Literature
*395, Special Topics in Literature
History
*252, The World of Islam
*334, History of the Church: Early Christianity
*335, History of the Church: The Middle Ages
Music
103, Music in Religion
Philosophy
85, Philosophy of Religion
102, Medieval Philosophy
120, Asian Philosophy
*185, Topics in Philosophy of Religion
385, Seminar in Philosophical Theology
Political Science
165, American Political Thought
261, Ancient and Medieval Political Thought
Sociology
264, The Sociology of Religion
College of Arts and Sciences
Certificate Programs

Institute for Women's and Gender Studies Certificate

Faculty
Zuleyma Tang Martinez, Professor of Biology
Ph.D., University of California-Berkeley
Joyce Mushaben, Professor of Political Science
Ph.D., Indiana University
Carol K. Peck, Professor of Optometry
Ph.D., University of California-Los Angeles
Stephanie Ross, Professor of Philosophy
Ph.D., Harvard University
Victoria Sork, Professor of Biology
Ph.D., University of Michigan
Jayne Stake, Professor of Psychology
Ph.D., Arizona State University
Sally Barr Ebest, Associate Professor of English
Ph.D., University of Indiana
Kathy Gentile, Associate Professor of English*
Ph.D., University of Oregon
Barbara Kachur, Associate Professor of Communication
Ph.D., Ohio State University
Ph.D., University of Illinois-Urbana
Margaret Sherraden, Associate Professor of Social Work
Ph.D., Washington University
Virginia Navarro, Assistant Professor in Educational Psychology
Ph.D., Washington University
Nanora Sweet, Assistant Professor of English,*
Ph.D., University of Michigan
Laura Westhoff, Assistant Professor of History and Education
Ph.D., Washington University,
Linda Kick, Lecturer in English
M.A., University of Toronto, M.A., University of Missouri-Columbia
Margaret Phillips, Lecturer in Foreign Languages
Ph.D., Saint Louis University
Beverly Sporleder, Lecturer in Social Work
MSW, Washington University
Jeanne Sevelius, Graduate Administrative Assistant
M.S., University of Missouri-St. Louis
*Joint appointees in Women's and Gender Studies

The Institute for Women's and Gender Studies draws upon the rich body of interdisciplinary feminist scholarship to investigate emerging theories and research on women and gender. Courses examine women's lives, roles, and contributions among different cultures and times, enabling students to broaden their educational experience and develop new insights into their own lives and aspirations. The program offers both day and evening courses.

The faculty and students in the Institute for Women's and Gender Studies program believe in cooperative education.

Classes promote the exchange of knowledge among women and men of different classes, races, sexual orientations, and social conditions.

The Institute for Women's and Gender Studies program offers an undergraduate certificate which is similar to a minor. (For graduate study, see listing for Institute for Women's and Gender Studies Graduate Certificate.) A certificate is meant to supplement a student's traditional academic major, to encourage a reassessment of gender and of women's roles in society, and to facilitate career goals that focus on women's and gender issues. The opportunity to earn a certificate is available to all undergraduates pursuing a degree at UM-St. Louis and to individuals with a bachelor's degree from any university.

Institute for Women's and Gender Studies courses are open to all students, whether or not they are working toward a certificate.

Candidates for the certificate should register with the Institute for Women's and Gender Studies program after they have taken one or two courses. To register, students should complete the certificate form available from any institute faculty or from the institute office. Students interested in the program should contact the director of the program or any member of the women's studies faculty.

Requirements

A student must complete 18 hours in women's studies courses, including:

Interdisciplinary 102, Women, Gender, and Diversity and either a 300-level course in Women's and Gender Studies or an independent study or internship (3 hours) to be taken in the junior or senior year. Students choosing the independent study option will write a research paper on some aspect of women's and gender studies.

Also required are four additional courses chosen from the following list. These shall be distributed among at least two of the following areas: social science, humanities, and natural science. They should also be distributed among at least three academic departments. No more than 3 hours may be taken on a satisfactory/unsatisfactory basis.

Anthropology
21, The Body in Culture
41, Sex and Gender across Cultures
235, Women in Subsaharan Africa

Art 276, Women and the Visual Arts

Biology/Psych 140, Female Sexuality

Business 295, Problems in Management: Women in the Profit Sector
Comm 337, Male/Female Communication

Criminology and Criminal Justice 325, Gender, Crime, and Justice

Economics 262, Economics of Women, Men, and Work

English

13, Topics in Literature (when appropriate topic)
280, Topics in Women and Literature
380, Studies in Women and Literature

History

007, History of Women in the United States
087, Women in the Ancient World
201, History of Women in Comparative Cultures
220, History of Feminism in Western Society
300, Selected Topics in History (as appropriate)
315, History of Women in the United States
318, African American Women's History
390, Directed Readings

Honors

200 level Inquiries courses (when appropriate)
300 level Seminars (when appropriate)

Interdisciplinary

102, Women, Gender, and Diversity
150, Special Topics in Women's and Gender Studies
350, Topics in Women's and Gender Studies
351, Theories of Feminism
352, Independent Studies in Women's and Gender Studies
353, Internship in Women's and Gender Studies

Music 108, Women in Music

Nursing 365, Women's Issues in Health Care

Philosophy

153, Philosophy and Feminism
251, Gender and Science

Political Science

129, Women and the Law
190, Studies in Political Science (when appropriate)
238, Women in U.S. Politics
257, Gender, Race, and Public Policy
259, Politics, Leadership, and the Global Gender Gap
268, Feminist Political Theory

Psychology

140, Female Sexuality
230, Psychology of Women
232, Psychology of Victims
295, Selected Projects in Field Placement (when appropriate)

Social Work

312, Women's Social Issues

College of Arts and Sciences
Certificate Programs

320, Supervised Field Experience in Social Work I (when appropriate)
321, Supervised Field Experience in Social Work II (when appropriate)

Sociology

100, Women in Contemporary Society
102, Women, Gender, and Diversity
103, Sex Roles in Contemporary Society
175, Women, Crime, and Society

Institute for Women's and Gender Studies Certificate-
Graduate

The graduate certificate in the Institute for Women's and Gender Studies is designed for students who wish to receive post-baccalaureate training in women's studies. This program provides a multidisciplinary course of study for students wishing to specialize in women's issues. It is appropriate for students in the College of Arts and Sciences or any of the schools of the university.

Admission Requirements

Program applicants must have the following:
A. Baccalaureate degree.
B. 2.75 grade point average.
C. Official transcripts of all previous undergraduate/graduate work.
D. Two letters of recommendation.

Certificate Requirements

A student may earn the graduate certificate in women's studies by completing a total of 18 hours from the following courses listed (or from additional courses approved by the director for women's studies). At least 9 hours of course work must be at the 400 level; no more than 6 hours of course work may be Independent Study.

Core Courses

Communication
Comm 337, Male/Female Communication

Education
Cas Ed 462, Counseling Women Toward Empowerment

Criminology and Criminal Justice
CCJ 325, Gender, Crime, and Justice
CCJ 446, Sex Crime

English
380, Studies in Women and Literature
416, Feminist Critical Theory

History

300, Topics in History (when appropriate)
315, History of Women in the United States
318, African American Women's History
Honors 300 Seminars (when appropriate)

Interdisciplinary
350, Topics in Women's and Gender Studies
351, Theories of Feminism
353, Internship in Women's and Gender Studies
452, Special Readings in Women's and Gender Studies

Nursing
365, Women's Issues in Health Care

Psychology
410, Women and Mental Health
418, Human Sexuality

Social Work
312, Women and Social Issues

Other 400 level topics courses as appropriate (e.g., Eng 495; History 405)

Writing Certificate

A student may receive the certificate in writing by completing a total of 18 hours in writing courses chosen from the following:

Comm 212, Broadcast Writing and Reporting
Comm 217, Script Writing for Business and Industry
English 103, Poetry Writing
English 104, Short Story Writing
English 105, Play Writing
English 108, or Comm 108 Advertising Copywriting
English 112, Topics in Writing
English 209, Practical Criticism: Writing About Literature
English 210, Advanced Expository Writing
English 211, Advanced Expository Writing for International Students
English 212, Business Writing
English 213, Technical Writing
English 214 or Comm 214, News Writing
English 215, Feature Writing
English 216, Writing in the Sciences
English 218, Reporting
English 228 or Comm 228, Writing for Public Relations
English 303, Advanced Poetry Writing
English 304, Advanced Fiction Writing
English 305, Writing for Teachers
English 313, Advanced Business and Technical Writing
English 317, Topics in Teaching Writing
English 319, Editing

English 320, Independent Writing Project (This course is required. It is to be taken as the last course a student will take in the program, and it is to be used to generate an extensive final project or internship.)

Writing Certificate with Technical Writing Emphasis

The technical writing emphasis provides a more career-specific strategy for students enrolled in the writing certificate program. The technical writing emphasis is composed of three required courses:

213, Technical Writing
319, Editing
313, Advanced Business and Technical Writing or 320, Independent Writing Project

In addition, students take three electives for a total of 18 hours chosen from the following:

Business Administration
103, Computers and Information Systems
205, Contemporary Business Communication
Communication
65, Introduction to Information Technology
Computer Science
125, Introduction to Computer Science (Prerequisite: Math 30, College Algebra)

English
212, Business Writing
214, News Writing
215, Feature Writing
216, Writing in the Sciences
228, Public Relations Writing
313, Advanced Business and Technical Writing (if 320 is taken as requirement)
320, Independent Writing Project (if 313 is taken as requirement)

Courses taken to fulfill requirements for the Writing Certificate may not be taken on a satisfactory/unsatisfactory basis.

Gerontological Studies Certificate

The requirements for an undergraduate certificate in gerontological studies are listed in the interschool studies in this Bulletin.

Trauma Studies Certificate

The trauma studies certificate is designed for students who are interested in a focused specialty in trauma studies or victim services in addition to their own major. It is appropriate for students in the College of Arts and Sciences or any of the schools of the university. It is particularly appropriate for students wishing to pursue careers in Psychology, social work, sociology, criminology, law, public health, or nursing.

Requirements

A student may earn a trauma studies certificate by completing 18 hours with a GPA of 2.0 or better from at least three departments from the following courses:
Students must complete at least 12 hours from the following group:

**CCJ**
- 120, Criminal Law
- 300, Communities and Crime
- 350, Victimology

**Nursing**
- 370, Topics in Nursing (Women at Risk: Women and Safety)

**Psychology**
- 232, Psychology of Victims
- 280, The Psychology of Death and Dying
- 295, Selected Projects in Field Placement: Helping Victims of Crime (for three credits only toward certificate).
- 390, Directed Studies, if trauma-related topic (for three credits only toward certificate). Please seek approval of the Coordinator of the Trauma Studies Certificate in advance.
- 398, Child Maltreatment: A Multidisciplinary Approach (Same as Social Work 398)

**Social Work**
- 310, Abused and Neglected Children
- 322, Child Welfare Practicum Seminar

**Sociology**
- 278, Sociology of Law

Only one of the following highly recommended courses may be counted toward the trauma studies certificate:

**Psychology**
- 161, Helping Relationships

**Social Work**
- 210, Introduction to Interventive Strategies for Social Work Practice

Students may count up to 6 hours from the following group toward the trauma studies certificate:

**CCJ**
- 230, Crime Prevention
- 240, Policing

**Political Science**
- 140, Public Administration
- 242, Introduction to Public Policy
- 394, Leadership and Management in Nonprofit Organizations (same as Social Work 308 and Sociology 308)

**Psychology**
- 160, Social Psychology (same as Sociology 160)
- 230, Psychology of Women
- 235, Community Psychology
- 245, Abnormal Psychology

**Social Work**
- 275, Stress and Stress Management
- 308, Leadership and Management in Nonprofit Organizations (same as PolSci 394 and Sociology 308)
- 312, Women's Social Issues

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**Undergraduate Certificate in Conservation Biology**

The Certificate in Conservation 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, Political Science, Social Work, and Sociology. Building on a core curriculum, students can elect courses from these departments to complete their requirements. Regularly enrolled undergraduates at UM-St. Louis 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 must apply to the certificate program. Application forms are available from the biology department. 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**
- 220, General Ecology
- 240, Conservation Biology
- 241, Conservation Biology Laboratory
- 347, Practicum in Conservation

**Anthropology**
- 120, Native Peoples of North America
- 131, Archaeology of Missouri

**Psychology**
- 314, Social Work with Culturally Diverse Populations
- 102, Sex Roles in Contemporary Society
- 160, Social Psychology (same as Psych 160)
- 175, Women, Crime, and Society
- 214, Juvenile Delinquency and Youth Crimes
- 268, The Sociology of Conflict
- 308 Leadership and Management in Nonprofit Organizations (same as PolSci 394 and Social Work 308)
- 340 Race, Crime, and Justice (same as CCJ 340)

Special Topics courses relevant to trauma studies may be included in the certificate when approved in advance by the coordinator of the trauma studies certificate.
Certificate Programs

132, Archaeology of North America

Biology

341, Population Biology
323, Tropical Resource Ecology
324, Tropical Resource Ecology Field Studies
325, Tropical Vertebrate Ecology
348, Evolution of Animal Sociality
351, Flowering Plant Families: Phylogeny and Diversification
359, Evolutionary Ecology of Animals
364, Ornithology
366, Ornithology Laboratory
367, Entomology
368, Entomology laboratory
380, Behavioral ecology
385, Wildlife Ecology and Conservation
386, Wildlife Ecology and Conservation Laboratory
395, Field Biology
396, Introduction to Marine Science

Economics

230, International Economic Analysis
251, Intermediate Economic Theory: Microeconomics
360, Natural Resource Economics

History

300, Selected Topics when relevant

Political Science

248, Environmental Politics
285, International Organizations and Global Problem Solving
351, Comparative Public Policy and Administration
359, Studies in Comparative Politics when relevant

Social Work

390, Seminar in Social Work when relevant

Sociology

342, World Population and Ecology
346, Demographic Techniques

Graduate Certificate in Biotechnology

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. Students must be enrolled in the graduate program at the University of Missouri-St. Louis either as certificate 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 nondegree 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.

Core Requirements

1. Biology 428, Advanced Techniques in Molecular Biology
2. Biology 426, Advanced Gene Expression in Eukaryotes OR Biology 438, Advanced Gene Expression in Prokaryotes (if both courses are taken, one may be used as elective credit)
3. The remaining 11 credit hours must be taken from the following electives:

Biology

317, Immunobiology
319, Immunobiology Laboratory
371, Biochemistry
376, Topics in Biochemistry
378, Protein Biochemistry Laboratory
406, Topics in Molecular, Cellular and Developmental Biology
410, Advanced Cell Physiology
417, Advanced Immunology
429, Advanced Molecular Evolution
430, Advanced Topics in Development
431, Graduate Internship in Biotechnology
434, Advanced Virology
435, Advanced Molecular Cell Biology
439, Advanced Plant Molecular Biology and Genetic Engineering
444, Advanced Gene Activity During Development
489, Graduate Seminar, when relevant

Chemistry

372, Advanced Biochemistry
373, Biochemical Techniques
Graduate Certificate in Tropical Biology and Conservation

The certificate is awarded after completion of 18 credit hours of core courses and electives with a minimum of 12 credits at the 400 level. Up to 3 credits may be taken at the 200 level upon permission of the Graduate Committee. 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 elsewhere than UM-St. Louis. Students may simultaneously earn a graduate degree and count credits earned in their degree program toward the certificate when appropriate.

Required Core Courses:
Biology 445, Public Policy of Conservation and Sustainable Development
Biology 447 (1-4), Internship in Conservation Biology (may be replaced with a biology elective for individuals with applied conservation or environmental agency experience upon consent of the Graduate Committee).

Choice of:
Biology 446, Theory and Application of Conservation Biology
Biology 487, Advanced Tropical Ecology and Conservation

Electives:
Biology
341, Population Biology
351, Flowering Plant Families: Phylogeny and Diversification
364, Ornithology
367, Entomology
385, Wildlife Ecology and Conservation
396, Introduction to Marine Science
423, Advanced Tropical Resource Ecology
424, Advanced Tropical Resource Ecology Field Studies
425, Advanced Tropical Vertebrate Ecology
441, Advanced Population Biology
442, Population and Community Ecology
446, Theory and Application of Conservation Biology
448, Advanced Evolution of Animal Sociality
458, Evolutionary Ecology of Plants
459, Advanced Evolutionary Ecology of Animals
465, Methods in Plant Systematics
480, Advanced Behavioral Ecology
481, Advanced Theoretical Systematics and Evolution
483, Applications of Geographic Information Systems
487, Advanced Tropical Ecology and Conservation
489, Graduate Seminar, when relevant

Economics
230, International Economic Analysis
251, Intermediate Economic Theory: Microeconomics
360, Natural Resource Economics

College of Arts and Sciences
Certificate Programs

History
300, Selected Topics in History, when relevant
371, History of Latin America: to 1808
372, History of Latin America: Since 1808
381, West Africa Since 1800
425, Readings in Latin American History, when relevant
430, Readings in African History, when relevant

Political Science
248, Environmental Politics
253, Political Systems of South America
254, Political Systems of Mexico, Central America, and the Caribbean
258, African Politics
283, International Political Economy
285, International Organizations and Global Problem Solving
347, Introduction to Environmental Law and Policy
351, Comparative Public Policy and Administration
359, Studies in Comparative Politics, when relevant
385, International law
388, Studies in International Relations
394, Leadership and Management in Nonprofit Organizations
414, Topics in Public Policy Analysis, when relevant
448, Political Economy and Public Policy
459, Seminar in Latin American Politics, when relevant
462, Political Theory and Public Policy
481, Seminar in International Relations

Social Work
390, Seminar in Social Work issues, when relevant

Sociology
342, World Population and Ecology
346, Demographic Techniques
426, Community and Regional Conflict Resolution

Africana Studies Certificate

Students seeking the Africana studies certificate have two options: an emphasis in African studies and an emphasis in African diaspora studies.

I. African Studies:
1) At least one course in two of the following four areas for a total of 9 hours:

Area 1: Anthropology
124, Cultures of Africa

Area 2: Art and Art History
117, African Art

Area 3: History
81, African Civilization to 1800
82, African Civilization Since 1800
Area 4: Political Science
258, African Politics

2) One course in two of the following areas, a total of 6 hours:

Area 1: Anthropology
234, Cultural Continuity and Change in Sub-Saharan Africa
235, Women in Sub-Saharan Africa

Area 2: Art and Art History
*215, Topics in Tribal Arts
*Note: Students should take Art History 215 only when the topic is appropriate to Africa.

Area 3: History
380, West Africa to 1800
381, West Africa Since 1800
382, History of Southern Africa

Area 4: Sociology
245, Sociology of South Africa

3) An independent study course (3 hours) in which a research paper will be written on some aspect of African Studies

II. African Diaspora Studies

1) Interdisciplinary 40: The Black World (3)

2) One course from each of the following areas, a total of 6 hours.

Area 1: Africa
Anthropology
124: Cultures of Africa
History
81: African Civilization to 1800
82: African Civilization Since 1800

Area 2: Diaspora
Anthropology
05: Human Origins
History
06: African-American History
83: The African Diaspora to 1800
84: The African Diaspora Since 1800
212: African-American History: From Civil Rights to Black Power

3. At least one course from each of the following areas, a total of 6 hours:

Area 1: Africa
Anthropology
234: Cultural Continuity and Change in Sub-Saharan Africa

235: Contemporary Women in Sub-Saharan Africa
Art History
117: African Art
History
380: West Africa to 1800
381: West Africa Since 1800
382: History of Southern Africa
Political Science
258: African Politics
Sociology
245: Sociology of South Africa

Area 2: Diaspora
Communication
332: Intercultural Communication

English
70: African-American Literature

History
319, Topics in African-American History
385: African Diaspora to 1800
386: African Diaspora Since 1800

Music
6: Introduction to African-American Music

Political Science
232: African Americans and the Political System

*Psychology
392: Selected Topics in Psychology: African-American Psychology

Sociology
360: Sociology of Minority Groups

Note: Students should take Psychology 392 only when the African American Psychology topic is offered.

Undergraduate Certificate Program in Nonprofit Organization Management and Leadership

The university offers an undergraduate certificate program for students who want to become professional staff, board members, or other leaders of nonprofit and voluntary organizations, as well as those who are currently in the field.

The certificate requires the completion of 18 semester hours. Nine of these hours must be the following core courses:

1. Leadership and Management in Nonprofit Organizations PolSci 394, same as Sociology or Social Work 308) (3 hours)
Graduate Certificate Program in Nonprofit Organization Management and Leadership

Through the public policy administration master's program, the university offers a graduate certificate program for students who are current professional staff, board members, and other leaders of nonprofit and voluntary organizations, as well as those who wish to consider entering the field. The certificate can be taken by itself or in conjunction with the pursuit of the master's in public policy administration, master's in social work or a graduate degree in another field.

A. The graduate certificate in nonprofit management and leadership requires the completion of 18 semester hours. Nine of these are the following core courses:

1. Leadership and Management in Nonprofit Organizations (3 hours) (Political Science 394, same as Public Policy Administration 394, Sociology, or Social Work 308)
5. American Philanthropy and Nonprofit Resource Development (3 hours) (Political Science, Public Policy Administration and Social Work 396)

B. Six hours of electives are to be taken from selected 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. (All Graduate electives must be at the 400 course level.)

C. Three hours of internship is also required, or graduate students should demonstrate a professional field experience equivalent to the internship. Any request for an exemption from the internship requirement must be approved by the nonprofit program director after a review of the student's professional or managerial field experience with appropriate documentation. Students who receive an exemption must take another 3 hours of electives from the selection in area B.
The internship will include learning activities in management and governance processes in nonprofit organizations, as well as a seminar in which students will critically reflect on their field experience with a faculty supervisor.

Requirements of admission to the graduate certificate program are the same as those required for admission to the Graduate school: an undergraduate degree, and a G.P.A of 2.75 or better.

**Graduate Certificate in Managerial Decision Making and Health Informatics**

The certificate prepares health professionals to bridge the traditional divide between clinical services and businesses. The degree is offered through the Health Managerial Decision Making and Informatics (MDHI) program--a unit of the Graduate School. The course work is comprised of one-credit modules that provide extensive exposure to health informatics and emerging technologies while simultaneously fostering a systems view of the internal and external forces that affect organizations in the healthcare market. The program is structured to meet the needs of working health professionals, and characterized by a high degree of integration among the courses, allowing completion of the certificate within three 5-credit terms during one calendar year.

**Admission Requirements**

Applicants must complete an application form and also submit:

- An undergraduate degree with a minimum grade point average of 3.0 or (B).
- A statement of purpose demonstrating a commitment to pursue a degree in health informatics.
- A resume, preferably showing two years of professional work experience in a health-related field.
- Three letters of recommendation from persons qualified to judge the candidate's potential for success in the program.

Applicants are required to take either the Graduate Record Exam (GRE) General Test, or the Graduate Management Admission Test (GMAT), and fulfill the general requirements for admission to the Graduate School as explained in the Graduate Studies section of this Bulletin. These exams measure verbal, quantitative and analytical skills that are developed over a long period of time and are associated with success in graduate studies.

Admission decisions are based on the applicant's portfolio. The MDHI program director may request a personal or phone interview once the applicant's file is complete. Applicants who do not meet all the requirements listed above may be provisionally admitted to the program at the program director's discretion.

To successfully complete the certificate program, the student must have earned a 3.0 cumulative grade point average in certificate classes.

**Mathematics Background Requirement**

If college algebra or its equivalent was not taken as part of the applicant's undergraduate program, they are required to successfully complete Math 30 or its equivalent prior to their entrance into the MHS-IMD program. This course may not be used as a program elective.

**Degree Requirements**

Students are required to complete 18 credit hours.

**Distribution Requirements**

**Overview: 7 credits**

- MDHI 400, Emerging Trends in Healthcare Markets
- MDHI 402, Insurance and Managed Care
- MDHI 404, The Internet and Electronic Commerce for Healthcare Professionals
- MDHI 406, Informatics in the Health Professions
- MDHI 408, Patient Rights and Provider Responsibilities
- MDHI 412, Organizational Structures and Administration in the Healthcare Industry

**B. Tools and Techniques used in Decision Making: 3 credits**

- MDHI 420, Quality and Productivity Improvement Tools
- MDHI 422, Decision Analysis
- MDHI 424, Modeling and Understanding Statistical Relationships

**C. Understanding Decision Making: 4 credits**

- MDHI 440, Total Quality Management in Healthcare Organizations
- MDHI 450, Consumer Behavior in Healthcare Markets
- MDHI 452, Health Provider Decision-making
- MDHI 454, The Role of the Government in the Healthcare Sector

**D. Informatics: 3 credits**

- MDHI 460, Information Technology Concepts and Elements
- MDHI 462, Health Information Resource Management
- MDHI 468, Health Data Warehousing and Security

**E. Electives: 1 credit**

- MDHI 480, Practitioner's Forum, 1 credit
Preprofessional Programs

Students at the University of Missouri-St. Louis may develop preprofessional study programs from the university's academic offerings in architecture, engineering, dentistry, journalism, law, medicine, optometry, or pharmacy. With early and careful advising, students may develop a two-year study program in preparation for transfer into a professional program in the junior year, or they may select a major field of study and related area courses which provide strong undergraduate preparation for graduate professional study.

Students should seek preprofessional faculty advisers in their interest area early in their academic careers to ensure development of sound, comprehensive study programs which fulfill the admission requirements of the professional program to which they wish to apply.

The following information on preprofessional study at UM-St. Louis is provided to give students minimal guidelines and assistance in planning a program.

Pre-Architecture
The Department of Art and Art History sponsors the 3+4 Program for the School of Architecture at Washington University. A student who transfers to the School of Architecture, Washington University, at the end of the junior year may graduate with a bachelor of arts degree in art history from UM-St. Louis after the satisfactory completion of the first year of professional school upon meeting one or more of the following conditions:

1) The student has completed all general education requirements and all requirements for the art history major and lacks only the total hours (electives) necessary for a degree. (The courses at Washington University will fulfill all remaining courses.)
2) A student who has not completed required courses for the art history degree must remedy the deficiency with courses taken at the UM-St. Louis within three years of entering the professional school. At the time of graduation, the student must remain in good standing in the professional school or have successfully graduated from professional school.
3) A student who has not completed all the courses required for the art history major may, if the art and art history department at UM-St. Louis approves, substitute up to six hours of appropriate course work from the professional school.

The requirement that 24 of the last 30 hours of course work for a degree be taken at UM-St. Louis shall be waived where necessary for students graduating under this procedure. For more information on admission requirements, please contact the College of Arts and Sciences at 516-5501, 303 Lucas Hall.

Pre-Engineering
The Joint Undergraduate Engineering Program of the University of Missouri-St. Louis and Washington University was established in 1993. It allows UM-St. Louis to offer complete bachelor of science degree programs in mechanical, electrical and civil engineering.

Students who enter the joint program take the pre-engineering half of their course work on the campus of UM-St. Louis. The remaining half of their degree programs, consisting of upper-level engineering courses and laboratories, is taken on the campus of Washington University and taught by Washington University engineering faculty members. The two campuses are separated by a driving time of about 15 minutes.

The UM-St. Louis pre-engineering program provides a solid base in mathematics, physics, chemistry, and introductory engineering subjects. Students completing the pre-engineering program will be well prepared for transferring to engineering schools throughout the United States, including UM-Columbia, UM-Rolla, Washington University, and SIU-Edwardsville, in addition to continuing their education and earning their engineering degrees at UM-St. Louis.

Admission Requirements
In addition to the general admission requirements, prospective undergraduate engineering and pre-engineering students may be required to take a mathematics placement test, given at UM-St. Louis, the semester before enrolling.

Although there is no required pattern of high-school units for admission to the undergraduate engineering or pre-engineering programs, students are urged to complete at least four units of mathematics, including units in algebra (excluding general mathematics) and trigonometry. Calculus, if available, is also strongly recommended.

The following indicates pre-engineering course work required for students planning to pursue a bachelor of science degree in engineering at UM-St. Louis through the joint program with Washington University.

Math
80, Analytic Geometry and Calculus I
175, Analytic Geometry and Calculus II
180, Analytic Geometry and Calculus III
202, Introduction to Differential Equations

Chemistry
11, Introductory Chemistry I
12, Introductory Chemistry II

Physics
111, Physics: Mechanics and Heat
112, Physics: Electricity, Magnetism, and Optics
College of Arts and Sciences
Preprofessional Programs

Introductory Engineering

Engineering
144, Statics
145, Dynamics

Humanities, Social Sciences, and English Composition

English
10, Freshman Composition

Humanities Electives (three courses)
Social Sciences Electives (three courses)

Students planning to earn a bachelor of science degree in engineering at UM-St. Louis should choose humanities and social sciences electives to meet both the UM-St. Louis general education requirements and the humanities and social sciences requirements of the Joint Undergraduate Engineering Program. In particular:

* A course in American history or government, or in Missouri history or government, must be included.
* The cultural diversity requirement must be fulfilled.
* At least 8 credit hours must be in one department or area within humanities or social sciences; of these 8 credit hours, at least 1 credit hour must be in a course at the junior level or higher, taken at a four-year institution.

Some courses that fulfill the humanities or social sciences breadth of study requirement do not count as humanities and social sciences electives; an example would be a statistics course taught in economics or Psychology.

For further information about undergraduate engineering and pre-engineering programs at UM-St. Louis, please contact the UM-St. Louis/Washington University Joint Undergraduate Engineering Program at 228 Benton Hall, 516-6800.

Prejournalism

Students wishing to pursue a journalism degree should review the entrance requirements of the schools they would like to attend for information on suggested prejournalism courses of study.

Students seeking a journalism degree from the University of Missouri must complete their junior and senior years at the School of Journalism, University of Missouri-Columbia. For admission, students must present to the UMC School of Journalism 60 acceptable credit hours. Admission is by sequence. Sequences include advertising, broadcast news, magazine, news-editorial, and photo journalism.

Required Courses

The following studies are required for admission to the School of Journalism:

English Composition: Students must complete at least the second course in an English composition sequence with a grade of B or higher. If a grade of C is received, the student must pass the Missouri College English Test on the MU campus. It is not possible to "test out" of this requirement.

Math: Students must complete College Algebra with a grade of C or higher.

Foreign Language: Four years of high school work in one foreign language or 12-13 hours of college work in one foreign language.

Science: Math 31, Elementary Statistics plus 6 hours from biology, chemistry, astronomy, geology, physics, or above college algebra-level math. One course must include a lab. Please note: college algebra is the prerequisite course for statistics.

Science Electives: Five or 6 additional hours in behavioral, biological, physical or mathematical science from the following areas: anthropology, astronomy, biology, chemistry, geology, math (above college algebra-level), physics, Psychology, or sociology.

Social Science: Nine hours to include American history from the beginning to present day and American government/introduction to political science plus 3 hours in microeconomics. Please note: advertising majors must complete both microeconomics and macroeconomics.

Humanistic Studies: Three hours American or British literature plus at least 5 hours from 2 of the following areas: history or appreciation of art or music, philosophy, humanities, religious studies, non-U.S. civilization or classical studies, history or appreciation of theater.

In addition, word processing skills are required (40 words per minute).

Nontransferable courses at the School of Journalism are basic military science, basic physical education, business education such as typing or shorthand, journalism or mass communication, advertising, public relations, photography, and no more than 3 hours maximum of applied music, dance, acting, or studio art. Also, not transferable are industrial arts, orientation, and remedial courses.

The school accepts CLEP subject exams only, Advanced Placement Program (AP) or advanced standing. The school will not accept credit by exam to fulfill the English composition admission requirement. Credit should be referred for review.

Students are required to take two journalism courses at UMC prior to admission to the school (minimum 2.75 GPA required). The English composition requirement must be satisfied prior to enrollment in any journalism course.
For advisement and information, contact the College of Arts and Sciences, 303 Lucas Hall, telephone 516-5501.

Prelaw
Students planning to attend law school must pursue an undergraduate degree of their choice. There is no such thing as a prelaw major. Law schools encourage students to pursue a course of study that includes a broad liberal arts background. The prelaw advisor will assist students in choosing courses that will enhance their analytical and writing skills.

English language and literature courses are virtually indispensable. An awareness of the institutional processes of government obtained through study in political science is needed. Since law is inseparable from historical experience, an acquaintance with American history is important. Students should acquire a knowledge of macro- and microeconomics. Statistics, accounting, and computer science are valuable in understanding special legal subjects and the practice of law.

The University of Missouri has law schools at Columbia and Kansas City. University of Missouri-St. Louis students will find everything needed in planning an undergraduate program, preparing for the LSAT, and applying to law school in the office of the prelaw advisor. Students should contact the prelaw adviser through the College of Arts and Sciences, 303 Lucas Hall, 516-5501, early in their undergraduate studies.

Premedical Sciences
Students wishing to enter medical, dental, optometry, or veterinary medicine schools should pursue the B.A. or B.S. degrees with majors in the disciplines of their choice, but they should take whatever additional courses may be necessary for admission to the professional school.

Since medical school admission requirements vary, students are urged to consult the catalogs of the schools to which they intend to apply. Updated information may be found in Medical School Admission Requirements (United States and Canada) for the current year, available from the:

Association of American Medical Colleges
2450 N. Street, N.W.
Washington, DC 20037-1126

A copy is available for student use at the reference desk of the Thomas Jefferson Library. Students may also visit a Web site at www.aam.org.

Suggested Courses
Many medical schools recommend the following undergraduate courses:

Biology: Biology 11, Introductory Biology I; Biology 12, Introductory Biology II; Biology 224, Genetics; and additional courses in molecular and/or cell biology.

Chemistry: Chemistry 11, Introductory Chemistry I; Chemistry 12, Introductory Chemistry II; Chemistry 261, Structural Organic Chemistry; Chemistry 262, Organic Reactions; Chemistry 263, Techniques of Organic Chemistry; and additional courses in organic chemistry and quantitative analysis.

Mathematics: Students should take courses at least through calculus, as appropriate for the major degree chosen.

Physics: 8 credit hours or as appropriate for the degree chosen.

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, premedical students should take Chemistry II and 12, Introductory Chemistry I and II, during the freshman year.

Each year the number of applicants to health profession schools exceeds the number of available places. Students, therefore, are encouraged to have alternative plans should they not gain entrance. Pharmacy, nursing, and laboratory technology may be considered as alternative fields.

For further information, testing dates, or premedical advising, contact the pre-health professions adviser through the College of Arts and Sciences, 303 Lucas Hall 516-5501.

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 School of Optometry. It is one of only 17 schools of optometry in the United States and the only one in the state of Missouri.

Because the University offers the doctor of optometry degree, it is an ideal institution for pre-optometry education. There are two distinct programs available to UM-St. Louis pre-optometry students:

1. The Department of Biology sponsors a 3+4 Program for the UM-St. Louis School of Optometry. In this program, a student may be admitted to the School of Optometry after completing three years (90 semester
hours) of study in the Department of Biology. The undergraduate degree is granted when the student satisfactorily completes the first year of the professional program. One or more of the following conditions must be met in order to qualify for the undergraduate degree. 1) All general education requirements and all requirements for the biology major, except electives, must be completed. 2) Any deficiency in required courses must be remedied with courses taken at UM-St. Louis within three years after entering the School of Optometry. 3) Up to 6 hours from the School of Optometry may be substituted for undergraduate degree requirements, with approval of the Department of Biology. For more information about the 3+4 program, contact the Department of Biology, 516-6200.

2. The Pierre Laclede Honors College and the School of Optometry offer the Scholars Program; this program 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; scored a minimum composite of 29 on the ACT; and be accepted to the UM-St. Louis Pierre Laclede Honors College program. For more information about the Scholars Program, contact the Pierre Laclede Honors College, 516-6870.

Prepharmacy
Admission to a school of pharmacy usually requires one to two years of college work in specified areas. Most colleges of pharmacy recommend the 1+4 plan which includes one year of college work followed by four years of professional courses in the college of pharmacy. In some cases the old 2+3 program is used. Since entrance requirements vary, students should consult the catalog of the college to which they intend to apply.

A typical one-year sequence for prepharmacy students which meets the admission requirements of the School of Pharmacy at the University of Missouri-Kansas City and also those of the St. Louis College of Pharmacy is as follows:

**Freshman Year:**
**First Semester (15 Hours)**
Biology 11, Introductory Biology I (At UMKC, Physics 11, Basic Physics, is preferred.)
Chemistry 11, Introductory Chemistry I
Math 30, College Algebra, and Math 35, Trigonometry (At UMKC mathematics through survey calculus, Math 100, is preferred.)

**Second Semester (16 hours)**
Biology 12, Introductory Biology II
Chemistry 12, Introductory Chemistry II
Literature: Any 3-hour course
English 10, Freshman Composition

For students pursuing a two-year prepharmacy sequence, it is recommended they continue with the following course work:

**Sophomore Year**
**First Semester (16 hours)**
Math 100, Basic Calculus
Chemistry 261, Structural Organic Chemistry
Literature: Any 3-hour course
Physics 11, Basic Physics
Elective*: One 3-hour course

* Courses in statistics, psychology, communication, economics, and accounting are most often recommended or required.

**Second Semester (15 hours)**
Biology: One biology elective
Chemistry 262, Organic Reactions
Chemistry 263, Techniques of Organic Chemistry
Physics 12, Basic Physics
Elective*: One 3-hour course

* Courses in statistics, psychology, communication, economics, and accounting are most often recommended or required.

For additional information and prepharmacy advising, contact the pre-health professions adviser, through the College.
College of Business Administration
Faculty

Charles R. Kuehl, Associate Professor*; Dean (Interim)
Director Center for Competitive Analysis
Ph.D., University of Iowa

Douglas E. Durand, Professor*; Vice Chancellor for
Academic Affairs (Interim)
Ph.D., Washington University

John J. Anderson, C.P.A., C.M.A., Professor*;
Associate Dean
Ph.D., University of Wisconsin-Madison

David R. Ganz, Assistant Professor; Associate Dean and
Director of Undergraduate Studies in Business
M.S. in C., Saint Louis University

Albert P. Ameiss, Professor Emeritus
Ph.D., Saint Louis University

Nasser Arshadi, Professor*
Ph.D., University of Nebraska

Howard B. Baltz, Professor Emeritus
Ph.D., Oklahoma State University

Allan Bird, Professor*
Ph.D., University of Oregon

James A. Breaugh, Professor*; Coordinator in
Management Ph.D., Ohio State University

James F. Campbell, Professor*
Ph.D., University of California, Berkeley

William P. Dommermuth, Professor Emeritus
Ph.D., Northwestern University

Hung-Gay Fung, Professor*
Ph.D., Georgia State University

Michael M. Harris, Professor*
Ph.D., University of Illinois-Chicago

Marius A. Janson, Professor*
Ph.D., University of Minnesota

Sioma Kagan, Professor Emeritus; Diplom-Ingenieur
Ph.D., Columbia University

Edward C. Lawrence, Professor*; Coordinator in
Finance Ph.D., Pennsylvania State University

Silvia A. Madeo, C.P.A., Professor*; Coordinator in
Accounting
Ph.D., University of North Texas

Joseph S. Martinich, Professor*
Ph.D., Northwestern University

Ray Mundy, Professor*
Ph.D., Pennsylvania State University

Robert M. Nauss, Professor*; Interim Coordinator in
Logistics and Operations Management
Ph.D., University of California, Los Angeles

David Ricks, Professor*
Ph.D., Indiana University

David Ronen, Professor*
Ph.D., Ohio State University

Rajiv Sabherwal, Professor*
Ph.D., University of Pittsburgh

Susan M. Sanchez, Professor*
Ph.D., Cornell University

Vicki L. Sauter, Professor*
Ph.D., Northwestern University

L. Douglas Smith, Professor*; Director, Center for
Business and Industrial Studies
Ph.D., University of Minnesota

Robert S. Stich, Professor Emeritus
Ph.D., New York University

Fred J. Thumin, Professor Emeritus; Diplomate,
Industrial and Organizational Psychology
Ph.D., Washington University

Donald H. Driemeier, Associate Professor*; Deputy to
the Chancellor
D.B.A., Washington University

Michael T. Elliott, Associate Professor*
D.B.A., Mississippi State University

Thomas H. Eysell, Associate Professor*; Director of
Graduate Studies in Business
Ph.D., Texas A & M

Timothy A. Farmer, C.P.A., Associate Professor*
Ph.D., Ohio State University

D=Anne G. Hancock, Associate Professor*
Ph.D., University of New Orleans

Julius H. Johnson, Jr., Associate Professor*
Ph.D., George Washington University

Kailash Joshi, Associate Professor*
Ph.D., Indiana University

Donald R. Kummer, Associate Professor*
Ph.D., University of Oregon

Mary Lacity, Associate Professor*
Ph.D., University of Houston

Haim Mano, Associate Professor*; Coordinator in
Marketing Ph.D., University of Chicago

Mary Beth Mohrman, Associate Professor*
Ph.D., Washington University

R. Frank Page, C.P.A., Associate Professor Emeritus
Ph.D., University of Illinois

Paul S. Speck, Associate Professor*
Ph.D., Texas Tech University

Ashok Subramanian, Associate Professor*; Coordinator
in Information Systems
Ph.D., University of Houston

George C. Witteried, Associate Professor Emeritus
M.B.A., J.D., Northwestern University

Deborah B. Balser, Assistant Professor*
Ph.D., Cornell University

Geraldine E. Hynes, Assistant Professor*
Ph.D., Saint Louis University

Tom Kozloski, Assistant Professor
Ph.D., Drexel University

James M. Krueger, C.P.A., Assistant Professor*; Vice
Chancellor for Managerial and Technological Services
D.B.A., Indiana University

Stephen R. Moehrle, C.P.A., Assistant Professor*
Ph.D., Indiana University

Jennifer Reynolds-Moehrle, C.P.A., Assistant
Professor*
Ph.D., Old Dominion University

Mahesh Shankarmahesh, Assistant Professor
Ph.D., Purdue University
At the undergraduate level, the College of Business Administration offers the Bachelor of Science in Business Administration (BSBA) degree with emphases in finance, international business, logistics and operations management, management and organizational behavior, and marketing; or an individual may earn the BSBA degree with no emphasis. Bachelor of Science in Accounting (BSA) and Bachelor of Science in Management Information Systems (BSMIS) degrees are also offered. At the graduate level, the College offers the Master of Business Administration (MBA), Master of Accounting (MAcc) and Master of Science in Management Information Systems (MS in MIS) degrees. Several specialized certificate programs are also available.

The diverse faculty, including primarily doctorally qualified, full-time members, have degrees from a variety of prestigious Ph.D. degree-granting institutions, assuring students exposure to various management theories and educational approaches.

In addition to the undergraduate and graduate degree programs mentioned above, the College supports additional operations including a continuing education unit; an applied research center; and a community service research center. More information about these operations is available from the College.

Undergraduate Studies

Admission to the College of Business Administration

Any day students who designate Business degree programs as their intended degree paths will have “Business” as their assigned Academic Unit (AU), and will be advised by the College of Business Administration Office of Undergraduate Academic Advisement, 487 SSB. Evening Business students are advised by the Evening College until completion of thirty-nine (39) credit hours. While upper division Business courses (those numbered 200 and above) normally require junior standing, Business degree seeking students are encouraged to complete the following courses during their first sixty (60) hours of course work:

BA 103, Computers and Information Systems
BA 140, Fundamentals of Financial Accounting
BA 145, Managerial Accounting
BA 156, Legal Environment of Business
Econ 51, Principles of Microeconomics
Econ 52, Principles of Macroeconomics

Transfer Students

Students transferring to UM-St. Louis are expected to take most of their specific business work during their junior and senior years. Business courses which are offered at the freshman or sophomore level and which are transferred in lieu of those offered at UM-St. Louis at the
200 level or above must be validated. Validation is determined by the appropriate discipline and may include:

1) Passing an approved 200-level or above course in that area with a grade of C- or better or
2) Passing a proficiency examination.

Business students must complete 48-60 hours in business for the BSBA, BSA, and BSMIS degrees. At least half of the 48-60 business hours must be completed in residence at UM-St. Louis on a regular graded basis. Students must also complete no fewer than sixty (60) hours (business and non-business) at an accredited baccalaureate degree granting institution and must meet the College's 30 hour residency requirement.

Degree Requirements

General Education Requirements
All undergraduate business administration majors must complete the general education requirements of both the University and the College of Business Administration. The College's general education requirements are in keeping with those of the University. Many of the courses needed to complete the College's degree requirements, as outlined below, may be taken to fulfill the University's general education requirements.

General Degree Requirements
All undergraduate business administration (BSBA), accounting (BSA), and Management Information Systems (BSMIS) majors must complete the specific non-business courses which are College of Business Administration degree requirements. To satisfy the BSBA, BSA, and BSMIS general degree requirements, the following pre-business administration requirements must be met:

1) Demonstration of basic skills in written communication by a minimum grade of C- in English 10, English Composition. For more information refer to the University General Education Requirements.
2) Students wishing to complete a degree at UM-St. Louis must complete a junior-level English requirement with a grade of C- or better.
3) Three courses in the humanities, to be chosen from selected offerings in art, English, music, philosophy and communication (applied courses do not qualify). See the Office of Undergraduate Academic Advising or the World Wide Web for a detailed listing of courses which fulfill this requirement.
4) Five courses in social science, to include: Econ 51, Principles of Microeconomics, and Econ 52, Principles of Macroeconomics; one course which meets the state requirement (see the University General Education Requirements); and two additional courses.
5) Three courses in mathematics and science which must include: a minimum proficiency in Math 100, Basic Calculus, and Math 105, Basic Probability and Statistics, and at least one lecture course in either a biological or physical science. (Note: Math 30, College Algebra, is a prerequisite to Math 100 and Math 105; also students planning to pursue a more in depth knowledge of calculus should take Math 80 in lieu of Math 100).
6) Global Awareness Requirement (9 hours):

A. Cultural Diversity Requirement: to expose students to a culture radically different from their own and to enhance their sensitivity to and awareness of cross-cultural differences, the College of Business Administration requires that students complete a three-hour course which focuses upon aspects of a culture and not upon the interactions of that culture with Euro-American cultures. This requirement may be met by one of the courses listed in the College of Arts and Sciences General Information.
B. International Studies: Graduates will work and live in an interdependent world; they will be part of a global economy and will work in an increasingly competitive global marketplace. Success in this changing environment requires knowledge and understanding of the international system, the global economy and other global issues. Towards meeting that objective the College of Business Administration requires that:

1) Students complete two three-hour courses in international studies. These courses are upper division courses, and will ordinarily be completed in the junior or senior year. A list of the courses that satisfy this requirement is available in the College of Business Administration Undergraduate Academic Advising Office.

2) Students who elect to take 13 hours in one foreign language may use the third course in the sequence in partial fulfillment of this requirement.

* This list will be updated periodically by the Undergraduate Studies Committee with the advice of the Director of the Center for International Studies. Check with your advisor for the most up-to-date list of courses that will satisfy these requirements.

College of Business Administration Core Degree Requirements Candidates for the Bachelor of Science in Business Administration, the Bachelor of Science in Accounting, or the Bachelor of Science in Management Information Systems degrees, must complete the following business administration core courses:

Business Administration
103, Computers and Information Systems
140, Fundamentals of Financial Accounting
145, Managerial Accounting
156, Legal Environment of Business
*204, Financial Management
*206, Basic Marketing
*210, Management and Organizational Behavior
*250, Business Statistics
Students must earn a minimum grade of AC-@ in each course included in the thirty (30) hour business core except BA 391, Strategic Management; and BA 390, Business Assessment Testing. A grade of satisfactory is required in Business Assessment Testing. Also to be admitted to BA 391, Strategic Management, all other core courses must be completed (except BA 390) with a passing grade.

College of Business Administration Degree Requirements
All students who pursue the Bachelor of Science in Business Administration (BSBA) degree, the Bachelor of Science in Accounting (BSA) degree, or Bachelor of Science in Management Information Systems (BSMIS) degree are required to complete a minimum of 36 hours in business courses at the junior/senior level (UM-St. Louis courses numbered 200 and above). Eighteen (18) of these hours are business core courses (those with an asterisk, above) and eighteen (18) hours are business electives.

Transfer courses used to partially fulfill this requirement must be from four-year accredited schools and must be restricted to junior/senior level students at those schools. Business courses taken in the freshman/sophomore year at any accredited school may be granted transfer credit, but the credit will not be included within the thirty-six hours required at the junior/senior level. If the freshman/sophomore transfer course in business appears to be similar to a junior/senior level business course at UM-St. Louis, one may request to validate the transfer course. Successful validation will result in a waiver from the need to take the validated course at UM-St. Louis but the transfer credit will not be counted at UM-St. Louis as part of the minimum thirty-six (36) hours required at the junior/senior level.

Approved Electives In addition to the above, students must complete a minimum of 24 hours of approved electives. A list of approved electives is available in the Undergraduate Advising Office of the College of Business Administration. Courses that are not on this list (free electives) may not be used as approved electives, except with the approval of the College's Undergraduate Studies Committee. Free electives are placed on a student's transcript but do not count toward the 120 minimum required hours for the BSBA, BSA, and BSMIS degrees. At least 12 hours of approved electives must be taken outside the College of Business Administration; the remaining may be earned within the College. A minimum of 60 hours must be taken in non-business administration course work.

Graduation Requirements The BSBA, BSA, and BSMIS degree programs require a minimum of 48 hours in business administration courses, a minimum of 72 hours in business administration and approved electives combined, and a minimum of 120 hours for all coursework.

Student must earn a minimum campus grade point average of 2.0 and a minimum grade point average of 2.0 for all business courses attempted at UM-St. Louis. Grade modification cannot be used for calculating the business grade point average.

College of Business Administration Residency Requirement Business Administration students must take their last 30 hours at the University of Missouri-St. Louis. Exceptions to this residency requirement would have to be approved by the College's Undergraduate Studies Committee.

Limitation on Discipline Concentration While a certain level of concentration in one of the various business fields is desirable, students should not concentrate their course selections to the extent of limiting their career flexibility. No more than 24 hours beyond required core courses are allowed in any business discipline—accounting, finance, logistics and operations management, management and organizational behavior, management information systems, and marketing. The combined hours in business and economics courses may not exceed 78 within the 120-hour program.

Requirements For Multiple Degrees Students may earn two or more undergraduate degrees in the College of Business Administration (BSBA, BSA, and/or BSMIS) by completing all of the requirements for each degree. In addition, each degree requires a minimum of 15 credit hours unique to that degree - at least 15 credit hours cannot have been used for another degree within the College of Business Administration. For example, students seeking two undergraduate degrees in Business will have to complete a minimum of 135 semester hours of college course work.

BSBA Emphasis Areas An emphasis area is not required within the BSBA degree program. Students who choose an emphasis must fulfill the general and specific requirements set forth below. An emphasis area will be noted on the student's permanent record card (transcript)—not the diploma upon completion of the emphasis area and the BSBA degree requirements.

NOTE: An emphasis area designation may be added to the permanent record card for up to two years following graduation. Courses taken after graduation which are to be applied toward an emphasis area must be taken in residence at UM-St. Louis.
General Requirements BSBA, BSA and BSMIS
All BSBA/BSA/BSMIS degree requirements must be satisfied including completion of the ten business core courses required of all persons.

A minimum of: eighteen (18) hours of business electives beyond the business core are required for all BSBA degree seeking students; twenty-one (21) hours of business electives beyond the business core are required of all BSA and/or BSMIS degree seeking students. Business courses used in fulfillment of a particular BSBA emphasis area, the BSA and/or the BSMIS major requirements would be counted among these hours.

A student must earn a grade of C- or better in all business and non-business courses applied to the BSBA emphasis area, BSA and/or BSMIS major requirements. Additionally, a campus minimum GPA of 2.00 is required in both the business and emphasis area coursework. (Non-business courses required for an emphasis area and/or degree are not averaged into either the business or the emphasis area GPA.)

The satisfactory/unsatisfactory option
Business students in good standing may take up to 18 hours on a satisfactory/unsatisfactory basis. Exempt from this option are specific degree requirements, including such courses as Econ 51, Econ 52, mathematics courses, English 10, and junior-level English courses; courses fulfilling the mathematics requirement; and the required business administration core courses except BA 390. Up to nine of the allowable 18 hours of work taken on a satisfactory/unsatisfactory basis may, however, be in business electives. Students should consult the College of Business Administration's regulations on this option regarding particular BSBA emphasis area courses and those in the BSA and BSMIS degree programs.

Residency
All BSBA emphasis areas, the BS in Accounting and the BS in MIS have residency requirements—a minimum number of business hours beyond the business core which must be taken at UM-St. Louis:

Finance, International Business, Logistics and Operations Management, Management and Organizational Behavior, and Marketing—six (6) hours; BS in Accounting and BS in MIS nine (9) hours.

General
Hours transferred from four-year accredited institutions require UM-St. Louis area approval to satisfy BSBA emphasis area, BSA and BSMIS requirements. Transferred independent study courses will not fulfill BSBA emphasis area requirements nor requirements for the BSA or BSMIS.

The specific requirements for a BSBA emphasis area, the BSA and the BSMIS for a given individual will be those requirements in effect at the time of completion (with a passing grade) of the first course in the respective program beyond the business core courses.

No more than thirty (30) hours of business electives (sixty [60] business hours in total) may be applied toward the minimum of 120 hours required for the BSBA, BSA and BSMIS degrees.

Various experimental courses and independent study courses may be offered under the BA 295, BA 296 and BA 395 numbers. The first such course taken in a given area will not count against the limit of courses in that area; any additional experimental and independent study courses will count against the limitations outlined above.

The College of Business Administration faculty is currently considering the implementation of a higher GPA requirement for admission and graduation. This will be no more than 2.5 and may be imposed in the future on all students entering the College.

Specific Requirements BS in Business Administration

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. 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.

Undergraduate Program Philosophy
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 UM-St. 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. Details for each of the tracks are discussed below.
Finance Core
To earn an emphasis in Finance in the BSBA degree program, all students must successfully complete a minimum of fifteen credit hours of finance electives beyond the business core course of Financial Management, BA 204. In addition, students with a desire to earn one or more professional certifications in specialized areas will need to take additional course work to satisfy the knowledge requirements of a particular track as detailed below.

It should be noted that the course listing under each track is the recommended curriculum to obtain sufficient command of the topics under the specialization. Students deviating from the suggested program of study must assume responsibility for completing any gaps in their backgrounds on their own prior to sitting for any professional exams.

General Finance Emphasis
For students who desire to obtain a general knowledge of finance or custom tailor their own individual program, this option allows students to take any of the finance course electives in any sequence. By affording maximum flexibility, students can explore the many different areas within finance before deciding upon which career path they may want to embark. As stated above, for a BSBA degree with an emphasis in finance, recipients must take a minimum of fifteen credit hours selected from the following courses:

Business Administration
207 Practicum in Investments
295 Business Administration Problems
296 Independent Study
327 Practicum in Finance
328 Estate Planning and Trust
332 Principles of Insurance
333 Life Insurance
334 Investments
335 Financial Risk Management
336 Treasury Management
337 Principles of Real Estate
338 Practices of Personal Financial Planning
339 Retirement Planning and Employee Benefits
350 Financial Policies
351 Computer Applications in Finance
355 Financial Services Industry and Instruments
356 Commercial Bank Management
380 International Finance
395 Business Administration Seminar: Topic: Property and Liability Insurance

Track Certification
All students completing one of the specialized tracks at UM-St. Louis will receive a Certificate of Completion for that track. This document will be in addition to the degree the student receives and is intended to provide additional evidence of attaining a specific body of knowledge. To receive the certificate, students must fill out an application for certification in their last semester. The application can be obtained from the Office of Undergraduate Academic Advising in the College of Business Administration.

Corporate Finance Track
The Corporate Finance Track trains students to make business financial decisions to maximize the value of the firm. In addition to raising and investing capital, firm managers must deal with a number of stakeholders including stockholders, lenders, customers, and regulators. While the major focus is on the financial problems of large corporations, many of the analytical tools and techniques also apply to small business enterprises. Students completing BA 336, Treasury Management, are eligible under a special agreement with the Treasury Management Association to sit for the Certified Cash Manager (CCM) exam. After completion of two years of related experience, the CCM designation qualifies students to work in the Treasury Departments of many leading companies or service providers like banks. Recommended courses include:

Business Administration
334 Investments
335 Financial Risk Management
336 Treasury Management
340A Financial Accounting and Reporting I
340B Financial Accounting and Reporting II
350 Financial Policies
351 Computer Applications in Finance
355 Financial Services Industry & Instruments
380 International Finance

Financial Institutions and Services Track
Financial institutions design and deliver financial services to businesses, government and individuals. It is also one of the fastest growing segments of the economy. This track is intended for students with a desire to work in a bank, insurance company, real estate firm, or other service provider. Beginning career opportunities include becoming a loan officer for a bank, a securities broker, a mortgage broker, or a property manager. Additionally, the Principles of Real Estate course (BA 337) provides students with the educational foundation to sit for the Missouri Real Estate Salespersons= Exam to become licensed to sell residential property under the direction of a broker. Recommended courses include:

Business Administration
332 Principles of Insurance
334 Investments
337 Principles of Real Estate
351 Computer Applications in Finance
355 Financial Services Industry and Instruments
356 Commercial Bank Management
Investment and Portfolio Management Track
There are billions of dollars flowing into retirement plans and mutual funds each year. These monies are invested in security markets around the world to provide the owners with the best returns available for a given level of risk. Professional portfolio managers have the responsibility of meeting investor goals while subject to rapidly changing market conditions. This path of study is intended to prepare students for a challenging career in money management. The program provides students with the critical knowledge to sit for the Chartered Financial Analyst (CFA) exam. This professional designation is highly regarded by the investment industry and requires the passing of a series of three exams. Students must also gain three years of related work experience before being certified. Recommended courses include:

Business Administration
207 Practicum in Investments
334 Investments
335 Financial Risk Management
340A Financial Accounting and Reporting I
340B Financial Accounting and Reporting II
351 Computer Applications in Finance
355 Financial Services Industry and Instruments
380 International Finance

CFA Review Courses (one for each level) are noncredit and available through Continuing Education.

Financial Planning Track
The Financial Planning Track is designed to prepare students to counsel individuals on personal financial matters that impact the family. This curriculum is a registered program with the Certified Financial Planner Board of Standards Inc., enabling students who successfully complete it to sit for their certification examination. UM-St. Louis does not award the CFP and CERTIFIED FINANCIAL PLANNER designations. The right to use the marks CFP and Certified Financial Planner is granted by the CFP Board to those persons who have met its rigorous educational standards, passed the CFP Certification Examination, satisfied a work experience requirement, and agreed to the CFP Board Code of Ethics and Professional Responsibility. Only persons registered with the CFP Board are permitted to sit for the CFP Certification Examination. CFP certificates and licenses are issued only by the CFP Board. The registered curriculum includes:

Business Administration
327 Practicum in Finance
328 Estate Planning and Trusts
332 Principles of Insurance
334 Investments
337 Principles of Real Estate
338 Practice of Personal Financial Planning
339 Retirement Planning and Employee Benefits
347 Income Taxes

351 Computer Applications in Finance

Comprehensive CFP Exam Review (noncredit) is available through Continuing Education.

Students who plan to sit for the CFP exam are strongly urged to include BA 338, BA 332, BA 334, BA 347, BA 328 and BA 339 in their coursework.

Insurance Track
This track is intended for the development of professionals for all aspects of the insurance industry. Insurance plays a special role in risk management for individuals and businesses. Areas emphasized include life and property/casualty risk exposures and the administration of pension and employee benefit plans. Students are prepared for careers as analytical staff members of major insurance companies, consultants, insurance agents or brokers, employee benefit specialists, and risk managers. The program is a cooperative partnership with the insurance industry including the American College in Bryn Mawr, Pennsylvania and the local chapter of the American Society. By special arrangement, students are entitled to apply three approved UM-St. Louis courses toward professional certification without further examination provided the courses are passed with a AC@ grade or higher. The professional certifications include the widely recognized Chartered Life Underwriter (CLU) and the Chartered Financial Consultant (ChFC). Transfer of these courses to the American College for certification does not require any additional tuition but only a one-time registration fee. Further courses can be used to satisfy the knowledge content for certification but will necessitate the taking of a standard national exam required of all candidates on the material. Both the CLU and ChFC require the passing of 10 courses not all of which are offered by UM-St. Louis but are available through the American College. In the future, it may also be possible to take actuarial courses offered in the Department of Mathematics as part of this track.

Recommended courses include:

Business Administration
328 Estate Planning and Trusts
332 Principles of Insurance
333 Life Insurance
334 Investments
338 Practice of Personal Financial Planning
339 Retirement Planning and Employee Benefits
347 Income Taxes
351 Computer Applications in Finance
395 Business Administration Seminar; topic: Property and Liability Insurance

International Business
There are two tracks for students wishing to pursue an emphasis in International Business (IB): one for those admitted to the Honors College, and one for other College
of Business Administration students. Students in either track must satisfy the University’s General Education requirements, the cultural diversity requirement, the College of Business Administration core course requirements and the following International Business emphasis area requirements:

Twelve (12) hours—four required courses

**Business Administration**
- 314 Managing the Global Workforce
- 316 International Marketing
- 380 International Finance
- 393 International Strategic Management

Foreign language proficiency equivalent to thirteen hours in one approved foreign language of international commerce must be demonstrated. Transfer students must pass the UM-St. Louis foreign language proficiency exam. Approved languages of international commerce are determined by the College of Business Administration.

U.S. students in the Honors College track are required to have a significant experience outside the U.S. This requirement can be met if they have lived outside the U.S. for at least nine months, spend at least one semester in an exchange program approved by the College of Business Administration or have an overseas internship for at least three months which is approved by the College of Business Administration.

Non-U.S. students in the Honors College track are required to have at least three months full-time working experience in the U.S. to be approved by the College of Business Administration.

Students in the non-Honors College track are encouraged to spend at least one semester in an exchange program approved by the College of Business Administration.

**Logistics and Operations Management**

The mission of Logistics and Operations Management is to get the appropriate goods or services to the right place, at the right time, in the right quality and quantity, while making the greatest contribution to the organization. In a business environment, Logistics and Operations Management encompasses the design, implementation and management of systems for efficient deployment of personnel, physical facilities, raw-materials, in-process inventories, finished goods and related information or services. Logistics and Operations Management covers the whole supply chain, from the point or origin to the point of consumption. Logistics and Operations Management analysts must be proficient in the use of quantitative models and computers, and communicate effectively.

For an emphasis in Logistics and Operations Management a student must complete at least four (4) courses (twelve [12] hours) from the following:

**Business Administration**
- 306 Decision Support Systems
- 308A Production and Operations Management
- 308B Business Logistics Systems
- 308C Lean Production in Manufacturing and Service Operations
- 308D Service Operations Management
- 329 Business Forecasting
- 330 Quality Assurance in Business
- 331 Multivariate Analysis
- 375 Operations Research
- 385 Operations Research II
- 295/395 Business Administration Problems/Seminars
- 296 Independent Study
- 224 Managerial Applications of Object-Oriented Programming I

*No more than one of these programming courses may be counted toward the emphasis area.*

**Management and Organizational Behavior**

The study of management and organizational behavior focuses on the behavior of individuals and groups in an organizational setting. The business environment today demands graduates with skills who can effectively make decisions involving working with and leading people.

The Management and Organizational Behavior emphasis stresses the qualitative approaches to business.

The major areas of focus are: the theory and functions of management; the management of human resources; the development of strategic policies in an organization; organizational design and conflict resolution; entrepreneurship; and international management. In covering these topics, both classic and current perspectives are provided.

To earn the emphasis designation in Management and Organizational Behavior a student must complete four (4) courses (twelve [12] hours) to include BA 311, Advanced Management and Organizational Behavior, plus three (3) additional courses selected from:

**Business Administration**
- 309 Human Resource Management
- 312 Industrial and Labor Relations
- 317 International Management
- 318 Industrial and Organizational Psychology (same as Psych 318)
- 319 Employee Training and Development
- 392 Entrepreneurship/Small Business Management
- 295/395 Business Administration Problems/Seminars
- 296 Independent Study
Marketing
Marketing is an important part of any business or organization and can enhance growth, increase profits, and help achieve the organization's goals. Furthermore, marketing plays an important role in our society by enhancing our quality of life. Equally important, marketing offers varied and interesting career opportunities.

Marketing involves the activities needed to facilitate an exchange. This covers selling products, services or ideas to both consumers and business buyers. Many non-profit institutions are now enthusiastic users of marketing concepts; thus marketing majors find such untraditional areas as hospitals, churches, museums, universities and retirement homes often offer excellent entry level opportunities, in addition to such traditional firms as manufacturing and retailing concerns.

For an emphasis in Marketing, a student must complete at least four (4) courses (twelve [12] hours) selected from:

**Business Administration**
- 270 Management of Promotion
- 275 Marketing Research
- 301 Consumer Behavior
- 302 Quantitative Marketing Methods
- 303 Business-to-Business Marketing
- 315 Marketing Management
- 316 International Marketing
- 295/395 Business Administration Problems/Seminars
- 296 Independent Study

295, 296 & 395 are restricted to those courses offered and approved by the area faculty.

Specific Requirements BS in Accounting
Accounting focuses on analyzing and measuring business activity, processing that data into reports, and communicating the information to decision makers. The successful accounting professional needs to acquire the education and skills necessary to fulfill these roles in whatever area of accounting he or she enters. Excellent skills in mathematics are necessary to analyze the quantitative, financial and operating data that decision makers use in marketing, finance, personnel administration, and other business activities. Because accounting is part of an information system, the ability to communicate financial results to managers, clients and others who need the information is a vitally important skill for professional accountants.

Mission: The Accounting Area of the University of Missouri-St. Louis endeavors to prepare high-potential students of diverse backgrounds to succeed in accounting careers, either through a bachelors or masters degree program. We seek to provide these students with the means to deal with the challenges confronting the accounting profession and to contribute to their solutions. Our faculty strives to further the practice and understanding of accounting through its teaching, research, and service to the profession.

Effective November, 1995, the accounting degree programs at UM-St. Louis are separately accredited by AACSB - The International Association for Management Education. This unique accreditation is not currently shared by any other St. Louis college or university.

For the BSA degree a student must complete at least 7 business courses (21 hours) beyond required business core courses. These 7 courses include:

**Business Administration**
- 340A Financial Accounting and Reporting I
- 340B Financial Accounting and Reporting II
- 345 Cost Accounting
- 347 Income Taxes
- 348 Auditing

In addition to the five courses above, either

**Business Administration**
- 215: Information Systems Analysis; or
- 344: Computer Applications in Accounting,

must be completed;

A minimum of one business course must be selected from the following:

**Business Administration**
- 341 Financial Accounting and Reporting III
- 342 Financial Accounting and Reporting IV
- 343 Accounting for Governmental and Nonprofit Entities
- 349 Business Income Taxation
- 295/395 Business Administration Problems/Seminars

295 and 395 are restricted to those courses offered and approved by the area faculty.

Two (2) additional courses (six [6] hours) must be successfully completed to earn the BSA degree:

One course selected from **Comm 30**: Interpersonal Communication I; or

**Comm 40**: Introduction to Public Speaking; or

**BA205**: Contemporary Business Communication.

One course selected from:

**Philosophy**
- 30 Approaches to Ethics; or
- 154 Business Ethics.
Specific Requirements-BS in Management Information Systems (BSMIS)

Management Information Systems (MIS) are key building blocks of modern organizations. These systems play a crucial role in managing and organizing work. They provide inputs to managers for strategic and operational decision making. They also help organize and streamline processes to improve productivity and reduce cycle times. Thus, MIS plays a crucial role in enhancing the competitive position of an organization. MIS professionals play a vital role in re-engineering organizations for competing in the interconnected global markets of today. An MIS professional needs to acquire functional knowledge in different areas of business and an overall perspective on the objectives and mission of the organization. MIS professionals need to develop strong communication and analytical skills to understand and design business processes and systems. A wide variety of technical and organizational skills are needed to effectively utilize the current information and communications technologies in developing business solutions. Some of the specific skills include systems analysis and design, database management, programming languages, telecommunication, decision support systems, and management of systems. Besides developing technical skills, organizational skills are also very important for MIS professionals in implementing systems and the changes associated with the new systems.

Mission: The MIS area in the College of Business Administration at the University of Missouri-St. Louis endeavors to prepare high-potential students of diverse backgrounds for successful careers in the MIS profession. Careers in MIS may include programming, systems analysis and design, database administration, end user support, network administration, and management consulting. We seek to provide students with the skills to deal with the challenges confronting the MIS profession and to contribute to their solutions. Our faculty strives to further the practice and understanding of MIS through its teaching, research, and service to the profession. Facilities at the college, such as hi-tech case rooms, advanced computer labs, latest software tools, and infrastructure, help students understand and practice the latest in information systems technology.

For the BSMIS degree a student must complete at least seven (7) courses (twenty-one [21] hours) beyond required business core courses as specified below.

1. A student must complete 5 courses (15 hours)
   a) Programming/File Structure Requirement (6 hours in either Track 1 or Track 2)

   TRACK 1
   Business Administration
   109 COBOL Programming and
   209 File Management

   TRACK 2
   Business Administration
   224 Managerial Applications of Object-Oriented Programming I and
   225 Managerial Applications of Object-Oriented Programming II

   b) Analysis and Design Requirement (6 hours)
   Business Administration
   215 Information Systems Analysis
   310 Information Systems Design

   c) Database Requirement (3 hours)
   Business Administration
   212 Database Management Systems

2. A student must complete two courses from the following to include at least one Business Administration (BA) course at the 300-level (6 hours):

   Business Administration
   109 COBOL Programming (if not used to fulfill requirements in 1A)
   209 File Management (if not used to fulfill requirements in 1A)
   224 Managerial Applications of Object-Oriented Programming I (if not used to fulfill requirements in 1A)
   225 Managerial Applications of Object-Oriented Programming II (if not used to fulfill requirements in 1A)
   304 The Management of Information Systems
   305 Management of Telecommunications
   306 Decision Support Systems
   307 End-User Computing for Business Applications
   344 Computer Applications in Accounting*
   351 Computer Applications in Finance*
   295/395 Business Administration Problems/Seminars
   296 Independent Study

   Computer Science
   240 Computer Hardware & Small Computer Systems I
   241 Computer Hardware & Small Computer Systems II
   332 Artificial Intelligence
   376 Operating Systems

295, 296 & 395 are restricted to those courses offered and approved by the area faculty.

*Only one of BA 344 and 351 may be used for the requirement in 2.

Minors in Business Administration

Students earning a degree outside the College of Business Administration may earn any of the minors listed below. Students earning a BSBA degree may, in addition to their emphasis(es) area(s), also earn a minor in accounting or
MIS or international business; students earning a BS degree in accounting or MIS may earn a minor in any field outside their major, but not in general business.

Students earning a degree outside the College of Business may, for some courses, satisfy course prerequisite requirements using courses other than those listed in the course descriptions. Students should check with the individual areas regarding alternative prerequisites. These alternative prerequisites apply only to students not earning degrees within the College of Business.

Minor in General Business
This minor is available only to students not seeking the BSBA, BSA or BSMIS degrees.

Students must successfully complete five of the following courses:
Business Administration
103 Computers and Information Systems
140 Fundamentals of Financial Accounting
156 Legal Environment of Business
204 Financial Management
206 Basic Marketing
210 Management and Organizational Behavior
252 Introduction to Operations Management

See additional requirements for minors, below.

Minor in Accounting
This minor is available to all but BSA students.

Students must successfully complete:
Business Administration
140 Fundamentals of Financial Accounting
145 Managerial Accounting

and three of the following courses:
Business Administration
340A Financial Accounting and Reporting I
340B Financial Accounting and Reporting II
341 Financial Accounting and Reporting III
342 Financial Accounting and Reporting IV
343 Accounting for Governmental and Nonprofit Entities
344 Computer Applications in Accounting
345 Cost Accounting
347 Income Taxes
348 Auditing
349 Business Income Taxation
295/395 Business Administration Problems/Seminars

295 & 395 are restricted to those courses offered and approved by the area faculty.

Minor in International Business
This minor is available to all but international business emphasis students.

Fifteen hours - to consist of at least five courses from the following international business courses with no more than one independent study course in the fifteen hours:

Business Administration
314 Managing the Global Workplace
316 International Marketing
317 International Management
326 Business in China
380 International Finance
393 International Strategic Management
396 Internship in International Business (no more than three hours may count)
295/395, Business Administration Problems/Seminars
296 Independent Study

BA 295, 296 and 395 are restricted to those courses approved by the International Business Committee. Students are encouraged to spend at least one semester in an exchange program offered through the University and approved by the College of Business Administration.

Minor in Finance
This minor is available to all but BSBA students.

Students must successfully complete:
Business Administration
204 Financial Management

and four of the following courses:
Business Administration
207 Practicum in Investments
327 Practicum in Finance
328 Estate Planning and Trust
332 Principles of Insurance
333 Life Insurance
334 Investments
335 Financial Risk Management
336 Treasury Management
337 Principles of Real Estate
338 Practices of Personal Financial Planning
339 Retirement Planning and Employee Benefits
350 Financial Policies
351 Computer Applications in Finance
355 Financial Services Industry and Instruments
356 Commercial Bank Management
380 International Finance
295/395 Business Administration Problems/Seminars
296 Independent Study

295, 296, 395 are restricted to those courses offered and approved by the area faculty.

Minor in Logistics and Operations Management
This minor is available to all but BSBA students.

Students must successfully complete:

Business Administration
252 Introduction to Operations Management

and four of the following courses:
Business Administration
252 Introduction to Operations Management

and four of the following courses:
306 Decision Support Systems  
308A Production and Operations Management  
308B Business Logistics Systems  
308C Lean Production in Manufacturing and Service Operations  
308D Service Operations Management  
329 Business Forecasting  
330 Quality Assurance in Business  
375 Operations Research  
385 Operations Research II  
295/395 Business Administration Problems/Seminars  
296 Independent Study  
224 Managerial Applications of Object-Oriented Programming I*  
307 End-User Computing for Business Applications*  
125 Introduction to Computer Science*  

295, 296, 395 are restricted to those courses offered and approved by the area faculty.

*No more than one of these programming courses may be counted toward the minor.

Minor in Management and Organizational Behavior  
This minor is available to all but BSBA students.

Students must successfully complete:  
Business Administration  
210 Management and Organizational Behavior  
311 Advanced Management and Organizational Behavior  

and three of the following courses:  
Business Administration  
309 Human Resource Management  
312 Industrial and Labor Relations  
317 International Management  
318 Industrial and Organizational Psychology (same as Psych 318)  
319 Employee Training and Development  
392 Entrepreneurship  
295/395 Business Administration Problems/Seminars  
296 Independent Study  

295, 296, & 395 are restricted to those courses offered and approved by the area faculty.

Minor in Management Information Systems  
This minor is available to all but BSMIS students.

Students must successfully complete:  
Business Administration  
103 Computers and Information Systems  

and one of the following programming courses:  
Business Administration  
109 COBOL Programming*  
224 Managerial Applications of Object-Oriented Programming I  

and three of the following elective courses (at least one of the three courses must be 212, 215, or a 300-level course):  
Business Administration  
109 COBOL Programming*  
209 File Management  
224 Managerial Applications of Object-Oriented Programming I*  
225 Managerial Applications of Object-Oriented Programming II*  
212 Database Management Systems  
215 Information Systems Analysis  
304 The Management of Information Systems  
305 Management of Telecommunications  
306 Decision Support Systems  
307 End-User Computing for Business Applications  
310 Information Systems Design  
295/395 Business Administration Problems/Seminars  
296 Independent Study  

295, 296, & 395 are restricted to those courses offered and approved by the area faculty.

*May be used if it was not used to satisfy the preceding programming course requirement.

Minor in Marketing  
This minor is available to all but BSBA students.

Students must successfully complete:  
Business Administration  
206 Basic Marketing  

and four of the following courses:  
Business Administration  
270 Management of Promotion  
275 Marketing Research  
301 Consumer Behavior  
302 Quantitative Marketing Methods  
303 Business-to-Business Marketing  
315 Marketing Management  
316 International Marketing  
295/395 Business Administration Problems/Seminars  
296 Independent Study  

295, 296, & 395 are restricted to those courses offered and approved by the area faculty.

Additional Requirements for Minors  
In addition to completing the above courses, the following requirements for minors in the College of Business Administration must be met:

1) A student earning a minor in General Business may not take more than 30 hours of business courses within the 120 required for a degree.

2) A student must earn a grade point average of 2.0 or better, and must earn a C- or better, in all courses.
included in the minor.

3) No course taken on a satisfactory/unsatisfactory basis may be applied toward fulfilling the minor requirements.

4) At least 9 credit hours of the courses required for the minor must be taken in residence at UM-St. Louis.

5) A minor is not conferred without completion of a UM-St. Louis baccalaureate degree.

6) Minors may be completed for up to two years following conferral of the baccalaureate degree. All work towards a minor following conferral of the baccalaureate must be completed in residence at UM-St. Louis.

Minor in Employee Training and Development
The College of Business Administration and the Evening College offer a minor in employee training and development. Information on this minor is can be found in the Evening College section of this book.

Cooperative Education and Internship Programs
Cooperative Education and Internship Programs are available for students seeking career-related employment while enrolled in college. These programs afford business students an opportunity to gain practical experience and earn a substantial income. Co-ops and internships are administered through Career Services, 308 Woods Hall.

International Business Certificate
Students who participate in the Missouri-London Program (take courses and work for one semester in London) or other study abroad programs may apply that experience toward an International Business Certificate. Details may be found in the Interdisciplinary Studies section of the Bulletin.

Graduate Studies
The College of Business Administration offers three graduate degrees: the Master of Business Administration (MBA), the Master of Science in Management Information Systems (MS in MIS), and the Master of Accounting (MAcc).

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 recommendations.

Applicants are required to take the GMAT. This aptitude test is designed to measure certain mental capabilities important in graduate business studies. The examination tests ability to read, understand, and reason logically with both verbal and quantitative material. The test is not a measure of achievement or knowledge of business administration curriculum. Information concerning the GMAT may also be obtained from the admission advisers or the Office of Graduate Studies in Business.

Master of Business Administration Program (MBA)
The MBA is available in two formats: the evening MBA program and the Professional MBA On-Line program. Both are fully accredited by AACSB - the International Association for Management Education (formerly the American Assembly of Collegiate Schools of Business), the authorized professional accrediting body in collegiate business education. The MBA programs are designed to prepare students for administrative positions. They also provide an appropriate foundation for students contemplating doctoral work and eventual careers in college teaching or in research. The programs are designed for students who have bachelor’s degrees from accredited institutions, including those with undergraduate backgrounds in the sciences, engineering, humanities, or arts.

The Evening MBA Program
A 54-hour or two-year program, the MBA curriculum provides training in the fundamental areas of 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 interactive 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 technology and operations management disciplines.
- Quantitative management decision-making models put to use in the context of current management information systems.

The total degree program is integrated by a course in strategy formulation and implementation in the student’s last semester. 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.

Degree Requirements
Depending on the student’s previous background, programs will range from 39 to 54 hours. Course work must be completed within a six-year period. At least 30 hours of coursework must be taken while enrolled as an MBA candidate at UM-St. Louis.
Candidates must take at least one course at either the core level or from the business breadth requirements list in each of the following six areas: accounting, finance, management, marketing, information systems, and management science. Also, no more than 15 credit hours may be taken in any one of the six areas.

Students are also required to have completed the equivalent of Econ 301, Quantitative Methods and Modeling in Economics, Business, and the Social Sciences, by the end of their first 15 hours in the program.

Required Courses
The following courses or their equivalents are required of all degree candidates.

General Requirements
Econ 301, Quantitative Methods and Modeling in Economics, Business, and the Social Sciences
BA 405, Managerial Communication
BA 408, Economics for Managers
BA 412, Law, Ethics, and Business
MS/IS 481, Statistical Analysis for Management Decisions
BA 490, Strategy Formulation and Implementation

Core Requirements
Accounting 440, Financial and Managerial Accounting
Finance 450, Financial Management
Management 460, Organizational Behavior and Administrative Processes
Marketing 470, Contemporary Marketing Concepts
MS/IS 480, Management Information Systems
MS/IS 483, Production and Operations Management

Business Breadth Requirements
A student must take a second-level course in three of the following areas:

Accounting:
Accounting 442, Accounting for Decision Makers
Finance: Any approved 400-level course beyond Finance 450
Management: Any approved 400-level course beyond Management 460
Marketing: Any approved 400-level course beyond Marketing 470
Information Systems: Any approved 400-level course beyond MSIS 480
Management Science: Any approved 400-level course beyond MSIS 483

Electives
The student must take a minimum of nine hours of elective courses. A maximum of six hours of electives may be taken at the 300 level. Nine elective hours may be taken outside the College of Business Administration if the student has approval in advance from a graduate adviser for the specific courses desired.

Previous Education
Based on a formal review and evaluation by the Office of Graduate Studies in Business, students may be granted waivers of certain courses from the general and core requirements. Waivers depend on the applicability of prior coursework and the student’s performance in these courses. Regardless of the number of courses waived, all students must take at least 39 hours to earn the degree.

Professional MBA On-Line Program
An Internet-based version of the MBA program exists as an alternative to the traditional part-time evening program. The Internet-based program is designed in a 48 credit hour lock-step format and is intended for students who are unable to attend classes on a regular basis. As such, students will only meet on campus one weekend per month throughout the program, with the remainder of the interaction between instructor and students taking place over the Internet. Students proceed through the program as part of a cohort group and complete the requirements for the degree in two years.

The first 30 hours of the Internet-based program consist of the same core courses required in the evening program (except for the mathematics and economics requirements, which are treated as prerequisites and must be satisfied prior to starting the program). The remaining 18 hours consist of the following courses:
Accounting 442, Accounting for Decision Makers
Finance 459, Seminar in Finance
Management 469, Seminar in Management
Marketing 474, Seminar in Marketing
MS/IS 424B, Seminar in Management Information Systems
MS/IS 494B, Seminar in Logistics and Operations Management

Master of Science in Management Information Systems (MS in MIS)
The Master of Science in MIS program is designed to provide the technical and managerial knowledge and skills to operate successfully in the rapidly changing 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 MIS, business, and computer science, as well as students with undergraduate degrees outside business. The program allows specialization in telecommunications, electronic commerce, or business systems development; the program also allows students not to select a specialization option.

MS in MIS Program Degree Requirements
The program may require as few as 30 hours for students with undergraduate business degrees from AACSB accredited institutions. Because of the need to attain general business core competencies as a foundation of the MS in MIS requirements, students with no academic
business background will be required to take additional hours as outlined below.

**General Requirements**
All students must meet course requirements in quantitative reasoning, general business and MIS. Students must complete a minimum of 30 credit hours beyond the general business core. Of the 30 hours beyond the general business core, at least 15 credit hours in MIS must be completed at the 400 level, and at least 24 of the hours must cover topics beyond MSIS 480 and MSIS 423a. Students with a B.S.B.A. with an emphasis in MIS or a B.S. in MIS from an AACSB accredited institution may, at the student’s discretion, substitute two electives for MSIS 480 and MSIS 423a. Waivers may be granted for other courses with appropriate undergraduate course work.

**Quantitative Reasoning Requirement**
Students are required to have completed by the end of their first semester in the program the equivalent of Econ 301, Quantitative Methods in Modeling in Economics, Business and the Social Sciences with a grade of C or better. Students are also required to complete the equivalent of MSIS 481, Statistical Analysis for Management Decisions with a grade of C or better. These courses do not count towards the graduate degree, but waivers may be granted with appropriate undergraduate course work.

**General Business Core**
Students must have a B.S. in MIS, or a B.S.B.A. with an emphasis in MIS that requires a managerial communication course, and course work equivalent to at least five of the following courses:
- BA 412, Law, Ethics, and Business
- ACCT 440, Financial and Managerial Accounting
- FIN 450, Financial Management
- MGMT 460, Organizational Behavior and Administrative Processes
- MKTG 470, Contemporary Marketing Concepts
- MSIS 483, Production and Operations Management
- BA 490, Strategy Formulation and Implementation

Students having not met this prerequisite to the program must complete BA 405 Managerial Communication and course work from at least five of the courses listed above.

**Program Requirements**

A. Basic MIS courses  9 credit hours
- MSIS 480, Management Information Systems
- MSIS 423a, Applications of Programming for Business Solutions

B. MIS Specialization Courses  15 credit hours
See specializations following this overall description.

C. MIS Electives  6 credit hours
Students must take at least two of the following courses. A course cannot count for credit as an elective if it is used as a specialization course (see Section B).
- BA 414, Introduction to Geographic Information Systems
- MSIS 423b, Managerial Applications of Object-Oriented Technologies
- MSIS 423c, Business Programming and File Systems
- MSIS 423d, Internet Programming for Business
- MSIS 424a, Seminar in Current Management Information Systems Topics
- MSIS 424c, Business Process Design
- MSIS 424d, Management of Transnational Information Systems
- MSIS 425, Advanced MIS Applications
- MSIS 426, Management of Client/Server Computing
- MSIS 488, Information Systems Analysis
- MSIS 489, Database Management Systems
- MSIS 491, Electronic Commerce
- MSIS 492, Information Systems Strategy
- MSIS 493, Simulation for Managerial Decision Making
- MSIS 495, Information Systems Design
- MSIS 496, Telecommunications: Design and Management
- MSIS 497, Decision Support Systems
- MSIS 498, Fourth Generation Languages and End User Computing
- MSIS 499, Management Information Systems Thesis Research
- CSC 377, Operating Systems for Telecommunications
- CSC 427, Systems Administration

**MIS Specialization Options**
(These are the course requirements for Category B identified previously).

1. Business Systems Development
The following four courses are required:
- MSIS 488, Information Systems Analysis
- MSIS 489, Database Management Systems
- MSIS 495, Information Systems Design
- MSIS 496, Telecommunications: Design and Management

Also required is one additional MIS course not being used for credit in Section C.

Students having earned a B.S.B.A. with an emphasis in MIS or a B.S. in MIS from a AACSB accredited university may be granted waivers for MSIS 488 and MSIS 489 with appropriate course work. However, they must take MSIS 495 and additional electives of their choice to complete this option.

2. Telecommunications
The following five courses are required:
- MSIS 496, Telecommunications: Design and Management
- MSIS 423b, Managerial Applications of Object-Oriented Technologies
- MSIS 426, Management of Client/Server Computing
3. Electronic Commerce
The following five courses are required:
- MSIS 491, Electronic Commerce
- MSIS 423d, Internet Programming for Business
- MSIS 426, Management of Client/Server Computing
- MSIS 489, Database Management Systems
- MSIS 496, Telecommunications: Design and Management

4. General MIS (no track)
Any five courses from the list under Category C (not being used for credit in Category C) are required.

Master of Accounting Program (MAcc)
The MAcc program is intended for students preparing to enter the accounting profession or furthering existing accounting careers. Designed to accommodate both students with undergraduate accounting majors and students with other undergraduate backgrounds, the program permits students to take a generalized course of study or specialize in income taxation or auditing/systems. It may require as few as 30 credit hours for students with undergraduate accounting degrees.

Because of the need to attain general business and professional accounting core competencies as a foundation for the MAcc requirements, students with no academic business or accounting background will be required to take additional credit hours as outlined below.

General Requirements
All students must meet course requirements in mathematics, general business, and accounting. Students must complete a minimum of 30 credit hours beyond the general business core and the professional accounting core. At least 15 credit hours in accounting must be completed, including at least 12 credit hours at the 400 level. At least 9 credit hours of the student's 30 credit hour program must be in 400-level non-accounting courses. Of the 30 credit hours beyond the general business and professional accounting core, 21 credit hours must be earned in courses at the 400 level.

Mathematics Background Requirement
Students are required to have completed by the end of their first semester in the program the equivalent of Economics 301, Quantitative Methods and Modeling in Economics, Business, and the Social Sciences, with a grade of C or better. Graduate credit is not given for this course but it may be waived with appropriate undergraduate coursework.

General Business Core
Students must have credit for the equivalent of one three-credit-hour course in each of the following subject areas: macroeconomics, microeconomics, financial accounting, managerial accounting, marketing, financial management, organizational behavior, and business strategy. These requirements may be met with graduate-level course work or may be waived with appropriate courses taken as an undergraduate.

Professional Accounting Core
Students must have credit for the equivalent of each of the following three-credit-hour courses. Some of these courses may be taken concurrently with MAcc degree requirements (listed below) or may be waived with appropriate courses taken as an undergraduate.

- 340A, Financial Accounting and Reporting I
- 340B, Financial Accounting and Reporting II
- 344, Computer Applications in Accounting
- 345, Cost Accounting
- 441, Concepts in Management Accounting
- 347, Income Taxes
- 348, Auditing

MAcc Degree Requirements (minimum: 30 credit hours)

- Accounting Courses (minimum: 15 credit hours, 12 credits at 400-level)
  - 341, Financial Accounting & Reporting III*
  - 342, Financial Accounting & Reporting IV*

- Research course-At least one of the following courses must be completed:
  - Accounting 421, Professional Accounting Research
  - Accounting 431, Tax Research

- Seminar- At least one of the following courses must be completed:
  - Accounting 445, Seminar in Financial Accounting Theory
  - Accounting 439, Seminar in Taxation
  - Accounting 446, Seminar in Auditing

- Accounting Electives-to meet 15 credit-hour and 400-level requirements

- Non-Accounting Courses (minimum: 9 credit hours at 400-level)
  - 405, Managerial Communication*
  - 412, Law, Ethics, and Business*
  - MS/IS 480, Management Information Systems*
  - MS/IS 481, Statistical Analysis for Management Decisions*
  - MS/IS 483, Production and Operations Management*

Electives may be necessary to meet 9 credit-hour 400-level non-accounting requirement or minimum 30 credit-hour requirement (*=May be waived with appropriate undergraduate courses).
Taxation Emphasis

Students desiring an emphasis in taxation must complete Accounting 431, Tax Research, Accounting 439, Seminar in Taxation, Accounting 433, Taxation of Corporations and Shareholders, and at least two courses from the following list of electives:

Accounting 432, Taxation of Estates, Gifts, and Trusts
Accounting 434, Taxation of Partnerships and Partners
Accounting 435, Tax Practice and Procedure
Accounting 436, Advanced Topics in Taxation

Auditing/Systems Emphasis

Students desiring an emphasis in Auditing/Systems must complete Accounting 421, Professional Accounting Research, Accounting 446, Seminar in Auditing,
Accounting 449, Systems Auditing,
Accounting 447, Accounting Systems for Management Planning and Control, and at least three courses from the following list of electives:

MS/IS 480, Management Information Systems
MS/IS 423a, Applications of Programming for Business Solutions
MS/IS 488, Information Systems Analysis
MS/IS 489, Data Base Management Systems
MS/IS 495, Information System Design

Ph.D. in Business Administration

Information Systems

Admissions Requirements

Admission decisions are made on the basis of past academic record, intellectual ability, GMAT or GRE score, 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 School.
- Three letters of recommendation (at least two from individuals with earned doctorates).
- A statement of objectives for the course of study.

Graduate Assistantships

Stipends for research and teaching 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 Ph.D. in the School of Business Administration requires 75 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 evident through completion of Econ 301 and BA 408 or equivalent. Students must also demonstrate appropriate competence in managerial communication, which is evident through completion of BA 405 or equivalent to be determined by the Ph.D. Coordinator.

Course Requirements

I. Business & Research Foundation Requirement: 11 Courses (31 credit hours)

Students are required to take:

- IS 480 Management Information Systems
- LOM 481 Statistical Analysis for Management Decisions
- BA 412 Law, Ethics, and Business
- ACCT 440 Financial and Managerial Accounting
- FIN 450 Financial Management
- MGMT 460 Organizational Behavior
- MKTG 470 Contemporary Marketing Concepts
- LOM 483 Production and Operations Management
- LOM 484 Statistical Modeling
- LOM 488 Experimental and Survey Design and Analysis
- BA 406 Seminar in Business Administration

Teaching (1 credit hour)
The first eight courses (480, 481, 412, 440, 450, 460, 470, 483) will normally be waived if students have an UMSL MBA, MS in IS, or MAcc degree or equivalent course work.

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: Supporting fields may include areas of business such as Accounting, Finance, Management, Logistics & Operations Management, and Marketing. Students may select supporting fields from outside the School of Business Administration (such as Applied Mathematics, Computer Science, Political Science, Psychology, etc.) with approval of the Ph.D. Coordinator.

III. IS Requirement: 12 courses (35 credit hours)

Students are required to take the following ten courses:

- IS 423a Applications of Programming for Business Solutions
- IS 485 Management Information Systems: Theory and Practice
- IS 488 Information Systems Analysis
- IS 489 Database Management Systems
- IS 496 Telecommunications: Design and Management
- IS 407 Philosophical Foundations of Business Administration Research (2 credit hours)
- IS 490a IS research seminar
- IS 490b Quantitative research methods in MIS
- IS 490c Qualitative research methods in MIS
- IS 490d Special Topics in MIS
Students are required to take two of the following courses:
LOM 414 Introduction to Geographic Information Systems
IS 423b Managerial Applications of Object-Oriented Technologies
IS 423c Business Programming and File Systems
IS 423d Internet Programming for Business
IS 424a Seminar in Current Management Information Systems Topics
IS 424c Business Process Design
IS 424d Management of Transnational Information Systems
IS 425 Advanced MIS Applications
IS 426 Management of Client/Server Computing
IS 491 Electronic Commerce
IS 492 Information Systems Strategy
IS 495 Information Systems Design
IS 497 Decision Support Systems
IS 498 Fourth Generation Languages and End-User Computing

Other Requirements:
Upon completion of course work, students are advanced to candidacy by successfully completing a comprehensive examination in the field of MIS and a supporting field examination in the student's chosen area.

Students admitted to the program with a relevant Masters 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.

Students are required to defend orally a dissertation proposal within one year of being advanced to candidacy.

Students are required to present one paper at a regional, national or international conference.

Student is required to submit one paper, approved by their dissertation advisor, to a refereed journal.

At least two semesters of supervised teaching in the School of Business Administration are required of all doctoral students.

Students must satisfy all Graduate School requirements.

The degree is awarded upon successful completion and defense of the Ph.D. dissertation. The dissertation must be defended orally within three years after approval of a Ph.D. dissertation proposal.

Graduate Certificate Programs in Business Studies

The College of Business Administration offers eight 18-hour 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 a defined course of study in a specialized business topic. Without requiring completion of a 30 - 69-hour graduate business degree program, certificate programs provide students with the opportunity to obtain the advanced knowledge available through a graduate course of study.

In order to successfully complete a certificate program, students must have earned a 3.0 cumulative GPA in certificate classes. Unless otherwise specified, the certificate 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.

Graduate Certificate Program in Business Administration

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 course work designed to cover the major disciplines within the field of business. Upon completion the student will have a core knowledge of common business practices and corporate procedures.

To earn the certificate, students must complete six courses as prescribed below: All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate area coordinator and the director of graduate studies in business. In all cases, 18 hours are needed to complete the graduate certificate.

Program Requirements: (5 courses)
ACCT 440 Financial and Managerial Accounting
MGMT 460 Organizational Behavior and Administrative Processes
MKT 470 Contemporary Marketing Concepts
MS/IS 480 Management Information Systems
One of the following:
FIN 450 Financial Management
MS/IS 483 Production and Operations Management

Elective Course (1 course):
BA 405 Managerial Communication
BA 412 Law, Ethics and Business
*FIN 450 Financial Management
*MS/IS 483 Production and Operations Management

*Cannot be used as an elective if used as a program requirement.

Graduate Certificate in Electronic Commerce
New communication technologies are changing the way organizations work with one another, the way consumers purchase products, and even the type of organizations that exist. In fact, technology may be changing the fundamental processes and structures of business. This certificate will introduce students to the interaction of existing processes and structures, and the introduction of new technologies to develop models of business activity in technology intensive environments.

Students must complete 18 hours as specified below.
MSIS 480, Management Information Systems
423a, Applications of Programming for Business Solutions
423d, Internet Programming for Business
491, Electronic Commerce
496, Telecommunications: Design and Management
426, Management of Client/Server Computing

Students will have the opportunity to take additional electives should they desire to do so.

All course prerequisites and all course waivers are applicable. Substitute courses must be approved by the area coordinator of the MSIS area and the director of graduate studies in business. In all cases, 18 hours are needed to complete the certificate. Students should complete the certificate with 3 years from the time they first enroll in the program.

Graduate Certificate in Human Resources Management
The Graduate Certificate in Human Resources Management is an 18-hour course of study designed to focus on the multidimensional aspects of personnel operations within business organizations. The course of study emphasizes both the formal and informal sides of human resources management.

Requirements
Students must complete the following six courses or appropriate substitutes if course waivers are appropriate:
Management 460, Organizational Behavior and Administrative Processes
Management 461, Managing Human Resources
Management 464, Compensation and Benefits
Management 465, Union-Management Relations and Collective Bargaining
Management 466, Personnel Administration: Theory and Practice
MS/IS 481, Statistical Analysis for Management Decisions
Management 460, Management 461, and MS/IS 481 may be waived with equivalent undergraduate courses. If a student is able to waive any or all of these three courses, substitute courses (approved by both the coordinator of the management area and the director of graduate studies in business) will be provided. Substitute courses may include Management 462, Advanced Organizational Behavior and Administrative Processes, or a course from outside the College of Business Administration. In all cases, 18 hours are needed to complete the Graduate Certificate in Human Resources Management.

Graduate Certificate in Information Resource Management
The management of information as a resource will be the key to success in the 21st century. To manage this resource, efficient and effective methods for collection, maintenance and use of data must be established. This certificate exposes students to the managerial and technological concerns in the planning of effective transaction processing and/or decision support systems. Students must complete 18 hours as specified below. In addition, if they have not had the equivalent of MSIS 480, they must complete that course.

Programming Requirement: Students must complete one of the courses listed below:
MSIS 423a Applications of Programming for Business Solutions
MSIS 423b Managerial Applications of Object-Oriented Technologies
MSIS 423c Business Programming and File Systems
MSIS 423d Internet Programming for Business
MSIS 484 Business Programming and File Systems
MSIS 498 Fourth Generation Languages and End User Computing

Core Courses: Students must complete each of the three courses listed below:
MSIS 485 Management Information Systems: Theory and Practice
MSIS 488 Information Systems Analysis
MSIS 489 Database Management Systems

Elective Courses: Students must complete two courses from the following list. Students may take at most one additional programming course (marked with *), and may not use any course as an elective already used to meet the
Programming Requirement.

**MSIS 423a** Applications of Programming for Business Solutions*
**MSIS 423b** Managerial Applications of Object-Oriented Technologies*
**MSIS 423c** Business Programming and File Systems*
**MSIS 423d** Internet Programming for Business*
**MSIS 424e** Business Process Design
**MSIS 492** Information Systems Management
**MSIS 496** Telecommunications: Design and Management
**MSIS 497** Decision Support Systems
**MSIS 498** Fourth Generation Languages and End User Computing*

Students will have the opportunity to take additional electives should they desire to do so.

All course prerequisites and all course waivers are applicable. Substitute courses must be approved by the coordinator of the MSIS area, and the director of graduate studies in business. In all cases, 18 hours are needed to complete the Graduate Certificate in Information Resource Management. Students should complete the certificate within three years from the time they first enroll in the program.

**Graduate Certificate in Information Systems Development**
The certificate is an 18-hour program designed to provide a focus on the creation and modification of information systems for business. Topics related to systems development such as programming and database design are included in the course of study.

**Requirements**
Students must complete six courses as specified below (or appropriate substitutes if course waivers are approved):

- **MSIS 480**, Management Information Systems
- **423a**, Applications of Programming for Business Solutions
- **485**, Management Information Systems: Theory and Practice
- **488**, Information Systems Analysis
- **489**, Database Management Systems
- **495**, Information Systems Design

Students will have the opportunity to take additional electives should they desire to do so.

All course prerequisites and all course waivers are applicable. Substitute courses must be approved by the coordinator of the MSIS area and the director of graduate studies in business. In all cases, 18 hours are needed to complete the certificate. Students should complete the certificate within 3 years from the time they first enroll in the program.

**Graduate Certificate in Marketing Management**
The Graduate Certificate in Marketing Management is an 18-hour program designed to provide a focused intensive study of the marketing management activity within organizations. This program is designed to serve a broad group of marketing managers, including those with interest in sales, brand management, promotion, and consumer behavior.

**Requirements**
Students must complete the following six courses or appropriate substitutes if course waivers are appropriate:

- **Marketing 470**, Contemporary Marketing Concepts
- **Marketing 475**, Consumer Motivation and Behavior
- **Marketing 478**, Marketing and Business Research

**Marketing Management:**
Marketing 471, Marketing Planning and Strategy
Marketing 476, Marketing Communications
Marketing 477, Product Planning and Pricing

All course prerequisites and all course waivers are applicable. Substitute courses must be approved by the coordinator of marketing area and the director of graduate studies in business. In all cases, 18 hours (including at least 12 hours in marketing) are needed to complete the certificate.

**Graduate Certificate in Taxation**
The Graduate Certificate in Taxation is an 18-hour course of study designed to focus on the theory and practice of taxation as a subfield of accounting. The course of study emphasizes both the legal, as well as the academic analysis of taxation.

**Requirements**
Besides the admission requirements needed by all graduate business students, students seeking a graduate certificate in taxation must have the equivalent of an undergraduate degree in accounting from UM-St. Louis. An up-to-date tax course should be part of that degree although up-to-date tax knowledge may be evidenced through an old tax course combined with recent tax experience.

To earn the certificate, students must complete six courses as prescribed following:

**Required Courses**
Accounting 431, Tax Research
Accounting 433, Taxation of Corporations and Shareholders
Accounting 435, Tax Practice and Procedure

**Three Additional Courses From:**
Accounting 432, Taxation of Estates, Gifts, and Trusts
Accounting 434, Taxation of Partnerships and Partners
Accounting 436, Advanced Topics in Taxation
405, Managerial Communication or
412, Law, Ethics and Business

Students must complete the Graduate Certificate in Taxation within three years from the time they first enroll in the program.

Graduate Certificate in Telecommunications Management
Managing communications systems remains one of the most challenging, and demanding jobs. The telecommunications manager must balance the interests of business, technical, regulatory, and applications aspects of connectivity, as well as maintain network security. The challenge has intensified with the recent exponential growth in the Internet, which has revolutionized the way in which individuals and organizations conduct business.

The certificate focuses on the management of telecommunications systems for business. It includes courses from both MIS and computer science to provide the necessary technical and managerial perspectives. Student must complete six courses as indicated below.

MSIS
480, Management Information Systems
496, Telecommunications: Design and Management
423, Managerial Applications of Object-Oriented Technologies
426, Management of Client/Server Computing

Computer Science
377, Operating Systems for Telecommunications
427, Systems Administration

Graduate Certificate in Telecommunications Science
Telecommunications science deals with the design, management, and administration of computer networks. The telecommunications specialist has to deal with issues such as feasibility of the system, cost optimization of the design, administration of the system, and watch for information security leaks, while working within the framework of different regulatory agencies. The exponential growth of the Internet and the projected growth in electronic commerce has increased the need for trained professionals in telecommunications science.

Students will study telecommunications science from a technical perspective in four courses offered in the Department of Mathematics and Computer Science. In addition, they will study the regulatory and management aspects in two courses in the College of Business.

Computer Science
372, Object Oriented Analysis and Design
377, Operating Systems for Telecommunications
473, Client/Server Computing
427, Systems Administration

MSIS
480, Management Information Systems
496, Telecommunications: Design and Management

Special Interdisciplinary Degree
The College of Business Administration also cooperates with the Departments of Economics and Political Science in the College of Arts and Sciences in offering a master's degree in public policy administration (MPPA). For information on the MPPA degree program, see the Inter-school Studies section of this Bulletin.

General Statement of Policy Applicable to All Students Taking Business Courses

Academic Misconduct
The College of Business Administration views academic dishonesty as a serious offense. Unless instructed by their instructor to the contrary, students should assume that all class assignments are to be done independently. For independent assignments (e.g., a case analysis, take-home or in-class exams), giving or receiving aid, unless authorized by the instructor, is considered academic dishonesty. If the student is uncertain concerning the nature of an assignment, it is his/her responsibility to seek the instructor's guidance. For more information on academic misconduct, refer to the appendix of this Bulletin and the UM-St. Louis Student Handbook.

Career Outlook
The current economic climate appears to favor students with business training. Business college graduates with the B.S.B.A. degree usually obtain entry-level positions in areas requiring accounting, finance, management, management information systems, marketing, and quantitative backgrounds. Recent graduates of the College of Business Administration hold positions with a variety of local and national firms as accountants; internal auditors; sales representatives; cost, budget, and systems analysts; executive trainees; merchandisers; systems programmers; and purchasing agents.

Many graduates of the University's graduate business programs are employed in staff-level positions in local and national businesses, and opportunities for managerial posts are promising for the graduate with a master's degree in business administration. Additionally, several graduates have chosen to pursue careers in college teaching.
Course Descriptions
Courses in this section are grouped as follows: all undergraduate courses are listed under Business Administration; 400-level graduate courses are listed under Business Administration, Accounting, Finance, Management, Management Science/Information Systems, and Marketing.

The College of Business Administration uses the University course numbering system (see p. 5) with the following clarifications:

100 to 199, sophomore, junior, or senior standing is required unless a specific exception is listed.
200 to 299, junior or senior standing is required.
300 to 399, junior, senior, or graduate standing is required unless a specific exception or restriction is listed.

A minimum grade of C- shall be required to meet the prerequisite requirement for any course. Prerequisites may be waived only by consent of both the instructor and the area coordinator. A minimum campus GPA of 2.0 is required for admittance to each 200- and 300-level Business Administration course.

93 Personal Finance for Nonbusiness Majors (3)
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.

95 Topics in Business Administration (1-3)
Study of selected special problems in business and administration. May be repeated for credit with different topics. Cannot be included in BSBA program.

103 Computers and Information Systems (3)
The basic concepts of data processing and the fundamental principles of computer-based information systems are studied. The characteristics of computer hardware and software used in implementing business applications are considered. Students will develop skills in utilizing both mainframe and microcomputers.

104 FORTRAN Programming (3)
Prerequisite: 103. A study of the principles of programming digital computers using the FORTRAN language. Credit will not be granted for both 104 and Computer Science 122.

109 COBOL Programming (3)
Prerequisite: BA103 or Computer Science 125. Structured COBOL programming techniques for business applications are presented. Included are report generation, control breaks, output editing, debugging, tables, and sort concepts.

140 Fundamentals of Financial Accounting (3)
Prerequisites: Math 30 and completion of 27 credit hours. This is a one-semester course in financial accounting theory and practices, with primary emphasis upon the accounting cycle and the preparation and interpretation of corporate financial statements.

145 Managerial Accounting (3)
Prerequisites: Math 30 and BA140. 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.

156 Legal Environment of Business (3)
Prerequisites: Econ 51 and BA140. 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.

195 Topics in Business Administration (1-3)
Prerequisites: Vary with topic; contact the College of Business Administration. Study of selected special problems in business and administration. May be repeated for credit with different topics.

204 Financial Management (3)
Prerequisites: Econ 52, MT 105, and BA140, and a 2.0 campus GPA. 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.

205 Contemporary Business Communication (3)
Prerequisites: English 10 or equivalent and a minimum campus GPA of 2.0 (Comm 40 recommended, but not required.) A forum wherein business writing and speaking skills are addressed. Communication unique to business organizations is critiqued. Emphasis is placed on writing and verbal communication skills necessary to succeed in the business environment.
206 Basic Marketing (3)
Prerequisites: Econ 51, junior standing, and a 2.0 campus GPA. 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, and societal implications of such policies.

207 Practicum In Investments (1)
Prerequisite: 204 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.

209 File Management (3)
Prerequisite: 109 and a 2.0 campus GPA. The course covers job control language, utilities, partitioned data sets, updating of sequential files, indexed files, direct and/or relative files. The topics are implemented in a COBOL environment. A database management system is used to illustrate design and implementation of business applications.

210 Management and Organizational Behavior (3)
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 classical and current perspectives are provided.

212 Database Management Systems (3)
Prerequisites: 209 or 225 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.

215 Information Systems Analysis (3)
Prerequisites: 109, or 224, and a minimum campus GPA of 2.0. Techniques and philosophies of systems analysis are addressed. Included are: traditional versus structured design methods, computer-based tools for systems analysis, workbenches, design and analysis of database systems, maintenance of existing information systems, human/machine interfaces, and security and control.

224 Managerial Applications of Object-Oriented Programming I (3)
Prerequisites: ( BA103 or Computer Science 122 or 125) and a 2.0 campus GPA. The course provides a study of the UNIX operating system and the C++ programming language as they pertain to managerial applications. In addition, the course will introduce the use of object-oriented programming methodologies.

225 Managerial Applications of Object-Oriented Programming II (3)
Prerequisites: 224 and a minimum campus GPA of 2.0. This course expands object-oriented skills taught in 224. The emphasis in this course is on object-oriented development tools and development in a client-server environment. The data management tools will include the use of SQL to access server-based databases.

250 Business Statistics (3)
Prerequisites: Math 100 and 105, BA103 and a 2.0 campus GPA. Construction and use of statistical models for business management. Students will learn techniques used for relational analysis and business forecasting and how to apply them in a business context. Tools include CHI-Square tests of statistical independence; analysis of variance; 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. Computers are used for extensive analyses of case data.

252 Introduction to Operations Management (3)
Prerequisites: A 2.0 campus GPA and either (Econ 51, BA 145, and BA 250) or (Math 180 and Statistics 132). An examination of the concepts, processes, and institutions which are fundamental to an understanding of manufacturing and service operations within organizations. Emphasis is on the management and organization of operations and on the application of quantitative methods to the solution of strategic, tactical and operational problems.

256 Business Law: Contracts, Sales, Secured Transactions, Bankruptcy (3)
Prerequisites: BA140, Econ 51, and a 2.0 campus GPA, or junior standing and a 2.0 campus GPA. Introduction to the laws of contracts, sales, secured transactions, bankruptcy, and other selected topics.
257 Business Law: Negotiable Instruments, Business Organizations, Property (3)
Prerequisites: BA 140, Econ 51, and a 2.0 campus GPA, or junior standing and a 2.0 campus GPA. Introduction to the laws of negotiable instruments, the principal-agent relationship, partnerships, corporations, property, and other selected topics.

270 Management of Promotion (3)
Prerequisite: 206 and a 2.0 campus GPA. A study of the design, organization, and implementation of the marketing communications mix. Various methods, such as advertising, personal selling, and publicity are analyzed as alternatives for use alone, or in combination, to stimulate demand, reseller support, and buyer preference. Particular topics considered include: media selection, sales promotional, packaging, and selling strategy, and their relationships in the promotion process.

275 Marketing Research (3)
Prerequisites: 103, 206, 250 and a 2.0 campus 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.

289 Career Planning (1)
Prerequisite: A minimum of junior standing and a 2.0 campus GPA. The emphasis of this course will be to assist business students to develop an understanding of themselves as related to employment, to develop an understanding of the world of work, and to integrate these so that effective career decisions can be made.

295 Business Administration Problems (1-10)
Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 campus GPA. Study of selected special problems in business and administration. May be repeated for credit with different topics.

296 Independent Study (1-3)
Prerequisite: Permission of the professor, the dean, and a minimum campus GPA of 2.0. Occasional special individual study topics under the guidance of a specific professor.

301 Consumer Behavior (3)
Prerequisites: 206 and a minimum campus 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.

302 Quantitative Marketing Methods (3)
Prerequisites: 103, 206, 250 and a 2.0 campus GPA. Applications of stochastic, deterministic, and simulation techniques to decision areas, such as market potential, product diversification, physical distribution alternatives, retail location, media selection, and market exposure. Quantitative and computerized methods are used heavily to enhance decision making in marketing, especially the selection, allocation, budgeting, and forecasting of marketing resources.

303 Business-to-Business Marketing (3)
Prerequisites: Senior Standing, MT 105, BA 206 and a 2.0 campus GPA. 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.

304 The Management of Information Systems (3)
Prerequisites: (109 or 224) and a minimum campus GPA of 2.0. Aspects and methods for managing the computer and information resources of organizations. Topics include aligning IS plans with corporate plans, MIS organizational structures, demonstrating the value of MIS to senior management, facility management, purchase decisions, software acquisition, software metrics, project management, security issues, and economic evaluation, as they relate to information resources.

305 Management of Telecommunications (3)
Prerequisite: 103 and a 2.0 campus GPA. The technical and managerial aspects of telecommunications as they apply to the business environment are discussed. Issues include: communications components and services, local area network architecture, managerial implementations, organizational issues, and cost/benefit analyses.

306 Decision Support Systems (3)
Prerequisites: 252 and a minimum campus GPA of 2.0. Applications of decision support systems and expert systems in a business environment are studied. Relationships between decision support systems, expert systems, and database management systems are explored.
307 End-User Computing for Business Applications (3)
Prerequisite: BA 109 or BA 224 and a minimum overall GPA of 2.0. Methods for end user development of applications in a business environment are presented. An end-user programming language (for example, Visual Basic) is used for development of prototypical applications. Case studies and/or programming problems are used to illustrate technology available to end-users for creating software in a windows-based system.

308A Production and Operations Management (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). Application of the tools and techniques of statistical decision theory and operations research to production and operating problems. Emphasis is on the use of mathematical modeling and simulation techniques to analyze complex and ill-structured problems in large scale systems.

308B Business Logistics Systems (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). Analysis of business logistics systems, their design and operation. Topics include network design, facility location, transportation, vehicle routing, storage and handling, capacity planning, inventory management, and customer service.

308C Lean Production in Manufacturing and Service Operations (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). 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.

308D Service Operations Management (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). An examination of methods for designing and operating service delivery systems, such as in the health care, financial, transportation, hospitality, and governmental service industries. Topics include process and facility design, facility layout and location, queuing, demand forecasting and management, service quality, staffing, and personnel scheduling.

309 Human Resource Management (3)
Prerequisites: MT 105 and BA 210, and a 2.0 campus 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.

310 Information Systems Design (3)
Prerequisites: 212, 215, one of either 209 or 225 and a minimum campus GPA of 2.0. System design, implementation, and methods of systems installation and operation are presented. A system development project is required.

311 Advanced Management and Organizational Behavior (3)
Prerequisite: 210 and a 2.0 campus GPA. Building upon 210, this 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.

312 Industrial and Labor Relations (3)
Prerequisite: 210 and a 2.0 campus 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 materials are used to supplement text and lecture.

314 Managing the Global Workforce (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, BA 210 and at least one of the following: BA 311 or BA 309 or enrollment in Honors College. 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. Credit not granted for students who have taken BA 317.

315 Marketing Management (3)
Prerequisites: MT 105, BA 206, one other three-hour marketing course, 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 decision are discussed. Cases, models, and problems are used heavily.
316 International Marketing (3)
Prerequisite: 206 and a 2.0 campus 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.

317 International Management (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Econ 52 and BA 210; or consent of the area coordinator and 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 strategy, preparing employees for international assignments, and the control process in an international context. Credit not granted for students who have taken BA 314 or BA 393.

318 Industrial and Organizational Psychology (3)
(Same as Psych 318.) Prerequisites: Psych 201 or (MT 105 and BA210). This course introduces the student to psychological research and theories pertaining to human behavior in the work setting. Topics covered include: selection, performance appraisal, training, leadership, motivation, job satisfaction, and organizational design.

319 Employee Training and Development (3)
Prerequisite: A minimum 2.0 campus GPA. In addition, 210 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.

326 Business in China (3)
Prerequisites: A minimum campus GPA of 2.0 and junior standing. 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.

327 Practicum in Finance (1-3)
Prerequisites: 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.

328 Estate Planning and Trusts (3)
Prerequisite: A minimum campus GPA of 2.0; BA 204 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.

329 Business Forecasting (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). Further study of statistical tools for forecasting in a decision-making context. Topics include explanatory models (multiple regression), classical time series decomposition, and extrapolative techniques (exponential smoothing and Box-Jenkins procedures). In addition, methods for considering problems of intervention effects, seasonality, and collinearity will be discussed. Students will perform extensive analyses of time series data using computer packages.

330 Quality Assurance in Business (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). A study of statistical quality control concepts and procedures applicable to management systems, administrative activities, service industries, and nonprofit organizations. Some successful quality assurance programs will be examined.

331 Multivariate Analysis (3)
Prerequisites: A minimum of 2.0 campus GPA and either (BA 252 and Math 100) or (Math 250 and Statistics 132). A study of statistical techniques applicable to multivariable relationships.

332 Principles of Insurance (3)
Prerequisites: 204 and 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.
333 Life Insurance (3)
Prerequisites: 204 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.

334 Investments (3)
Prerequisite: 204 and a 2.0 campus GPA. Financial analysis of debt and equity instruments available on organized exchanges and in less tangible over-the-counter markets. Techniques of such analysis are presented in context with economic and management circumstances within the company, industry, and economy.

335 Financial Risk Management (3)
Prerequisites: 204 and a 2.0 campus GPA. A study of derivative securities (forward contracts, futures, swaps and options) used in financial risk hedging. Emphasis will be placed on financial innovations and methods for tailoring a preferred risk/return trade-off. In addition, a project or a simulation will be utilized to emphasize the effects of risk management on portfolio development.

336 Treasury Management (3)
Prerequisites: 204 and a 2.0 campus GPA. The focus of this course is on the role cash management plays in corporate finance. Topics include cash collection and payment systems, forecasting cash flows, electronic fund transfers, check processing, international cash management and managing bank relationships. Students passing the course with a grade of A or B are permitted to take the qualifying exam to become a Certified Cash Manager (CCM) under a special arrangement with the Treasury Management Association. Along with other finance courses, this class prepares students for careers in the treasury departments of major companies or with service providers like banks.

337 Principles of Real Estate (3)
Prerequisites: 204 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.

338 Practice of Personal Financial Planning (3)
A minimum campus GPA of 2.0; BA 204 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.

339 Retirement Planning and Employee Benefits (3)
Prerequisites: A minimum campus GPA of 2.0; BA 204 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.

340A Financial Accounting and Reporting I (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30, BA140, 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.

340B Financial Accounting and Reporting II (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30 and BA340A. 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.

341 Financial Accounting and Reporting III (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30 and BA340B. Accounting theory and practice related to topics such as income taxes, pensions, owner=s 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.

342 Financial Accounting and Reporting IV (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30 and BA340B. 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 case problem solving skills, communication skills, and interpersonal skills.
343 Accounting for Governmental and Nonprofit Entities (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30, BA 140, and 57 credit hours. Principles of fund accounting and financial reporting for governmental and nonprofit entities.

344 Computer Applications in Accounting (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30, BA 103, 145, and 340A. Managerial and financial accounting applications of computers budgeting, financial planning and analysis, and accounting information processing systems. Emphasis on development of systems for micro- and mainframe computers using high-level applications development software and on associated internal control and auditing problems.

345 Cost Accounting (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30, BA 145, and 57 credit hours. 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.

347 Income Taxes (3)
Prerequisites: A minimum 2.0 campus GPA. In addition, Math 30, BA 145, and 57 credit hours. 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.

348 Auditing (3)
Prerequisites: A minimum campus GPA of 2.0. In addition, MT 105, BA 340B, and 344 or 215. 344 or 215 may be taken concurrently. 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.

349 Business Income Taxation (3)
Prerequisite: A minimum 2.0 campus GPA. In addition, 347. A study of the federal income taxation of partnerships and shareholders and corporations, including subchapter S (small business) corporations with emphasis on problems encountered in their formation, operation, liquidation, and sale.

350 Financial Policies (3)
Prerequisites: 204 and a 2.0 campus GPA. The intensification and application of the concepts developed in 204. 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.

351 Computer Applications in Finance (3)
Prerequisites: 103, 204, one 300-level finance course, and a 2.0 campus GPA. Financial problem solving and applications on the microcomputer. A project-oriented course with an emphasis on micro-sed finance projects: present value/IRR analysis, duration, immunization, portfolio optimization, leasing, capital budgeting, financial forecasting, options, and futures.

355 Financial Services Industry and Instruments (3)
Prerequisites: 204 and a 2.0 campus GPA. The theory of financial services, instruments, and markets is discussed. In this framework, the valuation consequences of money and capital markets, corporate control, complex contracting, and regulatory environment are developed. Topics also include hedging, interest rate risk, deposit insurance, and financial instruments.

356 Commercial Bank Management (3)
Prerequisites: Econ 52, BA 204, and a 2.0 campus 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.

375 Operations Research (3)
Prerequisites: Math 100, BA 252, and a 2.0 campus GPA, or Math 250 and a 2.0 campus GPA. Applications of the theories and techniques of operations research to problems of business, government, and industry, with emphasis on the construction and utilization of quantitative decision models.

380 International Finance (3)
Prerequisites: Econ 51, BA 204 and a 2.0 campus GPA. A study of the international financial markets, instruments, and portfolio strategies. Topics will include international risks, foreign diversification and hedging techniques for international exposure. The use of derivative instruments and special markets are evaluated in the international corporate/investment setting.
385 Operations Research II (3)
Prerequisites: A minimum of a 2.0 campus GPA, BA 375 and either BA 250 or Statistics 132. Topics of special interest including mathematical programming, stochastic decision making, digital simulation, game theory, and other selected techniques. (Formerly Mathematical Programming).

390 Business Assessment Testing (0)
Prerequisite: Concurrent enrollment in BA 391. 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.

391 Strategic Management (3)
Prerequisites: Senior standing and BA 204, 206, 210, a minimum campus GPA of 2.0; and concurrent enrollment in BA 390. 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.)

392 Entrepreneurship/Small Business Management (3)
Prerequisites: BA 156, 204, 206, 210, and a 2.0 campus 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.

393 International Strategic Management (3)
Prerequisites: A minimum 2.0 campus GPA and, BA 314, 316 and 380 or consent of the 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. Credit not granted for students who have taken BA 317.

395 Business Administration Seminar (1-10)
Prerequisite: To be determined each time the course is offered and to include a minimum 2.0 campus GPA. May be repeated for credit.

396 Internship in International Business (3-6)
Prerequisites: Econ 51 and 52, BA 140 and 145, an additional 12 hours in BA, concurrent enrollment in a UM overseas program; also a 2.0 minimum campus GPA. 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.

405 Managerial Communication (3)
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.

408 Economics for Managers (3)
The first portion of this course introduces microeconomic analysis of consumers, firms, and government. 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.

410 Managerial Economic Analysis (3)
Prerequisites: BA 408 or Econ 51 and Econ 52. 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.

411 Analysis of National Economic Environment (3)
Prerequisites: BA 408 or Econ 51 and Econ 52. 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.

412 Law, Ethics, and Business (3)
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.
414 Introduction to Geographic Information Systems (3)
Prerequisites: MS/IS 481 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 includes extensive use of GIS software and provides a foundation in using GIS for spatial analyses. A range of examples are used to emphasize use of GIS as a tool to support analysis and decision making.

415 Societal, Environmental, and Management Decisions (3)
Prerequisites: BA 408. An examination of the external relationships of a business enterprise with the broad and diverse interests of society. These are government and social forces that sometimes operate counter to the potential dictates of theoretical internal economic policies for an individual organization. The primary objective is to examine the increasingly complex set of interrelationships among business, government, other economic groups, and "the public." A series of major current problems, chosen to raise some of the major issues involved in these interrelationships, and in particular to explore the development of public policy on such problems.

416 International Finance, Investment, and Commercial Relations (3)
Prerequisite: BA 450. The objectives of this course are to: provide a knowledge of the various international markets and securities; gain insight into the complexities of international risks when investing; and, study the use of international hedging vehicles to manage foreign exchange risk.

417 International Business Operations (3)
Prerequisite: BA 416. Functional management within multinational corporations; case studies of operations abroad; and, focus on managerial decision making.

418 Governmental Budgeting and Financial Control (3)
(Same as Public Policy Administration 418.) Prerequisite: Accounting 440. 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.

420 Seminar in Business Administration (3)
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.

428 Current Topics in Business Administration (1)
Examination of a Business Administration topic of current interest. Instruction by regular graduate faculty, frequently supplemented by outside authorities (practicing managers, government officials, consultants, visiting faculty, etc.). Course may be taken three times for credit.

430 Individual Research (1-10)
Prerequisite: Consent of instructor and graduate director. Special individual research topics under the guidance of a specific professor.

490 Strategy Formulation and Implementation (3)
Prerequisites: FIN 450, MGT 460, MKT 470, MS/IS 483. 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.

Accounting (400-level)

419 Management Accounting and Auditing in Governmental and Not-for-Profit Entities (3)
Prerequisites: BA 418 and Accounting 441 or consent of instructor. A study of accounting for use in the public sector and in not-for-profit organizations. Cost behavior controllability, and traceability concepts for management planning and control will be investigated, as well as auditing in the public sector.

421 Professional Accounting Research (3)
Prerequisite: BA 341. 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.

422 Seminar in Governmental and Non-Profit Accounting (3)
Prerequisites: BA 418. Consideration of the positions of authoritative groups concerning accounting theory and practice for governmental and nonprofit entities. Evaluation and critical analysis of these positions in view of current accounting literature and research finding.
431 Tax Research (3)
Prerequisite: BA 347 or consent of instructor. A discussion of the research tools and methods available to resolve questions pertaining to the tax laws. Addresses techniques for locating, verifying, and evaluating authority. Students will be expected to complete a number of tax research and writing problems throughout the semester. A basic understanding of the federal income tax law is presumed.

432 Taxation of Estates, Gifts, and Trusts (3)
Prerequisites: BA 347 and Accounting 431, or consent of instructor. A discussion of the research tools and methods available to resolve questions pertaining to the tax laws. Addresses techniques for locating, verifying, and evaluating authority. Students will be expected to complete a number of tax research and writing problems throughout the semester. A basic understanding of the federal income tax law is presumed.

433 Taxation of Corporations and Shareholders (3)
Prerequisites: BA 347 and Accounting 431, or consent of the instructor. Addresses tax aspects of the formation, operation, and liquidation of a corporation, as well as changes in the corporate structure through division or reorganization. Topics include establishment of the corporate structure, distributions to shareholders, and stock dividends and redemptions.

434 Taxation of Partnerships and Partners (3)
Prerequisites: BA 347 and Accounting 431, or consent of the instructor. Addresses tax aspects of the formation, operation, and termination of a partnership. Topics include special allocations and disposition of a partnership interest. Compares partnerships with Subchapter S corporations.

435 Tax Practice and Procedure (3)
Prerequisite: BA 347 or consent of the instructor. Addresses the audit process; practice before the Internal Revenue Service; administrative appeals; the notice of deficiency; waivers and extensions; amended returns and claims for refund; statute of limitations on deficiencies and overpayments; and taxpayer and tax return preparer penalties.

436 Advanced Topics in Taxation (3)
Prerequisites: BA 347 and Accounting 431, or consent of instructor. Addresses various topics selected by the instructor, such as property transactions, compensation plans, charitable contributions, the alternative minimum tax, and tax planning.

439 Seminar in Taxation (3)
Prerequisite: At least nine hours of 400-level tax courses including Accounting 431 or consent of the instructor. Addresses tax policy topics drawing on literature from accounting, economics, and public finance. Other topics of current interest will be selected by the instructor.

440 Financial and Managerial Accounting (3)
Prerequisite: BA 347 or consent of instructor. A discussion of the research tools and methods available to resolve questions pertaining to the tax laws. Addresses techniques for locating, verifying, and evaluating authority. Students will be expected to complete a number of tax research and writing problems throughout the semester. A basic understanding of the federal income tax law is presumed.

441 Financial and Managerial Accounting (3)
Prerequisites: Math 100 or Econ 301 with a minimum grade of "C" and Accounting 440. The development, interpretation, and uses 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.

442 Accounting for Decision Makers (3)
Prerequisites: Accounting 440 or the equivalent. This course builds on the foundations covered in Accounting 440, emphasizing the use of accounting information for making operating, investment, and strategic business decisions. Topics covered include interpretation and analysis of financial statements, uses of accounting information by capital market participants, contribution margin analysis, tactical decision making, pricing and product decisions, budget analysis, and performance measurement.

443 International Accounting (3)
Prerequisites: BA 340B. Accounting practices for multinational businesses. Discussion of comparative financial accounting practices, the development of international accounting standards, and managerial accounting practices related to multinational operations.

445 Seminar in Financial Accounting Theory (3)
Prerequisite: Accounting 421. A study of theoretical issues, such as the foundations of accounting standards and the usefulness of accounting information. Analysis of how elements of accounting theory relate to current issues facing the profession.
446 Seminar in Auditing (3)
Prerequisites: BA 348 or permission of instructor. 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.

447 Accounting Systems for Management Planning and Control (3)
Prerequisites: Accounting 441 and MS/IS 481, or permission of instructor. A study of advanced managerial accounting techniques useful in facilitating the planning and control process in modern organizations. Emphasis on the implementation and administration of these techniques, their integration with management information systems, and the organizational role of the corporate accountant.

448 Seminar in Advanced Theory and Contemporary Issues in Accountancy (3)
Prerequisite: Accounting 445 and MS/IS 481. Examines the theory underlying accounting practice. The course includes an in-depth analysis of contemporary developments in financial accounting with a succinct overview of accounting research paradigms.

449 Systems Auditing (3)
Prerequisites: Accounting 440, MS/IS 480, or consent of instructor. Study of techniques involved in the control and audit of computer-based accounting information systems. Emphasis on the review of internal controls at operational and administrative levels and on computer-assisted audit techniques.

Finance (400-level)

450 Financial Management (3)
Prerequisites: ACC 440 (or BA 140), MS/IS 481 (or BA 250), and BA 408 (or Econ 51 and Econ 52). 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.

451 Advanced Financial Management (3)
Prerequisites: Finance 450 and MS/IS 481. 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 the instructor is required.

455 Security Analysis (3)
Prerequisites: Finance 450 and MS/IS 481. 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.

456 Capital Markets and Financial Institutions (3)
Prerequisite: Finance 450. The theory of financial intermediation is discussed in the context of banks, savings and loans, public and private insurance companies, and investment banking. In this framework, the relationship with money and capital markets, markets for corporate control, complex financial contracting, and regulatory environment is developed.

457 Introduction to Derivatives (3)
Prerequisite: Finance 450. An in-depth study of advanced risk management techniques utilizing futures, forwards, options, swaps and synthetic securities. A broad study of speculative market characteristics will be reviewed in conjunction with a variety of financial innovations. Portfolio management theories combined with mathematical models will be utilized to demonstrate the effects of hedging techniques and portfolio insurance.

458 Commercial Bank Management (3)
Prerequisite: Finance 450. 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.

459 Seminar in Finance (3)
Prerequisite: BA 450. 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.

Management (400-level)

460 Organizational Behavior and Administrative Processes (3)
(Same as Public Policy Administration 460.) 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.
461 Managing Human Resources (3)
Prerequisite: Management 460. In-depth examination of selected 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.

462 Advanced Organizational Behavior and Administrative Processes (3)
Prerequisite: Management 460. An in-depth examination of selected organizational and individual theories affecting behavior and operating performance. Organizational structure and design, formal and informal organizations, 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.

463 Organizational Training (3)
Prerequisite: Management 460 or Management 461 or permission of department. An intensive study of training and developmental methods/issues in organizations. Topics include needs analysis, learning theory, training techniques, evaluation, and management development. Other topics include memory, training objectives, and training facilities. Projects and exercises are used to supplement reading and lecture.

464 Compensation and Benefits (3)
Prerequisites: Management 461 and MS/IS 481. An in-depth study of compensation and benefit programs in organizations. Topics include job evaluation, incentive systems, performance appraisal, and employee benefits. Discussion of relevant laws, such as the Equal Pay Act, is also provided.

465 Union-Management Relations and Collective Bargaining (3)
Prerequisites: Management 460 and BA 412. 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.

466 Selected Topics in Human Resource Management (3)
Prerequisites: Management 461 and MS/IS 481. This course provides an advanced treatment of selected human resource management topics. Primary focus is on topics such as job analysis, pre-employment screening devices, test validation, and civil rights laws. Other topics, such as performance appraisal, recruitment, promotions, and terminations may be covered. Various class projects may be assigned to supplement readings, lectures, and discussion.

467 Dynamics of Interpersonal Relations (3)
Prerequisite: Management 460 or academic background in general psychology. The self-concept, personality dynamics, and mechanisms of adjustment. Catalysts and barriers to effective communication. Examination of the functional relationship between ego-needs, perceptual distortion, and stereotypical thinking. Role-playing, the resolution of role-conflict, and objective self-evaluation. The development of cooperation and trust as a prerequisite to effective human relations.

468 International Business Strategies (3)
Prerequisites: BA 408 and ACC 440. 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.

469 Seminar in Management (3)
Prerequisite: MGT 460. Topics of current interest in management. Possible topics include, human resource management, international management, and entrepreneurship.

Management Science/Information Systems (400-level)

423a Applications of Programming for Business Solutions (3)
Prerequisite: MS/IS 480. This course provides a study of business-oriented programming. A programming language will be introduced and discussed in detail. Emphasis will be on program definition and the use of such programs in business-oriented applications.

423b Managerial Applications of Object-Oriented Technologies (3)
Prerequisite: MS/IS 423a. This course deals with business-oriented programming in an object-oriented environment. The emphasis will be on program definition, and tools and development in a client-server environment. The course will involve the study of an object-oriented language in addition to object-oriented methodologies for systems development.
423c Business Programming and File Systems (3)
Prerequisite: MS/IS 423a. The course provides a study of business-oriented programming in a traditional centralized environment. The programming language COBOL will be introduced and studied in detail. Emphasis will be on program definition and the use of file structures in business-oriented applications.

423d Internet Programming for Business (3)
Prerequisites: MI/IS 423a. Focus on web-based applications development for business. It will begin with the fundamentals of web-based computing, including web client and server interaction, the MIME standard, server and client data frame headers, the CGI standard, and error conditions as they pertain to business applications. In addition, JAVA will be introduced to build web-based GUI-interfaces and back-end servers. Finally, business applications issues such as firewalls, proxy servers and data encryption using secure servers will be included.

424a Seminar in Current Management Information System Topics (3)
Prerequisite: MS/IS 488 or MS/IS 485 (may be taken concurrently). Advanced topics of current interest in management information systems. Content to be determined each time the course is offered. May be repeated for credit.

424b Seminar in Management Information Systems (3)
Prerequisite: MS/IS 480. 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.

424c Business Process Design (3)
Prerequisites: MS/IS 480, and MS/IS 485 (may be taken concurrently). This course presents the concepts of process design for improving customer service and satisfaction. Issues related to characteristics, goals, benefits and costs of enterprise-wide design, and the role of information technology during the design process will be discussed. Further topics may include: computer-based modeling tools for process design, total quality management and quality circles, and organizational learning.

424d Management of Transitional Information Systems (3)
Prerequisites: MS/IS 480 and MS/IS 485 (may be taken concurrently). The course presents concepts of managing global information technology. Issues covered include: global information technology, systems development, electronic data interchange, cross-border data flows, and national and international information structures. Further topics may include information technology enabled economic development, global outsourcing of information systems services, and social, organizational and ethical implications.

425 Advanced MIS Applications (3-6)
Prerequisite: MS/IS 488 or permission of instructor. The course requires a project through which the student applies MIS concepts to a real problem; a written, professional quality report will be required. The course material must build upon, not duplicate, material in the MIS curriculum. The course may be repeated for credit with the permission of the MS/IS area. Consent of the MS/IS area for the topic and number of hours is required.

426 Management of Client/Server Computing (3)
Prerequisite: MSIS 496. This course explores a wide range of topics necessary for the management of client/server computing technology. Students will explore the business advantage and opportunities that client/server systems can provide an organization. In addition, the course will introduce topics of importance to implementing technology in an organization. Finally, the course will provide a framework for understanding the diverse technical components of client/server technology, technical standards and their implications for interoperability of components.

428 Operations Research-Deterministic Models (3)
Prerequisites: Math 345 or equivalent. (Same as Math 435). A study of deterministic methods and models in operations research. This course provides an introduction to operations research and focuses on model building, solution and interpretation of results. Topics include formulation, solution, duality and sensitivity analysis in linear programming, integer programming, network flow models, nonlinear optimization, and dynamic programming.

429 Operations Research-Stochastic Models (3)
Prerequisites: Stat 320 or equivalent. (Same as Math 436). A study of stochastic methods and models in operations research. Provides an introduction to probabilistic models for decision making under uncertainty. Topics include stochastic processes, queuing theory and models, probabilistic inventory theory and models, Markovian decision problems, simulation and reliability.

430 Quality Management (3)
Prerequisite: MSIS 481 or Stat 320 or consent of instructor. (Same as Math 437). An applied course on total quality management. Quality improvement approaches are presented and the managerial implications and responsibilities in implementing these approaches are discussed. Topical coverage includes the construction and interpretation of control charts, graphical methods, quality function deployment, robust experiments for product design and improvement, mistake-proofing (poke yoke), the Deming approach, Baldrige award criteria, quality cost audits, worker empowerment and reward systems. Cases involving both business processes and physical processes are used to illustrate successful quality improvement efforts.

480 Management Information Systems (3)
Prerequisite: Econ 301. (Same as Public Policy Administration 480.) An overview of management information systems is presented, including IS managerial concepts and hands-on exposure to technology. Concepts include alignment of information systems strategy with organizational strategy, MIS components and organizational structures, issues in the design and implementation of systems, and understanding the role of information systems in organizations. Students are exposed to several technologies, including the information superhighway, application software packages, and a programming language.

481 Statistical Analysis for Management Decisions (3)
Prerequisites: MS/IS 480 (may be taken concurrently) and Econ 301 with a minimum grade of C. The role of statistical evidence in the formation of inference and in the selection of strategies in solving business problems is developed. 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.

482 Management Science Methods (3)
Prerequisite: MS/IS 483. This course provides a working knowledge of management science techniques. It emphasizes analytical approaches to solving business problems, construction of mathematical models, and manipulation of model variables for managerial decision making. Topics include mathematical programming, including integer and network models, heuristics, and simulation models.

483 Production and Operations Management (3)
Prerequisites: MS/IS 480 and 481. 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.

485 Management Information Systems: Theory and Practice (3)
Prerequisites: MS/IS 480. The course presents and analyzes critically current MIS topics in the context of business organizations. Issues may include: organizational and behavioral concerns, the fit between information systems and organizations, information systems development and implementation, software evaluation and procurement, systems performance, and information systems planning and control.

486 Advanced Statistical Methods for Management Decisions (3)
Prerequisite: MS/IS 481. A study of statistical methods applicable to specialized areas of statistical analysis. Topics include Markov processes, distribution-free tests, sampling theory and methods, experimental design, time series analysis, and spectral analysis.

487 Advanced Operations Research Applications (3)
Prerequisite: Consent of instructor. Application of operations research techniques to business problems. After a brief review of these techniques, followed by an examination of typical applications reported in the literature, the major portion of the term is spent in analyzing and solving an actual business operations research problem. A team approach is used, with groups of two or three students responsible for finding and solving an operations research problem in a local company. Primary emphasis is placed on the use of operations research techniques to solve management problems.

488 Information Systems Analysis (3)
Prerequisite: MS/IS 423a. The theory and practice of structured analysis are presented. Topics may include: traditional vs. structured analysis methods, requirements analysis, user/analyst interaction, investigation of existing systems, human/machine interfaces, CASE tools, and workbenches.

489 Database Management Systems (3)
Prerequisite: MS/IS 423a. The course introduces the concepts of database management systems for business applications. Issues in database architecture, design, administration, and implementation are covered. Projects are assigned on a mainframe DBMS and a microcomputer-based DBMS to illustrate the concepts and applications.
Electronic Commerce (3)
Prerequisite: MS/IS 480. Electronic commerce is a modern business methodology that addresses the needs of organizations, merchants, and consumers to cut costs while improving the quality of goods and services and increasing the speed of service delivery. In this course, students will examine critical information technologies that provide a basis for electronic commerce and their application in a variety of sectors and industries. It will begin with coverage of the tools, skills and business concepts that surround the emergence of electronic commerce and the consequences of applying these information technologies to difference commercial processes from both an operational and strategic perspective. We will also explore several of the problems surrounding electronic commerce such as security, privacy, content selection and rating, intellectual property rights, authentication, encryption, acceptable use policies, and legal liabilities.

Information Systems Strategy (3)
Prerequisite: MS/IS 485. 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 organizational perspectives and ethical implications. The course will be taught using cases.

Simulation for Managerial Decision Making (3)
Prerequisites: MS/IS 481 and (482 or 483). Introduction to simulation as a managerial decision-making aid. Application of simulation to a number of management science-oriented problems. The course introduces and requires use of a simulation language.

Advanced Operations Research Topics (3)
Prerequisite: Consent of instructor. Advanced topics from such areas as mathematical programming, stochastic processes, decision theory, or game theory are studied in depth.

Seminar in Logistics and Operations Management (3)
Prerequisite: MSIS 483. 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.

Information Systems Design (3)
Prerequisites: MS/IS 488 and MS/IS 489. This course builds upon the analysis techniques presented in MS/IS 488. 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.

Telecommunications: Design and Management (3)
Prerequisite: MS/IS 480 (may be taken concurrently). The topic of telecommunications is addressed from both a technical and managerial viewpoint. In particular, the course will address issues such as communications components and services, local area network architecture, managerial implementations, organizational issues, and cost/benefit analyses.

Decision Support Systems (3)
Prerequisite: MSIS 481. Applications of decision support systems in a business environment are studied. Issues pertaining to maintenance of data, construction of models and provision of supporting technology are explored. Students will analyze, design and implement a managerial decision support system using current development tools.

Fourth Generation Languages and End User Computing (3)
Prerequisite: MS/IS 423a. The course presents fourth generation languages and covers managerial issues of end-user computing. A specific fourth generation language will be introduced and programming applications will be assigned. In addition, the course will explore the problems of providing and managing micro-to-mainframe links, end-user software packages, and security/confidentiality issues.

Management Information Systems Thesis Research (1-6)
Credit to be awarded only upon successful defense of thesis.

Contemporary Marketing Concepts (3)
Prerequisite: BA 408. 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.
471 Marketing Planning and Strategy (3)
Prerequisite: Marketing 470. 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 campus 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.

474 Seminar in Marketing (3)
Prerequisite: Marketing 470. This course addresses advanced problems in contemporary marketing. Topics may include, but are not limited to, marketing strategy, marketing communications and advertising, product management, channels of distribution, and marketing research.

475 Consumer Motivation and Behavior (3)
Prerequisite: Marketing 470. An analysis of the socio-psychological foundations of consumer behavior including personality differences, needs and wants, status symbols, social change and mobility, and 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.

476 Marketing Communications (3)
Prerequisite: Marketing 470. Deals with managerial decision making by placing particular emphasis on assimilating and integrating all forms of marketing communication in the development of promotional policies, plans, and procedures. Course approach is analytical rather than descriptive in investigating the areas of advertising, public relations, sales management, packaging, and other forms of demand stimulation.

477 Product Planning and Pricing (3)
Prerequisite: Marketing 470. A study of product management focusing on new product development. The steps of the new product development process are covered in detail. Current issues in new product research are discussed. Projects are emphasized and involve the application of several of the key techniques to the student=s own new product ideas. Selected pricing topics are also covered, such as measuring consumer price sensitivity.

478 Marketing and Business Research (3)
Prerequisites: Marketing 470 and MS/IS 481. 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.

479 Marketing Channel Strategy (3)
Prerequisites: MKT 470 and MS/IS 483. A study of the marketing institutions involved in the distribution of goods and services, industrial and consumer markets, as well as the establishment and integration of marketing channels. The planning and analysis of the macrodistribution and microdistribution systems which contribute to creation of optimal time and place utility. Some attention is paid to quantitative applications to marketing situations including simulation and logistics.
General Information

Accreditation

The University of Missouri-St. Louis, through the College of Education, is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary and secondary school teachers and school service personnel.

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 Courses (Adu 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 Tec)
- Elementary Education Courses (Ele Ed)
- Higher Education Courses (HIRED)
- Physical Education Courses (Phy Ed)
- School-Wide Education Courses (Educ)
- Secondary Education Courses (Sec Ed)
- Special Education Courses (Spc Ed)
- Teacher Education Courses (Tch Ed)

Teacher Education

Degrees and Areas of Concentration

The College of Education offers work leading to the B.S. in education with specialization in any of the following: early childhood education, elementary education, special education, physical education, and secondary education. Courses are also available for those seeking certification for middle school. In cooperation with other schools and colleges of the university, the College of Education provides a program for students pursuing other degrees but planning on a teaching career in secondary education.

General Education Requirements

Students in the College of Education must meet university and departmental general education requirements specified for their degrees.

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). A C- grade is not acceptable.

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 must also be admitted to the teacher education program.

Application and Admission to the Teacher Education Program

All students (pre- and post-degree) who wish to become teachers must be admitted to the teacher education program regardless of the college in which they are enrolled. The admission program requires student action at the following levels.

Applications to the teacher education program are processed through the office of teacher education. Eligibility is based upon fulfillment of the following requirements:

- Submitted qualifying scores on C-BASE in areas of English, writing, mathematics, science and social studies, as mandated by the Missouri Excellence in Education Act of 1985. Consult the office of teacher education, College of Education, for test descriptions, cost, required scores, dates of administration, retest policies, etc. Acceptable C-BASE scores are required in addition to acceptable ACT or SAT scores. (C-BASE not applicable to students with a bachelor's degree. Graduates of the general studies program in the UM-St. Louis Evening College, however, must take the C-BASE).
- Scored either 20 on the ACT Composite (18, when taken prior to 11-1-89) or 800 on the SAT (verbal plus math)*.
- Completed 60 hours of college or university courses (at UM-St. Louis or another accredited school).
- Accumulated a grade point average of 2.5 or better.
- Completed Educ 101, Introduction to Classroom Teaching, or the equivalent, with a grade of C or better. (Not applicable for secondary education or early childhood education majors).
- Completed Ed Fnd 111, The School in Contemporary Society, or the equivalent, with a grade of C or better.
- Agreed to adhere to ethical codes which have particular pertinence during clinical experiences. (These codes are available in the office of teacher education, College of Education.)
- Agreed to subscribe to a standard of preprofessional behavior which will enhance greater self-awareness if social or emotional difficulties arise which may affect future teacher effectiveness. (This standard is available in the office of teacher education.)
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- Submitted a notarized Affidavit of Moral Character and a criminal record check and child abuse/neglect screening.

* Policy for Students Scoring Below ACT and SAT Qualifying Requirements Students who do not achieve satisfactory scores of 20 on the ACT or 800 on the SAT may retake the test(s) until the requirement is met. Students who initially score below the required ACT score of 20 or SAT score of 800 may petition the dean of Education to attest that basic educational competencies are met if their grade point average from 60 hours of college or university courses is at least 2.5 and they have performed satisfactorily on a norm-referenced achievement test other than ACT or SAT. Students must produce evidence that the ACT or SAT was initially completed and a score recorded.

Students with a documented disabling condition, preventing valid test administration of the ACT or SAT, may be evaluated for basic educational competencies through appropriate testing instruments and/or procedures designated and approved by the dean of the College of Education.

Students who do not meet the initial ACT or SAT qualifying scores may seek assistance in upgrading basic competencies through contact with one or more of the following University of Missouri-St. Louis services: Center for Academic Development; Women's Center; Counseling Service; Veteran Affairs Office; Video Instructional Program; Horizons (Peer Counseling Center).

In addition, assistance may be available through correspondence courses, University of Missouri-Columbia. Copies of this policy are available in the office of teacher education.

Application to the Student Teaching Program The application for student teaching is a two-part process which begins two semesters before the semester in which the student plans to do student teaching.

*Check student teaching bulletin board in Marillac Hall for exact date.

**Step I Preapplication:** Students must submit both of the following items to the office of teacher education, Room 155, Marillac Hall:

- An autobiography and philosophy of education written according to guidelines on reserve (number 456) in the Ward E. Barnes Library.
- Proof of formal acceptance to the teacher education program (approved 60 hour form), required of both pre- and post degree students. Students will then sign an application list and receive a ticket to attend the formal application meetings which will be held at the beginning of the semester.

**Step II Formal Application:** Students:

- Must attend one of three formal application meetings offered at the beginning of each semester to receive application materials. Dates and times will be posted on the student teaching bulletin board in Marillac Hall.
- Will be admitted to the meetings by ticket only; autobiographies and philosophies will be returned at this time. (See Preapplication above).
- Will complete and return applications within two weeks after the meetings to the office of teacher education, 155 Marillac Hall. Applications will not be accepted after the deadline.

Upon receipt, formal applications for both pre- and post degree students are checked to ensure they have met the following requirements:

- Full admission to the teacher education program for both pre- and post degree students.
- Completion of 90 hours of approved course work at the time of application.
- A cumulative grade point average of 2.5 or above by the semester before the one in which students plan to do their student teaching. The 2.5 cumulative grade point average must be maintained in order to graduate with a B.S. in education degree and/or be certified to teach in the state of Missouri.
- Grade point average of 2.5 in the teaching field (secondary education students only).
- Completion of English 210, Advanced Expository Writing, or equivalent, with a grade of C- or better.
- Completion of Comm 40, or equivalent, Introduction to Public Speaking, with a grade of C- or better.
- Completion of general education requirements and near completion of course requirements in the teaching major.
- A grade of C or better in all professional education courses so designated. Lists of these courses are available in the office of teacher education and from advisers. A grade of C- is not acceptable.
- Satisfactory recommendations by students teaching
area representatives in the teacher education program.

- Completion at UM-St. Louis of no fewer than 12 hours of approved course work.
- Completion of prerequisite courses in professional education and psychology.
- Completion of TB screening and police and child abuse checks.
- Completion of acceptable portfolio.

The student teaching experience in the physical education, and special education certification programs provides assignments in two different school settings and appropriately increases the amount of time devoted to it. Students will be expected to do student teaching on a full-day basis for an entire semester. The student teaching experience in early childhood, elementary, and middle school are completed at one site.

The student teaching experience must be done in residence. Secondary student teaching in science education, mathematics education, and foreign language education is usually offered only during the winter semester. Secondary education majors student teach for an entire semester, full days.

While enrolled in student teaching, students may not carry more than 15 credit hours. When students are admitted to student teaching, the office of teacher education arranges assignments with appropriate school district officials.

Students who withdraw from student teaching at any time after being admitted for a given semester must formally reapply during the designated application period for the subsequent semester in which they plan to do their student teaching. This must be done in person in the office of teacher education. Students who withdraw in this way three times must wait a minimum of one calendar year after the third such withdrawal before they may reapply for student teaching. At the time of reapplication they must present evidence that the circumstances which prevented them from continuing in student teaching during their last admission no longer pertain. In all instances of reapplication, students must meet the requirements in effect for the semester during which they plan to do their student teaching.

Student teachers who fail the course or are allowed to withdraw because they are failing to meet minimum requirements must wait at least one full semester and fulfill the remedial requirements established at the time of the failure or withdrawal before they may reapply for admission to student teaching. The remedial requirements will be determined by the office of teacher education after consultation with the cooperating teachers, university supervisors, and student teachers involved. The students must provide appropriate evidence that the remedial requirements have been met at the time they reapply for admission to student teaching. It is understood that meeting the remedial requirements does not guarantee success in the subsequent student teaching experience.

For further information regarding certification, contact the undergraduate teaching education office, 155 Marillac Hall.

**Application for Degree and/or Certificate**

**Bachelor of Science in Education**

Candidates for the B.S.Ed. degree must complete degree and certificate application forms in the office of teacher education when they apply for admission to student teaching or during the semester before the one in which they expect to finish degree requirements.

Evening College students should complete degree application forms in the Evening College office and certification application forms in the office of teacher education.

**Bachelor of Arts**

Students seeking the B.A. degree with teacher certification must complete a state certification form with the office of teacher education.

**Certification**

In cooperation with the Missouri State Department of Elementary and Secondary Education, the College of Education is responsible for recommending teaching certificates for students completing B.S. in education degree requirements, recommending for certification students completing degrees in other UM-St. Louis colleges and schools, as well as all certification requirements, and for advising and recommending for certification those post degree students who meet requirements.

All individuals must pass the appropriate Praxis/National Teacher's Examination to meet graduation and/or certification requirements. This exam should be taken during the semester immediately prior to that of student teaching.

By completion of specified undergraduate courses at the University of Missouri-St. Louis, students may obtain certification in the following fields: elementary education; early childhood education; middle school/junior high; music education; physical education; special education: behavioral disorders (BD), educable mentally handicapped (EMH), and learning disabilities (LD); as well as the secondary education areas of biology, business, chemistry, English, foreign languages (French, German, Spanish), mathematics, physics, social studies, and speech/theater. Graduate programs leading to certification in counseling; reading; school administration
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(elementary and secondary principal, school superintendent); and special education: behavioral disorders (BD), learning disabilities (LD), educable mentally handicapped (EMH), and early childhood special education (ECSE) are also available; see Graduate Studies sections for each division of the College of Education.

Graduate Studies in Education

Degrees and Areas of Emphasis
M.Ed. programs are offered in counseling, educational administration, elementary education, secondary education, and special education. Within the counseling program are the emphasis areas of elementary, secondary, and community counseling. Within the educational administration program are the emphasis areas of adult and community education, elementary administration, and secondary administration. Within the elementary education program is the emphasis area of reading. Within the secondary education program are the emphasis areas of adult education, curriculum and instruction, and reading. Within the special education program are the emphasis areas of behavioral disorders, learning disabilities, mental retardation, and early childhood/special education. Courses are available for areas of specialization in early childhood education, physical education, educational technology, severe handicaps and higher education.

Advanced certification studies (60-hour concentrations) are offered in elementary and secondary educational administration.

Programs leading to the Ed.D. degree are offered in two broad interdisciplinary emphasis areas: learning-instructional processes and behavioral-developmental processes. Programs leading to the Ph.D. degree are offered in the areas of counseling, educational psychology, teaching-learning processes, and metropolitan leadership and policy studies.

Master of Education Degree

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 school or community counseling must complete a separate application (see graduate studies in the Counseling division in this Bulletin). The minimum number of hours required for the M.Ed. degree is 32 except that the elementary, secondary, and community counseling emphases require 48 hours. The school has adopted a flexible policy on exit requirements, which are determined divisionally.

Advisement and Program Planning
After acceptance, each student completes an adviser form, sent by the College of Education's office of graduate studies, 123 SCCB. A faculty adviser is then appointed who counsels the student in registration and program planning. A program for master's degree form must be submitted for approval during the first half of the student's program. This form includes all course work in the program and the exit requirement. Once approved, the degree program may be changed only by petition.

Students working toward teacher and/or school service personnel certification as graduate students should complete state certification forms in the office of teacher education, 155 Marillac Hall, one year before those requirements will be completed.

Doctor of Education Degree

The Ed.D. degree is designed primarily for the field practitioner, and is, therefore, a comparatively broad-based interdisciplinary degree. The two emphasis areas, learning instructional processes and behavioral-developmental processes, embrace two general categories of professional activities.

Learning-instructional processes place primary emphasis on the teaching-learning relationship, as well as on general planning and development of organizational programs to carry on this relationship successfully. Traditional programs that tend to fall under this heading are school administration, elementary and secondary teaching, supervision/curriculum, and reading instruction.

Behavioral-developmental processes place primary emphasis on the nature of individuals. Doctoral studies focus on such elements as learners' behavioral and developmental characteristics, typical and atypical development within varied environments, motivation, strategies of behavioral change, and counseling processes. Traditional programs that tend to fall under this heading are counseling, special education, educational psychology, and measurement. Students seeking the Ed.D. degree are expected to meet the doctoral degree requirements and procedures adopted by the Graduate School. (See Doctoral Degree Requirements for details.)

Admission and General Requirements
In addition to meeting the application and admissions requirements of the Graduate School, students must submit three letters of recommendation (two letters must be from individuals with an earned doctorate), along with a professional resume. Because enrollment is competitive, admission standards are comparatively high. Successful candidates must exhibit significantly above-average academic records and GRE scores. In exceptional cases, other criteria may outweigh these customary indicators of probable academic success.
At least two years of teaching or other school service experiences are required for admission. Exceptions may be made by substituting a supervised internship during the first year of the program.

Admission Application
In order to ensure time for review and decision, complete applications and accompanying materials must reach the office of admissions by September 15 for the winter semester and February 15 for the summer or fall semester. In addition, applicants are urged to request transcripts and letters of recommendation two weeks before submitting their papers. Consideration of applications cannot be undertaken until all materials are available.

Degree Requirements

1. Core Studies
General foundations, 12 hours from:
philosophical, historical, psychological, sociological, anthropological, and comparative foundations of education, as well as curriculum, instruction, and supervision.

Research Methods, 12 hours:
6 hours from:
Quantitative research methodology, Ed Rem 431 and above.

6 hours from:
Qualitative research methodology

Common doctoral seminars, 6 hours

2. Role Specialization, 48 hours:
Emphasis area doctoral seminars (6-12)
Emphasis area electives (15-27)
Related area (12-18)
Internship (3-9)

3. Dissertation, 12 hours

Total: minimum 90 hours, postbaccalaureate

Doctor of Philosophy Degree

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. Four emphases are available:

- Counseling
- Educational psychology
- Teaching-learning processes
- Educational leadership and policy studies

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).
- An original essay.
- A professional resume.
- Evidence of above-average academic records.
- GRE scores (a composite [verbal, quantitative, and analytical subtests] score of 1500 or better desired)

A favorable vote of an admission interview committee, composed of faculty in the emphasis area, is required. Admission is competitive.

Admission Application
To ensure time for review and decision, complete applications and accompanying materials must reach the office of admission by September 15 for the winter semester and February 15 for the summer or fall semesters. In addition, applicants are urged to request transcripts and letters of recommendation at least two weeks before submitting their papers. Consideration of applications cannot be undertaken until all materials are available.

Degree Requirements

General Foundations, 9-12 hours:
Philosophical, historical, psychological, sociological, anthropological, and comparative foundations of education, as well as curriculum, instruction, and supervision.

Research Methods, 15-18 hours:
Educational Research and Evaluation Methods (Ed Rem) 431: Educational Research Methods and Design, and at least 12 hours from Ed Rem courses numbered above 431: 6 hours in quantitative methods and 6 hours in qualitative methods.

Foreign Language Proficiency or Other Research Tools, equivalent to 6 hours

Emphasis Area (Primary Discipline) courses, 21-27 hours, with at least 16 in residence, in one of the following four areas:

1. Teaching-Learning Processes
Minimum 15 hours in cognate area
Minimum 3 hours in curriculum or instruction
Minimum 3 hours in educational psychology

2. Educational Leadership and Policy Studies
Minimum 21 hours in educational leadership, either in K-12, higher education, work, adult, or community
education settings, selected in consultation with the faculty advisor and advisory committee.

3. Educational Psychology
Minimum of 21 hours in educational psychology. Program may include courses in research and evaluation methods, school psychology, developmental psychology, cognition and learning, character education, and sociocultural theory. Courses in the primary discipline will be selected in consultation with the faculty advisor and advisory committee.

4) Counseling
Cns Ed 414, Individual Inventory
Cns Ed 420, Group Procedures in Counseling
Cns Ed 442, Career Information and Development
Cns Ed 495, Foundations for Multicultural Counseling
Cns Ed 485, Community Counseling Practicum (or Cns Ed 482, School Counseling Practicum or Cns Ed 493, Counseling Practicum I)
Cns Ed 486, Community Counseling Field Experience I (or Cns Ed 483, School Counseling Field Experience I or Cns Ed 494, Counseling Practicum II)
Cns Ed 487, Community Counseling Field Experience II (or Cns Ed 484, School Counseling Field Experience II or Cns Ed 490, Internship)
Cns Ed 426, Advanced Theories of Counseling and Family Therapy
Cns Ed 443 Advanced Career Development
Cns Ed 455, Counselor Education and Supervision
Cns Ed 475, Doctoral Practicum (3 hours)
Cns Ed 498, Advanced Multicultural Counseling
3 semester hours of electives in Cns Ed approved by advisory committee.

Additionally, all students should complete Cns Ed 476, Doctoral Internship I and Cns Ed 477, Doctoral Internship II, as the research internship; and a secondary discipline in Ed Psy consisting of at least Ed Psy 412, Psychology of Learning Processes, Ed Psy 413, Personality Development and Adjustment, and Ed Rem 422, Individual Assessment of Cognitive Abilities.

3 semester hours of electives from educational psychology, research, or evaluation.

Related (Secondary Discipline) Courses, 12-15 hours, in education or another department.

Required Exit course, 3 hours
Education 414 Common Doctoral Seminar: Research: Implementing Change in Educational Systems

Research Internship, 6-9 hours
Dissertation, 12 hours
Total: Minimum 90 hours, postbaccalaureate

Support Services

The College of Education maintains a number of offices and centers to directly assist students, faculty, and people in the metropolitan area and to support its instructional, research, and service activities.

Undergraduate Teacher Education Services - 155 MH
This office supplies advisement services for undergraduate teacher education and certification students. It coordinates the clinical experiences of the College of Education and directs the student teaching program.

Office of Graduate Studies in Education - 123 SCCB
Information about admission to, and requirements of, graduate programs in education may be obtained in this office. The office also assists students with advisement, registration, and related topics, and maintains student records.

Teacher Education Resource Center - G01
The center is designed as an instructional media laboratory. The Instructional Technology Center located in Lucas Hall also has an office in the center.

Human Services Unit - B23A ED LIB
The human services unit is a training facility for graduate students supervised by faculty in the Division of Counseling. Career counseling and assistance with vocational, adult, or adolescent developmental concerns are available to individuals in the community.

Reading Clinic - B9 ED LIB
The reading clinic provides a laboratory setting for graduate level elementary and secondary teachers who are seeking certification as reading specialists. The clinic has been providing services to the surrounding community in diagnosing and treating severe reading problems in children and adults since 1966. The clinic also serves as a demonstration and materials center for preservice and inservice teacher education, as well as a clinical research facility for the faculty.

University Child Development Center - 130 SCB
The center provides university students with observation, participation, research, and similar educational and clinical opportunities; it also offers quality child care programs for children of student, faculty, staff, and community families.

Technology and Learning Center - 100 Marillac
The center provides education students and faculty a model environment for managing new methods of teaching through the newest technologies; a place to research and develop technology-enhanced teaching methods to engage K-12 students; and programs that connect school classrooms to the workplace.
College-wide Courses

Education (Edue)

65 The University (3)
A College of Education interdisciplinary course on the principles, development, and organized structure of the university. Special emphasis will be placed on the role of the university in modern society and upon forces affecting the direction of the university and its potential for change. Methods include outside speakers, discussion groups, and laboratory research on UM-St. Louis.

101 Introduction to Classroom Teaching (3)
An introduction to the study of teachers' behaviors and learners' responses in classroom settings. Students will be assigned to school sites for specified observations/analyses and limited participation. Students will have the opportunity to evaluate the teaching profession as an appropriate career choice. The course will consist of approximately one-third lecture/seminar and two-thirds clinical/field experiences.

204 Special Topics in Education (1-3)
Prerequisites: 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.

290 Internship I (6)
Prerequisites: Senior standing and consent of instructor. Field experience in educational setting under university supervision. Includes planning, research, evaluation, and other professional activities in the student's area of concentration.

291 Internship II (6)
Prerequisite: Completion of or concurrent enrollment in EDUC 290. Continuation of EDUC 290.

297 Independent Study (1-3)
Prerequisites: 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.

301 Introduction to Microcomputers in Education (3)
A course designed to introduce individuals to the microcomputer as an instructional medium. The course will emphasize (1) the history, role, and use of microcomputers in education; (2) learning the elements of programming for the microcomputer; and (3) beginning program construction and debugging operations.

306 Graduate Workshop (1-10)
Prerequisite: Consent of instructor

College of Education

308 Graduate Institute (1-10)
Prerequisite: Consent of instructor.

317 Topics in the Teaching of Writing (1-3)
(Same as English 317) Prerequisite: English 210 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.

393 Practicum in Individualized Instruction (3-6)
Prerequisites: Completion of the course(s) to which assigned for instruction and consent of instructor. Supervised instruction in individualized programs. Seminar accompanies instructional programs. May be repeated.

408 Graduate Seminar (1-10)
Prerequisite: Consent of instructor. Intensive study of selected issues in education.

414 Common Doctoral Seminar(s) (3)
Prerequisite: Admission to the doctoral program. Two Educ 414 seminars are required for all doctoral students, for a total of six hours of Educ 414 seminar credit. One, "Elements of Educational Leadership," is to be taken early in the program. The other, "Research: Implementing Change in Educational Systems," is to be taken following completion of the research courses identified in the student's approved program.

415 Emphasis Area Seminar(s) (3)
Prerequisite: Admission to the doctoral program. All doctoral students are required to take at least two emphasis area seminars consistent with their programs. Students may take additional emphasis area seminars. Obtain a list of emphasis area seminars from the office of graduate studies in education.

422 Policy Analysis of Higher Education (3)
Prerequisites: Graduate admission. Introduces students to analysis of higher education public policy. Includes state and local policy analysis and examination of legislative history of major federal higher education laws.

475 Microcomputer Applications in Music Education (3)
(Same as Music 475.) Prerequisites: Graduate standing in music. An examination of the potential of microcomputers in the music education field. Experiences with available hardware and software suitable for applications that include inventory, budget, music library cataloging, digital music synthesis, and computer-assisted instruction at all levels.
476 Microcomputer-Assisted Instruction Curriculum Development in Music (3)
(Same as Music 476.) Prerequisites: Graduate standing in music. Design and development of Computer-Assisted Instruction (CAI) lessons in music. Commercial courseware and various CAI models will serve as the basis for creating original programs that can be used effectively to implement objectives of the music curriculum for a specific school or school district. The design, refinement, and production of a major CAI program for use in an elementary, secondary, or postsecondary setting is required.

477 Advanced Microcomputer Application in Music (3)
(Same as Music 477.) Prerequisite: Graduate standing in music. The study of complex microcomputer applications including music synthesis, MIDI, music-oriented graphics, voice and pitch recognition, administrative applications, and computer-assisted instruction.

480 Research Internship I (3)
Prerequisite: Nine hours of research methods or statistics and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

481 Research Internship II (3)
Prerequisite: Educ 480 and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

482 Research Internship III (3)
Prerequisite: Educ 481 and consent of instructor. Supervised experience in the conduct of research studies or scholarly inquiry.

491 Staff Development and Professional Growth (1-10)
Designed in conjunction with an individual school district or educational agency and related to problems of education confronting that specific district or agency.

495 Doctoral Research Tools (1-6)
Prerequisites: Ed Rem 431. 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. May not substitute for any existing graduate courses that cover same research tool skills.

497 Thesis Research (1-10)
Prerequisite: Consent of instructor.

499 Dissertation Research (1-12)
Prerequisite: Admission to the doctoral program. Credit awarded only upon successful defense of the dissertation.
Counseling and Family Therapy

Faculty

Therese S. Cristiani, Associate Professor, ** Chairperson
Ed.D., Indiana University
R. Rocco Cotone, Professor**
Ph.D., Saint Louis University
Patricia A. Jakubowski, Professor Emerita*
Ed.D., University of Illinois
Arthur E. Smith, Professor Emeritus
Ph.D., Saint Louis University
Susan Kashubock-West, Associate Professor*,
Ph.D., Ohio State University
Mark Pope, Associate Professor**
Ed.D., University of San Francisco
W. Glenn White, Associate Professor Emeritus*
Ph.D., University of Missouri-Columbia
S. Kent Butler, Assistant Professor
Ph.D., University of Connecticut
H. Lori Schnieders, Assistant Professor*
Ed.D., University of Louisville
Donna Noonan, Affiliate Assistant Professor
Ph.D., Saint Louis University
* members of graduate faculty
** members of doctoral faculty

General Information

The Division of Counseling and Family Therapy is housed on the fourth floor of Marillac Hall. Information about offerings and related matters may be obtained in the departmental office, 469 Marillac Hall. The Division of Counseling and Family Therapy offers work leading to the M.Ed. and requisite course work for state certification in elementary and secondary school and counseling, and school psychological examiner. Non-certification degree work is available in community counseling and is designed to prepare students to take the state examination for licensed professional counselor.

Areas of emphasis in the counseling degree program are elementary school, secondary school, or community counseling.

The following Division of Counseling and Family Therapy programs have been accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP):
- Community Counseling (M.Ed. degree)
- Community Counseling with a Specialization in Career Counseling (M.Ed. degree)
- School Counseling (M.Ed. degree)
CACREP, a specialized accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation, grants accredited status to graduate-level programs in the professional counseling field.

Students wishing to receive Missouri certification in elementary school counseling, or secondary school counseling, must complete all required courses in addition to holding teaching certificates valid in Missouri or taking the equivalent coursework. (Consult your adviser if you have questions on these matters.) The community counseling area, for which there are no certification requirements, is appropriate only for the practice of counseling in non K-12 settings.

The master of education degree in counseling has an exit requirement of a comprehensive examination. Students may sit for the exam after completing 36 units in their degree program. There is a service charge for taking the exam. The exam will be given at least twice a year. All degree students should consult with their advisers about this requirement.

Graduate Studies

Admission

In addition to meeting the general admission requirements of the Graduate School, applicants to the master's of education with an emphasis in community or school counseling must complete the divisional application in addition to the application to Graduate School, have three completed references on file, must have an undergraduate GPA of 3.0, and must take Cns Ed 410, Personal and Professional Development in Counseling in their first semester. Admissions will be conducted twice a year. The deadlines for applications are June 1 for the fall semester and November 1 for the winter semester. Students are accepted on a provisional basis pending their completion of application materials, Cns Ed 410 and review by the Counseling Faculty Review Board.

Since it is the objective of the counseling faculty to identify students with low effectiveness potential as early as possible and to initiate the necessary procedures for dealing with such students, the faculty of the counseling program reserves the right to review students at any stage of their course work. Any grade less than a B in any core counseling course (Cns Ed 410, Personal and Professional Development in Counseling; Cns Ed 411, Theories of Counseling; Cns Ed 493, Counseling Practicum I, or CNS 485, Community Counseling Practicum; Cns Ed 494, Guidance Practicum II, or Cns Ed 486, Community Counseling Field Experience I; and Cns Ed 490, Internship, or Cns Ed 487, Community Counseling Field Experience II) will automatically trigger a review process which may result in the termination of the student=s degree program.

Students admitted to the master's degree program in counseling on restricted status must attain a 3.0 GPA for the first 12 hours of graduate course work at UM-St. Louis with no grades less than a B. Restricted students must include the following courses in the first 12 hours of course work: Cns Ed 410, Personal and Professional Development in Counseling; Cns Ed 411, Theories of Counseling, and Cns Ed 493, Counseling Practicum I, or
Counselor Education (Cns Ed)
410, Personal and Professional Development in Counseling
411, Theories of Counseling
412, Theories & Techniques of Counseling Children and Adolescents
413, Ethical and Professional Issues in Individual and Relationship Counseling
414, Individual Inventory
420, Group Procedures in Counseling
431, Foundations of School Guidance
442, Career Information and Development
482, School Counseling Practicum
483, School Counseling Field Experience I
484, School Counseling Field Experience II
495, Foundations for Multicultural Counseling

Psychological Foundations and Human Development (Ed Psy)
410, Lifespan: Individual & Family Development
432, Psycho-Educational Differences in Childhood

Educational Research and Evaluation Methods (Ed Rem)
421, Educational and Psychological Measurement
431, Educational Research Methods and Design

Individuals seeking certification as a professional school counselor in the State of Missouri who are non-teacher certificated must take the following courses in addition to their counseling degree: EP 411, SE 416, SE 320, and Elem. Ed. 410 or Sec. Ed. 415.

Master of Education: Emphasis in Community Counseling

The community counseling emphasis allows flexibility for developing programs appropriate to particular nonschool settings. Students must have their adviser's approval before taking other than required courses.

Core Curriculum (CNS ED)
The courses listed below meet the course work requirements for the M. Ed. Degree and the license to practice as a professional counselor:
410 Personal and Professional Development in Counseling
411 Theories of Counseling
413 Ethical and Professional Issues in Individual and Relationship Counseling
414 Individual Inventory
420 Group Procedures in Counseling
442 Career Information and Development
485 Community Counseling Practicum
486 Community Counseling Field Experience I
487 Community Counseling Field Experience II
495 Foundations of Multicultural Counseling

Psychological Foundations and Human Development (Ed Psy)
The following course is required:
413, Personality Development and Adjustment
Educational Research and Evaluation Methods (Ed Rem)
The following courses are required:
421, Educational and Psychological Measurement
431, Educational Research Methods and Design

Area of Specialization (9 hours)
Course work in the area of specialization is to be selected in consultation with the adviser and may include career counseling, mental health counseling, rehabilitation counseling, addictions counseling, couples and family counseling, and others.

Career Outlook

Elementary and Secondary School Counselors
The demand for school counselors throughout the state is quite high. There is a shortage of school counseling personnel at all levels. Additionally, many teachers who do not intend to leave the classroom pursue this program to be better able to meet the needs of their students. Some graduates of the program have left the field of education and have obtained positions such as those cited under Community Counseling.

Community Counselors
Graduates have been employed in a wide variety of settings: as counselors 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.

Note It should be noted that in Missouri, persons who engage in "professional counseling" in many of these settings are required by law to be licensed as professional counselors.
Course Descriptions

Prerequisites may be waived by consent of the department.

For information about certification and licensure, an adviser should be consulted.

Course descriptions in this section are Counseling (Cns) courses.

Counseling (Cns)

110 Making a Career Choice (1)
Introduces students to career development theories (Holland, Super, Bolles, etc.) and the career decision-making process. Students receive an overview of career development theory and learn how these theories pertain to the formulation of career plans. 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.

310 Introduction to the Counseling Profession (3)
Prerequisite: Junior or senior level standing. This survey course will provide undergraduates and noncounselors with a broad overview of the counseling profession. Topics include a history of the profession, foundations of counseling, ethical, and legal considerations and the role of the counselor in various settings.

318 Counseling Gifted Students (3)
Prerequisites: Spc Ed 313, Ed Psy 312, or equivalent. This course emphasizes the social and emotional development of gifted and talented individuals. Subject areas will include current research, factors affecting the development of the gifted, and resources and strategies utilized in counseling these students and their parents.

329 Counseling the Chemically Dependent (3)
This course is an introduction to the problems resulting from the abuse of alcohol and other chemicals, with an emphasis on the impact of chemical dependence on the individual, the family, the employer, and the community. The special problems resulting from chemical dependence as it affects various populations, e.g., women, individuals with disabilities, and the elderly, will be analyzed and linked to appropriate counseling strategies.

331 Counseling Individuals with Special Needs (3)
Prerequisite: Spc Ed 313 or equivalent. A course emphasizing counseling skills for individuals who plan to work with the handicapped. Emphasis is placed on using counseling strategies with school-age handicapped children.

332 Youth and Chemical Dependence (3)
Prerequisite: Junior standing. This course provides information about adolescent and preadolescent chemical dependency and its relationship to numerous other developmental and societal factors that place the adolescent "at risk" for the development of substance abuse problems. Skills in the identification, intervention, and referral of chemically-dependent adolescents are emphasized, along with preventive measures and family and school issues.

404 Seminar (3-10)

410 Personal and Professional Development in Counseling (3)
Prerequisite: 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.

411 Theories of Counseling (3)
Prerequisite: Cns Ed 410. This course will explore the philosophical foundations of counseling theory. The major constructs of contemporary counseling approaches will be discussed, and the practical applications of these theories will be analyzed.

412 Theories and Techniques of Counseling Children and Adolescents (3)
Prerequisite: Cns Ed 410, 411 (with a grade of B or better in both courses) or consent of the instructor. Focus is 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 will be emphasized, as well as legal and ethical considerations for counselors. Strategies presented can be utilized in a variety of settings. Multicultural considerations are also addressed.

413 Ethical and Professional Issues in Individual and Relationship Counseling (3)
Prerequisite: Cns Ed 410. Ethical, legal, and professional issues related to counseling are addressed. Ethical dilemmas in the provision of counseling services to individuals, couples, families, and groups are defined. Specific ethical codes of professional organizations are examined.
414 Individual Inventory (3)  
Prerequisites: Ed Rem 421. Uses of educational and psychological appraisal techniques in counseling. Develops counselors' abilities in assisting clients toward self-awareness through the use of test and nontest data. Ethical practices in the use of tests and the maintenance of personnel records are stressed.

420 Group Procedures in Counseling (3)  
Prerequisites: Cns Ed 411 and Cns Ed 493. 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 included. Knowledge and skills of how to facilitate therapeutic groups are included. Students will be required to be participant-observers or facilitators of a group outside of class time.

423 Introduction to Systems Theory for Marriage and Family Counseling (3)  
Prerequisite: Cns Ed 411. This course is an introduction to general systems theory and application to marriage and family counseling. Students learn the theoretical basis for intervention and counseling strategies in the context of an ecology of human development. Developmental issues at individual, sibling, marital, family, and community levels and the ways in which various social systems interact with and mutually influence one another are presented.

424 Marriage Counseling and Enrichment (3)  
Prerequisite: Cns Ed 423 or consent of instructor. This course focuses on the theory and technique 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.

425 Family Counseling (3)  
Prerequisites: Cns Ed 423 and Cns Ed 493, 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.

426 Advanced Theories of Counseling and Family Therapy (3)  
Prerequisites: Cns Ed 411 and Cns Ed 423, Cns Ed 493 or consent of instructor. Contemporary and emergent theories in counseling and family therapy are presented and analyzed. Research issues are addressed.

427 Introduction to Addictive Behaviors and Addiction Counseling (3)  
Prerequisites: Cns Ed 411 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.

429 Advanced Strategies in Addictions Counseling (3)  
Prerequisite: Cns Ed 427 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.

430 Counseling the Dual Diagnosed Substance Abuser (3)  
Prerequisites: Cns Ed 427 and Cns Ed 411. This course introduces the student to the special needs, concerns, and problems encountered when counseling clients who are both mentally ill and chemically dependent. Subject areas include an overview of counseling methodologies, diagnosis, and psycho-pharmacology.

431 Foundations of School Guidance (3)  
The purpose of this course is to give students a foundation for understanding the history, philosophy, and development of school guidance programs. The role functions of the school counselor within a developmental, comprehensive program are examined, along with communication skills necessary for consultation with students, parents, school support staff, and resource people in the community nonacademic needs.

442 Career Information and Development (3)  
Prerequisites: Graduate standing. Emphasis is on the nature of the changing labor market and the impact on personal, social, economic, career and educational aspects of individuals and society. Use of occupational and educational information systems and resources to assist with career decisions are examined. The needs of culturally diverse populations are discussed. Use of career and labor market information and programs such as computer technology to access up-to-date career and labor market information is explored. Techniques and methods of career counseling are discussed. Various theories of career development and career choice will be examined.
443 Advanced Career Development (3)
Prerequisites: Cns Ed 442 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.

444 Career Assessment in Counseling and Rehabilitation (3)
Prerequisites: Cns Ed 414 and 442 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.

451 Counseling Parents of Exceptional Children (3)
The development of counseling skills to enable human service professionals to interact productively with families who have handicapped children.

455 Counselor Education and Supervision. An introduction to clinical supervision in counseling. Theories, models, and research in supervision will be presented. Students will supervise master's level students in practicum and internship courses in counseling.

460 Rehabilitation Counseling (3)
Prerequisite: Cns Ed 410; 411; 493; or 485. This course addresses: a) the history of vocational rehabilitation; b) specialty issues in rehabilitation counseling; c) medical aspects of disability; d) the rehabilitation process; e) theories of rehabilitation; f) the assessment process of individuals with disabilities; g) the job placement and work adjustment process of individuals with disabilities; h) ethical issues in rehabilitation counseling.

461 Theory and Practice of Clinical Hypnosis in Counseling (3)
Prerequisite: Cns Ed 493 or 485 or Consent of instructor. Clinical hypnosis is conceptualized and approached as a system of skilled communication. Historical perspectives, major models (Traditional, Standardized, and Utilization [Ericksonian], myths, and misconceptions will be explored. Students will develop skills in direct and indirect trance induction procedures, and case conceptualization with individuals and multiple participants. Legal and ethical considerations will be presented.

462 Counseling Women Toward Empowerment (3)
Prerequisite: Cns Ed 410, 411 493 or 485. An introduction to Women's issues in counseling. Relational theory, healthy female development, and an overview of clinical issues most common to females will be presented.

470 Advanced Assessment in Counseling (3)
Prerequisite: Cns Ed 414 and doctoral standing or consent of the instructor. This course develops advanced skills in the assessment process which includes the administration, scoring, and interpretation of psychological tests and environmental inventories, clinical interviewing, observation, and the gathering of historical and collaborative information; and the integration of this information into patterns to predict human functioning.

471 Time-Limited Group Counseling (3)
Prerequisite: Cns Ed 420 and doctoral standing or consent of the instructor. The theory, techniques, and research in psychodynamic, interpersonal, cognitive-behavioral and existential-humanistic counseling groups are addressed, as well as levels of group focus; management of resistance and transference; research and methods of working through issues and assisting difficult, multi-problem group members.

472 Practicum in Group Counseling (3)
Prerequisite: Cns Ed 471 and doctoral standing or consent of instructor. Students will lead or co-lead a supervised counseling group in the community.

475 Doctoral Practicum (3)
Prerequisites: Doctoral standing. 100 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.

476 Doctoral Internship I (3)
Prerequisites: Cns Ed 475; Ed Rem 471 and 481. 300 clock hours of doctoral-level supervised practice in counseling. Students provide counseling services to clients at field sites, teach and supervise beginning counseling trainees, and conduct clinical research projects. Students are supervised by a graduate faculty member, with 2 hours per week of group supervision or 1 hour per week of individual supervision.
477 Doctoral Internship II (3)
Prerequisites: Cns Ed 476 or concurrent enrollment. Continuation of Cns Ed 476, Doctoral Internship I, with 300 clock hours of doctoral level supervised practice in counseling required. Students provide counseling services to clients at field sites, teach and supervise beginning counseling trainees, and conduct clinical research projects. Students are supervised by a graduate faculty member, with 2 hours per week of group supervision or 1 hour per week of individual supervision.

480 Advanced Clinical Issues in Counseling (3)
Prerequisite: Doctoral standing or consent of instructor. This course will address advanced clinical issues with seriously disturbed clients.

482 School Counseling Practicum (3)
Prerequisite: Cns Ed 410 and 411 (both courses with a grade of B or better) or consent of the instructor. Supervised practice in counseling with children and adolescents and the opportunity for students to learn to facilitate personal change and problem solutions using a defined systematic framework, theoretical orientation, or research base.

483 School Counseling Field Experience I (3)
Prerequisite: Cns Ed 482 with a grade of B or better and consent of instructor. A 300-hour closely supervised field experience under the direction of a graduate faculty member. Designed to move the student to an appropriate level of competence and evidence of growth in the professional counselor role. Students will receive 1.5 hours of group and 1 hour of individual supervision weekly by a graduate faculty member.

484 School Counseling Field Experience II (3)
Prerequisites: Cns Ed 483 with a grade of B or better and consent of instructor. A 300-hour closely supervised field experience under the direction of a graduate faculty member. The course will build on and extend the School Counseling Field Experience I. The student will acquire counseling competencies and ethical practice in keeping with the Missouri state guidelines for school counselors. Students will receive 1.5 hours of group and 1 hour of individual supervision weekly by a graduate faculty member.

485 Community Counseling Practicum (3)
Prerequisite: Cns Ed 410 and 411 and consent of instructor. 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.

486 Community Counseling Field Experience I (3)
Prerequisite: Cns Ed 485 and consent of instructor. A 300-hour closely supervised field experience under the direction of a graduate faculty member. An appropriate level of competence and evidence of growth in the professional counselor role must be demonstrated by the student. Students will receive 1.5 hours of group and 1 hour of individual supervision weekly by a graduate faculty member.

487 Community Counseling Field Experience II (3)
Prerequisite: Cns Ed 486 and consent of instructor. A 300-hour advanced closely supervised field experience under the direction of a graduate faculty member. The course will build upon and extend the Community Counseling Field Experience I. It is expected that the student will demonstrate counseling competencies and skills and ethical practice. Students will receive 1.5 hours of group and 1 hour of individual supervision weekly by a graduate faculty member.

490 Internship (1-10)
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.

494 Guidance Practicum II (3)
Prerequisite: Grade of B- or better in Cns Ed 493 and/or consent of instructor. Supervised practice in counseling.

495 Foundations for Multicultural Counseling (3)
Prerequisite: Cns Ed 411. This course will focus 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.

496 Seminar in Counseling Research (3)
Prerequisite: Ed Rem 431, 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.

497 Problems (1-10)

498 Advanced Multicultural Counseling (3)
Prerequisite: Cns Ed 495 and doctoral standing or consent of instructor. This advanced course addresses theories and research in multicultural counseling.
Educational Leadership and Policy Studies

Faculty

Carole A. Murphy, Associate Professor**, Chairperson
Ed.D., Texas A & M University
Timothy O'Rourke, Professor**
Ph.D., Duke University
Charles Schmitz, Professor**, Dean
Ph.D., University of Missouri-Columbia
Joy E. Whitener, Dean Emeritus, Professor Emeritus*
Ed.D., Washington University
Charles J. Fazzaro, Associate Professor**
Ed.D., West Virginia University
Lowry S. (Sandy) MacLean, Associate Professor*
Ed.D., Indiana University-Bloomington
Everette E. Nance, Associate Professor*, Dean, Evening College,
Ed.D., Western Michigan University
Joyce Somers, Associate Professor**
Ph.D., University of New Orleans
James E. Walter, Associate Professor**
Ph.D., University of Wisconsin-Madison
Patricia Boyer, Assistant Professor**
Ph.D., University of Missouri-Columbia
Fred E. Bradley, Assistant Professor**
Ph.D., Southern Illinois University-Carbondale
Kathleen Sullivan-Brown, Assistant Professor**
Ph.D., Washington University
Shaw Woodhouse, Assistant Professor*
Ph.D., University of Missouri-Columbia
Wendell L. Smith, Assistant Professor*, Interim Vice Chancellor for University Relations
Ph.D., Ohio State University
John Henschke, Associate Professor of Adult Education**
Ed.D., Boston University
Mary Cooper, Assistant Professor of Adult Education*
Ph.D., University of Minnesota
Paulette Isaac, Assistant professor of Adult Education*
Ed.D., University of Georgia
Dan Natale, Assistant Professor
Ph.D., University of Missouri-St. Louis
Ken Owen, Affiliate Associate Professor
Ed.D., Saint Louis University
Tom Hensley, Assisilate Assistant Professor, Director of Programs, Continuing Education, College of Arts and Sciences
Ed.D., University of Missouri-St. Louis
Cecil Abrahams, Visiting Assistant Professor
Ph.D., University of Alberta, Canada

* members of Graduate Faculty
** members of Doctoral Faculty

General Information

Faculty are housed on the second floor of Marillac Hall. Questions about the division and its offerings may be directed to the division office, 269 Marillac Hall (314-516-5944).

The division offers master's degree work and advanced certification studies in elementary and secondary school administration, special education administration, and the superintendency. Higher education, adult education, and community education are additional emphases offered.

The division offers courses in K-12 school administration, higher education, and adult and community education. The M.Ed. degree is offered in K-12 school administration. Both the Ed.D. and Ph.D. are offered with emphases in K-12 school administration, higher education, and adult education.

Graduate Studies

The program options in the division include:

- Elementary and secondary school administration.
- Certification for school district administration.
- Higher education administration
- Adult and community education.

The options in educational administration are more than simply lists of courses. Each is an organized curricular offering.

The school administration and certification sequences are organized into a continuous two-phase, NCATE- and DESE-approved program. In the first phase, students earn the M.Ed. The second phase leads to the completion of a two-year course of study and is designated the advanced certification studies program. Both phases are correlated with current Missouri requirements for certification as a principal or director of elementary or secondary education or school superintendent in Missouri schools.

The programs in higher education administration are intended to be incorporated in a doctoral program of studies, either the Ph.D. or the Ed.D. It is designed as a cooperative program with UM-Kansas City and UM-Columbia. Students can expect to be involved in cohort groups, non-traditional scheduling of most courses, and to be taking selected courses that are Web-based or through interactive television.

Students are responsible for developing their individual programs. They are encouraged to take full advantage of the program-planning assistance provided by advisers early in the program(s).
Master of Education and Advanced Certification Studies (ACS): Educational Administration

The recommended curriculum for the M.Ed. in educational administration is 33 semester hours. The curriculum for advanced certification studies is 60 semester hours.

**Requirements**

1.00 Contexts Core (15 semester hours)
- Ed Adm 421, Knowledge Contexts of Education Administration and Policy
- Ed Adm 422, Social Contexts of Education
- Ed Adm 423, Political Contexts of Education
- Ed Adm 424, Economic Contexts of Education
- Ed Adm 425, Legal Contexts of Education

1.20 Research/Change Core (6-9 semester hours)
- Ed Rem 420, Classroom Measurement and Evaluation
- Ed Adm 431, Education Administration Policy Research
- Ed Adm 453, Organizational Change in Education

1.30 School Specialization Core (12 semester hours)

1.31 Elementary School Administration
- Ed Adm 432 Elementary School Administration
- Ed Adm 441 School Staff Development and Supervision
- Ele Ed 411 Curricular Issues in Elementary Schools
- Ele Ed 422 Curriculum Construction in Elementary Schools
- *** Ed Adm 490 Internship

1.32 Secondary School Administration
- Ed Adm 434 Secondary School Administration
- Ed Adm 441 School Staff Development and Supervision
- Sec Ed 414 Secondary School Curriculum
- Sec Ed 416 Curriculum Construction in Secondary Schools
- *** Ed Adm 490 Internship

* Required if student had no equivalent course at the undergraduate level.
** Exit course--must be taken during last semester of M.Ed. program.
*** Must be taken within the last 10 semester hours before completion of M.Ed. program.

Master of Education: Educational Administration with Emphasis in Community Education

This is a 32-credit hour program for students interested in community education.

**Degree Requirements**

- ED FND 421 Philosophy of Education
- ED FND 435 History of Western Education
- OR
- Ed Fnd 320 History of American Education
- Ed Fnd 422 Social Contexts of Education
- Ed Fnd 423 Political Contexts of Education

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**College of Education**

**Educational Leadership and Policy Studies**

Total Required Semester Hours Section 2.10 12

2.20 Research Core
- Ed Adm 431 Educational Administration Policy Research
- Ed Rem 330 Educational Statistics

Total Required Semester Hours 2.20 6

2.30 Community Education
- Ed Rem 461 Administration of Community and Adult Education
- Ed Adm 462 Programming in Community and Adult Education
- Ed Adm 490 Internship: Community Education

Total Required Semester Hours Section 2.30 9

2.40 School Specialization**

2.41 Elementary School Administration
- Ed Adm 432 Elementary School Administration
- Eld Ed 411 Curricular Issues in the Elementary School
- OR
- Ele Ed 422 Curriculum Construction in Elementary Schools

Total Required Semester Hours Section 2.41 6

2.42 Secondary School Administration
- Sec Ed 415 The Secondary School Curriculum
- OR
- See Ed 416 Curriculum Construction for Secondary Schools

Total Required Semester Hours Section 2.42 6

TOTAL Master of Education—Community Education 33

* Exit Requirement—Taken within the last 9 semester hours of the M.Ed. program.
** Students take either section 2.41 or section 2.42, not both sections.
College of Education
Educational Leadership and Policy Studies

Course Descriptions

Educational Administration (Ed Adm)

Prerequisites may be waived by consent of the department.

411 Foundations of School Administration I (1)
Prerequisites: Admission to the masters, doctoral, and/or certification programs in education administration. This course is (1) an introduction to the sources of knowledge and information about education administration, (2) a review of written and oral communications standards in education administration, and (3) the uses of technology in education administration. Each student will be assigned to a Collegium (5-10 students under the direction of a faculty adviser) and begin the construction of a portfolio of academic work. Students will remain in their assigned collegium until they complete their programs of study.

412 Foundations of School Administration II (1)
Prerequisites: Ed Adm 411. This course must be taken during the middle third of the thirty-three (33) semester hour M.Ed. program or any administrator certification program. The course is designed to engage students in activities that relate the academic study of education administration to practice in the schools and to continue the construction of their individual portfolios.

413 Foundations of School Administration III (1)
Prerequisites: Ed Adm 412. This course must be taken during the last semester of the thirty-three (33) semester hour M.Ed. program or any administrator certification program. The course engages the student in an assessment simulation that parallels that of the Interstate School Leaders Licensure Consortium Council (ISLLC) of the Council of Chief State School Officers (CCSSO). Students will complete their individual portfolios by the end of this course.

421 Knowledge Contexts of Education Administration and Policy (3)
Prerequisites: Completed or enrolled in Ed Adm 411 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.

422 Social Contexts of Education (3)
Prerequisites: Ed Adm 411, Ed Adm 421 or consent of instructor. This course is a critical examination of different perspectives on the social structures within which education policies are constituted and their concomitant practices implemented.

423 Political Contexts of Education (3)
Prerequisites: Ed Adm 411, Ed Adm 421 or consent of instructor. 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.

424 Economic Contexts of Education (3)
Prerequisites: 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.

425 Legal Contexts of Education (3)
Prerequisites: Ed Adm 411, Ed Adm 421, 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.

431 Education Administration Policy Research (3)
Prerequisites: Ed Adm 412 (may be taken concurrently) or consent of instructor. A study of issues and trends in basic, applied, and action research in educational policy making.

432 Elementary School Administration (3)
Prerequisite: Ed Adm 412 (may be taken concurrently) or consent of instructor. Emphasis is placed on relating theories of learning, teaching, and organization to effective administration of elementary schools.

433 Middle School Administration (3)
Prerequisites: Ed Adm 412 (may be taken concurrently) or consent of instructor. This course is a comprehensive, systematic study of the middle school principalship. Emphasis is placed on relating theories of learning, teaching, and organization to effective administration of middle schools.

434 Secondary School Administration (3)
Prerequisite: Ed Adm 412 (may be taken concurrently) 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.
435 School District Administration (3)
Prerequisite: Enrolled 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.

441 School Staff Development and Supervision (3)
Prerequisite: Ed Adm 412 (may be taken concurrently) and/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.

442 School Personnel Administration (3)
Prerequisite: 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.

443 Problems in School Public Relations (3)
Prerequisites: Advanced standing and/or consent of instructor. This course is an examination of a range of both traditional and critical perspectives relevant to home-school-community relations.

444 Collective Negotiations in Educational Organizations (3)
Prerequisites: Advanced graduate standing and/or consent of instructor. This course focuses on the concepts, issues, and processes involved with collective negotiations (bargaining) in American educational organizations. The major issues addressed in the course include recognition procedures, bargaining unit determination, the scope of negotiations, the proposal and counterproposal, compromise, impasse procedures, and master contract management.

445 Extracurricular Activities (3)
Prerequisites: Graduate standing and consent of instructor. Activities related to the extracurricular program of secondary schools will be studied in depth. Analyses of appropriate activities will include the nature and purposes of these activities.

446 Leadership in Educational Administration (3)
Prerequisites: Advanced standing and/or consent of instructor. This course is designed to acquaint the administrator with the factors of groups and interpersonal relationships directly affecting job performance. The consequences of various types of group relationships upon the institution will be studied in detail. The administrator will study various rationales for and methods of improving interpersonal relationships within the institution.

451 Principles of Public School Finance in Missouri (3)
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.

452 School Buildings and Sites (3)
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.

453 Organizational Change in Education (3)
Prerequisite: Advanced graduate standing and/or consent of instructor. This course deals with (1) developing strategies for assessing educational needs, (2) methods of assessing the school's organizational health, (3) the designing of educational change strategies involving theory-based models, (4) using systems-analysis techniques to implement educational change, and (5) methods of involving students and staff in incorporating meaningful organizational change strategies in educational institutions.

461 Administration of Adult and Community Education (3)
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.

462 Programming in Community and Adult Education (3)
Prerequisite: Ed Adm 461 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.
463 Financing of Community Education (3)
Prerequisites: Graduate standing and consent of instructor. The student will develop the necessary skills needed to construct an operational budget for the administration of community education programs. Emphasis will be placed on developing a support base from federal, state, and local funding resources. The student will be exposed to proposal writing and funding procedures.

481 Education Administration Doctoral Seminar (1-6)
Prerequisites: Admission to doctoral program and consent of instructor. Intensive directed study of selected issues related to the administration of educational institutions.

482 Education Policy Studies Seminar (1-6)
Prerequisites: Admission to doctoral program and consent of instructor. Intensive directed study of selected education policy issues.

490 Internship (1-10)
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.

497 Problems (1-10)

Higher Education (HIRED)

401 Current Issues in Higher Education (3)
Prerequisites: Graduate admission. Familiarizes student with nature and characteristics of American higher education--structure of higher education, roles played by various constituencies, and current issues.

402 Student Affairs Administration (3)
Prerequisites: Graduate admission. Survey course in student personnel administration with emphasis on understanding college student and on learning ways to meet his/her academic and nonacademic needs.

404 Seminar (1-10)

406 Governance of Higher Education (3)
Prerequisites: Graduate admission. Concentrates on study of unique system of governance in higher education, including faculty, institutional system, and state governing mechanisms.

420 Legal Aspects of Higher Education (3)
Prerequisites: Graduate admission. Examines legal rights and responsibilities of faculty, students, staff, and administrators. Includes fair employment, due process, affirmative action, and liability.

421 Legal Aspects of Postsecondary Teaching (3)
Prerequisites: Graduate admission. Examines legal issues of interest to faculty. Areas include faculty issues (contracts, grievances/appeals/affirmative action, free speech, classroom incivility, student behavioral standards, grades).

430 The Community College (3)
Prerequisites: Graduate admission. Develops 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.

473 Curriculum in Higher Education (3)
Prerequisites: Graduate standing and consent of instructor. The development, implementation, and assessment of curriculum in higher education as well as historical and philosophical perspectives; major figures and emerging trends are included.

474 The College Student (3)
Prerequisites: Graduate standing and consent of instructor. 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.

476 Organization and Administration of Higher Education (3)
Prerequisites: Graduate standing and consent of instructor. This course includes the study of the 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.

477 History and Philosophy of American Higher Education (3)
Prerequisites: Graduate standing and consent of instructor. 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.

Adult Education (Adu Ed)

311 Teaching Basic Reading Skills to Adults (3)
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.
Prerequisites: Adu Ed 410 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.

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.

Prerequisites: Adu Ed 410. Study of the historical foundation of adult education in America. Will include the major theorists and their contributions and the continuing education of the adult in a progressive social contest.

Prerequisites: Adu Ed 410 or consent of instructor. A comprehensive, systematic philosophical foundation for adult education. Exploration of philosophical underpinnings of various approaches to education of adults--role of learner, teacher, and objectives within each philosophy.

Prerequisites: Adu Ed 410 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.

Prerequisites: Adu Ed 410 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.

Prerequisites: Adu Ed 410. Survey of distance education covers concept, theories, history, present practice, delivery systems, major issues and directions of distance learning. Emphasis on research and practice in U.S.; however, course will explore topics and issues in distance education from international perspective, identifying similarities and differences among countries.

This course deals with student selection procedures. Coordinating vocational instruction and planned employment experiences; research techniques for collecting and analyzing data for process and product evaluation; procedures for implementing new ideas and innovations in cooperative vocational education programs. The course is designed for vocational teachers and for teachers who wish to qualify as coordinators of cooperative vocational programs. This course may be applied toward Missouri Vocational Certification.
427 Improvement of Instruction in Teaching Business Subjects (3)
Prerequisites: Business education certification and consent of instructor. Designed for business education teachers, this course examines current trends in planning, organizing, developing, and evaluating instructional materials relevant to business education classes. Emphasis is placed on research techniques and strategies for selecting and utilizing appropriate curriculum materials, resources, and media to match learning needs. This course may be applied toward Missouri Vocational Certification.

432 Teaching in the Community College (3)
This course is designed for students considering a teaching career in the community college. The main emphasis of the course will be to expose students to the unique features of the community college with respect to the special goals of the institution, variety of degree and nondegree programs, and diversity of community college students. A second objective will be to offer a brief review of teaching techniques that will be useful in the community college classroom.

435 Problems in Teaching College Biology (3)
(Same as Biology 485.) Prerequisites: Teaching experience, 30 semester hours in biology, and consent of the instructor. Basic philosophies underlying undergraduate biology Education at the college level will be presented and examined with concern for establishment of an individual philosophy in the prospective college teacher. Teaching techniques suitable for college-level instruction will be considered, practiced, and evaluated. Advantages and limitations of various methods of instruction will be considered with respect to current research findings.

490 Internship (1-10)
Prerequisites: ADU Ed 410 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.

497 Problems in Adult Education (1-10)
Prerequisites: ADU ED 410 or consent of instructor. Independent study on topics in adult education.
Educational Psychology, Research, and Evaluation

Faculty

Margaret W. Cohen, Associate Professor**, Chairperson
Ph.D., Washington University
Marvin W. Berkowitz, Sanford N. McDonnell Professor of Character Education**
Ph.D., Wayne State University
William L. Franzen, Professor *, Dean Emeritus
Ph.D., University of Wisconsin
Thomas E. Jordan, Curator's Professor* of Child Development, Professor Emeritus
Ed.D., Indiana University
W. Ray Rhine, Professor Emeritus*
Ph.D.
Steven D. Spaner, Associate Professor**
Ph.D., Southern Illinois University-Carbondale
Clark J. Hickman, Assistant Professor and Associate Dean of Continuing Education and Outreach*
Ed.D., University of Missouri-St. Louis
Matthew W. Keefer, Assistant Professor**
Ph.D., University of Toronto
Virginia L. Navarro, Affiliate Assistant Professor*
Ph.D., Washington University
Stephen A. Sherblom, Assistant Professor*
Ed.D., Harvard University
* members of Graduate Faculty
** members of Doctoral Faculty

General Information

Faculty in the Division of Educational Psychology, Research, and Evaluation are housed on the fourth floor of Marillac Hall. Information about course offerings may be obtained in the division office, 402 Marillac Hall.

At the undergraduate level, the division coordinates educational psychology and measurement courses required in the various B.S. in education degree programs.

At the graduate level, the division offers courses in educational psychology and in educational research and evaluation methods required in the various M.Ed. degree programs and in the doctoral programs. Students choosing to pursue a Ph.D. in education may elect an emphasis in educational psychology. The Missouri certificate in school psychology is coordinated through this division.
Course Descriptions

Courses in this section are grouped as follows:
Educational Psychology (Ed Psy) and Educational Research and Evaluation Methods (Ed Rem)

Educational Psychology (Ed Psy)

212 Introduction to Learners and Learning (3)
Prerequisite: Psych 3. (Same as Tch Ed 212) Foundational study of development of infants, children and adolescents focusing on role of appropriate educational environments in fostering positive physical, cognitive, social, and moral outcomes. Reading relevant research will be combined with experiences in the field and technology-based assignments to investigate influences that shape development processes.

312 The Psychology of Teaching and Learning (3)
Prerequisites: Tch Ed 210, Tch 211, Tch Ed 212 or equivalents and admission to Teacher Education program. (Same as Tch Ed 312.) Application of the principles of psychology to an understanding of the dynamics of teaching behavior and learning behavior. Involves both theoretical and practical approaches to analysis of the learning environment of the school. Required of all who are preparing to teach. Includes a field experience.

325 Education and the Psychology of Human Sexuality (3)
(Same as Nursing 325). The course is designed to provide educators and other human services personnel with knowledge and understanding of various personal and social dimensions of human sexuality.

404 Seminar (1-10)

410 Life-Span: Individual and Family Development (3)
Prerequisites: Graduate standing. Critical analysis 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.

411 Psychology of Education (3)
Current psychological theories and research that guide inquiry and decision making in education. Topics surveyed include behavior, development, learning, instruction.

412 Psychology of Learning Processes (3)
Prerequisite: Ed Psy 411. Advanced study of learning and instructional theories. The historical and theoretical bases of instructional practice are examined.

413 Personality Development and Adjustment (3)
A course in personality development, personality structure, and the dynamics of adjustment. Course materials are oriented to the applied problems of counselors, teachers, administrators, and others in the helping professions.

416 Psychology of Early Childhood Development (3)
Prerequisite: Ed Psy 411 or consent of instructor. A survey of the theories, concepts, and research which inform the field of early childhood development to help caregivers and teachers understand the cognitive, social, and emotional changes that take place from birth through the primary years of schooling.

417 Psychology of the Elementary School Child (3)
Prerequisite: Ed Psy 411 or consent of instructor. Current research on the psychological changes which occur during the school age years of childhood. Includes attention to how development proceeds and to the processes that may alter its progress.

418 The Psychology of Adolescence (3)
Prerequisite: Ed Psy 411 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.

419 Adult Learning and Development (3)
Prerequisites: Ed Psy 410 or Ed Psy 411, or Adu Ed 410. (Same as Adu Ed 419.) Study of how life stage theories and theories of learning pertain to adult learners. Research bases of these theories will be explored in relationship to instructional practice with adult learners.

420 Behavioral Analysis of Human Learning (3)
Prerequisite: Graduate standing. A course in the principles of human learning and the technology of behavior modification, from the perspective of the teaching and counseling professions. Emphasis is placed on its application to school learning and behavior problems and to social behavioral patterns in a variety of appropriate counseling settings.

421 Biological Factors Influencing Human Behavior (3)
Prerequisite: Ed Psy 411 or Ed Psy 412 or consent of instructor. 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.
430 Foundations in School Psychology (3)  
Prerequisites: Graduate standing and consent of instructor. Examination of history and foundations of school psychology, standards of practice, and legal and ethical practice considerations.

432 Psycho-Educational Differences in Childhood (3)  
Prerequisite: EP 410 or EP 417 or EP 418 or consent of instructor. Examination of educational and mental health challenges first seen in childhood, with an emphasis on understanding both educational and mental health classification systems.

433 Psycho-Educational Interventions in Childhood (3)  
Prerequisites: Ed Psy 430 and Ed Psy 432 or Cns Ed 410 or consent of instructor. Examination and evaluation of educational and mental health interventions delivered in schools and related settings, with emphases on primary prevention and systems perspectives.

434 Consultation in Schools and Related Settings (3)  
Prerequisite: Ed Psy 430 or Cns Ed 410 or consent of instructor. An examination of theoretical principles, research, and legal and ethical issues as applied to consultation practices in schools and related settings.

441 Character Education and Development (3)  
Prerequisites: Ed Psy 411 and Ed Psy 417 or Ed Psy 418. 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.

442 Sociocultural Perspectives in Education (3)  
Prerequisites: Doctoral standing or 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.

443 Motivation Theory in Education (3)  
Prerequisites: Ed Psy 411 and doctoral standing or consent of instructor. Focuses on the social and cognitive aspects of contemporary theories of motivation and examines supporting research. Participants will apply theory to settings of teaching and learning, training, and counseling relevant to their interests.

445 Changing Perspectives in Educational Psychology (3)  
Prerequisite: Doctoral standing or consent of instructor. The advanced exploration of foundational issues in educational psychology. Topics include theoretical perspectives of modes of analysis used in the investigation of psychological theories and concepts in education.

490 Internship (1-10)  
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.

497 Problems (1-10)

Educational Research and Evaluation Methods (Ed Rem)

320 Classroom Testing and Measurement (3)  
Basic measurement principles for the classroom teacher: test planning; construction and use of selection, supply, and performance type test items; item analysis for test improvement; methods of summarizing test scores; derived scores for interpretation of performance; development and use of norms in evaluation.

321 Interpretation of Educational Tests and Measurements (3)  
Prerequisite: Meet the university standard for proficiency in basic mathematical skills. A study of the principles of test theory with emphasis on standardized aptitude, behavioral, and achievement tests; the interpretation of individual and group performance; and application within classroom settings. Required of all majors in special education.

330 Educational Statistics (3)  
Prerequisite: Meet the university standard for proficiency in basic mathematical skills. Statistical methods for advanced undergraduate and beginning graduate students: descriptive statistics, probability and sampling, and introduction to hypothesis testing and inferential statistics.

404 Seminar (1-10)  
Prerequisite: Consent of instructor. Educational research and evaluation methods seminar addressing special issues and topics not normally included in the regular statistics, research methods, evaluation, and measurement courses.

412 Evaluation of Data Analysis Programs (3)  
Prerequisite: Graduate admission and an introductory statistics course or consent of instructor. Principles and procedures for assessing the quality and effectiveness of data analysis computer programs and packages in educational research. Review and evaluation of various computer programs and packages used in educational research.
420 Classroom Measurement and Evaluation (3)
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.

421 Educational and Psychological Measurement (3)
Prerequisite: Graduate admission or consent of instructor. An introductory graduate course in testing and measurement theory: reliability, validity, and associated descriptive statistics; correlation and simple regression; derived and transformed scores; interpretation of test scores; measurement of aptitude, vocational interests, and personal-social adjustment.

422 Individual Assessment of Cognitive Abilities (3)
Prerequisite: Ed Rem 420, or 421, or consent of instructor. A course to develop administrative, interpretive, and reporting skills in the use of individually administered cognitive ability tests such as the Wechsler scales, the Stanford-Binet, and similar instruments.

423 Psycho-Educational Assessment of Children (3)
Prerequisites: Ed Psy 430 or Cns Ed 410 and Ed Rem 422 or consent of instructor. Develops administrative, interpretive, and reporting skills in educational and psychological assessment of children in schools and related settings, including standardized testing, interviewing, observation, and functional assessment.

431 Educational Research Methods and Design (3)
Prerequisite: An introductory statistics course or Ed Rem 420, or 421, or consent of instructor. An introductory course in educational research methodology: comparison of various types of qualitative and quantitative educational research, threats to internal/external validity, sampling methods, data analysis, and components of research reports.

432 Survey Research Methods in Education (3)
Prerequisite: An introductory statistics course and Ed Rem 431 or consent of instructor. (Same as Political Science 406 and Soc 432). A course on the principles and procedures for conducting survey research. Topics include forming questions and scales, survey design, sampling methods, data preparation and analysis, and presentation of results.

441 Action Research in Education (3)
Prerequisite: Ed Rem 431 or consent of instructor. A course that engages the participants in systematic qualitative inquiry into their own practice: framing appropriate questions; gathering and interpreting data; analyzing culture, subjectivity and multiple perspectives; and reporting the results ("telling the story"). Readings will address the methods, politics, and ethics of action research. Enrollment requires access to a field setting.

442 Nonparametric Statistics in Education (3)
Prerequisite: Ed Rem 431 or consent of instructor. An advanced educational research methods course in alternative analysis procedures to classical parametric statistics. Nonparametric methods are surveyed and their data requirements compared to their parametric counterparts. Educational research problems appropriate to or adaptable to these methods are studied.

451 Educational Program Evaluation (3)
Prerequisites: Admission to doctoral education and Ed Rem 431 or consent of instructor. A course on the principles and procedures for assessing the quality and effectiveness of programs, projects, and materials related to planned interventions and system changes in educational settings.

460 Advanced Test Theory in Education (3)
Prerequisite: Admission to doctoral education and Ed Rem 420, or Ed Rem 421, or consent of instructor. An advanced course in measurement theory and practice: issues of reliability, validity, and item analysis for both criterion and norm referenced tests; introduction to factor analysis in the development and analysis of test structure and validity; introduction to item response theory for the improvement of educational testing and research.

471 Quantitative Research Methods I (3)
Prerequisites: Admission to doctoral education and Ed Rem 431 or consent of instructor. An advanced educational research methods course: hypothesis testing using factorial analysis of variance; analysis of covariance; and the general linear model.

472 Quantitative Research Methods II (3)
Prerequisite: Ed Rem 471 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.

473 Quantitative Research Methods III (3)
Prerequisite: Ed Rem 472. An advanced educational research methods course using multiple linear regression models, path analysis, and structural equation modeling. Focus is on the theory, issues, and application of these advanced data analysis techniques.
481 Qualitative Methods in Educational Research I (3)
Prerequisites: Admission to doctoral education and Ed Rem 431 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. Philosophical and ethical issues in qualitative research are presented.

482 Qualitative Methods in Educational Research II (3)
Prerequisite: Ed Rem 481 or consent of instructor. An advanced qualitative educational research methods course to address the issues of sampling strategies, observational and interview techniques, and data analysis. Requires access to a field setting to conduct a qualitative research study.

490 Internship (1-10)
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.

497 Problems (1-10)
Prerequisites: 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.


Teaching and Learning

Faculty

Helene J. Sherman, Associate Professor**, Associate Dean, Chairperson
Ed.D., University of Missouri-St. Louis
Judith Cochran, Des Lee Professor in Tutorial Education
Ph.D., Arizona State University
Carl Hoagland, Emerson Electric Company Professor in Technology and Learning
Ed.D., University of Massachusetts
Rie Hovda, E. Desmond Lee Professor in Urban Education
Ph.D., Ohio State University
Patricia Simmons, E. Desmond Lee Professor in Lifelong Learning for the Sciences
Ph.D., University of Iowa
Douglas Turpin, E. Desmond Lee and Family Fund Endowed Professor in Music Education
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Richard W. Burnett, Professor Emeritus*
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Laura Westhoff, Assistant Professor
Ph.D., Washington University
Linda Cason, Lecturer; Director, Gateway Writing Project;
M.Ed. Webster University
Linda Gagen, Lecturer
M.Ed., Kent State University
Jacquelyn A. Lewis-Harris, Lecturer
M.A., Washington University
Lynn Navin, Lecturer; Director, University Child Development Center
M.Ed., Michigan State University

* members of Graduate Faculty
** members of Doctoral Faculty

General Information

The faculty of the Division of Teaching and Learning have their offices on the 2nd and 3rd floors in Marillac Hall and in the Mark Twain Building. Information about course offerings and related matters on all programs except physical education may be obtained in 369 Marillac Hall. The physical education offices are located at 234 Mark Twain Building.
The division coordinates programs leading to a B.S. in education degree in:

- Early childhood education
- Elementary education
- Physical education
- Secondary education
- Special education

Programs leading to the M.Ed. in elementary education, secondary education, and special education also are coordinated in the Division of Teaching and Learning.

The early childhood undergraduate program is designed for students wishing to teach and direct programs for children from pre-kindergarten through grade three. Students electing this program will work directly with young children as a part of their professional courses.

The graduate program is designed to develop master-level educators through a common core of essential knowledge and experiences drawn from current research and practice in the field of early childhood education. Through this program, candidates are able to further their competencies as educators, directors, program planners, and curriculum developers in various early childhood settings. Students can complete additional course work to receive certification.

The elementary education program prepares students to teach in grades one through six. Students may also tailor a program leading to a middle school/junior high teaching certificate. A special feature of these programs is the many opportunities to work with children in schools as part of the professional course work.

The graduate program strives to develop and refine the concept of the "teacher as researcher" or the "teacher as reflective decision maker or problem solver." It is based on the premise that as professionals, teachers must understand both the products or findings of research and the underlying processes that influence their professional practice.

Students may choose a program leading to the M.Ed. in education, generalized or specialized elementary education or elementary education with Missouri certification in reading.

The physical education program coordinates work in physical education which leads to a B.S. in education degree with certification to teach either PK-9 or K-12.

The elementary education and secondary education graduate programs provide courses for graduate students who choose physical education as their teaching field.

The secondary education program prepares students for teaching these subjects in secondary schools (grade 9-12):

- Biology, business, chemistry, English, French, German, history, mathematics, music, physics, psychology, social studies, speech and Spanish. A special feature of these programs is the close interdisciplinary cooperation between the professional school and other university departments.

Students may also choose to pursue the bachelor's degree in the College of Arts and Sciences plus certification, or the B.S. in education degree which includes Missouri certification. Business education students have only the College of Education option.

At the graduate level, the division provides a program leading to a M.Ed in secondary education with emphasis in: adult education, certification studies with adult basic education, secondary education with emphasis in reading, and secondary education and certification. It offers graduate degree work and advanced certification studies in elementary and secondary school administration, special education administration, and the school superintendent.

The special education program prepares students to teach learners with developmental disabilities, emotional/behavioral disorders, learning disabilities, or in early childhood special education settings. Students also receive certification as regular elementary school teachers upon completion of the curriculum. Missouri certification standards require a student teaching experience in each area of special education.

At the graduate level, requisite course work for Missouri certification in special education is available, as is the M.Ed. Degree.

Note The State Board of education developed standards for renewable professional certificates, based on specific requirements for training and experience. Details regarding these standards are available in the office of undergraduate studies in education.

Bachelor of Educational Studies

General Education Requirements

Communicative Skills (2 requirements)
- All students must complete a freshman English composition course with a grade of C- or better.
- All students must complete English 210--Advanced Expository Writing, or its equivalent, with a grade of C- or better.

Mathematical Skills
- A grade of C- or better in a college-credit mathematics course having at least intermediate algebra as a prerequisite, or
- A satisfactory score on the university’s Mathematics Proficiency Test.
Breadth of Study (minimum 42 hours in the following three areas with at least three courses in each area)
- Humanities
- Natural sciences and mathematics
- Social sciences

Other Requirements
- American History or Government (course taken at the University of Missouri or at other colleges or universities in Missouri)

Degree Requirements
2 Cultural Diversity Requirement (3 hours)
- Ed Psy 312 The Psychology of Teaching and Learning (3 hours)
- Communication 40 Introduction to Public Speaking (3 hours)
- 6 hours in Psychology or Educational Psychology numbered 200 or higher
- Ed 290 Internship (6 hours)
- Ed 291 Internship (6 hours)

At least one of the following:
- Phy Ed 282 Physical Growth and Motor Development (3 hours)
- Ed Psy 211 Growth and Development, Ed Psy/Tch Ed 212, (3 hours), Introduction to learners and Learning (3 hours), or equivalent
- Psy 272 Adult Development and Aging (3 hours; same as Gerontology 272)

Emphasis in Early Childhood

One of the following two:
- Ed Fnd 111 The School in Contemporary Society (3 hours or equivalent)
- Phy Ed 282 Physical Growth and Motor Development (3 hours)

All of the following:
- Spe Ed 313 The Psychology and Education of Exceptional Individuals (3 hours) or equivalent
- Ech Ed 303 Curriculum and Practice Laboratory: Infant/Toddler (1 hour)
- Ech Ed 304 Curriculum and Practice Laboratory: Preschool (1 hour)
- Ech Ed 312 Introduction to Early Childhood Education (3 hours)
- Ech Ed 313 Curriculum and Practice: Infant/Toddler (2 hours)
- Ech Ed 314 Curriculum Curriculum and Practice: Preschool (2 hours)
- Ech Ed 317 Assessing Individual Needs for Early Childhood Instruction (3 hours)
- Ech Ed 331 Language Acquisition and Development in Early Childhood (3 hours)
- Ech Ed 332 Early Literacy (3 hours)
- Ech Ed 346 The Acquisition of Mathematical Concepts (3 hours)

Total: 27 hours
Second Concentration: Electives to total 12 hours to be chosen from Ech Ed, Ele Ed, Spe Ed, Ed Tec, Ed Rem, or an area chosen in consultation with the adviser.

Emphasis in Exercise Science

All of the following:
- Bio 113 Human Physiology and Anatomy I (4 hours)
- Bio 114 Human Physiology and Anatomy II (4 hours)
- Phy Ed 204 Special Topics in Physical Education (1-3 hours)
- Phy Ed 283 Kinesiology (3 hours)
- Phy Ed 284 Physiology of Human Exercise (3 hours)
- Phy 285 Sports Medicine (3 hours)
- Phy Ed 287 Seminar in Exercise Science (3 hours)

At least 6 credits from the following:
- Phy Ed 261 Physical Activity for the Exceptional Learner (2 hours)
- Phy Ed 275 Psychological Aspects of Physical Education
- Phy Ed 330 Prescribing Physical Activity (3 hours)
- Phy Ed 331 Adult Exercise Leadership (3 hours)
- Phy Ed 380 Nutrition for Human Performance (3 hours)

Total 27-29 hours
Second concentration: Electives to total 12 hours to be chosen from Bio, Chem, Phys, Psy, Geron, or an area chosen in consultation with the adviser.

Emphasis in Professional Education Studies

27 hours in one of the following, numbered 200 or above: Ele Ed, Spe Ed, Sec Ed.

Candidates for the Bachelor of Educational Studies degree must achieve a cumulative grade point average of at least 2.750, complete 24 or the last 30 hours in residence at UM-St. Louis, and be recommended by the faculty of the College of Education.

Admission Requirements
To be admitted to the Bachelor of Educational Studies Program an applicant must:
- Be regularly admitted to the College of Education.
- Have a UM and overall cumulative grade point average of 2.5 on a 4.0 scale.
- Have a 20 on the ACT or 800 on the SAT
- Have a 235 on each subtest of the CBASE.
- Complete English 10 with a C or better.
- Complete Mathematics 30 with a C or better
- Have at least 45 hours of college credit.
- Complete an application for the Bachelor of Educational Studies and secure appropriate signatures.
Early Childhood Education (Ech Ed)

Undergraduate Studies

Bachelor of Science in Education: Early Childhood

This program is designed for students wishing to teach and direct programs for children from birth through grade three.

General Education Requirements:

English and Communication (9 hours)
- English 10, Composition
- English 210 or 212, Advanced Expository Writing
- Communication: 3 hours

Mathematics (3 hours)
- Math 50, Structure of Mathematical Systems I

Biological Science: includes lab (5 hours)
- General Biology 001/Lab 003

Physical Science: includes lab (4 hours)

Humanities (8 hours)
- Three courses from two of the following fields: art, music, philosophy, and literature.

Social Science (15 hours)
- Psych 3, General Psychology
- PolSci 11, Introduction to American Politics, or equivalent
- and one of the following history courses
- Hist 3, American Civilization
- Hist 4, American Civilization
- and the following courses:
- Pol Sci 85, Global Ecology
- Soc 10, Introduction to Sociology, or any anthropology course.

Degree Requirements

Students are required to take the general education requirements as indicated for early childhood education above.

Level I: Exploring Education as a Profession
- Tch Ed 210, Introduction to Teaching
- Tch Ed 211, Introduction to American Schools

Level II: Analyzing the Nature and Process of Education
- Tch Ed 212, Introduction to Learners and Learning

Level III: Synthesizing Theory and Practice in Education
- Ele Ed 330, Children’s Literature and Reading
- Ele Ed 336, Teaching Language Arts and Reading, N-9

plus these Early Childhood Education (Ech Ed) courses:

Note Ech Ed 290 and Ech Ed 291 must be taken during the same semester.

312, Introduction to Early Childhood Education
317, Assessing Individual Needs for Early Childhood
331, Language Acquisition and Development in Early Childhood
332, Early Literacy
346, The Acquisition of Mathematical Concepts
313, Curriculum and Practice: Infant/Toddler
314, Curriculum and Practice: Preschool
315, Curriculum and Practice: Primary
303, Curriculum and Practice Laboratory: Infant/Toddler
304, Curriculum and Practice Laboratory: Preschool
305, Curriculum and Practice Laboratory: Primary
290, Student Teaching in Early Childhood Education I (6 hrs)
291, Student Teaching in Early Childhood Education II (6 hrs)

Attention education majors: Professional education courses must be completed with a grade point average of 2.50 and no grade lower than a C- (2.0).

Total: A minimum of 120 hours

Graduate Studies

Master of Education: Elementary Education, Concentration in Early Childhood Education

This program is designed to develop a master teacher through a common core of essential knowledge and experiences drawn from current research and practice in early childhood education. Teaching and Learning (continued)

Core Competencies (12 hours):

- Ele Ed 410, Current Research in Elementary School Curriculum (required as the entry course in the program).
- Ele Ed 411, Curricular Issues in the Elementary School

Students may select two of the following courses:
- Ech Ed 410, Foundations of Preschool Education (strongly suggested)
- Ed Psy 412, Psychology of Learning Processes
- Ed Psy 416, Psychology of Early Childhood Development
- Ech Ed 490, Internship
- Ech Ed 497, Problems
Content Competencies (minimum of 12 hours of course work from the following areas):

- Early Childhood Certification Courses
- Early Childhood Electives
- Other courses approved by adviser

Curricular Application Competencies (9 hours):

A measurement course is required before admission to the exit course Ele Ed 423 and one of the following is suggested:

- Ed Rem 420, Classroom Measurement and Evaluation or
- Ed Rem 421, Educational and Psychological Measurement or
- Ed Rem 431, Educational Research Methods (an option if a prerequisite measurement course was completed at the undergraduate level)
- Ele Ed 422, Curriculum Construction in Elementary School and
- Ele Ed 423, Curriculum Implementation in Elementary School

Career Outlook

The field of early childhood education has experienced a marked increase in the demand for highly qualified and professional prepared educators. As research continues to focus on the crucial early years of development, the need for trained professionals in early care and education will continue to rise. Early childhood graduates at all degree levels are attractive candidates for employment in a variety of educational positions. The downward extension of Aages of schooling@ opens employment opportunities in the public and private sector. 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. Additional career opportunities exist for early childhood educators in specialized child care, private family care, instruction and training, corporations, self-owned businesses, and family-focused public and private agencies. Qualified early childhood educators can and do make a powerful difference in the lives of families and children.

Elementary Education (Ele Ed)

Undergraduate Studies

Bachelor of Science in Education: Elementary Education

The elementary education program prepares students to teach in grades one through six.

General Education Requirements:

- English and Communication (9 hours)
  - English 10, Freshman Composition
  - English 210, Advanced Expository Writing
  *Communication 40 Introduction to Public Speaking
- Mathematics (6 hours)
  - Math 50, Structure of Mathematical Systems I
  - Mathematics 151 Structure of Mathematical Systems II
- Biological Science: includes lab (5 hours)
  *General Biology 001/Lab 003
- Physical Science: includes lab (4 hours)
- Humanities (8 hours)
  - Three courses from two of the following fields: art, music, philosophy, and literature.
- Social Science (18 hours)
  - Psych 3, General Psychology
  - Pol Sci 11, introduction to American Politics, OR equivalent
  - And one of the following history courses:
    - Hist 3, American Civilization
    - Hist 4, American Civilization
    - Pol Sci 85, Global Ecology
    - Soc 10, Introduction to Sociology, or
    - Any anthropology course.
  - Econ 306, Microeconomics for the School Curriculum

Program Requirements

Level I: Exploring Education as a Profession
- Tch Ed 210, Introduction to Teaching
- Tch Ed 211, Introduction to American Schools
- Tch Ed 212, Introduction to Learners and Learning

Level II:
- Tch Ed 310, Introduction to Instructional Methods
- Tch Ed 312, Psychology of Teaching and Learning
- Tch Ed 313 The Psychology and Education of Exceptional Individuals
- Tch Ed 315, Literacy Learning and Instruction

Level III: Synthesizing Theory and Practice in Education

*Internship hours are met through special methods courses in Level III.
- 246, Teaching Mathematics in the Elementary School
- 253, Teaching Social Studies in the Elementary School
- 330, Children's Literature and Reading
- 336, Teaching Language Arts and Reading N-9
- 341, Teaching of Science in the Elementary School
- 389, The Analysis and Correction of Reading Problems in the Classroom
  *291, Elementary School Student Teaching

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C-. 
Middle School/Junior High (5-9)
General education requirements are the same as for elementary education, except that Psychology 271, Adolescent Psychology, is taken in lieu of Psychology 270, Child Psychology.

Related Area Requirements
Phy Ed 130, Elements of Health Education
Phy Ed 165, Physical Education Activities for the Elementary School
Ele Ed 177, Elementary School Music
Ele Ed 179, (Art 139), Art Activities for Elementary School

Program Requirements
Edc 101, Introduction to Classroom Teaching
Ed Fnd 111, The School in Contemporary Society
Ed Psy 312, Psychology of Teaching and Learning
Spe Ed 313, The Psychology and Education of Exceptional Individuals

and these Elementary Education (Ele Ed) courses:
246, Teaching Mathematics in the Elementary School
253, Teaching of Social Studies in the Elementary School
*290, Elementary School Student Teaching I
*291, Elementary School Student Teaching II
330, Children’s Literature and Reading
336, Teaching Language Arts and Reading, N-9
341, Teaching of Science in the Elementary School
385, Teaching Reading in the Elementary School
389, The Analysis and Correction of Reading Problems in the Classroom

*Note Ele Ed 290 and Ele Ed 291 must be taken during the same semester.

Attention 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). A C- grade is not acceptable.

Postdegree certification students may take Ed Fnd 330, History of American Education, or Ed Fnd 421, Philosophy of Education, in lieu of Ed Fnd 111.

Changes in teacher certification requirements in this area are upcoming. To obtain the latest information on requirement changes or to find out whether the new requirements will apply to you, contact the office of undergraduate teacher education, 155 Marillac Hall.
Total: 120 hours

Bachelor of Science in Education: Elementary Education (Middle School Certification)
This area of specialization in elementary education prepares students to teach in grades 5-9.

General Education Requirements
General education requirements are the same as for elementary education.

Related Area Requirement
Phy Ed 130, Teaching Health in the Elementary School

Program Requirements
Level I: Exploring Education as a Profession
Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to American Schools
Tch Ed 212, Introduction to Learners and Learning

Level II: Analyzing the Nature and Process of Education
Sec Ed 315, The Middle Level School
Ele Ed 316, Middle Level Curriculum and Instruction
Tch Ed 310, Introduction to Instructional Methods
Tch Ed 312, The Psychology of Teaching and Learning
Tch Ed 313, The Psychology and Education of Exceptional Individuals
Tch Ed 386, Teaching Reading in the Secondary School Content Area

Level III: Synthesizing Theory and Practice in Education
Ele Ed 389, The Analysis and Correction of Reading Problems in the Classroom
Sec Ed 305, Writing for Teachers
Ele Ed 317, The Middle Level Child
Spe Ed 320, Behavior Management

Special Methods
Along with education courses in Level III, students must take the appropriate special methods course congruent with the certification area(s) listed below:
Ele Ed 336, Teaching Language Arts and Reading, N-9
Ele Ed 253, Teaching of Social Studies in the Elementary School
Ele Ed 246, Teaching Mathematics in the Middle School
Ele Ed 341, Teaching of Science in the Elementary School
Ele Ed 291, Student Teaching

Area of Concentration for State Certification
Middle School certification 5-9 requires a minimum of 21 hours for certification in the specific content of language arts, social studies, math, or science. Contact the office of undergraduate teacher education, 155 Marillac Hall, for specific content area courses.
Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C- is acceptable.

Minimum of 120 hours.

Graduate Studies

Master of Education: Elementary Education

General Curricular Program or Specialization in Selected Curricular Areas

The M.Ed. student in elementary education may elect a general program or the emphasis in reading. Please note, however, that in either case the degree is the master of education in elementary education. Diplomas and transcripts do not show areas of specialization, nor are special certificates awarded.

1) Core Competencies (12 hours)
To include Ele Ed 410, Current Research in the Elementary School Curriculum; Ele Ed 411, Curricular Issues in the Elementary School; and 6 hours selected, in consultation with advisers, from among cognate fields or professional education.

2) Content Competencies (12 hours)
Students desiring to specialize through a sequence of courses should select at least 9 hours in one of the following areas: children's literature, early childhood, language arts, mathematics education, reading, science education, social studies education, or special education. Students who elect a general sequence should take no more than 6 hours in any one area.

3) Curricular Applications Competencies (9 hours)
Students must select, in consultation with their advisers, a measurement course, and complete the following: Ele Ed 422, Curriculum Construction in Elementary Schools, and Ele Ed 423, Curriculum Implementation in the Elementary School.

Upon completion of Ele Ed 410 and Ele Ed 411 in phase one, each candidate selects a curricular area or areas, identifies an adviser from the elementary and early childhood education faculty, and plans appropriate course sequences. A candidate enrolling in the specialist program should select an adviser in the area of specialization.

The sequence of courses, Ele Ed 410 and Ele Ed 411, should be taken at the beginning of the program; Ele Ed 422 and Ele Ed 423 constitute the final two program courses. Students should note that Ele Ed 411 is typically offered only during the winter and summer semesters, Ele Ed 422 is offered only during the fall semester and Ele Ed 423 only during the winter semester.

Electives should be selected according to candidates' needs and/or interests.

Emphasis in Reading

The M.Ed. program with emphasis in reading is designed to enable candidates to further their competencies as reading teachers and prepares them for positions as remedial reading specialists, reading consultants, and/or for further graduate study. The minimum required and recommended courses are as follows:

1) Core Requirements
At least one graduate-level course in each of the following areas: learning psychology; research, statistics, and measurements; and elementary curriculum.

2) Courses in Reading
The following required courses in reading should be taken in sequence. Courses denoted by asterisks are required for certification in remedial reading by Missouri teacher certification regulations. Students, with their advisers' permission, may substitute other courses for any requirement if they have had a recent upper-class undergraduate course covering the same material.

Required are:

*Ele Ed 385, Teaching Reading in the Elementary School
*Sec Ed 386, Teaching Reading in Secondary School Content Areas
*486, Clinical Diagnosis and Treatment of Reading Disabilities
*493, Clinical Methods in Child Study I
*494, Clinical Methods in Child Study II

Note Ele Ed 493 is offered in Fall and Summer Semesters; Ele Ed 494 is offered in the Winter and Summer.

and also:

Ele Ed 482, Problems and Research in Teaching Elementary School Reading (offered only in the winter semester).

*Ed Rem 420, Classroom Measurement and Evaluation
*Spe Ed 315, Speech and Language Problems, or
*Ech Ed 331, Language Acquisition and Development
*Spe Ed 320, Behavioral Management
*Cns Ed 310, Introduction to the Counseling Profession
*Ed Psy 417, Psychology of the Elementary School Child
*Ed Psy 418, Psychology of Adolescence

Note Spe Ed 412, Psychology of Exceptional Children, is required for certification if it has not been taken previously at the undergraduate or graduate level. It is not a degree requirement.

3) Electives
Following is a list of possible elective courses. Other courses may be selected from cognate fields after conferring with an adviser in reading.
College of Education
Teaching and Learning

English 220, Development of the English Language
Ed Fnd 421, Philosophy of Education
Adu Ed 311, Teaching Basic Reading Skills to Adults
Ele Ed 484, Developmental Reading (K-13)
Ele Ed 488, Supervision of School Reading Programs

Certification Options
A combined M.Ed. and certification option exists. Options include elementary education (1-8), early childhood education (PK-3), and middle school/junior high (4-9). Students should consult certification advisers. Graduate credit will not be given for courses at the 100 or 200 level.

Career Outlook
Undergraduate and graduate degrees in elementary education are most directly applicable to teaching at the level appropriate to the program emphasis. Increasing specialization of teaching assignments and downward extensions of ages of schooling continue to open employment opportunities. As in the past, elementary education graduates at all degree levels also continue to be attractive candidates for employment in many positions which require (or are well suited to) training in social and behavioral sciences. Positions in constant contact with and service to the general public such as sales, service, public relations, and general business are most 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. Many currently employed teachers will retire within the next 5-10 years; consequently, a shortage of teachers is anticipated.

Physical Education (Phy Ed)

Undergraduate Studies

Bachelor of Science in Education: Physical Education
This program prepares students to teach physical education. Individuals can be certified for grades PK to 9 only or for grades PK to 12.

Communication Skills (9 hours)
English 10, Freshman Composition
English 210, Advanced Expository Writing or equivalent Communication 30 or 40

General Education Requirements (42 hours required):

Humanities (8 hours)
Three courses from two curricular designations in the humanities (Symbol H).

Social Science (9 hours)
One course in American history
One course in American government
Psych 3, General Psychology

Natural Science (8 hours)
One course in a physical or earth science
One course in a biological science.
At least one of these courses must have a laboratory component.

Mathematics (3 hours)
One college-level mathematics course

Note: All of the courses above must be a minimum of two semester hours.

Electives 11-14 hours

PK-9 Emphasis
The following theory of physical education (Phy Ed) courses are required, 31 hours, to be taken with Level I professional education courses:

234, Teaching of Wellness and Health Related Fitness (4 hrs)
261, Physical Activity for the Exceptional Learner (2 hrs)
267, Performance Analysis in Physical Education (3 hrs)
275, Psychological Aspects of Physical Education (3 hrs)
277, Historical/Philosophical Foundations of Physical Education and Sport (2 hrs)
280, Human Anatomy and Physiology, (5 hrs)
282, Physical Growth and Motor Development (3 hrs)
283, Kinesiology (3 hrs)
284, Physiology of Human Exercise (3 hrs)
285, Sports Medicine (3 hrs)

The following courses in teaching of skills are required in physical education (Phy Ed), 14 hours, to be taken with Level II professional education courses. These courses are required:

220, Teaching of Skills: Movement and Rhythms (3 hrs)
221, Teaching of Skills: Dance (3 hrs)
222, Teaching of Skills: Grades PK-4 (4 hrs)
223, Teaching of Skills: Grades 5-9 (4 hrs)

The following professional education courses are required (31 hours):

Level I: Exploring Education as a Profession

Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to Schools
Tch Ed 212, Introduction to Learners
Level II: Analyzing the Nature and Process of Education

Tch Ed 312, Psychology of Teaching and Learning
Tch Ed 313, Psychology and Education of Exceptional Individuals
Tch Ed 386, Teaching Reading in Secondary School Content Areas
Phy Ed 268, The Curriculum and Methods of Teaching Physical Education

Level III: Synthesizing Theory and Practice in Education

Internship hours are met through the teaching of skills courses
Phy Ed 290, Student Teaching in Physical Education PK-5
Phy Ed 291, Student Teaching in Physical Education 5-9

Total: 127 hours

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C-. Grades PK through 12 Emphasis

The following theory of physical education (Phy Ed) courses are required, 33 hours, to be taken with Level I professional education courses:

234, Teaching of Wellness and Health Related Fitness (4 hrs)
261, Physical Activity for the Exceptional Learner (2 hrs)
267, Performance Analysis in Physical Education (3 hrs)
275, Psychological Aspects of Physical Education (3 hrs)
276, Sociological Foundations of Physical Education and Sport (2 hrs)
277, Historical/Philosophical Foundations of Physical Education and Sport (2 hrs)
280, Human Anatomy and Physiology, (5 hrs)
282, Physical Growth and Motor Development (3 hrs)
283, Kinesiology (3 hrs)
284, Physiology of Human Exercise (3 hrs)
285, Sports Medicine (3 hrs)

The following courses in teaching of skills are required in physical education (Phy Ed), 14 hours, to be taken with Level II professional education courses. These courses are required:

220, Teaching of Skills: Movement and Rhythms (3 hrs)
221, Teaching of Skills: Dance (3 hrs)
222, Teaching of Skills: Grades PK-4 (4 hrs)
223, Teaching of Skills: Grades 5-9 (4 hrs)
224, Teaching of Skills: Grades 9-12 (4 hrs)

The following professional education courses are required (31 hours):

Level I: Exploring Education as a Profession

Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to Schools
Tch Ed 212, Introduction to Learners

Level II: Analyzing the Nature and Process of Education

Tch Ed 312, Psychology of Teaching and Learning
Tch Ed 313, Psychology and Education of Exceptional Individuals
Tch Ed 386, Teaching Reading in Secondary School Content Areas
Phy Ed 268, The Curriculum and Methods of Teaching Physical Education

Level III: Synthesizing Theory and Practice in Education

Internship hours are met through the teaching of skills courses. Two of the following three:
Phy Ed 290, Student Teaching in Physical Education PK-5
Phy Ed 291, Student Teaching in Physical Education 5-9
Phy Ed 292, Student Teaching in Physical Education 9-12

Minimum: 133 hours

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C-. Athletic Coaching Minor

An athletic coaching minor is available (minimum of 20 hours). The following courses are required:

Phy Ed 283, Kinesiology
Phy Ed 284, Physiology of Human Exercise
Phy Ed 284, Physiology of Human Exercise
Phy Ed 224, Teaching of Skills: Grades 9-12
Phy Ed 312, Management of Sports Programs
Phy Ed 330, Prescribing Physical Activity

All courses apply to, but do not complete, teaching certification in Missouri.

Health Certification

For those with a valid teaching certificate in physical, courses are available to obtain an additional endorsement in health education.
Master of Education: Elementary or Secondary Education with Physical Education as Teaching Field

A significant number of graduate students choose physical education as the teaching field within one of the master of education degree options. Most are currently employed as teachers of health and/or physical education. Certification requirements in Missouri mandate the completion of a master's degree to professionalize the certificate. Therefore, a full complement of graduate courses relating to teaching in physical education is available to meet this need. For many who need to pursue teacher certification in physical education while pursuing the master's degree, most course work needed to meet state certification requirements can be taken in the master's program. For those employed outside education, an emphasis in exercise science is also available, providing a foundation of course work designed to prepare a person in this area. Specific information is available regarding each of these degree programs. Please consult with your graduate adviser to discuss the specific options and requirements.

Career Outlook

The employment outlook for physical educators in the schools continues to be positive, especially in the elementary and middle school levels. Recent placement years have yielded full employment opportunities to UM-St. Louis graduates. Rising school enrollments and the expected retirement of a significant portion of currently employed teachers signal optimistic outlooks for the next few years. In addition to elementary, middle school, and high school physical education teaching, more limited opportunities exist in athletic training, dance, research, sports management, and exercise leadership fields serving persons of all age categories.

Secondary Education (Sec Ed)

Undergraduate Studies

Bachelor of Science in Education: Secondary Education
Two secondary education programs prepare students to teach in grades 9 through 12: Bachelor of Science in Secondary Education through the College of Education (B.S.Ed.) OR Bachelor of Arts in a department of the College of Arts and Sciences (B.A.) with certification in Secondary Education

General Education 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.

Humanities
Three courses required from two of the following fields: music (excluding applied music), art, foreign language, Western and non-Western cultures, philosophy, literature, classical studies, and theater and drama.

Communication Skills
At least two courses in English composition and one in oral communications.

Social Studies
One course in each—American history and American government, and one additional course selected from the following areas: geography, sociology, economics, anthropology, psychology.

Natural Science
One course in a physical or earth science; one course in a biological science. At least one of these courses must have a laboratory component.

Mathematics
One college-level mathematics course.

Note All of the courses above must be a minimum of 2 semester hours.

Program Requirements

B.S.Ed. and B.A. certification candidates must complete the following courses:

Level I: Exploring Education as a Profession
Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to Schools
Tch Ed 212, Introduction to Learners

Level II: Analyzing the Nature and Process of Education
Tch Ed 310, Introduction to Instructional Methods
Tch Ed 312, Psychology of Teaching and Learning
Tch Ed 313, Psychology and Education of Exceptional Individuals
Tch Ed 386, Teaching Reading in Secondary School Content Areas

Level III: Synthesizing Theory and Practice in Education
Sec Ed 2xx, Curriculum and Methods of Teaching (specific subject area)
Sec. Ed 290, Internship
Sec Ed 291, Student Teaching
Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C- is acceptable.
Note: Music education students take the following courses instead of Sec Ed 291: Sec Ed 293, Student Teaching in Music Education K-6, and Sec Ed 294, Student Teaching in Music Education 7-12. These two courses must be taken during the same semester.

Emphasis Areas: B.S.Ed. candidates must complete 30 to 50 hours of specific subject requirements in one of the following fields: English, foreign language (French, German, or Spanish), mathematics, music, unified science (biology, chemistry, or physics endorsement), or social studies. For specific subject requirements see the appropriate department listing in the Arts and Science section of this bulletin: Social Studies requirements are listed below:

Social Studies certification students must complete a major or an equivalent in hours in one of the following disciplines: anthropology, economics, geography, history, political science, psychology, or sociology and meet these minimum social science requirements: American history, 12 hours including History/Sec Ed 257; European or world history, 9 hours including History/Sec Ed 258; United States and/or state government, 6 hours including Political Science/Sec Ed 209; economics, 3 hours; geography, 3 hours; and 2 hours of elective social studies credit. For emphasis area advising see the History Department.

Bachelor of Science in Education: Secondary Education with Emphasis in Business Education

General Education Requirements
B.S.Ed/ degree in Business Education candidates must complete the university general education requirements required by the College of Education and the Missouri Department of elementary and Secondary Education, the requirements for the program and the academic major

Program Requirements
Level I: Exploring Education as a Profession
Tch Ed 210 Introduction to Teaching
Tch Ed 211 Introduction to American Schools
Tch Ed 212 Introduction to Learners and Learning

Level II: Analyzing the Nature and Process of Education
Tch Ed 310, Introduction to Instructional Methods
Tch Ed 312 Psychology of Teaching and Learning
Tch Ed 313 Psychology and Education of Exceptional Individuals
Tch Ed 386 Teaching Reading in the Secondary School Content Area

Level III: Synthesizing Theory and Practice in Education
Sec Ed 2xx Curriculum and Methods of Teaching
(specific subject area)
Sec Ed 290 Internship
Sec Ed 291 Student Teaching

Academic major (36 hours required)
These secondary education (Sec Ed) courses:
162, Computer Keyboarding and Formatting
261, Methods of Teaching Keyboarding and Formatting
263, Methods of Teaching Accounting
264, Methods of Teaching Basic Business Subjects
*265, Secretarial Practice
267, The Secondary Business Curriculum
361, Information Processing: Applications and Techniques of Teaching
367, Methods of Teaching Desktop Publishing Concepts and Procedures
plus these Business Administration courses:
103, Computers and Information Systems
140, Fundamentals of Financial Accounting
145, Managerial
156, Legal Environment of Business
256, Business Law I
266, Basic Marketing and
Econ 51, Principles of Microeconomics
* Majors working toward shorthand certification must take this additional course, and are not required to take BA 206

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C-. Grades of C or better are required in all courses in the academic major. Minimum of 120 hours

Electives
Electives are to be selected only after consulting with a faculty adviser.
Total: 120 hours

B.S. degree in Secondary Education with an Emphasis in Science-Physics

All candidates must enroll in a program that includes levels I, II, and III course work in the College of Education. In addition, students must complete the following Science Core Courses and the courses listed under Physics Endorsement:

Science core courses:
Philosophy 280, Philosophy of Science
Biology
11, Introductory Biology I
12, Introductory Biology II
11, Introductory Chemistry I
12, Introductory Chemistry II
Geology 1, General Geology
Atmospheric Science 1, Elementary Meteorology
Biology 120, Environmental Biology or another environmental science
Physics
111, Physics: Mechanics and Heat
112, Physics: Electricity, Magnetism, and Optics

Physics Endorsement
Physics
200, Survey of Theoretical Physics
221, Mechanics
223, Electricity and Magnetism
231, Introduction to Modern Physics
304, Modern Electronics
311, Advanced Physics Laboratory I
280, or Education 240, Methods of Teaching Science in Secondary Schools
Physics 283, Teaching Intern Seminar
Graduate Studies

Master of Education: Secondary Education

The M.Ed. program in secondary education is flexibly designed to allow for the special interests of teachers, department chairpersons, curriculum workers, instructional supervisors, reading specialists, and those working in adult education. Programs must be planned with advisers and meet the approval of the department, school, and Graduate School.

Degree Requirements for All Secondary Education M.Ed. Students
The minimum 32-hour program for all secondary education majors includes the following requirements:

Core Requirements (9 hours)
Ed Fnd 421, Philosophy of Education
Sec Ed 415, The Secondary School Curriculum
Sec Ed 420, The Improvement of Secondary School Teaching

Exit Requirement (3 hours)
One of the following courses must be taken as part of the last 9 hours in the M.Ed. program in secondary education:

Ed Fnd 422, Analysis of Educational Issues
Sec Ed 416, Curriculum Construction for Secondary Schools

In addition to the above courses, the following is a third exit course option, limited solely to those in the adult education emphasis or business education teaching field:

Adu Ed 490, Internship (in adult education)

Any of the above courses, when not used to meet the exit requirement, may be included as an elective in the program.

College of Education
Teaching and Learning

Master of Education: Secondary Education with Emphasis in Curriculum and Instruction

The M.Ed. with an emphasis in curriculum and instruction is designed to enable candidates to further their competencies as teachers or curriculum/instructional leaders.

Degree Requirements (32 hours)

1) Core requirements (9 hours as specified above)

2) Curriculum/instruction core (8 hours) Courses are to be selected in consultation with an adviser in the curriculum/instruction field from among the following:

See Ed 315, The Middle Level School
See Ed 386, Teaching Reading in Secondary School
Content Areas
See Ed 414, Teaching the Gifted and Talented in Secondary School
Teaching and Learning (continued)

See Ed 416, Curriculum Construction for Secondary Schools
See Ed 422, Individualizing Instruction in Secondary Schools
Phy Ed 462, The Physical Education Curriculum

3) Teaching field core (8 hours) Courses approved by the Graduate School for M.Ed. programs are to be selected in consultation with an adviser in secondary education.

4) Electives Additional courses may be taken in the College of Education and/or curriculum and instruction areas to provide a consistent program upon the recommendation of the adviser.

Master of Education: Secondary Education with Emphasis in Adult Education

The M.Ed. with an emphasis in adult education is designed to enable candidates to further their competencies as teachers, administrators, and program planners in various adult education settings through the study of core courses in adult education, plus a minimum of 8 hours of elective work appropriate to the candidates' particular needs. Adult basic education practitioners can complete course requirements for certification within the scope of or independent from the master's degree program.

Degree Requirements (32 hours)

1) Core requirements (9 hours)
A course in educational foundations (3 hours)
A course in curriculum (3 hours)
A course in improvement of instruction (3 hours)

2) Adult education core (8 hours)
Courses are to be selected in consultation with an adviser in the adult education teaching field including but not limited to:
- Adu Ed 404, Seminar in Adult Education Research
- Adu Ed 410, The Adult Learner
- *Ed Adm 480, Administration of Adult and Community Education
- Adu Ed 490, Internship, or
- Adu Ed 497, Problems in Adult Education

3) Electives
Following is a list of possible elective courses. Other courses may be selected after conferring with an adviser in adult education.
- Ed Fnd 421, Philosophy of Education
- Sec Ed 415, The Secondary School Curriculum
- Sec Ed 420, The Improvement of Secondary School Teaching

4) Exit Requirement (3 hours as specified above)

Total: 32 hours

Adult Basic Education Certification
* Adu Ed 311, Teaching Basic Reading Skills to Adults
* Ele Ed 445, Problems of Teaching Arithmetic in the Elementary School, or Ele Ed 346, Advanced Methods in Elementary School Mathematics

* Eight semester hours from these six courses, and 3 hours of adult education electives, in addition to Spc Ed 313, Psychology and Education of Exceptional Individuals, are required for five-year certification from the Missouri Department of Elementary and Secondary Education.

Adult Basic Education (ABE) Certification
1) Requirements for two-year teacher's certificate in ABE:
   a. A holder of a bachelor's degree from a four-year college or university.
   b. Annual attendance at Department of Elementary and Secondary Education (DESE) approved adult basic education teacher certification workshops.

   (The two-year ABE certificate may be renewed twice. Requirements for a five-year certificate must be completed by the end of the sixth year.)

2) Requirements for a five-year teacher's certificate in ABE:
   a. Hold a bachelor's degree from a four-year college or university.
   b. Earn eight semester hours in DESE-approved adult education classes, institutes, or workshops.

   (The five-year ABE certificate may be renewed an unlimited number of times by repeating the requirements during the previous five years.)

Note This would provide certification for (1) ABE teachers who are teaching less than half time and/or without a contract and/or not in a public school or an accredited private school and (2) ABE teachers with bachelor's degrees who have experience teaching adult, but do not have regular teacher certification. Information is available for professional certificates for full-time ABE teachers.

Master of Education: Secondary Education with Emphasis in Reading

The M.Ed. with an emphasis in secondary reading is designed to enable candidates to further their competencies as teachers of reading and to prepare for positions as reading specialists, reading consultants, and/or further graduate study.

Degree requirements (32 hours)

1) Core requirements (9 hours as specified above)

2) Reading core
Required courses in reading should be taken in the following sequence:
- Sec Ed 386, Teaching Reading in Secondary School Content Areas
- Ele Ed 486, Clinical Diagnosis and Treatment of Reading Disabilities
- Ed Rem 422, Individual Assessment of Cognitive Abilities
- Ele Ed 493, Clinical Methods in Child Study I
- Ele Ed 494, Clinical Methods in Child Study II
- Ele Ed 482, Problems and Research in Teaching Elementary School Reading

To complete Missouri reading certification for grades K-12, the following must be taken or have been completed at the undergraduate level. Students should see an adviser.

- Spc Ed 315, Speech and Language Problems of Exceptional Children, or
- Ech Ed 331, Language Acquisition and Development in Early Childhood
- Spc Ed 320, Behavior Management
- Cns Ed 327, Personal and Professional Development in Counseling
- Ed Psy 417, Psychology of the Elementary School Child
- Ed Psy 418, The Psychology of Adolescence

3) The same exit requirement exists as outlined above for all students in the master of education degree program in secondary education.
Master of Education: Secondary Education and Certification

The M.Ed. in secondary education requires a minimum of 32 hours of graduate credit. Depending upon the area of secondary school specialization, certification may require from 28 to 36 semester hours of undergraduate course work, making a total of over 60 semester hours of graduate and undergraduate work. Under the combined program up to 15 hours of graduate courses may be substituted for the same number of undergraduate courses. Students seeking such certification must obtain advisement from the office of teacher education, the Department of Educational Studies, and from the appropriate faculty joint appointee in the Department of Educational Studies and respective Arts and Sciences department.

Degree Requirements

Required and recommended courses
1) Professional requirements
Sec Ed 2XX, Curriculum and Methods of Teaching
Sec Ed 213, Techniques of Secondary School Teaching and Field Experience
Sec Ed 290, Secondary School Student Teaching
Sec Ed/A and S Dept., 2XX or 3XX Teaching Intern Seminar (1-3)

2) Certification and M.Ed. requirements
Ed Psy 312, The Psychology of Teaching and Learning
Sec Ed 386, Teaching Reading in Secondary School Content Areas
Ed Psy 418, The Psychology of Adolescence
Spec Ed 412, Psychology of Exceptional Children
Ed Fnd 421, Philosophy of Education
Sec Ed 415, The Secondary School Curriculum

Electives
Selected graduate courses, including at least eight hours in the teaching specialty or in curriculum/instruction.

Career Outlook

Secondary school teaching positions are more plentiful than in the recent past. Most certificated teachers can find jobs if they are willing to go where there are openings.

Teachers of mathematics and the sciences are in extremely high demand. The fields of humanities and social sciences have somewhat better immediate prospects than in the past. The preparation that teacher education graduates receive enables them to do well in service and sales positions. Job opportunities in the educational and training facets of these fields are good.

People with preparation in secondary education, educational technology, adult education, and educational administration find positions in education/training units in businesses, industries, health care organizations, governmental units, community agencies, and service institutions.

School administration opportunities are available to qualified individuals, particularly those who have completed advanced graduate programs. Community education is an expanding field and will need increasing numbers of people with preparation in that specialty.

Special Education (Spc Ed)

Undergraduate Studies

Bachelor of Science in Education: Special Education

General education requirements (46 hours required):

English and Communication (9 hours)
   English 10, Composition
   Communication 30 or Communication 40
   English 210

Mathematics (3 hours)
   50, Structure of Mathematical Systems I

Science (8-9 hours)
   Biology (Laboratory)
   Physical Science (Laboratory)

Humanities (8 hours)
   Music 177, An Introduction to Music for the Elementary School Teacher (Recommended) plus two courses from art, music, philosophy, or literature

Social Science (18 hours)
   Psych 3, General Psychology
   History 3, American Civilization, or History 4, American Civilization
   PolSci 11, Introduction to American Politics
   Econ 306, Microeconomics for the School Curriculum
   Sociology 10, Introduction to Sociology, or any Anthropology course
   Geography 101 or 102

Related Area Requirements (6 hours)
   Phy Ed 130, Elements of Health Education
   Phy Ed 261, Physical Activity of the Exceptional Learner

Program Requirements (24 hours)

Level I: Exploring Education as a Profession

Tch Ed 210, Introduction to Teaching
Tch Ed 211, Introduction to Schools
Tch Ed 212, Introduction to Learners
Level II: Analyzing the Nature and Process of Education

Tch Ed 310, Introduction to Instructional Methods  
Tch Ed 312, Psychology of Teaching and Learning  
Tch Ed 313, Psychology and Education of Exceptional Individuals  
Tch Ed 315, Literacy Learning and Instruction  
Ed Rem 321, Interpretation of Educational Tests and Measurements  
Cns Ed 331, Counseling Individuals with Special Needs  
Spc Ed 315, Speech and Language Problems of Exceptional Children  
Spc Ed 342, Career Education for the Special Needs Individual  
Spc Ed 345, Introduction to Mild/Moderate Disabilities

Level III: Synthesizing Theory and Practice in Education

Ele Ed 246, Teaching Mathematics in the Elementary School  
Ele Ed 330, Children's Literature and Reading  
Ele Ed 336, Teaching Language Arts and Reading, N-9  
Ele Ed 342, Teaching Remedial Mathematics  
Spc Ed 320, Behavior Management  
Ele Ed 389, The Analysis and Correction of Reading  
Ele Ed 341, Teaching Science in the Elementary School  
Ele Ed 253, Teaching Social Studies in the Elementary School

Must take one or more of following three courses (depending on certification area desired):

Spc Ed 347, Teaching Learners with Learning Disabilities  
Spc Ed 350, Teaching Learners with Emotional-Behavioral Disorders  
Spc Ed 332, Educating Learners with Developmental Disabilities, Physical or Other Health Impairments

Internship hours are met through special methods courses in Level 3.

Student Teaching

Ele Ed 290, Student Teaching in Elementary Education  
Ele Ed 291, Student Teaching in Special Education

Note: Ele Ed 290 and Spc Ed 291 must be taken during the same semester.

Attention education majors: Professional education courses must be completed with a grade point average of 2.5 and no grade lower than a C-.

Total: Minimum of 120 hours

Graduate Studies

Master of Education: Special Education

Graduate students should understand that completion of the M.Ed. program in special education does not assure teaching certification. Students seeking the degree and certification should consult with their advisers.

Following is the recommended curriculum for students enrolled in the learning disabilities, mental retardation, behavioral disorders, or early childhood-special education options.

Area of specialization Students are required to complete 9-18 hours from the following areas:

Knowledge base (3-6 hours) (Spc Ed)  
497, Problems  
431, Problems in Mental Retardation  
443, Learning Disabilities  
450, Introduction to Behavioral Disorders  
462, Introduction to Early Childhood-Special Education

Curriculum (3-6 hours) (Spc Ed)  
415, The Secondary School Curriculum  
416, Curriculum Construction for Secondary Schools  
Ele Ed 410, Current Research in the Elementary School Curriculum  
413, Organizational Foundations for Special Education  
421, Prescriptive Teaching of Exceptional Children  
430, Education of the Mentally Retarded  
444, Education of Children with Learning Disabilities  
452, Education of Behaviorally Disordered Children  
463, Curriculum, Methods and Materials for Early Childhood-Special Education

Practicum (3-6 hours)  
At least 3 hours must be taken in Spc Ed 492, Practicum in Special Education.

Psychological foundations and human development (3-6 hours) (Ed Psy)  
411, Psychology of Education  
417, Psychology of the Elementary School Child  
Ed Psy 418, The Psychology of Adolescence  
412, Psychology of Exceptional Children  
416, Current Research in Psychology of Exceptional Children

Educational Research and Evaluation Methods (3-6 hours) (Ed Rem)  
330, Educational Statistics  
420, Classroom Measurement and Evaluation  
421, Educational and Psychological Measurement  
422, Individual Assessment of Cognitive Abilities
Electives may be chosen from the courses listed here and from other courses with approval of the adviser and department chairperson.

Career Outlook

The employment outlook for special education teachers continues to be favorable, especially in certain positions. In addition to special classroom teaching, graduates of the area have been employed as resource-room teachers, clinical diagnostic personnel, itinerant teachers, educational resource teachers, consultants, educational therapists, and sheltered workshop evaluators, and in various supervisory and administrative positions in agencies and schools.

In combination with counseling, educational psychology, physical education, or other areas, careers can be planned in such occupations as vocational evaluator, counselor for special-needs individuals, and special physical educators.
Course Descriptions

Courses in this section are grouped as follows: Early Childhood Education (Ech Ed), Educational Foundations (Ed Fnd), Educational Technology (Ed Tec), Elementary Education (Ele Ed), Physical Education (Phy Ed), Secondary Education (Sec Ed), and Special Education (Spc Ed).

Prerequisites may be waived by consent of the department.

Early Childhood Education (Ech Ed)

290 Student Teaching in Early Childhood Education I (6)

291 Student Teaching in Early Childhood Education II (6)
Prerequisite: Ech Ed 290. Must be taken concurrently with Ech Ed 291 in the semester. Clinical teaching experience in early childhood education classrooms in the schools under university and school supervision. Required for all majors in early childhood education.

303 Curriculum and Practice Laboratory: Infant/Toddler (1)
Classroom experience in infant or toddler classrooms under direction of university personnel. Must be taken concurrently with Ech Ed 313, Curriculum and Practice: Infant/Toddler.

304 Curriculum and Practice Laboratory: Preschool (1)
Classroom experience in preschool classrooms under direction of university personnel. Must be taken concurrently with Ech Ed 314, Curriculum and Practice: Preschool.

305 Curriculum and Practice Laboratory: Primary (1)
Classroom experience in primary classrooms under direction of university personnel. Must be taken concurrently with Ech Ed 315, Curriculum and Practice: Primary.

312 Introduction to Early Childhood Education (3)
Prerequisites: Ed Fnd 111 and Ed Psy 312. Study of basic principles underlying good schools for young children. Students will use theoretical base 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. Throughout the course, students will be expected to begin developing their own philosophy of early childhood education.

313 Curriculum and Practice: Infant/Toddler (2)
Prerequisite: Ech Ed 312. Focuses on planning integrated curriculum for child from birth to 30 months. Includes working with parents and community resources. Lab required.

314 Curriculum and Practice: Preschool Education (2)
Prerequisite: Ech Ed 312. Focuses on planning integrated curriculum for the preschool classroom with emphasis on science, social studies, creative activities and technology. Working with parents and parent education emphasized. Lab required.

315 Curriculum and Practice: Primary Education (2)
Prerequisite: Ech Ed 312. Focuses on planning integrated curriculum for the primary classroom with emphasis on science, social studies, creative activities and technology. Working with parents and parent education emphasized. Lab required.

317 Assessing Individual Needs for Early Childhood Instruction (3)
Prerequisites: Ech Ed 312. Techniques of observing children and using assessment instruments to plan an individualized program for early childhood. Practicum experience required.

321 Parent and Community Resources in Early Childhood Education (3)
Prerequisite: Admission to the College of Education or graduate status. 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.

331 Language Acquisition and Development in Early Childhood (3)
Prerequisite: Ed Psy 312. Development of language and the effects environmental and cultural factors have on the acquisition process. Identification of language problems for purpose of referral. Includes preschool classroom practices to support language development. Practicum experiences included.
332 Early Literacy (3)
Prerequisites: Ech Ed 312 and Ech Ed 331. Study of children as they construct literacy knowledge from birth to early elementary. Development of meaningful and developmentally appropriate activities in which reading and writing are used to support children's skills. Criteria for choosing and assessing literature as a vehicle for literacy for children from birth to eight will be addressed.

346 The Acquisition of Mathematical Concepts (3)
Prerequisites: Formal admission to the Teacher Education Program, Ed Psy 312, and Math 50. Applications of the major theorists to mathematics reasoning. Content is appropriate for pre-k to third grad learners. Research and its implications for practice in the areas of logical thinking, pre-number ideas, geometry, topology, problem solving and arithmetical operations are considered.

412 Foundations of Early Childhood Education (3)
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.

413 The Educational Role of Play (3)
Prerequisite: Ech Ed 312 or equivalent. Emphasizes play as a constructive process with applications to cognitive and social development. Special attention to facilitating play in early childhood classrooms.

415 Organization and Development of Early Childhood Programs (3)
Prerequisites: Ech Ed 312 or equivalent. Strategies for the effective organization and development of programs for children from diverse cultures, ages birth through eight years, will be studied. Research and theory in funding and budgeting, staffing and professional development, selection, development, and assessment of program curriculum will be emphasized. Long-range planning for program stability and involvement in advocacy issues will be covered.

490 Internship (1-10)
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.

497 Problems (1-10)
Prerequisite: Graduate standing. Individual study on topics pertaining to early childhood education.

Educational Foundations (Ed Fnd)

111 The School in Contemporary Society (3)
The introductory course in teacher education. An examination of the organization and purpose of the school in its social setting. Selected representative educational themes and issues will be studied. Required of students admitted to the College of Education. Prerequisite to other professional courses.

330 History of American Education (3)
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.

421 Philosophy of Education (3)
A study of the fundamentals of education in the light of modern science and philosophy.

422 Analysis of Educational Issues (3)
Prerequisite: A course in philosophy of education or a course in history of education, or consent of instructor. A critical examination of issues about the elementary and secondary schools. This is done through the analysis of the procedures, resources, and goals that guide school policies and practices.

435 History of Western Education (3)
A course designed to survey the educational development of Western civilization from approximately the eighth century BC until the present. Salient educational theory and practice will be considered in their appropriate social context.

Educational Technology (Ed Tec)

245 Audiovisual Equipment Operation for Classroom Teachers (1)
An entry-level course for all teacher education students. May be taken concurrently with Ed Tec 246. A self-paced, modularized, and criterion referenced course. Students will demonstrate competence in operating standard audiovisual equipment normally found in the schools.

246 Preparation of Inexpensive Materials for the Classroom (1)
An entry-level course for teacher education students. May be taken concurrently with Ed Tec 245. A lecture-demonstration laboratory course in material preparation for classroom use.
247 Integration of Media and Materials in Instructional Planning (1)
Prerequisites: Ed Tec 246, and for secondary Education students, Sec Ed 213. Course concentrates on the integration of media and materials in lesson planning. Through lecture, demonstration, and individualized instruction, the student designs an instructional unit and prepares appropriate material for that unit. Ed Tec 246 must be taken prior to, or concurrently with, this course.

248 Utilization of Computer-Based Materials in Instruction (1)
Utilizing a series of computer-based education modules, the instructional uses of the computer are explained and demonstrated. Students develop practical experience in using and evaluating computer materials for classroom use.

340 Selection and Utilization of Educational Media (3)
Introduction to the selection, use, and evaluation of audiovisual materials and equipment including films, slides, transparencies, projectors, globes, charts, maps, bulletin boards, plus programmed materials, information retrieval systems, and instructional television.

345 Preparation of Graphic Materials for Audiovisual Education (3)
Prerequisite: Ed Tec 340 or consent of instructor. Not open to lower-division students. A lecture-demonstration-laboratory course that emphasizes the graphic arts component of audiovisual material production. Theories of learning and communication are used in the design and production of materials used for classroom settings.

346 Instructional Television (3)
Prerequisite: Ed Tec 340 or consent of instructor. Not open to lower-division students. A lecture-demonstration laboratory course designed to concentrate on the use of instructional television in formal and informal learning situations. Basic script writing, management of ITV systems, and design and production of low-budget programs will be emphasized.

404 Seminar in Educational Technology Research (3)
Prerequisites: Ed Tec 340 and twelve hours of graduate work in educational technology. A review of research in educational technology with individual in-depth study. The student selects a research problem in conjunction with the instructor and completes a review project. Open to graduate students who have completed twelve hours of work in educational technology.

410 Computer-Based Graphics and Text Design and Production (3)
Prerequisite: Education 301 or permission of the instructor. A lecture-demonstration-laboratory course that emphasizes the theoretical and practical design of graphic and textual material through the use of computer-based graphics programs. Emphasis will be placed on the utilization of commercial software to produce graphic designs and desktop publishing projects such as newsletters, workbooks, and other textual materials.

412 Applications of Computers in Education (3)
Prerequisite: Educ 301 or permission of instructor. Uses and capabilities of computers in the teaching, administration, and counseling areas of Education. Familiarization with computing facilities and package programs.

415 Computer-Based Education: Authoring Software I (3)
Prerequisite: Education 301 or permission of the instructor. A lecture-demonstration-laboratory course that emphasizes the theoretical and practical design of computer-based Educational materials. Students will develop practical experience in utilizing programming shells and authoring languages in the development of curricular-based CBE programs.

433 Educational Technology Systems Management (3)
Prerequisite: Ed Tec 340. Basic principles of management in design and operation of media programs and systems in various educational settings. Emphasis on strategies and alternative structures for achieving and evaluating functions of media centers.

435 Diffusion and Adoption of Innovations in Educational Technology (3)
Prerequisite: Ed Tec 340. A lecture course designed to provide an overview of the diffusion and adoption of technical innovations in the Educational system. This course will include the technological, sociological, psychological, and political aspects of the process of diffusion and adoption. Various models, techniques, and applications of the diffusion and adoption process are emphasized.

446 Advanced Instructional Television Production (3)
Prerequisite: Ed Tec 340 and Ed Tec 346. Advanced management, script writing, and production of ITV programs. Laboratory activities in production of systematically designed instruction. Each student will produce ITV programs involving writing, production of graphics, directing, editing, and validating the programs.

452 Educational Multimedia Design (3)
Prerequisite: Ed Tec 340 or consent of instructor. Examines principles and techniques for design of visually and functionally effective multimedia educational resources. Emphasis on techniques for computer-based production of materials incorporating text, graphics, and video. Rapid prototyping and evaluation techniques incorporated.
490 Internship (1-10)
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.

497 Problems (1-10)
Prerequisite: Ed Tec 340 or consent of instructor. Individual study on topics pertaining to educational technology.

Elementary Education (Ele Ed)

82 Effective Reading and Study Skills (2)
Designed to increase reading rate and comprehension and to develop study techniques appropriate to the purpose and difficulty of materials. Use is made of mechanical pacer, comprehension tests, vocabulary materials, and lecture demonstrations. No credit toward a degree.

177 Elementary School Music (2)
Prerequisite: Consent of department. The role of the classroom teacher in the development of the elementary school general music program; selection of music, demonstration and practice of methods, and study of resources. This course will not apply toward requirements for a music major.

179 Art Activities for Elementary Schools (3)
(Same as Art 134.) A study of art principles; provides laboratory experiences with various media and materials. Stresses curriculum planning and developments of the elementary school program in art. Lab fee required. Basic studio equipment will be provided though students will need to supply some personal equipment and supplies.

192 Educational Laboratory/Field Experience (1-3)
A laboratory/field experience requiring systematic observation and/or participation in appropriate educational settings. To precede student teaching. May be repeated to maximum of three hours.

246 Teaching Mathematics in the Elementary School (3)
Prerequisites: Ed Fnd 111, junior standing, and completion of mathematics requirements in general education. Organization and implementation of a modern elementary school mathematics program. A field experience involving several visits to local elementary schools is a required assignment of the course.

253 Teaching of Social Studies in the Elementary School (3)
Prerequisites: Ed Fnd 111, junior standing, and completion of social science requirements in general education. Study of elementary school social studies emphasizing the current social studies curricular content, methods of teaching, and instructional materials. Analysis of forces affecting objectives, materials, and teaching techniques.

277 Curriculum and Methods of Teaching Elementary School Music (3)
(Same as Music Education 257.) Prerequisites: Music 131 and Ed Fnd 111. For the music education major. A study of the elementary school music curriculum emphasizing the objectives, methods of teaching and staffing music classes, and analysis of instructional materials and resources. This course must be completed in residence.

290 Elementary School Student Teaching I (5)

291 Elementary School Student Teaching II (5)
Prerequisite: Ele Ed 290. Must be taken "in block" with Ele Ed 205 and Ele Ed 290, and must immediately follow Ele Ed 290 in the semester. Clinical teaching experience in elementary school classrooms under university and school supervision. Assignments will be in different school districts, buildings serving families of different socioeconomic and cultural backgrounds, and at different grade levels from those of the Ele Ed 290 assignments. Required for all majors in elementary education.

310 Elementary School Curriculum (3)
Prerequisites: Ed Fnd 111 and junior standing. Study of modern education with regard to objectives, content, and methods in elementary school curriculum.

316 Middle Level Curriculum and Instruction (3)
Prerequisites: Sec Ed 315. Preparation for teaching and learning in a middle school, grades 5-8. Content focuses on curriculum development, methods, techniques, materials, planning, organization, and assessment in middle level education for early adolescents.

317 The Middle-Level Child (3)
Prerequisite: Sec Ed 315 and Ed Psy 312. 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 relationship are highlighted.
330 Children's Literature and Reading (3)
Prerequisite: Junior standing. A course designed to provide a knowledge of the various types of literature for young people, including books, magazines, comics, television, and films; criteria for evaluating and selecting material; uses of material in the classroom and home; and motivating reading for enjoyment and information, bibliotherapy, and communication.

336 Teaching Language Arts and Reading N-9 (3)
Prerequisites: Six hours of English/Communication; Ed Psy 312. Involves study of methods and materials for implementing a total language arts program, including reading in the elementary school. Emphasis is placed on using the language experience approach in teaching listening, reading, spelling, handwriting, grammar, and spoken or written composition as basic skills.

341 Teaching Science in the Elementary School (3)
Prerequisites: Completion of science requirements in general education, Ed Fnd 111, and upper-level standing. An analysis of teaching science to elementary school children with emphasis on current science education trends, science curricular materials, and strategies of instruction.

342 Teaching Remedial Mathematics (3)
Prerequisite: Ele Ed 246. Methods for diagnosing and remediating mathematical skills and concepts of the special needs learner. Course requires testing and tutoring assignments in area school districts outside of scheduled university class time.

346 Advanced Methods in Elementary School Mathematics (3)
Prerequisites: Ele Ed 246 and consent of instructor. Review, evaluate, develop, and provide classroom trial of instructional components prepared for teaching mathematics. Course will develop greater depth of preparation in: elementary program content; programs for exceptional children; and curricular extensions such as transformational geometry, rational numbers, and intuitive algebra.

387 Language and Literacy Needs of Culturally and Linguistically Diverse Children (3)
Prerequisites: Ed Psy 312 and Reading Methods or equivalent. Analysis of the community and cultural influences on children's language and literacy development, particularly children from culturally diverse settings. Attention to the sociolinguistic and constructivist practices in the teaching of language and literacy. Study of strategies to focus on the efforts of school administrators, faculty, parents, students, and the community on developing language and literacy competence as a primary tool for supporting academic achievement.

389 The Analysis and Correction of Reading Problems in the Classroom (3)
Prerequisites: Ele Ed 385 or Sec Ed 386, or equivalent. Study of causes of reading difficulties and procedures that may be used to analyze and correct them in the group setting. Ten hours of diagnostic tutoring is required.

390 Elementary School Student Teaching III (5)
Prerequisites: Ele Ed 291 or equivalent and admission to student teaching. Clinical teaching experience in elementary school classrooms under university and school supervision with seminar included. For students who wish an additional student teaching experience.

405 Seminar (1-10)

410 Current Research in the Elementary School Curriculum (3)
A systematic examination of research related to elementary school curriculum. Students will be expected to become effective consumers of educational research and to utilize appropriate research findings in their decision-making processes when planning instruction.

411 Curricular Issues in the Elementary School (3)
Prerequisite: Ele Ed 410. Selected contemporary problems which affect elementary classroom decisions. Computer literacy values, meeting individual needs, and dealing with discipline are studied through investigative discussions, reading, and a research paper.

412 Microcomputers in Elementary Education (3)
Focuses on principles and procedures for using microcomputers for instructional and classroom management activities in the elementary classroom.

422 Curriculum Construction in Elementary Schools (3)
Prerequisite: Ele Ed 410. A study of the elementary curriculum with regard to selection of objectives and content and to provisions for curricular change.

423 Curricular Implementation in the Elementary School (3)
Prerequisite: Ele Ed 422. Culminating experience for curricular project in Ele Ed 422. Course will include procedures and techniques for curricular design implementation in the field.

425 Elementary School Supervision (3)
Organized to study such problems in field of supervision as will meet needs of superintendents, principals, and special supervisors.
427 Supervision of Clinical Experiences in Teacher Education (3)
Prerequisite: Teaching experience and consent of instructor. A consideration of the clinical phase of the teacher Education program, with special emphasis on student teaching. Examination of role responsibilities and supervisory practices. Study of professional literature for research findings, theoretical formulation, and recent developments in the field.

430 Problems of Teaching the Language Arts (3)
Procedures used in teaching integrated language arts in elementary schools.

432 Problems and Research in Elementary School Language Arts (3)
Prerequisites: Ele Ed 430, Ed Rem 431, and six hours of English. A systematic study of research in teaching speaking, listening, written composition, handwriting, spelling, and linguistics as it focuses on the problems of teaching these skills in the elementary school. Attention is given to innovations in the field.

436 Children's Literature I: Survey and Analysis (3)
Prerequisite: Ele Ed 330 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.

437 Children's Literature II: Selection and Functions (3)
Prerequisite: Ele Ed 330 or equivalent. A study of literary elements that make literature interesting and meaningful for children will be completed. Further emphasis will focus on the application of trade books for children as resources in school curriculum planning. Children's Literature II may be taken either before or after Children's Literature I.

441 Problems and Research in Teaching Elementary School Science (3)
Prerequisites: Eight hours of science, Ele Ed 341, and Ed Psy 411. A thorough examination of research related to elementary school science instruction with particular emphasis on innovative programs. Includes methods of investigation and techniques for interpreting the professional literature.

443 Teaching Physical Science in the Elementary School (3)
Activity-oriented experiences with basic physical science concepts, laboratory skills, and techniques that are appropriate for elementary school teachers. The physical science concepts in elementary school curricula will be analyzed in depth.

444 Environmental Studies for Elementary Teachers (3)
Activity-oriented training in developing environmental awareness, field and/or laboratory skills and techniques, and the use of elementary environmental curricula. Materials and activities appropriate for one's students and locale will be developed.

445 Problems of Teaching Mathematics in the Elementary School (3)
A study of the mathematics program in the elementary school from the viewpoint of goals, content, techniques, and evaluation.

446 Curriculum and Methods of Teaching Measurement in Mathematics: Metric and Standard Systems (3)
Prerequisite: Ele Ed 346 or Ele Ed 246. Curricular development and implementation on reflecting recent research findings. Content, materials, methods of teaching the general topic: measurement. Applications in both the metric and standard systems.

447 Problems and Research in Teaching Elementary School Mathematics (3)
Prerequisite: Ele Ed 445. A thorough examination of research related to recurrent problems in elementary school mathematics instruction, as well as current problems arising within modern programs. Includes methodology appropriate to investigation of such problems and techniques for assessment of the literature.

448 Diagnosis and Remediation of Disabilities in Learning Mathematics (3)

450 Problems of Teaching Social Studies in the Elementary School (3)
A classroom-oriented study of curricular and instructional problems encountered in social studies. Emphasis is placed upon development of materials, techniques, and resources.

452 Problems and Research in Teaching Elementary School Social Studies (3)
Prerequisite: Ele Ed 450. An advanced study of pedagogical problems germane to social studies education with particular emphasis on application of research findings to the solution of classroom problems.

482 Problems and Research in Teaching Elementary School Reading (3)
Prerequisite: Ele Ed 385 or equivalent. Systematic study of research as it focuses on the problems of teaching reading in the elementary school. Attention is given to innovations in the field.
Col/ege of Education
Teaching and Learning

484 Developmental Reading (K-13) (3)
Prerequisite: Ele Ed 385 or Sec Ed 386, or equivalent.
Designed to update classroom teachers' skills in reading instruction. Study of basic reading instruction at all grade levels with special emphasis on current instruction programs, innovative approaches to reading instruction, basic techniques, commercial reading materials, and recent research findings which have a bearing on methodology.

486 Clinical Diagnosis and Treatment of Reading Disabilities (3)
Prerequisites: A graduate course in reading and in measurement or statistics. Etiology of specific reading disability; procedures that are used to diagnose and treat in the clinical setting.

488 Supervision of School Reading Programs (3)
Prerequisite: Ele Ed 385 or Sec Ed 386. Processes and techniques of developing, evaluating, and/or modifying the reading program in a school or district. The course would enable those seeking positions as consultants, coordinators, and directors of reading to conform with standards specified by the International Reading Association.

490 Internship (1-10)
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.

493 Clinical Methods in Child Study I (3)
Prerequisites: Ele Ed 486 and Ed Rem 422. Clinical experience in diagnosing learning problems, especially reading disability, in school children.

494 Clinical Methods in Child Study II (3)
Prerequisite: Ele Ed 493. Clinical experience in applying remedial procedures to school children with learning problems, especially reading disability.

495 Supervision of Practicum in Clinical Reading (3)
Prerequisites: Ele Ed 385 or Sec Ed 385; Ele Ed 486, Ele Ed 493, Ele Ed 494; and Ed Rem 422. Supervising graduate students in diagnosis and remedial process within the reading clinic.

497 Problems (1-10)
Selected problems to meet the needs of individual students.

Physical Education (Phy Ed)

Prerequisites may be waived by consent of the department or the instructor.

124 Principles and Practice in First Aid and Cardiopulmonary Resuscitation (1)
The course provides theory and supervised practice in first aid and cardiopulmonary resuscitation leading to American Red Cross certification in those areas.

130 Teaching Health in the Elementary School (3)
Prerequisites: Ed Fnd 111 and admission to the College of Education. A study of health programs in the elementary school. Emphasis is given to the teacher's responsibilities in the areas of health services, healthful school environment, and instruction in a comprehensive school health program.

132 Personal Health (3)
A study of factors that contribute to physical and mental well-being at all stages of the life cycle. Particular attention will be given to the identification and analysis of individual health behaviors.

134 Personal Physical Fitness (3)
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.

165 Physical Education Activities in the Elementary School (3)
Objectives of physical education for the elementary school child with applications of choice of activities, organization of program, theory, and practices.

190 Clinical Experience in Physical Gerontology (3)
(Same as Gerontology 190.) Early supervised experience in gerontological physical activity programming. Seminar precedes and accompanies clinical experience.

193 Clinical Experience in Youth Sport Programs (3)
Supervised clinical experience in youth sport programs. Seminar precedes and accompanies clinical experience.

204 Special Topics in Physical Education (1-3)
Prerequisite: Consent of instructor. Independent study through readings, reports, field study, or research.
220 Teaching of Skills: Movement and Rhythms (3) 
Prerequisite: Junior Standing and Phy Ed 283. Study of 
skill analysis and techniques of teaching fundamental 
movement skills and rhythmical activities. Emphasis will 
be given to biomechanical analysis of movement, 
application of motor learning concepts, and design and 
preparation of appropriate instructional experience and 
materials.

221 Teaching of Skills: Dance (3) 
Prerequisite: Junior Standing. Study of skill analysis and 
techniques of teaching dance in school physical education 
programs. Emphasis will be given to biomechanical 
analysis of movement, application of motor learning 
concepts, and design and preparation of appropriate 
instructional experience and materials. Dance forms 
studied will be folk, square, ballroom, modern, jazz and 
creative.

222 Teaching of Skills: Grades PK-4 (4) 
Prerequisite: Phy Ed 282 and admission to Teacher 
Education Program. Study of skill analysis and techniques 
of teaching developmental games, education gymnastics 
and perceptual-motor activities. Emphasis will be given to 
biomechanical analysis of movement, application of 
motor learning concepts, and design and preparation of 
appropriate instructional experience and materials.

223 Teaching of Skills: Grades 5-9 (4) 
Prerequisite: Junior Standing. Study of skill analysis and 
techniques of teaching track and field, outdoor education, 
soccer, softball, flag football, basketball, and volleyball. 
Emphasis will be given to biomechanical analysis of 
movement, application of motor learning concepts, and 
design and preparation of appropriate instructional 
experience and materials.

224 Teaching of Skills: Grades 9-12 (4) 
Prerequisite: Junior Standing. Study of skill analysis and 
techniques of teaching racquet sports, aquatics, bowling, 
golf, archery and team handball. Emphasis will be given to 
biomechanical analysis of movement, application of 
motor learning concepts, and design and preparation of 
appropriate instructional experience and materials.

234 Teaching Wellness and Health-Related Fitness (4) 
Prerequisite: PHY ED 280 or the equivalent, or consent of 
the instructor. Study and techniques of teaching wellness 
and health-related physical fitness concepts across the life 
span. Evaluation, interpretation, and application of 
wellness concepts to the individual and groups.

261 Physical Activity for the Exceptional Learner (2) 
Prerequisites: Spc Ed 311 and Spc Ed 313. A study of the 
special physical activity and exercise needs, interests, and 
problems of the exceptional learner, with considerable 
emphasis on the development of methods and 
competencies in modifying physical activities.
282 Physical Growth and Motor Development (3)
Prerequisite: Psychology 270 or Psychology 271. 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.

283 Kinesiology (3)
Prerequisite: Phy Ed 280. Study of the biomechanics of human motion with particular application to performance in sport activities.

284 Physiology of Human Exercise (3)
Prerequisite: Phy Ed 280. Study of the physiological effects of human exercise, training, and sport activities upon the human body; understanding and evaluation of physical fitness components, with consideration given also to areas including work, fatigue, nutrition, age, sex, and environment.

285 Sports Medicine (3)
Prerequisite: Phy Ed 280 or equivalent. A study of the prevention and care of athletic/sport participation injuries. Emphasis is given to proper conditioning and training of the sport participant and on emergency responses, including CPR certification.

287 Seminar in Exercise Science (3)
Prerequisites: Phy Ed 283, 284, or 285. A review of current topics in the area of exercise science. Focus is on research and practice in various subdisciplines in the field. An emphasis will be placed on application of research to professional situations. Some field experience may be required.

290 Student Teaching in Physical Education: PK-5 (5)
Prerequisites: Admission to Student Teaching. Clinical teaching experience in physical education settings in the schools under university and school supervision. Required for all majors in physical education receiving certification in physical education, Grades PK-5.

291 Student Teaching in Physical Education 5-9 (5)
Prerequisite: Admission to Student Teaching. Clinical teaching experience in physical education settings in the schools under university and school supervision. Required for all majors in physical education, Grades 5-9.

292 Student Teaching in Physical Education: 9-12 (5)
Prerequisite: Admission to Student Teaching. Clinical teaching experience in physical education settings in the schools under university and school supervision. Required for all majors in physical education receiving certification in physical education, Grades 9-12.

312 Management of Sports Programs (3)
Prerequisite: Consent of instructor. A study of administrative theory, roles, responsibilities, and functions in the management of sports programs.

330 Prescribing Physical Activity (3)
(Same as Gerontology 330.) Prerequisite: Phy Ed 280 or consent of instructor. Prescription of physical activity 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 physiological and biomechanical research.

331 Adult Exercise Leadership (3)
Prerequisites: Phy Ed 284 or equivalent. A study of the roles, functions, and skills necessary to become certified as an American College of Sports Medicine Health/Fitness Instructor for adult exercise programs.

340 Community Health Education (3)
Prerequisites: Tch Ed 211 or equivalent, junior or graduate standing, or permission of instructor. Study of community health issues and programs, within the school and the community, including spread and control of communicable diseases. Treatment and prevention programs, community resources, and educational issues for both communicable and chronic diseases will be examined.

348 Teaching Health in the Secondary School: Grades 9-12 (3)
Prerequisites: Tch Ed 211 or equivalent, junior or graduate standing, or permission of instructor. Study of methods of health education in the secondary school. Class will examine instructional program, ways to provide healthful environment in the school, and health services for high school student.

380 Nutrition for Human Performance (3)
A study of human nutrition and its relationship to human performance. Consideration is given to nutrients—function, food source, health concerns and implications, and energy intake and expenditure. Special consideration is given to the following: 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.
390 Student Teaching in Physical Education III (5)
Prerequisites: Phy Ed 291 or equivalent and admission to student teaching. Clinical teaching experience in physical education settings in the school under university and school supervision with seminar included. For students who wish an additional student teaching experience.

476 Social Inquiry of Sport (3)
Prerequisite: Phy Ed 276 or consent of instructor. A study of basic social processes in sport, such as socialization, social facilitation, and assimilation.

478 Problems and Research in Physical Education (3)
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.

482 Life Span Perceptual and Motor Development (3)
Prerequisite: Phy Ed 282 or consent of instructor. A study of sensory and perceptual development and change, and the age-related qualitative and quantitative changes in motor skill. Both current theory and current empirical findings are stressed. Attention is given to methods of structuring learning environments to maximize development. Study is from a life span perspective.

483 Biomechanics of Sport Techniques (3)
Prerequisite: Phy Ed 283 or consent of instructor. A study of the biomechanical concepts important to analysis of techniques used in selected sports. Explores recent research findings on efficient sports techniques. Provides experience in the analysis of skill performance.

484 Physiological Bases of Physical Performance (3)
Prerequisites: Phy Ed 280 and Phy Ed 284 or consent of instructor. Physiological bases and contemporary trends in the study of human performance and exercise stress; will analyze research literature and study experimental strategies with the focus upon application to teaching and coaching.

485 Theory of Exercise and Cardiovascular Disease Risk Factor Management (3)
Prerequisite: Completion of Phy Ed 484 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.

490 Internship (1-10)
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.
492 Directed Readings in Curriculum and Instruction (1-6)
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 and curriculum and instruction.

494 Directed Readings in Motor Behavior (1-6)
Prerequisites: Graduate standing, one graduate course in motor behavior, and consent of instructor. Independent study into the current research, literature, and issues in the area of motor behavior.

497 Problems (1-10)
Prerequisite: Consent of instructor. Selected problems to meet the needs of individual students.

Secondary Education (Sec Ed)

162 Computer Keyboarding and Formatting (3)
Prerequisite: Intermediate typewriting or equivalent. Review of keyboarding techniques and skills; development of speed and accuracy; instruction in the preparation of business and professional papers and forms with emphasis on formatting and information processing skills.

204 Seminar: Business Education Student Teaching (1)
Prerequisites: Completion of all required courses in major and/or certification emphasis area. To be taken concurrently with student teaching. Application of theory, methods, and techniques to the teaching of business subjects in grades 7-12.

208 Mathematics Teaching Intern Seminar (1)
Prerequisite: Concurrent enrollment in Sec Ed 290. A seminar in the integration of mathematics curricula, educational philosophy, teaching strategies, and instructional technology in the classroom setting. To be taken concurrently with Secondary Student Teaching, Sec Ed 290.

209 American Government for the Secondary Classroom (3)
Same as POL SCI 209. Prerequisites: Sec Ed 213 and POL SCI 11, graduate standing or consent of 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 themes of American government, on expanding bibliography, and on choosing methods of inquiry for use in an interactive classroom. Either History/Sec Ed 257 or 258 or Political Science/Sec. Ed. 209 must be taken the same semester as History/Sec Ed 255 except with special consent of the Social Studies Coordinator. Can be counted towards the Political Science major requirement, but not the American Politics subgroup. Counts towards Social Studies Certification.

213 Techniques of Secondary School Teaching and Field Experience (4)
Prerequisites: Ed Fnd 111 and admission to the teacher education program. Activities and interaction of teachers and students in secondary schools. Included also is an analysis of teaching, learning, and field observations in secondary classrooms. Recommended that Sec Ed 213 be taken during the first semester of the junior year prior to special methods courses.

232 The Curriculum and Methods of Teaching English (3)
(Same as English 262.) Prerequisites: Sec Ed 213 and a near major in the subject matter. 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. Includes field experiences. 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. This course must be completed in residence.

240 Curriculum and Methods of Teaching Physical Sciences (3)
(Same as Chemistry 280 and Physics 280.) Prerequisite: Sec Ed 213 and a near major in the subject matter. 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. To be taken prior to student teaching. This course must be completed in residence.

246 The Curriculum and Methods of Teaching Mathematics (3)
Prerequisites: Sec Ed 213 and a near major in the subject matter. 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.
255 The Curriculum and Methods of Teaching History and Social Studies (3)
( Same as History 255.) Prerequisite: Junior standing and Sec Ed 213. 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. Attention is directed also toward learning the techniques and research tools of the scholar in the fields of history and social studies. May not count toward history hours required for history major. Must be completed prior to student teaching. This course must be completed in residence.

256 Social Studies Teaching Intern Seminar (1)
( Same as History 256.) Prerequisite: Must be enrolled concurrently in student teaching. Addresses the application of educational philosophy, social studies curriculum, teaching strategies, and instructional technology in the classroom setting. Offered concurrently with Secondary School Student Teaching, Sec Ed 290.

257 United States History for the Secondary Classroom (3)
( Same as History 257.) 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 38-hour history major requirement, but can be counted towards the 45-hour maximum and for Social Studies Certification.

258 World History for the Secondary Classroom (3)
Prerequisite: (Same as History 258.) 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. Particular emphasis will be placed on defining the broad and connecting themes of World history, on expanding bibliography, and on choosing methods of inquiry for use in an interactive classroom. Cannot be counted towards the minimum 38-hour history major requirement, but can be counted towards the 45-hour maximum and for Social Studies Certification.

261 Methods of Teaching Keyboarding and Formatting (3)
Prerequisite: Intermediate Typewriting or equivalent. Instruction in the methods and techniques used to teach keyboarding and document formatting.

263 Methods of Teaching Accounting (3)
Prerequisites: BA 140, BA 145, or equivalent. Methods and techniques of teaching data processing and accounting in the secondary schools.

264 Methods of Teaching Basic Business Subjects (3)
Prerequisites: Econ 51 or equivalent, BA 206 and/or BA 256. Methods and techniques of teaching basic business, business law, economics, consumer economics, and business principles and management in the secondary school curriculum.

267 The Secondary Business Curriculum (3)
Prerequisite: Ed Fnd 111 or equivalent or consent of instructor. Study of the scope and sequence of business education courses in the high school curriculum. Attention is directed toward the history of business education, curricular change, standards, evaluation, and research in the field of business education.

270 English Student Teaching Seminar (1)
(Same as English 270.) Prerequisite: Sec Ed 290. A seminar in the integration of English curricula, educational philosophy, teaching strategies, and instructional technology in the classroom setting. To be taken concurrently with Secondary Student Teaching, Sec Ed 291.

273 The Curriculum and Methods of Teaching Art (3)
Prerequisites: Sec Ed 213 and a near major in the subject matter. A study of the scope and sequence of art 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 art. To be taken concurrently with student teaching.

274 Curriculum and Methods of Teaching Foreign Language (3)
(Same as FLL 264.) Prerequisites: Sec Ed 213 and passing the departmental language skill test. 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. Attention is also directed toward learning the techniques and research tools of the scholar in the field of foreign language. To be taken prior to student teaching. This course must be completed in residence.
275 Philosophic and Practical Foundations of the Secondary Music Education Curriculum (1)
(Same as Music 267.) Prerequisites: Music 131, Music 257/Ele Ed 277, and Ed Fnd 111; concurrent registration in Music 261, Music 268/Sec Ed 276 or Music 269/Sec Ed 277 and Music 270/Sec Ed 278 or Music 271/Sec Ed 279. For the music education major. A study of the secondary school music program: curricular objectives, philosophy, and general administrative procedures common to all secondary music classes. This course must be completed in residence.

276 Curriculum and Methods of Teaching Instrumental Music I (2)
(Same as Music 268.) Prerequisites: Music 131, 145, 151, 161, Ed Fnd 111, two of the following: Music 25, 26, 27, 28. Concurrent registration in Music 257/Ele Ed 277. 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.

277 Curriculum and Methods of Teaching Middle School/Junior High School General Music (2)
Prerequisites: Music 131, Music 257/Ele Ed 277, and Ed Fnd 111. (Same as Music 269.) Concurrent registration in Music 267/Sec Ed 275 and Music 271/Sec Ed 279. For the music education major. A study of the middle school/junior high school general music program emphasizing a conceptually based curriculum, objectives, methodologies, materials, innovations, classroom organization, and management. This course must be completed in residence.

278 Curriculum and Methods of Teaching Instrumental Music II (2)
Prerequisites: Music 131, 152a, 162, Music 257/Ele Ed 277, Music 268/Sec Ed 276, Ed Fnd 111, three of the following: Music 25, 26, 27, 28. (Same as Music 270.) Concurrent registration in Music 267/Sec Ed 275. A continuation of Music 268/Sec Ed 276. Topics include large group rehearsal techniques, program development, administrative procedures, and evaluation. This course must be completed in residence.

279 Curriculum and Methods of Teaching Secondary Choral Music (2)
(Same as Music 271.) Prerequisites: Music 131, Music 257/Ele Ed 277, and Ed Fnd 111; concurrent registration in Music 261, Music 267/Sec Ed 275, Music 269/Sec Ed 277. For the music education major. A study of the secondary school choral music program: curriculum, methods, teaching techniques, organization, and administrative procedures for choral performance classes. This course must be completed in residence.

285 Curriculum and Methods of Teaching Life Sciences (4)
(Same as Biology 285.) Prerequisites: Sec Ed 213 and a near major in biology. A study of 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/learning and field experience observations in secondary school classrooms will be integrated into classroom activities and discussions. This course must be completed in residence.

286 Laboratory in Teaching Life Sciences (2)
(Same as Biology 286.) Prerequisite: Sec Ed 213. Discussion, development, utilization, and evaluation of equipment, materials, and techniques applicable to instruction in the life sciences. Must be taken concurrently with Biology 285/Sec Ed 285.

290 Secondary School Student Teaching (12)
Prerequisites: Sec Ed 213 and admission to student teaching. Clinical teaching experience in secondary school classrooms under university and school supervision. To be taken after appropriate curriculum and methods course.

293 Student Teaching in Music Education, K-6 (5)
Prerequisites: Ele Ed 210, Sec Ed 213, Music 257/Ele Ed 277, Music 267/Sec Ed 275, Music 118, Music 268/Sec Ed 276, Music 270/Sec Ed 278 (instrumental emphasis majors); Music 120, Music 269/Sec Ed 277, Music 271/Sec Ed 279 (Choral/vocal emphasis majors); and admission to student teaching. Must be taken "in block" with Sec Ed 294 and must immediately precede it in the semester. Clinical teaching experience in music education settings in the schools under university and school supervision with seminar included. Required of all majors in music education.

294 Student Teaching in Music Education, 7-12 (5)
Prerequisite: Sec Ed 293. Must be taken "in block" with Sec Ed 293 and must immediately follow it in the semester. Clinical teaching experience in music education settings in the schools under university and school supervision with seminar included. Assignments will be in different settings from those of Sec Ed 293. Required of all majors in music education.

305 Writing for Teachers (3)
(Same as English 305.) Prerequisite: English 210 or a comparable course in advanced composition. Designed for prospective as well as in-service teachers, the course includes: (1) writing--short papers to be shared in workshop groups; (2) reading--current theory and research on writing and the implications for teachers; (3) teaching--classroom activities that foster growth in writing.
315 The Middle Level School (3)
Prerequisites: Ed Fnd 111 or equivalent and admission to teacher education program. An in-depth study of the philosophical and historical bases of the goals and organization of middle level schools, including a review of research as the bases for current trends and practices.

360 Administration and Supervision of Office Personnel (3)
Prerequisite: Consent of instructor. An advanced course in office administration and supervision designed to meet the needs of business personnel involved in administrative office management work; emphasis on updating leadership and human relations skills, organizing, planning, controlling office services, and business data processing systems.

361 Information Processing: Applications and Techniques of Teaching (3)
Prerequisite: Sec Ed 162, Sec Ed 261, or equivalent, or consent of instructor. The course will focus on the needs of preservice and in-service teachers who instruct courses in information processing. Special emphasis placed on organizing and managing an information processing lab, software applications, integration of information processing concepts into existing courses, teaching strategies, and current information processing research.

362 Teaching Alpha Writing Systems: Theory and Application (3)
Prerequisite: Consent of instructor. A study of alphabetic shorthand writing systems. Instruction in the theory and application of alpha writing systems. Emphasis on teaching techniques, learning activities, evaluation, testing, and current research.

367 Methods of Teaching Desktop Publishing Concepts and Procedures (3)
Prerequisite: Sec Ed 162; Sec Ed 261 or consent of instructor. This course will focus on the integration of text and graphics using graphic design and electronic page assembly with a microcomputer-based system. Special emphasis placed on Desktop Publishing concepts, methods, and techniques. Attention is directed toward teaching techniques, learning activities, evaluation and current research.

374 Foreign Language Teaching Seminar (2)
(Same as FLL 364.) Prerequisite: Concurrent enrollment in Sec Ed 290 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 274, Curriculum and Methods, with an emphasis on specific practical skills. To be taken concurrently with Sec Ed 290, Student Teaching.

386 Teaching Reading in Secondary School Content Areas (3)
Prerequisite: Ed Fnd 111 or equivalent. Methods and materials for improving reading and study strategies in content area classes in upper grades.

391 Field Study in Secondary Education (1-10)
Identification of specific problems in the area of secondary education. Course is conducted as a field study in the public schools. A maximum of 8 credit hours may be applied toward an advanced degree contingent upon adviser approval.

393 Student Teaching in Music Education, K-12 (5)
Prerequisite: Sec Ed 294 or equivalent and admission to student teaching. Clinical teaching experience in music Education settings in the schools under university and school supervision with seminar included. For students who wish an additional student teaching experience.

399 Science Teaching Intern Seminar (3)
(Same as Biology 399.) Prerequisites: Sec Ed 285 and Sec Ed 286. Addresses 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 290.

404 Seminar (1-10)

413 Secondary Teaching with Microcomputers (3)
Prerequisite: Educ 301 or consent of instructor. A course designed for teachers, department heads, and school administrators. Research and theory on microcomputer-assisted instruction as a teaching method in the secondary schools will be presented. Both hardware and software suitable for microcomputers will be used and analyzed.

414 Teaching the Gifted/Talented Student in Secondary School (3)
A survey of research and theory on teaching the gifted/talented student in secondary school. Ways to identify the gifted/talented with emphasis on teaching the gifted/talented in both heterogenous and homogenous secondary classrooms. Models of gifted/talented programs in a school setting.

415 The Secondary School Curriculum (3)
For secondary school principals, teachers, and superintendents. Present methods in curricular change and methods of curricular investigation.

416 Curriculum Construction for Secondary Schools (3)
Prerequisite: Sec Ed 415 or consent of instructor. Designed for those engaged in curriculum revision work and construction of new secondary school courses.
420 The Improvement of Secondary School Teaching (3)
For secondary school teachers, principals, and superintendents with considerable training in education and experience in teaching. Recent developments in secondary school teaching.

422 Individualizing Instruction in Secondary Schools (3)
This course surveys a variety of theoretical models and research findings related to individualized instruction in the secondary school and is designed for teaching and administrative personnel.

427 Supervision of Clinical Experiences in Teacher Education (3)
Prerequisites: Teaching experience and consent of instructor. A consideration of the clinical phase of the teacher education program, with special emphasis on student teaching. Examination of role responsibilities and supervisory practices. Study of professional literature for research findings, theoretical formulations, and recent developments in the field.

429 The Department Head (3)
This course emphasizes the role of the department chairperson as an educational leader. Theoretical concepts are related to sound practice. The potential for the job is discussed, as well as the roadblocks to successful execution. Appropriate for practicing department chairpersons, school administrators, or classroom teachers interested in acquainting themselves with this position.

430 Problems of Teaching English in the Secondary School (3)
A review of recent developments in the teaching of secondary English. Special attention is given to research involving instructional problems in urban and suburban schools. The course is designed for teachers, department heads, and supervisors in secondary English programs.

436 Gateway Writing Project (1-6)
(Same as English 490.) 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. Topics may vary. May be repeated for credit. No more than six hours may be applied toward the M.Ed. Counts toward the Certificate in Writing.

452 Problems of Teaching Social Studies in the Secondary Schools (3)
A review of recent developments in the teaching of secondary school social studies. Special attention is given to research and scholarship involving instructional and curricular problems, especially in the metropolitan St. Louis area. Emphasis is placed upon development of effective materials, techniques, and resources. The course is designed primarily for teachers and supervisors in secondary school social studies programs.

486 Techniques in Teaching Biology for Graduate Students (2)
(Same as Biology 486.) Prerequisites: Graduate standing and teaching assignment. Discussion and practice of techniques specific to instruction in the life sciences. Consideration will be given to teaching strategies, curriculum design, evaluation, instrumentation, and student teacher interactions. Recommended for all graduate students with teaching assistantships.

490 Internship (1-10)
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.

497 Problems (1-10)

Special Education (Spc Ed)

192 Field Experience in Special Education (3)
Intensive early field experience involving on-site observation and limited participation with exceptional individuals in schools and/or other Educational agencies. This course is open to all students.

242 Characteristics of Learning Disabilities (3)
A study of the divergent characteristics of children with perceptual impairments. This course consists of fifteen half-hour tapes, designed to offer instruction at an undergraduate level on the nature of children with learning disabilities, and the roles of educators, parents, and auxiliary personnel in diagnosis and remediation. Historical perspectives and future trends will be explored. The tapes are followed by student contact with the instructor, for discussion, work evaluation, and testing.

290 Student Teaching in Special Education I (5)
Prerequisites: Spc Ed 313, Spc Ed 320, Spc Ed 332 and admission to student teaching. Must be taken with Spc Ed 291 and must immediately precede Spc Ed 291 in the semester. Clinical teaching experience in special education classrooms in schools under university and school supervision. Required of all majors in special education.
291 Student Teaching in Special Education II (5)
Prerequisite: Spc Ed 290. Must be taken with Spc Ed 290, and must immediately follow Spc Ed 290 in the semester. Clinical teaching in special education classrooms in schools under university and school supervision. Assignments will be in different school districts, buildings, serving families of different socioeconomic and cultural backgrounds, and at different grade levels from those of the Spc Ed 290 assignments. Required of all majors in special education.

311 Sex Education for Exceptional Individuals (3)
Prerequisite: Consent of instructor. Course is designed to give teachers a thorough knowledge and understanding of the issues, problems, teaching techniques, and the current curricular resources of teaching sex education to handicapped individuals.

313 The Psychology and Education of Exceptional Individuals (3)
Prerequisite: Psychology 270 or Psychology 271 or equivalent. The psychology and education of individuals with special problems and/or abilities. Survey of theories and strategies for the learning-teaching process and of sources of assistance to educators and parents. Required in certification programs.

315 Speech and Language Problems of Exceptional Children (3)
Prerequisites: Ed Fnd 111, Spc Ed 313, and admission to the College of Education. Study of the problems associated with speech and language development and the techniques employed by classroom teachers to lessen these problems for children. Required for all majors in special education.

320 Behavior Management (3)
Prerequisites: Spc Ed 313 and an appropriate introductory course in the special education area of concentration. An in-depth exploration of various behavior control techniques that are particularly applicable to exceptional children. Students will be required to conduct at least one behavior modification project with exceptional children.

322 Inclusive Education: Theory and Practice (3)
Prerequisite: Spc Ed/Tch Ed 313 or Spc Ed 416, or equivalent. This course for general and special educators focuses on current theory, research, and practice of inclusion of students with disabilities in general education classrooms. Topics include instructional strategies, adaptations of curriculum, facilitation of friendship development and social support, consultation and collaboration with other professionals, and working with parents.

330 Introduction to Mental Retardation and Severe Handicapped (3)
Prerequisite: Spc Ed 313. An introductory course describing characteristics, classification, and causes of mental retardation and severe handicapped.

332 Educating Learners with Developmental Disabilities, Physical or other Health Impairments (3)
Prerequisites: Tch Ed 211, Spc Ed 313, and Spc Ed 345. Methods and techniques for educating learners with developmental disabilities, physical or other health impairments. Required of all who are preparing for certification in special education with endorsement in Developmental Disabilities or Cross-Categorical.

342 Career Education for the Special Needs Individual (3)
Prerequisite: Consent of instructor. This course is intended to provide information to teachers and other personnel charged with the responsibility of delivering career development services to special needs clientele. Topics including designing a K-12 career education curricula, techniques of improving job readiness for the unemployed and underemployed, and ways to utilize community employment resources for the handicapped.

345 Introduction to Emotional Disturbances and Learning Disabilities (3)
Prerequisite: Spc Ed 313. A comparative approach to these two areas of specialization regarding their history, etiologies, definition, prevalence, and service delivery systems.

347 Teaching Learners with Learning Disabilities (3)
Prerequisites: Spc Ed 313 and Spc Ed 345. Application of instructional techniques for learners with learning disabilities, including assessment for instruction, interdisciplinary teamwork, parental involvement, individualized education plans, and classroom techniques. Required for certification in special education of learners with learning disabilities or cross-categorical.

350 Teaching Learners with Emotional/Behavioral Disorders (3)
Prerequisites: Spc Ed 313 and Spc Ed 345. A course designed to instruct students in the management and instructional strategies necessary to the education of learners with emotional/behavioral disorders or cross-categorical.
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College of Education  
Teaching and Learning  

370 Sensory-Motor Development of the Severely Handicapped (3)  
Prerequisite: Spc Ed 330 or equivalent or consent of instructor. An examination of basic sensory-motor development and associated disorders to enable teachers to work more effectively with occupational and physical therapists. Basic techniques used by therapists are presented together with an exploration of the teacher's role regarding sensory-motor programming. Required for certification for teaching individuals with severe handicaps.

371 Methods and Curricula for Severely Handicapped (3)  
Prerequisite: Spc Ed 370 or consent of instructor. This course begins with the application of the clinical teaching model to the severely handicapped population regarding objectives, training methods, and program process monitoring. It also includes critical analysis of existing curricula and methods of classroom or living unit organization. Required for certification in Severe Handicapped.

372 Screening and Diagnosis of the Developmentally Delayed (3)  
Prerequisites: Ed Rem 310 or equivalent and Spc Ed 313. This course addresses the content, techniques, and special problems related to the assessment of handicapped individuals in the birth-to-five developmental range. Students gain experience in construction, administration, and interpretation of assessment tools used with low functioning handicapped individuals. Required for certification in Severe Handicapped and Early Childhood-Special Education.

382 An Introduction to Gifted Children (3)  
Prerequisite: Spc Ed 313. This course provides an introduction to gifted children. Their characteristics, cognitive abilities, special abilities, and creativity will be reviewed. Current problems, research, and issues concerning the gifted are covered.

384 The Education of Gifted Children (3)  
Prerequisite: Spc Ed 313. This course deals with methods, techniques, and curricular modifications necessary for the effective education of gifted children.

390 Student Teaching in Special Education III (5)  
Prerequisites: Spc Ed 291 or equivalent and admission to student teaching. Clinical teaching experience in special education classrooms in schools under university and school supervision with seminar included. For students who wish an additional student teaching experience.

405 Introduction to Braille (4)  
Braille reading and writing of standard English Grade 2 braille and braille mathematics will be introduced. Information on transcribing printed matter into braille and the use of writing devices and technical aids will be presented. The objectives of this class will be met over two semesters due to the large amount of information and high level of proficiency required. A literary braille test and transcription test must be passed at the end of the course.

412 Psychology of Exceptional Children (3)  
An in-depth analysis of the unique psychological problems of exceptional children and youth. Current psychological theories and research emphasized.

413 Organizational Foundations for Special Education (3)  
Prerequisite: Spc Ed 313 or equivalent. 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.

416 Current Research in Psychology of Learners with Disabilities (3)  
Prerequisite: Consent of instructor/adviser. Study of current trends, issues, and research in special education. Areas of investigation focus on major developments in disabilities, situations related to programming for projected needs, and considerations and utilization techniques with learners with disabilities. Students should have experience or an undergraduate background in the education of learners with disabilities prior to enrolling in this course.

421 Prescriptive Teaching of Learners with Disabilities (3)  
Prerequisite: Spc Ed 313 or equivalent. Course will instruct students on how to develop and implement prescriptive educational programs for learners with disabilities. Students will become familiar with prescriptive systems which will enable them to use various sources of information in response to learner remedial and developmental needs.

430 Introduction to Developmental Disabilities (3)  
Prerequisite: Spc Ed 313 or equivalent. An advanced study of the theoretical and methodological problems related to developmental disabilities. Particular emphasis on the application of current research findings to the problems confronting learners with developmental disabilities.

431 Education of Learners with Developmental Disabilities (3)  
Prerequisite: Spc Ed 430. A systematic study of current educational practices and procedures for the education of learners with developmental disabilities. Methods and materials are stressed.
443 Introduction to Learning Disabilities (3)  
Prerequisite: Spc Ed 313 or equivalent. 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 disabilities.

444 Education of Learners with Learning Disabilities (3)  
Prerequisite: Spc Ed 443. Systematic study of current educational practices and procedures for the education of learners with learning disabilities. Methods and materials are stressed.

450 Introduction to Emotional/Behavioral Disorders (3)  
Prerequisite: Spc Ed 313 or equivalent. 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.

452 Education of Learners with Emotional/Behavioral Disorders (3)  
Prerequisite: Spc Ed 450. Systematic study of current educational practices for learners with emotional/behavioral disorders. Methods and materials are stressed.

462 Introduction to Early Childhood Special Education (3)  
Prerequisite: Spc Ed 313 or equivalent. A 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.

463 Curriculum, Methods, and Materials for Early Childhood Special Education (3)  
Prerequisites: Spc Ed 462. 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.

481 Introduction to Orientation and Mobility (3)  
Prerequisites: Spc Ed 366. This course is an introduction to the principles of orientation and mobility and is designed to acquaint the student with the effects of visual impairment on spatial orientation and movement within the environment. Topics will include instructional strategies for developing prerequisite concepts, basic travel techniques, structuring the classroom environment, low vision orientation and mobility, and orientation and mobility devices for individuals who are visually impaired.

483 Instructional Strategies and Technology for Students with Visual Impairment (4)  
Prerequisites: Spc Ed 366. This course focuses on meeting the instructional needs of visually impaired and blind elementary and secondary students through the use of curricula adaptations and technology. Topics include designing and implementing instructional plans to teach keyboarding skill, math, science, and social studies; listening and recording devices; transition; and the use of computers with students who are visually impaired. The objectives of this class will be met through in class, lab, and out of class activities. Students will be expected to have an ongoing interaction with students who are visually impaired through directed experiences.

490 Internship (1-10)  
Prerequisite: Consent of instructor/adviser. 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 includes planning, research, evaluation, and related professional activities.

492 Practicum in Special Education (3-6)  
Prerequisite: Two courses in 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.

493 Practicum with Students with Visual Impairment (6)  
Prerequisites: Spc Ed 366, 405, 481, 482, 483 and all required course work for certification for Teachers of Blind and Partially Sighted Students. This practicum focuses on the techniques and materials necessary to education students who are visually impaired and on procedures for evaluating their effectiveness. This supervised practicum involves both field placement and classroom instruction. It is limited to advanced students in the area of Blind and Partially Sighted.

497 Problems (1-10)  
Prerequisite: Spc Ed 313 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.
Teacher Education (Tch Ed)

210 Introduction to Teaching (3)
Explores the multiple roles and functions of professional teaching including: communication, leadership, management skills, use of technology, and identification of needs of diverse populations. Portfolio preparation will be introduced. Fourteen clock hours of classroom observation are required.

211 Introduction to American Schools (3)
One of three introductory, prerequisite courses to the Teacher Education Program. An examination of selected concepts and principles underlying American public education. Required field experience of eight clock hours complements class assignments.

212 Introduction to Learners and Learning (3)
Prerequisites: Psych 3. (Same as Ed Psy 212.) Foundational study of the development of infants, children and adolescents focusing on the role of appropriate educational environments in fostering positive physical, cognitive, social and moral outcomes. Reading relevant research will be combined with experiences in the field and technology-based assignments to investigate both biological and sociocultural forces that shape the development process.

310 Introduction to Instructional Methods (3)
Prerequisites: Tch Ed 210, 211, 212, or equivalent and admission to Teacher Education Program. Beginning methods course for K-12 teachers. Skill development in planning instruction, selecting content, use of various teaching methods, designing assessment, developing classroom climate and management strategies. Participation in professional development through observing students in a school setting, micro-teaching, using educational technology, and portfolio development. Ten hours per semester of field experiences required.

312 The Psychology of Teaching and Learning (3)
Prerequisites: Tch Ed 210, Tch Ed 211, Tch Ed 212 or equivalents and admission to Teacher Education program. (Same as Ed Psy 312.) Application of the principles of psychology to an understanding of the dynamics of teaching behavior and learning behavior. Involves both theoretical and practical approaches to analysis of the learning environment of the school. Required of all who are preparing to teach.

313 The Psychology and Education of Exceptional Individuals (3)
Prerequisites: Tch Ed 210, 211, 212 or equivalent, and admission to Teacher Education program. (Same as Spc Ed 313.) Provides overview of special education, including terminology, educational definitions, characteristics of students with special needs, and legislation related to exceptional individuals. Issues related to education of these students, including early intervention, inclusion, multicultural influences, and transition services. Required in certification process.

315 Literacy Learning and Instruction (3)
Prerequisites: Admission to the Teacher Education program. May take concurrently with Tch Ed 312 and Tch Ed 313 or equivalents; may not be taken before Tch Ed 312 and Tch Ed 313 or equivalents. Methods, materials, frameworks, and technology for the effective teaching of literacy to young children, children with special needs, and children in elementary education settings. Emphasis on role of language experience, phonics, semantics, syntactics, pragmatics, schema theory, and metacognition in literacy development. Observation, assessing children's literacy interests and development, and teaching lessons in a school classroom setting are required.

454 Cultural Diversity in Teaching (3)
Prerequisite: Graduate standing. An advanced study, application, and discussion of pedagogical issues associated with cultural diversity and human origin. The course will emphasize application of research in order to help teachers develop effective strategies for preparing teachers to integrate.
Evening College
Administration

Everette E. Nance, Associate Professor, Dean
Ed.D., Western Michigan University
Lawrence D. Friedman, Associate Professor, Associate Dean
Ph.D., University of Wisconsin

General Information

The Evening College provides undergraduate degree programs for students who, for various reasons, choose to attend evening classes. Thirty-one degree programs are offered through the Evening College. Courses needed as prerequisites for graduate programs are available. In addition, persons who want to maintain their professional competence or broaden their educational background without pursuing degree work will find a broad array of courses which may be taken for credit or on an audit basis.

Recognizing the value of continuing education and career advancement, many St. Louis institutions, businesses, and industries encourage their employees to avail themselves of the educational opportunities offered by the Evening College. The Veterans Administration has approved either full-time or part-time study for educational benefits.

Since most Evening College students are employed full time, they normally carry less than a full academic load. To enable students to carry as many courses as they wish, the Evening College schedules classes after 5 p.m. and limited offerings on Saturday mornings. Classes and degree programs are conducted according to the same standards as the day program.

Course Areas The Evening College offers courses in the following areas: anthropology, art, astronomy, biology, business administration, chemistry, communication, computer science, criminology and criminal justice, economics, education, English, French, geography, geology, German, history, mathematics, music, philosophy, physics, political science, psychology, sociology, social work, and Spanish.

Academic Advising and Program Planning

New students are encouraged to consult with an academic adviser to develop programs appropriate to their needs. Appointments may be made with an academic adviser by calling or stopping by the University Advising Center, 225 Millennium Student Center, (314)516-5161. All students may come to the University Advising Center for advising, see a faculty adviser in their department, or see a professional adviser in their college, school or professional school.

Facilities The facilities of the University of Missouri-St. Louis, including the computer center, library, laboratories, cafeteria, cashiers, bookstore, financial aid, health service, and admissions office, are open in the evening. Evening College students are also eligible to participate in any of the university sports programs that interest them. The athletic facilities of the Mark Twain Building are available.

Alpha Sigma Lambda The Beta Epsilon Chapter of Alpha Sigma Lambda is a national honorary scholastic society for Evening College students. To be eligible for membership, a student must have completed at least four semesters of college or university work, completed a minimum of 24 semester hours in the Evening College, have a cumulative grade point average of 3.2, and be enrolled in the Evening College.

Degree Programs

General Education Requirements All candidates for a degree through the Evening College must meet the university general education requirements.

Bachelor of Arts Majors available for the B.A. degree are biology, chemistry, communication, economics, English, history, mathematics, physics, political science, psychology, and sociology. For further information, consult the appropriate departmental section of the College of Arts and Sciences portion of this Bulletin.

Bachelor of Science The B.S. degree is available in applied mathematics, biology, chemistry, computer science, criminology and criminal justice, economics, mathematics, physics, and sociology. For further information, consult the appropriate departmental section of the College of Arts and Sciences portion of this Bulletin.

Specialized Bachelor's Degrees Also available are the bachelor of science in accounting (B.S.A.), bachelor of science in business administration (B.S.B.A.), the bachelor of science in management information systems (B.S.M.I.S.), the bachelor of science in education (B.S.Ed.), and the bachelor of science in public policy and administration (B.S.P.A.). The B.S. in education offers specialization in any of the following: early childhood education, elementary education, middle school/junior high school, special education, and secondary education. Students should consult the appropriate departmental section of the College of Arts and Sciences, the College of Business Administration, or the College of Education of this Bulletin.

Bachelor of Social Work The B.S.W. degree program is designed to prepare persons for employment in social welfare agencies, schools, hospitals, correctional institutions, or day care, geriatric, or rehabilitation centers. Individuals currently working in social welfare settings can improve their skills or increase their opportunities for job advancement. For further information, consult the Social Work section of this Bulletin.
The Bachelor of General Studies degree (B.G.S.) is also offered through the Evening College. It is designed to provide mature students with a meaningful alternative to traditional degree programs. It appeals to a variety of students whose circumstances, goals, and aspirations are different from those of the "typical" college student. The B.G.S. program provides the flexibility needed to enable students, with careful advisement, to develop individualized programs of study.

Admission Requirements for the B.G.S. Program
Candidates for the B.G.S. degree must be admitted to the Evening College and must complete an application for admission to the program. Applications must be approved by the General Studies Committee and the Evening College dean. The criteria for admission are:

- Students must have reasonable programs of study, and be in good academic standing.
- Students must have demonstrated the equivalent of academic proficiency required for any other undergraduate degree at UM-St. Louis.
- Study programs should be structured to meet students' unique educational goals and should not be readily available under any other UM-St. Louis degree program.

Degree Requirements for the B.G.S. Program

General Education Requirements
Students must complete the university's general education requirements. For details refer to the general education requirements section of this Bulletin.

Personal Emphasis Area In consultation with a faculty adviser, students shall develop a personal emphasis area of at least 30 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 of A, A-, B+, B, B-, C+, C, C-, D+, D, D-. Regardless of the focus, theme, or purpose, the personal emphasis area should result from self-examination and contribute to self-realization and an advanced level of academic competence and achievement. The program must be approved by the faculty adviser, dean, and General Studies Committee. Students and advisers periodically review the program and make appropriate modifications where necessary, subject to the dean's approval.

Hour and Grade Requirements The degree requires completion of 120 semester hours with a 2.0 grade point average overall and in the personal emphasis area. No more than 30 hours may be taken in any 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 UM-St. Louis, of which 15 hours must be in the personal emphasis area and completed after admission to the B.G.S. program. No more than 18 hours may be taken on a satisfactory/unsatisfactory basis. 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).

Credit for Experience, Special Projects, Examinations, and Nontraditional Forms of Study Credit may be earned through the College Level Examination Program in accordance with university policy or through examinations proposed or approved by university departments. Credit also may be earned through correspondence study, supervised independent research study, and college-level courses offered by television or similar education media. Students are responsible for obtaining approval for credit applied under this option.

Students may receive credit for vocational experience, community service projects, or cultural activities after they have completed 24 hours of course work in residence.

Vocational Experience Credit may be granted for vocational experience when related to the personal emphasis area. Credit cannot exceed 3 semester hours for each year of experience with a maximum of 12 hours allowed only in exceptional circumstances. Petitions for vocational experience credit must be accompanied by a job description verified by the employer or similar appropriate evidence. Credit may be granted only upon recommendation of the faculty adviser and approvals of the dean and the General Studies Committee.

Community Service Projects/Cultural Activities Credit not exceeding 6 hours may be earned for participation in approved community service projects or cultural activities. 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, dean, and General Studies Committee. Students must submit a written report approved by the supervisor upon completion of the projects or activities. Credit for vocational experience or community service/cultural activities may be applied toward the elective credits required for the degree but may not be used to complete the personal emphasis area or general education requirements.

Students must file a degree application form in the Evening College at least one year before the expected graduation date.

Bachelor of Health Science
The bachelor of health science degree (B.H.S.) is designed to prepare students for two career areas: clinical laboratory science (CLS) and cytotechnology (CT). The B.H.S. combines course work taken at UM-St. Louis with clinical experiences at Barnes Jewish Hospital and throughout the BJC Systems of member hospitals and clinics.
The clinical laboratory science program prepares students to perform analytical tests on body fluids, cells, and products. The students will learn to identify possible discrepancies in data, confirm abnormal results, and develop solutions to problems concerning the generation of laboratory data.

The cytotechnology program prepares students to be knowledgeable about all of the normal cells from numerous body sites, as well as those changes encountered due to neoplasia, infectious agents, viruses, and other causative agents. Graduates will be able to perform cytologic evaluations of body fluids, cells, and fine-needle aspirations.

The B.H.S. curricula was developed in collaboration with the Jewish Hospital College of Nursing and Allied Health. Consult the Biology Department section of this Bulletin for course descriptions and prerequisites.

### Clinical Laboratory Science

Courses (specific course or distribution area and credits):

- **Humanities (9)**
  - Bio 11, Intro Biology I (5)
  - Bio 113, Human Phys and Anat I (4)
  - Bio 114, Human Phys and Anat II (4)
- **State Requirement (3)**
- **Bio 216, Microbiology (3)**
- **Bio 218, Microbiology Lab (2)**
- **Bio 317, Immunobiology (3)**
- **Bus 103, Comp and Info Systems (3)**
- Chem 11, Intro Chemistry I (5)
- Chem 12, Intro Chemistry II (5)
- Chem 262, Organic Reactions (3)
- Chem 263, Tech of Organic Chem (2)
- Com 30 or 40, Interpersonal or Public Speaking (3)
- Eng 10, Freshman Comp (3)
- Eng 213, Technical Writing (3)
- Math 30, College Algebra (3)
- Nurs 115, Pathophysiology (3)
- Psy 201, Psych Stats (4)
- Soc 10, Intro to Sociology (3)

*Bio 116 and 118 may also fulfill these requirements.

### Clinical requirements:

- Bio 303a, Fundamentals and Trends in Role Development (3)
- Bio 303b, Clinical Bacteriology (3)
- Bio 303c, Bacteriology Practicum (4)
- Bio 303d, Parasitology and Mycology (2)
- Bio 303e, Clinical Immunology (2)
- Bio 303f, Immunology Practicum (1)
- Bio 303g, Immunohematology (3)
- Bio 303h, Immunohematology Practicum (3)
- Bio 303i, Hematology (4)
- Bio 303j, Hematology Practicum (3)
- Bio 303k, Clinical Chemistry (3)
- Bio 303l, Chemistry Practicum (4)
- Bio 303m, Leadership and Mgmt CLS (3)
- Bio 393, Res Methods Health Sci (3)

Free elective credits: 15 credit hours

*Bio 213 and 371 are recommended.

### Cytotechnology

Courses (specific courses or distribution area and credits):

- **Humanities (9)**
- **State requirement (3)**
- Bio 11, Intro Biology I (5)
- Bio 113, Human Phys and Anat I (4)
- Bio 114, Human Phys and Anat II (4)
- Bio 216, Microbiology (3)*
- Bio 218, Microbiology Lab (2)*
- Bio 317, Immunobiology (3)
- Bus 103, Comp and Info Systems (3)
- Chem 1, Gen Chem I (3)
- Chem 2, Gen Organic Chemistry (3)
- Chem 3, Gen Chem Lab (2)
- Com 30 or 40, Interpersonal or Public Speaking (3)
- Eng 10, Freshman Comp (3)
- Eng 213, Technical Writing (3)
- Math 30, College Algebra (3)
- Nurs 115, Pathophysiology (3)
- Psy 201, Psych Stats (4)
- Soc 10, Intro to Sociology (3)

*Bio 116 and 118 may also fulfill these requirements.

### Clinical requirements:

- Bio 302a, Intro to CT (3)
- Bio 302b, Female Genital Tract I (4)
- Bio 302c, Female Genital Tract II (3)
- Bio 302d, Processing Lab (2)
- Bio 302e, Respiratory and Oral CT (3)
- Bio 302f, Body Fluid Cytology (3)
- Bio 302g, Gastro Genitourinary CT (3)
- Bio 302h, Fine Needle Aspiration (4)
- Bio 302i, Adv Practices in CT (12)
- Bio 302j, Leadership and Mgmt CT (4)
- Bio 393, Res Methods Health Sci (3)

Free elective credits 17 credit hours

Request for additional information concerning the B.H.S. degree and academic advising can be obtained through the Evening College.

### Minors

**Minor in Employee Training and Development**

The Evening College and the College of Business Administration offer a minor in employee training and development. The requirements are:
BA 318, or Psych 318, Industrial and Organizational Psychology
BA 319, Employee Training and Development
Ed Psy 312, Psychology of Teaching and Learning
Ed Tec 340, Selection and Utilization of Educational Media
Psych 219, Research Methods
One additional course selected from these approved electives:
BA 309, Human Resources Management
Comm 141, Business and Professional Speaking
Sociology 354, Occupations and Their Work Settings

Students should consult with an adviser when planning their programs. A 2.0 grade point average is required for the minor. No courses may be taken on a satisfactory/unsatisfactory basis. At least 12 credits of those required must be completed in residence at UM-St. Louis.

This minor is designed for human resources managers in small companies and training managers or human resources specialists in larger companies. The required 18 hours, including the approved elective course, enable the student to be exposed to different skills essential for the occupational area.

Other minors in business administration include accounting, finance, general business, logistics and operation management, management and organizational behavior, marketing, and management information systems.

Other Minors
Minors are also available in biology, black studies, chemistry, communication, computer science, criminology and criminal justice, economics, English, history, legal studies, mathematics, political science, philosophy, physics, psychology, public affairs journalism, social work, sociology, and urban studies. For currently offered minors, consult an adviser.

Certificates
Certificate programs are available in biochemistry, gerontology, nonprofit organization management and leadership, women's and gender studies, trauma studies, and writing. For more information consult the Certificate Programs section of this Bulletin.

Career Outlook
Many graduates of the Evening College have found their careers advanced upon obtaining their degree. Some have entered new careers in midlife, and others have found personal satisfaction in the acquisition of knowledge for its own sake. The Evening College staff consists of advisers with extensive experience concerning adult students' needs. For an appointment, call the Evening College office, 516-5161.
Inter-School Studies
Gerontology

Faculty

Robert J. Calsyn, Director, Professor* of Psychology and Gerontology
Ph.D., Northwestern University

Carl J. Bassi, Associate Professor* of Optometry
Ph.D., Vanderbilt University

Margo-Lea Hurwiez, Associate Professor* of Anthropology and Gerontology
Ph.D., University of California-Los Angeles

W. Howard McAlister, Associate Professor* of Optometry
O.D., Ohio State University

Timothy D. McBride, Associate Professor* of Public Policy Administration, Economics, and Gerontology
Ph.D., University of Wisconsin-Madison

Chikako Usui, Associate Professor* of Sociology and Gerontology
Ph.D., Stanford University

Timothy A. Wingert, Associate Professor* of Optometry
O.D., Illinois College of Optometry

Ann M. Steffen, Assistant Professor* of Psychology
Ph.D., Indiana University

Nanora L. Sweet, Assistant Professor of English
Ph.D., University of Michigan

Terry Ettling, Senior Lecturer
M.A., Webster University

John Van Emden, Senior Lecturer
M.A., Washington University

Anna Biggs, Lecturer Barnes College of Nursing
Ph.D., University of Colorado Health Sciences Center

Richard P. Johnson, Adjunct Professor
Ph.D., University of Florida

Nina Tumosa, Adjunct Associate Professor* of Optometry
Ph.D., State University of New York at Albany (SUNYA)

Kelly Everard, Adjunct Assistant Professor
Ph.D., University of Kentucky

Myra Aud, Adjunct Lecturer
M.S.N., Saint Louis University

*members of Graduate Faculty

Faculty from 10 departments and schools are involved in the undergraduate and graduate programs in gerontology.

Master of Science in Gerontology

The master of science degree in gerontology program is a multidisciplinary program designed to prepare students for management or direct service positions working with the aged. The program of study includes courses from a variety of departments including anthropology, biology, nursing, political science, psychology, sociology, social work, physical education, English, public policy administration, and optometry. Courses are offered primarily in the evening to accommodate part-time, as well as full-time, students.

Admission Requirements

Program applicants must have the following:

- Baccalaureate degree.
- 3.0 or B average (students with exceptions should contact the director of the gerontology program).

- Official transcripts of all previous undergraduate/graduate work.
- Three letters of recommendation

In addition, students must meet the other general requirements for admission to the Graduate School as explained in the Graduate Study section of the Bulletin.

Degree Requirements

The students are required to complete 45 credit hours, including 27 hours in gerontology courses, a 3-hour research methods course, and a 15-hour specialization that is individually tailored to the student's career goals. Depending on the student's prior course work in gerontology, up to 15 hours of credit may be waived. The required courses are listed below.

Gerontology Distribution Requirements

A. Public Policy and Aging-3 credits

Gerontology (PPA, Political Science) 443, Health Care Policy

Gerontology (PPA, Political Science) 417, Income and Pension Policy for the Aged

Gerontology (Sociology) 449, Issues in Retirement

B. Health and Physical Aspects of Aging - 3 credits from the following:

Gerontology 300a (Soc. Wk. 381a) Mechanics of Aging I: The Aging Body (1 credit hour)

Gerontology 300b (Soc. Wk. 381b) Mechanics of Aging II: The Aging Brain (1 credit hour)

Gerontology 300c (Soc. Wk. 381c) Mechanics of Aging III: Diseases of Aging (1 credit hour)

Gerontology (Nursing) 401, Health and Wellness in the Aging

Gerontology 441, Aging and Health Behavior

Gerontology 458 (Opt. 558), Geriatric Optometry

C. Psychosocial Aspects of Aging-3 credits from the following:

Gerontology (Psych.) 373, Psychology of Aging

Gerontology (Psych.) 376, Mental Health and Aging

Gerontology (Soc.) 361, Sociology of Aging

Gerontology (Anthro.) 440, Cultural Aspects of Aging

D. Practica in Gerontology, 6 credits

Gerontology 495, Practicum in Gerontology

Gerontology 496, Advanced Practicum in Gerontology

E. Gerontology 494, Integrative Research in Gerontology - 3 credits

F. Gerontology Electives - 9 credits

G. Graduate-level statistics course - 3 credits

Students should consult Director of Gerontology for approved courses.
Graduate School
Gerontology

H. Specialization Area - 15 credits
Students should consult Director of Gerontology for approved courses.

Graduate Certificate in Gerontology

The graduate certificate in gerontology is designed for students who wish to receive postbaccalaureate training in gerontology. The certificate can be taken by itself or in conjunction with pursuit of a graduate degree in another field. Eighteen credit hours are required.

Admission Requirements
Program applicants must have the following:
- Baccalaureate degree.
- 2.75 grade point average (students with exceptions should contact the director of the gerontology program).
- Official transcripts of all previous undergraduate/graduate work.
- Two letters of recommendation.

Distribution Requirements

A. Public Policy - 3 credits from the following:
Gerontology (PPA, Political Science) 443, Health Care Policy
Gerontology (PPA, Political Science) 417, Income and Pension Policy for the Aged
Gerontology (Sociology) 449, Issues in Retirement

B. Health and Physical Aspects of Aging - 3 credits selected from the following:
Gerontology (Nursing) 401, Health and Wellness in the Elderly
Gerontology 441, Aging and Health Behavior
Gerontology 300a, (Soc.Wk.381b)Mechanics of Aging II: The Aging Brain (1 credit hour)
Gerontology 300b (Soc.Wk. 381b) Mechanics of Aging II: The Aging Brain (1 credit hour)
Gerontology 300c (Soc.Wk. 381c) Mechanics of Aging III: Diseases of Aging (1 credit hour)
Gerontology 458 (Optometry 558), Geriatric Optometry

C. Psychosocial Aspects of Aging - 3 credits selected from the following:
Gerontology (Psych) 373, Psychology of Aging
Gerontology (Psych) 376, Mental Health and Aging
Gerontology (Soc.) 361, Sociology of Aging

D. Gerontology 495, Practicum in Gerontology - 3 credits

E. Electives in Gerontology - 6 credits

The program can be taken by itself or in conjunction with the pursuit of a graduate degree in another field.

Admission Requirements
Program applicants must have the following:
- Baccalaureate degree.
- 2.75 grade point average (students with exceptions should contact the director of the gerontology program).
- Official transcripts of all previous undergraduate/graduate work.
- Two letters of recommendation.

Certificate Requirements
Eighteen credit hours are required to complete the certificate. Students must complete 15 hours of required core courses and 3 hours of gerontology electives at the 300-level or above.

Required Core Courses
Gerontology 316, Clinical Gerontology, or Social Work 316, Clinical Gerontology
Gerontology 373, Psychology of Aging, or Psych 373, Psychology of Aging
Gerontology 361, Social Gerontology, or Sociology 361, Social Gerontology
Gerontology 444, Public Policy and Aging, or Political Science 444 Public Policy and Aging
Social Work 412, Research Design in Social Work
Social Work 491, Professional Leadership Practice

Undergraduate Certificate in Gerontological Studies

A certificate in gerontological studies, a multidisciplinary course of study, is available at the University of Missouri-St. Louis. This program provides an opportunity for students to obtain a focused specialty in gerontology in addition to their majors. It utilizes offerings in the College of Arts and Sciences, the College of Business Administration, Barnes College of Nursing, and the College of Education. It is appropriate for students in any of the colleges of the University.

Certificate Requirements
A student may earn the certificate in gerontological studies by completing a total of 15 hours. Courses must be chosen from at least two of the following four topic areas. No more than 3 credit hours from Research/Practicum Experience courses will be allowed. The student must have the approval of the director of the gerontology program before enrolling in the course. Courses taken to fulfill the requirements may not be taken on a satisfactory/unsatisfactory basis. New courses continually are added, so it is advisable to check with the director each term. Many courses are cross-listed and also have a gerontology designation.

Humanities
English 15, Images of Age in Film
English 16, Images of Age in Literature
Gerontology 156, Medical Ethics, or Philosophy 156, Medical Ethics
Natural Sciences and Mathematics
Gerontology 111, Issues in Geriatric Health Care, or
Biology 111, Issues in Geriatric Health Care, or
Nursing 111, Issues in Geriatric Health Care
Biology 311, Physiology of Aging

Social Sciences
Gerontology 272, Adult Development and Aging, or
Psych 272, Adult Development and Aging
Gerontology 280, The Psychology of Death and Dying, or
Psych 280, The Psychology of Death and Dying
Gerontology 373, The Psychology of Aging, or
Psych 373, The Psychology of Aging
Gerontology 316, Clinical Gerontology, or
Social Work 316 Clinical Gerontology
Gerontology 361, Social Gerontology, or
Sociology 361, Social Gerontology

Education
Gerontology 190, Clinical Experience in Physical
Gerontology, or
Phy Ed 190, Clinical Experience in Physical Gerontology
Gerontology 392, Internship in Physical Gerontology,
or
Phy Ed 392, Internship in Physical Gerontology
Gerontology 330, Prescribing Physical Activity, or
Phy Ed 330, Prescribing Physical Activity

Career Outlook

The increasing number of elderly in the population has
greatly expanded job opportunities in gerontology in the last
decade, and job prospects for the future are equally bright.
Career possibilities include nursing home administration,
administration and planning of community-based programs
for the elderly, recreational programming, and counseling of
the elderly.
Course Descriptions

15 Images of the Elderly in Film (3)
(Same as Eng 15.) Analysis of the portrayal of older adults in various films. Class discussions focus on the style and thematic content of the film, as well as intergenerational relationships.

16 Images of Age in Literature (3)
(Same as Eng 16.) Reading and discussion of literature that portrays aging and old age in various settings. Discussion and short essays enable consideration of how literature helps in the study of aging and also how the process of aging can be a creative force within literature.

60 Aging in America (3)
(Same as ID 60.) An introduction to the major issues, research, problems, and current service approaches in the study of the aging process. An overview of information useful for students in the arts and sciences, business, education, and nursing schools.

120 Special Topics in Gerontology (1-3)
(Same as ID 120.) 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 for credit with permission of the Gerontology director.

156 Medical Ethics (3)
(Same as Phil 156.) 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.

190 Clinical Experience in Physical Gerontology (3)
Prerequisite: Consent of instructor. (Same as Phy Ed 190.) Early supervised experience in gerontological physical activity programming. Seminar precedes and accompanies clinical experience.

215 Growing Old in Other Cultures (3)
(Same as Anthro 215.) 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.

272 Adult Development and Aging (3)
(Same as Psych 272.) Personality, social, and physiological development from the onset of early adulthood through maturity and old age.

300a Mechanisms of Aging I: The Aging Body (1)
Prerequisites: Bio 1 or Bio 110 or equivalent. (Same as SW 381a). (MSW students normally take all foundation courses prior to enrolling in this course.) Introduces students with a social sciences/humanities background to the normal changes in the biology and chemistry of the aging human body.

300b Mechanisms of Aging II: The Aging Brain (1)
Prerequisites: Ger 300a or SW 381a or equivalent or consent of instructor. (Same as SW 381b). (MSW students normally take all foundation courses prior to enrolling in this course.) Provides students with a social sciences/humanities background a basic introduction to the biology and chemistry of the aging human brain and nervous system.

300c Mechanisms of Aging III: Diseases of Aging (1)
Prerequisites: Ger 300a and 300b or SW 381a and 381b or equivalents or consent of instructor. (Same as SW 381c). (MSW students normally take all foundation courses prior to enrolling in this course.) Provides students with a social sciences/humanities background with information on how diseases associated with aging exacerbate the effects of aging on the human body and mind.

330 Prescribing Physical Activity (3)
Prerequisite: Phy Ed 280 or consent of instructor. (Same as Phy Ed 330.) Prescription of physical activity 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 physiological and biomechanical research.

361 Social Gerontology (3)
Prerequisite: Soc 10 and junior standing or consent of instructor. (Same as Soc 361.) Topics include sociological theories of aging, technological and social change and its effects on the environment of older people, and prejudice and discrimination against the elderly.

373 Psychology of Aging (3)
Prerequisite: Nine hours of Psychology or consent of instructor. (Same as Psych 373.) This course focuses on the developmental changes associated with aging including sensation, memory, emotions, and attitudes.

376 Mental Health and Aging (3)
Prerequisites: Psych 272, 373, or graduate student status. (Same as Psych 376 and SW 376.) (MSW students normally take all foundation courses prior to enrolling in this course.) A survey of recent theory and research in mental health issues for older populations. The primary focus is on major psychological disorders prevalent among the elderly and in treatment approaches for elders.

380 Psychology of Death, Dying, and End-of-Life Concerns (3)
(Same as Psych 380.) Prerequisites: Nine hours of psychology. This course will address the psychological aspects of a variety of end of life issues, including death attitudes, funeral practices, ethics, grief theory, family communication practices, health care system approaches, and current research regarding these.
390 Directed Readings (1-3)
Prerequisite: Consent of instructor. Directed readings and research or field work. May be repeated for a maximum of three hours.

392 Internship in Physical Gerontology (1-10)
Prerequisite: Phys Ed/Ger 190 or consent of instructor. (Same as Phys Ed 392.) Supervised clinical experience in selected gerontological settings as a physical education practitioner under the supervision of university and program professionals. Internship may include two or more separate experiences completed concurrently or sequentially and involve planning of instruction, participant and program evaluation, research, and related activities.

401 Health and Wellness in the Elderly (3)
Prerequisite: Graduate standing. (Same as Nurs 401.) Factors contributing to longevity and health in old age, including genetic predisposition, lifestyle, culture, and environment are related to aspects of maintaining health and promoting wellness. Through a holistic approach, explores aspects of nutrition, exercise and activity, prevention of hazards to health, maintaining self-responsibility, managing stress, and meeting continued developmental, emotional and spiritual needs. Considers cross-disciplinary interventions to promote health and wellness in the elderly. Introduces the "Putting Prevention into Practice" model adapted to health promotion in the elderly.

417 Income and Pension Policy for the Aged (3)
Prerequisite: Graduate standing or consent of instructor. (Same as PPA 417, PolSci 417, and SW 417.) (MSW students normally take the social policy foundation course prior to enrolling in this course). Examination of federal, state, and local policies that affect the economic well-being of the elderly. The development of social security programs and pension programs is explored within a historical context. Emphasis is placed on the analysis of current policy problems and proposed solutions.

440 Cultural Aspects of Aging (3)
(Same as Anthro 440.) 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.

441 Aging and Health Behavior (3)
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.

442 Minority Aging (3)
Prerequisite: Sociology 361 or consent of instructor. (Same as Soc 442.) The experience of aging for racial and ethnic minority elderly will be examined in the context of their families, communities, and society. Key questions concerning minority elderly frame the course, such as the relative importance of culture versus social structure, and the applicability of gerontological theory to the minority aging experience.

443 Health Care Policy (3)
Prerequisites: Graduate standing and consent of instructor. (Same as PolSci 443, PPA 443 and SW 443.) (MSW students will normally take the social policy foundation course prior to enrolling in this course.) 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.

444 Seminar in Public Policy and Aging (3)
Prerequisite: Consent of instructor. (Same as PPA 444 and PolSci 444.) 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.

445 Sociological Dimensions of Chronic Illness (3)
Prerequisite: Soc 400 or consent of instructor. (Same as Soc 445.) The consequences of chronic illness for social roles, family and organizational dynamics, and the functioning of society are examined. Chronic illness is presented as both a medical problem and a social phenomenon that is shaped by the changing age structure of society.

449 Issues in Retirement (3)
(Same as Soc 449.) Prerequisite: Graduate standing. This course examines macro and micro issues of retirement in the United States. It considers experiences of older persons in retirement, its processes, causes, and consequences-in relation to economic market conditions, demographic changes, and programs and policies that are targeted to support the elderly (e.g., Social Security). It also examines issues relating to older women and retirement.

458 Geriatric Optometry (2)
(Same as Opt 558.) 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.

Graduate School
Gerontology
490 Directed Study (1-3)
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 6 credit hours.

494 Integrative Research Seminar in Gerontology (3)
(Same as Psych 494.) Prerequisite: A graduate level research methods course (e.g., PPA 401). This seminar requires students to critically examine research in terms of methodology. Topics covered include: reliability and validity of measures; internal and external validity; needs assessment; treatment implementation and process evaluation, and qualitative methods.

495 Practicum in Gerontology (3)
(Same as Psych 495.) Prerequisite: Consent of instructor. 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.

496 Advanced Practicum in Gerontology (3)
(Same as Psych 496.) Prerequisites: Ger 495 and consent of instructor. Advanced practicum experience beyond Gerontology 495. Students must complete a minimum of 150 clock hours of supervised field work (service or research) with older adults.

497 Interdisciplinary Geriatric Care (2)
(Same as Opt 497.) Prerequisite: Consent of instructor. Interdisciplinary approaches that address the medical and social needs of the elderly will be examined. Information about geriatric care and social issues affecting the well-being of older adults will be provided. Clinical, theoretical, and educational perspectives will be presented.

498 Advanced Seminar in Gerontology (3)
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.)

499 Topics in Gerontology (1-2)
Prerequisite: Graduate standing. Analysis of a current problem in gerontology. (Course may be repeated for maximum of five credits, assuming topics are different.)
Managerial Decision Making and Health Informatics

General Information

Master of Health Sciences in Managerial Decision Making and Informatics

The MHS in Managerial Decision Making and Informatics is an integrated, multidisciplinary degree designed to enable health professionals to bridge the traditional divide between clinical services and business. The degree is offered through the Managerial Decision Making and Health Informatics (MDHI) unit of the Graduate School. The program’s core is comprised of one-credit modules that provide extensive exposure to health informatics and emerging technologies while simultaneously fostering a systems view of the internal and external forces that affect organizations in the healthcare market. Electives drawn from information systems, health economics, health policy, gerontology, nursing, and business allow students to tailor the program to meet their individual career needs. The program is structured to meet the needs of working health professionals, and characterized by a high degree of integration among the courses.

Admission Requirements:
Applicants must complete an application form and also submit:
- An undergraduate degree with a minimum grade point average of 3.0 or (B).
- A statement of purpose demonstrating a commitment to pursue a degree in health informatics.
- A resume, preferably showing two years of professional work experience in a health-related field.
- Three letters of recommendation from persons qualified to judge the candidate's potential for success in the program.

Admission decisions are based on the applicant's portfolio. The MDHI program director may request a personal or phone interview once the applicant’s file is complete. Applicants who do not meet all the requirements listed above may be provisionally admitted to the program at the program director’s discretion.

Mathematics Background Requirement
If college algebra or its equivalent was not taken as part of the applicant's undergraduate program, they are required to successfully complete Math 30 or its equivalent prior to their entrance into the MHS-MDHI program. This course may not be used as a program elective.

Degree Requirements
Students are required to complete 36 credit hours. Of these, 21 are in the core curriculum, 6 are from related fields as electives, and 9 involve contact with the local healthcare community via case studies and a capstone project course.

Distribution Requirements
A. Overview: 7 credits
- MDHI 400, Emerging Trends in Healthcare Markets
- MDHI 402, Insurance and Managed Care
- MDHI 404, The Internet and Electronic Commerce for Healthcare Professionals
- MDHI 406, Informatics in the Health Professions
- MDHI 408, Patient Rights and Provider Responsibilities
- MDHI 410, Effective Communication for Healthcare Professionals
- MDHI 412, Organizational Structures and Administration in the Healthcare Industry.

B. Tools and Techniques used in Decision Making: 4 credits
- MDHI 420, Quality and Productivity Improvement Tools
- MDHI 422, Decision Analysis
- MDHI 424, Modeling and Understanding Statistical Relationships
- MDHI 426, Outcomes Research Methods

C. Understanding Decision Making: 5 credits
- MDHI 440, Total Quality Management in Healthcare Organizations
- MDHI 450, Consumer Behavior in Healthcare Markets
- MDHI 452, Health Provider Decision Making
- MDHI 454, The Role of the Government in the Healthcare Sector
- MDHI 465, Outcomes Research Applications in the Healthcare Sector

D. Informatics: 5 credits
- MDHI 460, Information Technology Concepts and Elements
- MDHI 462, Health Information Resource Management
- MDHI 464, Decision Support for Healthcare Management
- MDHI 466, Health Information Systems Evaluation
- MDHI 468, Health Data Warehousing and Security

E. Electives: 6 credits
Students may select courses from the list below, or another course approved by the MDHI program director.
- Econ 471, The Political Economy of Healthcare
- Econ 472, Health Economics
- MSIS 430, Quality Management
- MSIS 485, Management Information Systems: Theory and Practice
- MSIS 488, Information Systems Analysis
- Nurs 405, Policy, Organization and Financing in Healthcare
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Managerial Decision Making and Health Informatics

Nurs 406, Values in Health Care Decision Making
Nurs 408, Health and Society
Nurs 458, Resource Utilization
Phl 456, Medical Ethics for Health Care Providers
PPA/Pol Sci/Ger 443, Health Care Policy
PPA 446, Selected Topics in Health Policy: Comparative Health Policy

F. Application: 9 credits
MDHI 480, Practitioner's Forum, 3 credits
MDHI 490, Practicum in Health Managerial Decision Making and Informatics, 6 credits

Graduate Certificate in Managerial Decision Making and Health Informatics
The certificate prepares health professionals to bridge the traditional divide between clinical services and businesses. The degree is offered through the Health Managerial Decision Making and Informatics (MDHI) program—a unit of the Graduate School. The course work is comprised of one-credit modules that provide extensive exposure to health informatics and emerging technologies while simultaneously fostering a systems view of the internal and external forces that affect organizations in the healthcare market. The program is structured to meet the needs of working health professionals, and characterized by a high degree of integration among the courses, allowing completion of the certificate within three 5-credit terms during one calendar year.

Admission Requirements
Applicants must complete an application form and also submit:
1. An undergraduate degree with a minimum grade point average of 3.0 or (B).
2. A statement of purpose demonstrating a commitment to pursue a degree in health informatics.
3. A resume, preferably showing two years of professional work experience in a health-related field.
4. Three letters of recommendation from persons qualified to judge the candidate's potential for success in the program.

Applicants who do not meet all the requirements listed above may be provisionally admitted to the program at the program director's discretion.

In order to successfully complete the certificate program, the student must have earned a 3.0 cumulative grade point average in certificate classes.

Mathematics Background Requirement
If college algebra or its equivalent was not taken as part of the applicant's undergraduate program, they are required to successfully complete Math 30 or its equivalent prior to their entrance into the MHS-IMD program. This course may not be used as a program elective.

Degree Requirements
Students are required to complete 18 credit hours.

Distribution Requirements
A. Overview: 7 credits
MDHI 400, Emerging Trends in Healthcare Markets
MDHI 402, Insurance and Managed Care
MDHI 404, The Internet and Electronic Commerce for Healthcare Professionals
MDHI 406, Informatics in the Health Professions
MDHI 408, Patient Rights and Provider Responsibilities
MDHI 412, Organizational Structures and Administration in the Healthcare Industry.

B. Tools and Techniques used in Decision Making: 3 credits
MDHI 420, Quality and Productivity Improvement Tools
MDHI 422, Decision Analysis
MDHI 424, Modeling and Understanding Statistical Relationships

C. Understanding Decision Making: 4 credits
MDHI 440, Total Quality Management in Healthcare Organizations
MDHI 450, Consumer Behavior in Healthcare Markets
MDHI 452, Health Provider Decision Making
MDHI 454, The Role of the Government in the Healthcare Sector

D. Informatics: 3 credits
MDHI 460, Information Technology Concepts and Elements
MDHI 462, Health Information Resource Management
MDHI 468, Health Data Warehousing and Security

E. Electives: 1 credit
MDHI 480, Practitioner's Forum, 1 credit
Course Descriptions

400 Emerging Trends in Healthcare Markets (1)
Emerging trends in the healthcare marketplace are described. Topics include market dynamics of the healthcare industry, the use of quality and accessibility to enhance market share, changes in cost accounting systems and healthcare marketing tactics, telemedicine, and more. Emphasis is on recent changes in the local and national markets, and projections for the future.

402 Insurance and Managed Care (1)
The dynamic change in the managed care industry is explored. The structure of managed care plans is described and analyzed, focusing on ways that managed care plans have changed the incentives for health providers and patients to alter their behavior, thus leading to changes in medical care delivery. Evidence of the impacts of managed care are studied on important trends such as health care spending, the utilization of medical care, and the quality of medical care. Proposed reforms of the managed care industry will be studied and analyzed.

404 The Internet and Electronic Commerce for Healthcare Professionals (1)
Discussion of identifying and analyzing healthcare organizational needs that may be satisfied using electronic commerce technologies. Focus is on the technical and economic evaluation, analysis, and design of Internet Web pages for electronic commerce using a standard programming language such as, for example, Java Script. Health industry applications of Internet electronic commerce, electronic data interchange, and telemedicine will be discussed.

406 Informatics in the Health Professions (1)
Overview of Health Informatics as a discipline, describing the history of its development, current research and applications domains, job opportunities, informatics resources and ethical responsibilities. Examination of the roles of managers, coordinators, consultants, and users of informatics in the health sciences.

408 Patient Rights and Provider Responsibilities (1)
Examination of issues involving relations between patients and healthcare providers. Topics include informed consent to medical treatment, access to experimental liability for denial of care, and patient confidentiality.

410 Effective Communication for Healthcare Professionals (1)
Analyzing business writing and speaking, and the communication conventions common in organizations. Emphasis is on developing skills critical to career advancement and necessary for effective organizational functioning.

412 Organizational Structures and Administration in the Healthcare Industry (1)
Various organizational structures present in today's healthcare industry are described. Utilizing a systems perspective, several areas from the standpoint of both individual and organizational performance, including communication, motivation, conflict resolution, and leadership are considered.

420 Quality and Productivity Improvement Tools (1)
Exploration of the foundations of quality, including Deming's 14 points for effective management, process capability and improvement studies, control charts, brainstorming and root cause analysis, continual improvement cycles and graphical presentation of results. Readings also provide insights into the application of quality principles and processes to personal and professional development.

422 Decision Analysis (1)
Estimation, hypothesis testing, and prediction for biological and health science data are examined. Uncertainty and risk in Decision Making, tools for static and sequential decisions, excellence in graphical presentation and the effective presentation of statistical results to a variety of audiences are stressed.

424 Modeling and Understanding Statistical Relationships (1)
Focus is on correlation and regression models in analyzing healthcare data. Interactive model-building skills are developed with the use of statistical software. An overview of statistical software systems is presented, ranging from spreadsheet tools appropriate for analyzing small or moderate data sets when limited resources are available to statistical packages appropriate for manipulating massive data sets.

426 Outcomes Research Methods (1)
Exploration of the theory and methods of outcomes research. Focus is on various topics important to understanding the outcomes research approach, including: the measurement of costs, the difference between accounting costs and real resource costs, the measurement of quantity and quality, and the methods for distinguishing between inputs and outputs. Also compare and contrast various approaches to outcomes research, including cost-benefit analysis, cost minimization analysis, cost-effectiveness analysis, and cost analysis. Explore the methods for relatively simple therapeutic interventions, screening and secondary prevention activities, and in assessment of diagnostic tests.
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440 Total Quality Management in Healthcare Organizations (1)
Examination of Total Quality Management: an integrated, structured approach that aims at delighting customers by delivering exceptional products or services. Key elements include customer involvement, leadership and team dynamics, and building achievements into a lasting culture of ongoing improvement within the organization. Examines success stories from private practitioners, hospitals, managed care organizations, and consumer/buyer alliances that have resulted in significant and long-lasting improvements in both improved clinical outcomes and reduced costs.

450 Consumer Behavior in Healthcare Markets (1)
Build the tools necessary to understand how consumers behave in healthcare markets. Applying standard microeconomic techniques, analyze the incentives facing patients and explore the ways in which their behavior when purchasing healthcare might differ from their behavior in other consumer decisions. Several topics are explored, but emphasis is on the role of health insurance and how it influences consumer behavior, and the important role of information (or the lack thereof) in consumer decisions.

452 Health Provider Decision Making (1)
Apply standard microeconomic techniques to analyze the incentives facing decision makers in the healthcare system and the ways in which they are altered by government policy. We specifically focus on the market for insurance, and the specific markets for health services (e.g., physicians, hospitals, pharmaceuticals). We explore how the institutional setting for these markets has been changing in recent years, the role of consolidations and mergers, and the impact of government regulations on supplier decisions. The role of information and technological changes in health markets are also examined.

454 The Role of Government in the Healthcare Sector (1)
Explore the rationale for government intervention in the health market, from an economic perspective. Also investigate the impact of government policy on health care provision and financing, focusing especially on the effect of entitlement programs (e.g., Medicare and Medicaid), tax policy, and government regulation. Review and analyze various current proposals for health care reform, addressing such potential topics as Medicare and Medicaid reform, insurance reform, Medical Savings Accounts (MSAs), and reform of managed care.

456 Outcomes Research Applications in the Healthcare Sector (1)
Explore empirical applications of outcomes research to medical Decision Making, familiarizing students with the basic ideas and tools of cost-effectiveness analysis in healthcare as it may be applied to medical interventions. Focus is on the authoritative sources of outcomes data that administrative leaders can rely on for effective decision making. Topics covered may include provider ranking procedures, evaluation of provider treatment patterns, use of mortality and morbidity data in outcomes research, and the use of outcomes research in utilization management. A major goal of the course is to encourage thinking about how to incorporate the methods, ideas and results form cost-effective analysis into the management of contemporary health organizations. This is largely unexplored territory.

460 Information Technology Concepts and Elements (1)
A broad view of aspects in health informatics, including its methodologies and applications. The concepts and elements covered include data models, data bases, data as a resource, process models, and information systems.

462 Health Information Resource Management (1)
Focus is on the techniques, methods, and philosophies associated with the introduction and maintenance of new information systems in healthcare organizations. We concentrate on the management of information resources such as database design, system make versus buy decisions, information systems right-sourcing, and information systems implementation, operation and management.

464 Decision Support for Healthcare Management (1)
Successful applications of intelligent decision support systems (including executive information systems and organizational and medical support systems) and data mining in the healthcare environment are studied. Issues pertaining to the maintenance of data, construction of decision models, and provision of supporting technologies are explored.

466 Health Information Systems Evaluation (1)
Develop skills needed to effectively identify and integrate technology, human components, and strategic needs of healthcare information systems. Of particular emphasis are the tools and methods for user information needs assessment, user information requirements, information use assessment, systems prototyping and evaluation.

468 Health Data Warehousing and Security (1)
The benefits and difficulties inherent in designing data warehouses to collect, integrate, and store legacy information from several databases are described. Procedural issues related to data access and security are discussed, in light of emerging technologies such as smart cards, wireless Intranet and Internet communications, electronic data exchange among patients, healthcare providers, suppliers, insurers, and other entities.
480 Practitioner's Forum (1)
Students will work in teams to analyze and present solutions
to case studies which address problems or opportunities
currently faced by healthcare organizations. Potential topics
include work flow analysis, human resource management,
healthcare accounting and finance, entrepreneurship, health
services marketing, health law compliance and regulation..
This course may be repeated for credit.

490 Practicum in Healthcare Managerial Decision
Making and Informatics (6)
Capstone course is a concentrated, experiential opportunity
to function as part of a supervised team on informatics and
decision making projects within a regional healthcare
organization. Special emphasis is given to the synthesis of
previous course work, resulting in a cross-functional
approach to problem-solving within the organization.
Faculty

Andrew D. Glassberg, Director of Public Policy Administration, Associate Professor of Public Policy Administration and Political Science*
Ph.D., Yale University
Alan F. J. Artibise, Professor of History and Public Policy Administration and History
Ph.D., University of British Columbia
E. Terrence Jones, Professor of Public Policy Administration and Political Science*
Ph.D., Georgetown University
Carol W. Kohfeld, Professor Emerita
Ph.D., Washington University
George J. McCall, Professor of Public Policy Administration and Sociology*
Ph.D., Harvard University
Eugene J. Meehan, Curators' Professor Emeritus of Public Policy Administration and Political Science*
Ph.D., London School of Economics
Donald Phares, Professor of Public Policy Administration and Economics*
Ph.D., Syracuse University
J. Fred Springer, Professor Emeritus
Ph.D., University of California-Davis
J. Germain Gros, Associate Professor of Public Policy Administration and Political Science
Ph.D., University of California-Berkeley
Timothy D. McBride, Associate Professor of Public Policy Administration, Gerontology, and Economics*
Ph.D., University of Wisconsin-Madison
Lana Stein, Associate Professor* of Political Science and Public Policy Administration
Ph.D., Michigan State University
Anne E. Winkler, Associate Professor of Public Policy Administration and Economics*
Ph.D., University of Illinois
Deborah B. Baisier, Assistant Professor of Public Policy Administration and Business Administration
Ph.D., Cornell University
Brady Baybeck, Assistant Professor of Public Policy Administration and Political Science
Ph.D., Washington University
Nancy T. Kinney, Assistant Professor of Public Policy Administration and Political Science
ABD, University of Colorado at Denver
MA, University of Denver
James M. Krueger, C.P.A., Assistant Professor of Public Policy Administration and Accounting*, Associate Vice Chancellor for Budgeting and Academic Planning
D.B.A., Indiana University
John McClusky, Director, Non-Profit Management and Leadership Program*
Ph.D., University of California-Berkeley
Anne Zerr, Director, Local Government Management and Leadership Program
MBA, Harvard University
Gerald J. Blasi, Affiliate Assistant Professor of Public Policy Administration and Political Science
Ph.D., SUNY, Binghamton University
*members of Graduate Faculty

General Information

The master's program in public policy administration (M.P.P.A.) is an interdisciplinary program designed to prepare students for managerial positions in the public sector or in agencies having substantial interaction with the public sector. The program is a unit of the Graduate School and is accredited by the National Association of Schools of Public Affairs and Administration. Faculty are on joint appointments in economics, history, political science, sociology, or business administration. The program includes courses in policy analysis, public administration, management, budgeting, and economics in the basic curriculum.

The M.P.P.A. program at the University of Missouri-St. Louis differs from existing programs available in the Missouri-Illinois region in its interdisciplinary nature and emphasis on the development of analytic and administrative skills. It is designed to meet the needs of prospective full-time students as well as those who wish to earn a degree in the evening while continuing to work.

In addition to the distinguished doctoral-level faculty in public policy administration, students have access to courses and faculty in business and other social sciences, in the Center for Metropolitan Studies, and in the Center for International Studies. The M.P.P.A. program serves as an editorial home of the American Review of Public Administration.

The full facilities of Campus Computing, and the lab for Qualitative Analysis are available. UM-St. Louis is also a member of the Inter-University Consortium for Political and Social Research.

Admission Requirements

Applicants to the M.P.P.A. program must meet the general requirements for admission to Graduate School as explained in the Graduate Study section of this Bulletin. Students entering the M.P.P.A. program may be required to take up to 9 hours of prerequisites in mathematics, and social science.

Degree Requirements

The program includes 40 hours, 28 in the core curriculum sequence and 12 in a special field chosen by students in consultation with their advisers.
Prerequisites
Students must demonstrate competency in microcomputer-based applications, including spreadsheets and data bases. These competencies must be acquired at the beginning of the degree program, if students are not already familiar with these applications. Competency may be demonstrated examination, or by successfully completing approved short courses, or by completing PPA 480, Management Information Systems.

Core Curriculum
All candidates for the MPPA degree must complete 28 hours in the core curriculum sequence composed of the following public policy administration courses:

Administration
440, Proseminar in Public Policy Administration
460, Organizational Behavior and Administrative Processes

Budgeting
418, Governmental Budgeting and Financial Control

Economics
408, Microeconomics for Policy Analysis
421, Public Sector Microeconomics

Policy Analysis
410, Introduction to Policy Analysis
419, Cases in Public Policy Analysis

Statistics and Applications
401, Introduction to Policy Research
475, Introduction to Evaluation Research Methods

Exit Project
499, Exit Project Research

A thesis is not required, but students must complete written analyses as part of their course work and/or internships. There is also a 1 credit hour exit project (PPA 499) examining a problem in public policy administration in the final semester. PPA 419 is a capstone course and should be taken toward the end of the program.

Students may select one of five emphasis areas in which to concentrate their advanced studies: (1) managing human resources and organizations, (2) policy research and analysis, (3) local government management, (4) health policy, (5) nonprofit organization management, or they may select an individualized focus area in consultation with their advisors.

Prior to the completion of 15 hours in the MPPA program, students should identify a specialization. Specific requirements for each focus area are as follows:

1) Managing Human Resources and Organizations
   a. Required (3 hours)
   PPA 449 Human Resources in the Public Sector
   b. Electives – 9 hours chosen from:
   Management 462, Advanced Organizational Behavior and Administrative Processes
   Management 463, Organizational Training
   Economics 480, Labor Economics
   PPA 468, Negotiating Workplace Conflict
   Sociology 424, Conflict Management in Organizations
   Pol Sci 341, Collective Bargaining
   PPA 495, Internship – 3 hours (in assignment relevant to specialization)

2) Policy Research and Analysis
   a. Required (6 hours)
   PPA 365, Introduction to Econometrics or
   Pol Sci 402, Intermediate Techniques in Policy Research
   AND one of the following:
   Pol Sci 411, Seminar in Policy Analysis OR
   Soc 331, Qualitative Methods in Social Research OR
   Soc 366, Applied Econometrics OR
   Pol Sci 403, Advanced Techniques in Policy Research
   b. Electives – 6 hours Chosen from (may include courses listed above but not counted towards specialization requirement)
   Econ 317, Public Finance
   Econ 360, Natural Resource Economics
   Econ 480, Labor Economics
   Econ 490, Advanced Topics in Economic Analysis
   Pol Sci 404, Multi-Method Research
   PolSci 422, Law, Courts, and Public Policy
   Sociology 432, Survey Research Methods
   PPA 495, Internship (in assignment relevant to the specialization

Students cannot receive credit for both Econ 365 and Pol Sci 402 or for both Econ 366 and Pol Sci 403.

3) Local Government Management
   a. Required – 6 hours
   PPA 434, Seminar in City Administration AND EITHER
   Pol Sci 470, Proseminar in Urban Politics OR
   Pol Sci 471, Seminar in Urban Politics
   b. Electives – 6 hours Choose from:
   PPA 449, Human Resources in the Public Sector
   PPA 394, Leadership and Management in Nonprofit Organizations
   PPA 451, Urban and Regional Planning and Public Policy
   PPA 435, Issues in Urban Management
   Econ 317, Public Finance: State and Local
   Econ 470, Political Economy of Metropolitan Areas
   Soc 426, Community and Regional Conflict Intervention
   Pol Sci 432, Intergovernmental Relations
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PPA 495, Internship (in assignment relevant to specialization)

NOTE: Students interested in careers in local government management are strongly encouraged to take PPA 449, Human Resources in the Public Sector, as one of their electives.

4) Health Policy
a. Required 9 hours:
PPA 443, Health Care Policy
PPA 446, Selected Topics in Health Care Policy: Comparative Health Policy
Econ 471, Political Economy of Health Care OR Econ 472, Health Economics

b. Electives – 3 hours Chosen from (may include courses listed above but not counted toward specialization requirement):
PPA 446, Selected Topics in Health Care Policy (with different substantive area from comparative health policy)
Soc 447, Health Policy and the Elderly
Gerontology 376, Mental Health and Aging
Gerontology 401, Health and Wellness in the Elderly
Gerontology 441, Aging and Health Behavior
PPA 495, Internship (in assignment relevant to the specialization)

Nonprofit Organization Management and Leadership
a. Required 9 hours
PPA 391-A, B, C, Management Issues in Non-Profit Organizations: Staff Management Issues; Legal Issues; Financial Issues
PPA 394, Leadership and Management in Non-Profit Organizations
PPA 396, American Philanthropy and Non-Profit Resource Development

b) Electives - 3 hours chosen from:
PPA 449, Human Resources in the Public Sector
PPA 455, Strategic and Program Planning for Nonprofit Organizations
Sociology 424, Conflict Management in Organizations
Sociology 426, Community and Regional Conflict Intervention
Sociology 430, Policy Mediation Processes
Sociology 444, Social Policy and Community Planning
BA 343, Accounting for Governmental and Nonprofit Entities
BA 405, Managerial Communication
BA 412, Public Policies Toward Business
BA 470, Contemporary Marketing Concepts
Psych 412, Social Psychology
PPA 495, Internship (in assignment relevant to the specialization)

Individualized Focus Area
Prior to the completion of 15 hours in the MPPA program, the student must present a proposal for 12 hours of specific coursework for approval by the MPPA faculty. The 12 hours must include PPA 495, Internship (in an assignment relevant to the focus area) unless the student has significant public or nonprofit sector experience.

Internships
There currently exists a need for well-trained policy administrators and analysts. Frequent contact is maintained with public and nonprofit practitioners and public officials in the St. Louis metropolitan area, providing valuable input for program development, creation of a wide variety of internship possibilities, and assistance with a vigorous placement program for M.P.P.A. graduates. Interns may be placed in planning agencies, city managers' offices, administrative departments, or budgeting offices.

An internship is required for students without substanted experience in the public or nonprofit sectors. M.P.P.A. students employed in public agencies may receive up to 3 hours of credit for internships in those agencies. To do so, students must develop, in consultation with their advisers, special research projects outside the scope of their regular employment duties. Credit is granted after successful completion of the project and a written paper at the end of the semester.

Graduate Certificate Program in Nonprofit Organization Management and Leadership

The university offers a graduate certificate program for students who are current professional staff, board members, and other leaders of nonprofit and voluntary organizations, as well as those who wish to consider entering the field. There are only two such graduate programs in Missouri. The certificate can be taken by itself or in conjunction with the pursuit of the master's in public policy administration or a graduate degree in another field.

A. The graduate certificate in nonprofit management and leadership requires the completion of 18 credit hours. Nine of these are the following core courses:

1. Leadership and Management in Nonprofit Organizations (3 hours) (Political Science 394, same as Public Policy Administration 394, Sociology, or Social Work 308)


B. Six hours of electives are to be taken from selected 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. (All Graduate electives must be at the 400 course level.)

C. Three hours of internship are also required, or graduate students should demonstrate either a professional field experience equivalent to the internship or be required to participate. Any request for an exemption from the internship requirement must be approved by the nonprofit program director after a review of the student’s professional or managerial field experience with appropriate documentation. Students who receive an exemption must take another 3 hours of electives from the selection in area B.

The internship will include learning activities in management and governance processes in nonprofit organizations, as well as a seminar in which students will critically reflect on their field experience with a faculty supervisor.

Requirements of admission to the graduate certificate program are the same as those required for admission to the Graduate school: an undergraduate degree, and a G.P.A of 2.75 or better.

Career Outlook

The current outlook for graduates of the interdisciplinary master’s degree in public policy administration program is quite promising. Recent graduates of this program have found careers as budget analysts, personnel analysts, transportation planners, and human resources planners with local, regional, state, and federal agencies, and the nonprofit sector.
Course Descriptions

365 Introduction to Econometrics (3)
Prerequisites: Econ 51 and 52; Econ 265 or Math 132; Math 80 or 101 or consent of instructor. (Same as Econ 365.) 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.

391A Management Issues in Nonprofit Organizations: Staff Management Issues (1)
Prerequisite: Junior Standing. (Same as Poli Sci 391A and SW 391A). 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.

391B Management Issues in Nonprofit Organizations: Legal Issues in Governing and Managing Nonprofit Organizations (1)
(Same as Poli Sci 391B and SW 391B). 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.

391C Management Issues in Nonprofit Organizations: Financial Issues (1)
(Same as Poli Sci 391C and SW 391C). 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.

394 Leadership and Management in Nonprofit Organizations (3)
Prerequisite: Junior standing. (Same as Poli Sci 394, SW 394, and Soc 308.) 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.

396 American Philanthropy and Nonprofit Resources Development (3)
Prerequisite: Junior standing or consent of instructor. (Same as Political Science 396 and Social Work 396). 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.

401 Introduction to Policy Research (3)
(Same as PolSci 401.) Procedures for testing explanations, including research design, principles of measurement, probability sampling, methods of data collection, and techniques for analyzing data.

408 Microeconomics for Policy Analysis (3)
Prerequisites: Graduate student standing. (Same as Econ 408). This course introduces microeconomic analysis of consumers, firms, and government, with an emphasis on policy applications. It assumes no prior training in economics and is appropriate for graduate students in public policy administration, nonprofit management, political science, gerontology, criminology and criminal justice, and other related fields.

410 Introduction to Policy Analysis (3)
(Same as PolSci 410.) Systematic development of a critical/analytic base for dealing with public policy.

415 Directed Reading and Research in Public Policy (1-10)
(Same as PolSci 415.) Prerequisite: Consent of Instructor. Independent study through readings, reports, research projects, and conferences. May be repeated for credit, provided the subject matter is different.
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417 Income and Pension Policy for the Aged (3)
Prerequisite: Graduate standing or consent of instructor. (Same as PolSci 417, Gerontology 417, and SW 417.) (MSW students normally take the social policy foundation course prior to enrolling in this course.) Examination of federal, state, and local policies that affect the economic well-being of the elderly. The development of social security programs and pension programs is explored within a historical context. Emphasis is placed on the analysis of current policy problems and proposed solutions.

418 Governmental Budgeting and Financial Control (3)
Prerequisite: BA 440. (Same as BA 418.) 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.

419 Cases in Public Policy Analysis (3)
(Same as PolSci 419.) Intensive analysis of several public policy cases. Cases will be problem-solving exercises in areas such as personnel management, program financing, budget preparation, and planning.

421 Public Sector Microeconomics (3)
Prerequisites: Econ 251, or BA 410, or PPA 408. (Same as Econ 421.) Application of tools of intermediate microeconomics to address public sector issues. Special emphasis is placed on critically analyzing current public policy debates using the models developed. Topics covered include: cases in which competitive market fails to allocate resources efficiently (e.g., externalities and public goods), importance of property rights, incentive effects of the tax and transfer system, and the fundamentals of cost-benefit analysis.

434 Seminar in City Administration (3)
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.

435 Issues in Urban Management (3)
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.

440 Proseminar in Public Administration (3)
(Same as PolSci 440.) Examination of major approaches to analyzing public policies and their administration. Emphasis is on the effects of administrative organization and procedures on policy decisions and their impacts. Specific topics may include administrative accountability, intergovernmental relations, public-private interaction, implementation processes, bureaucratic expertise, the legal environment of public policy administration, and public service and merit issues.

443 Health Care Policy (3)
Prerequisites: Graduate standing and consent of instructor. (Same as PolSci 443, Gerontology 443, and SW 443.) (MSW students will normally take the social policy foundation course prior to enrolling in this course.) 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.

444 Seminar in Public Policy and Aging (3)
Prerequisite: Consent of instructor. (Same as Ger 444 and PolSci 444.) The study of special 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.

446 Selected Topics in Health Care Policy (3)
Prerequisite: Consent of instructor. (Same as PolSci and Soc 446.) The study of special issues and methods relating to health care policy. May be repeated for credit, provided the subject matter is different.

449 Human Resources in the Public Sector (3)
Prerequisite: PPA 460 or consent of instructor. (Same as PolSci 449 and SW 469.) Presents an overview of personnel and labor relations in the public sector. Particular emphasis placed 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. The topics 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.

451 Urban and Regional Planning and Public Policy (3)
Prerequisites: Graduate standing or consent of instructor. Focuses on the interdependent processes of urbanization and public policy. Students will acquire an understanding of urban planning and public policy in North America.
455 Strategic and Program Planning for Nonprofit Organizations (3)
Prerequisites: Graduate standing or consent of instructor. (Same as PoliSci 491 and SW 455). 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.

460 Organizational Behavior and Administrative Processes (3)
(Same as Madag. 460.) 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.

475 Introduction to Evaluation Research Methods (3)
Prerequisites: At least one course in Research Design and Statistics at the graduate level. (Same as Psych 475, Soc 475, and CCJ 475) 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 designs.

480 Management Information Systems (3)
Prerequisite: Econ 301. (Same as MS/IS 480.) An overview of management information systems is presented, including various information systems concepts and technologies. Students are introduced to a mainframe operating system, a microcomputer-based operating system, and a programming language. Students are also exposed to several common microcomputer-based software applications.

495 Internship (1-6)
Independent study involving work with an appropriate public or private agency.

499 Exit Project Research (1)
Prerequisites: Completion of or simultaneous enrollment in other degree requirement courses. The exit project is viewed as the capstone of the MPPA program. As such, it is meant to be undertaken toward the end of a student's program, usually during the final semester. Its purpose is to provide evidence to the faculty that the degree candidate has mastered the skills acquired in the various courses completed during residence at the university and can apply them to the analysis of a practical research problem.
Faculty

Jerry Durham, Dean, Professor
Ph.D., Saint Louis University

Roberta K. Lee, Hubert C. Moog Endowed Professor of Nursing*
Dr. PH, University of Texas-Houston

Sally Hardin, Professor*, Ph.D. Program Director
Ph.D., University of Illinois-Urbana

Shirley A. Martin, Dean Emerita, Professor Emerita*
Ph.D., Saint Louis University

Jean Bachman, Associate Professor*
D.S.N., University of Alabama

Anne Fish, Associate Professor*
Ph.D., University of Michigan-Ann Arbor

Ruth L. Jenkins, Associate Professor*
Ph.D., Saint Louis University

Patricia Jamerson, Assistant Professor*
Ph.D., University of Kansas

Anna J. Biggs, Clinical Professor*
Ph.D., University of Colorado

Nancy Magnuson, Student Health Administrator and Clinical Professor
DSN, University of Alabama at Birmingham

Judith Maserang, Clinical Professor*, Extended Learning Director
Ph.D, Saint Louis University

Mary Jo Stralka, Clinical Professor*
Ph.D, PNP Saint Louis University

Dottye Akerson, Clinical Associate Professor
Ph.D., Saint Louis University

Connie K. Koch, Clinical Associate Professor*, Associate Dean
Ed.D., Southern Illinois University-Edwardsville

Margaret Jean Auffarth, Clinical Assistant Professor,
MSN, University of Missouri-Kansas City

Gretchen Drinkard, Clinical Associate Professor
MSN, FNP, University of Missouri-Columbia

Peggy A. Ellis, Clinical Associate Professor*, Acting MSN Program Director
Ph.D., ANP, FNP, Southern Illinois University-Carbondale

Gail Rea, Clinical Associate Professor
MSN, University of Nebraska

Sandy Lindquist, Clinical Associate Professor*
Ph.D., Saint Louis University

Teri Murray, Clinical Associate Professor*, BSN Program Director
Ph.D., Saint Louis University

Robyn Rice, Clinical Associate Professor
MSN, Southern Illinois University-Edwardsville

Donna Bridgman Musser, Clinical Assistant Professor
M.S.N., Southern Illinois University-Edwardsville

Wilma Calvert, Clinical Assistant Professor
MSN, University of Oklahoma

Dawn Garzon, Clinical Assistant Professor
MSN, PNP, University of Florida

Deborah Kiel, Clinical Assistant Professor
MSN, Saint Louis University

Cynthia Mitchell, Clinical Associate Professor
MSN, University of Missouri-Columbia

Susan M. Kendig, Clinical Assistant Professor,
MSN, WNP, University of Missouri-Kansas City

Linda Sherman, Clinical Assistant Professor
MSN, Southern Illinois University-Edwardsville

Jean Nelson, Clinical Assistant Professor
Ph.D., University of Missouri-St. Louis

Carol W. Trotter, Adjunct Assistant Professor**
RNC, Ph.D., NNP

Lyn Vargo, Adjunct Assistant Professor**
RNC, MSN, NNP

Melodie Rowbotham, Clinical Assistant Professor
MSN, University of Missouri-St. Louis

* Members of Graduate Faculty
** Affiliated Adjunct Faculty

General Information

Barnes College of Nursing offers nursing studies at the undergraduate and graduate levels. Knowledge and skills needed to complete the professional licensure examination to become a registered nurse are available through a basic baccalaureate option. Nurses who have obtained their basic nursing education through associate degree or diploma nursing programs may complete the B.S.N. completion option without repetition of previous nursing education. The master of science in nursing program is offered in cooperation with the School of Nursing at University of Missouri-Kansas City. The Ph.D. in Nursing is offered in cooperation with the Schools of Nursing at University of Missouri-Columbia and Kansas City. Admission to the Ph.D. is available at the post B.S.N. and M.S.N. levels.

Undergraduate Studies

The Barnes College of Nursing provides course work leading to the bachelor of science in nursing. The program is accredited by Commission on Collegiate Nursing Education and the Missouri Board of Nursing. The undergraduate program offers two means for achieving the bachelor=s degree in nursing: studies which are preparatory for completion of the professional nurse licensure examination (pre-licensure track) and advanced placement for the professional registered nurse without repetition of fundamental nursing courses (RN/B.S.N. track). An accelerated prelicensure track is available for qualified persons who hold earned degrees in a nonnursing fields, for outstanding students who have completed all prescribed general education and science course work, and for highly motivated, qualified high school graduates. Baccalaureate students meeting admission criteria may participate in the Pierre Laclede Honors College.
Admission Policies

Basic Baccalaureate

First-time freshman or students with less than 24 college credits:

- Admission to the university (see Undergraduate Admission and Application Procedure section in this Bulletin).
- Cumulative high school grade point average of 2.5 (4.0 scale).
- High school rank in upper third of graduating class.
- GED score, if applicable.
- ACT score of 21 or higher.
- Basic computer literacy prior to beginning nursing courses required in nursing major.
- Cumulative grade point average of 2.5 (on 4.0 scale) required prior to beginning nursing courses required in nursing major.
- Completion of minimum of 45 semester hours of general education course work applicable to BSN degree and NS 010, NS 103 (or equivalent), and NS 105 (or equivalent) prior to beginning nursing courses required in nursing major.

Students with 24 or more college credit hours:

- Admission to the university (see Undergraduate Admission and Application Procedure section in this Bulletin).
- Minimum cumulative grade point average of 2.5 (on 4.0 scale) on 24 transferable credits from an accredited college or university.
- Basic computer literacy prior to beginning nursing courses required in the nursing major.
- Cumulative grade point average of 2.5 (on 4.0 scale) required prior to beginning nursing courses required in nursing major.
- Completion of minimum of 45 semester hours of general education course work applicable to BSN degree and NS 010, NS 103 (or equivalent), and NS 105 (or equivalent) prior to beginning nursing courses required in nursing major.

Post High School Pathway to the accelerated option

- Admission to the university (see Undergraduate Admission and Application Procedure section in this Bulletin).
- ACT score of 24 or higher
- Minimum high school grade point average of 3.2 on 4.0 scale on general education course work prior to beginning nursing courses.
- Completion of all prerequisite general education and science courses for the nursing major with grade of C or better.
- Completion of at least 45 semester hours of designated general education credits at UM-St. Louis, including credit earned through advanced standing.
- Basic computer literacy prior to beginning nursing courses required in nursing major.

Honors pathway

- Meet all requirements for admission to the traditional four-year option.
- Apply to Pierre Laclede Honors College.

RN/BSN

- Admission to the university (see Undergraduate Admission and Application Procedure section in this Bulletin).
- Graduate of either an accredited diploma or associate degree program in nursing.
- Evidence of current licensure as a registered nurse with eligibility for licensure in Missouri.
- Cumulative grade point average of 2.5 (4.0 scale)* on all previous college-level course work.
- Minimum of 30 hours of college credit applicable to degree.
- (Cumulative GPA of 3.0 required of individuals seeking accelerated access to MSN option.)

Students are required to furnish their own transportation to and from campus and clinical agencies. Students must have automobile access for all community experiences through the program. For specific information regarding the B.S.N. degree program, contact Nursing Student Services and Records office at (314) 516-6066 or 1-888-NURSEUM or http://www.umsl.edu/divisions/nursing.
Credit by Transfer and Examination
Credit may be granted for selected general studies. See Admission and Application Procedure section in this Bulletin for credit information.

Degree Requirements
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 prelicensure baccalaureate track can be completed in four academic years. The prelicensure accelerated track requires full-time study and can be completed in 15 months. RN/B.S.N. course work is offered via interactive telecommunication at various sites throughout eastern Missouri, on-campus, and by Internet. Clinical activities are community-based and may be completed in the student's home community.

Satisfactory/Unsatisfactory
Undergraduate nursing majors may not take required related area general education or nursing courses on a satisfactory/unsatisfactory basis.

General Education Requirements
Nursing majors must complete all general education requirements of the university as outlined in this Bulletin (see Undergraduate Studies, General Education Requirements).

In addition to meeting the university's general education requirements, the following specific courses must be completed prior to initiation of the nursing major. See a curriculum planning guide for specific courses and proper sequencing.

1) Natural science course work
Biology 113, Human Physiology and Anatomy I
Biology 114, Human Physiology and Anatomy II
Biology 116, General Microbiology
Chem 5, Chemistry for Health Professions (or equivalent)

2) Behavioral science course work
Psych 3, General Psychology
Psych 268, Human Growth and Behavior
Econ 40, Introduction to American Economy (or equivalent)

3) Humanities
Phil 156, Bioethics (or equivalent)

4) Nursing
Nursing 010, Orientation to Nursing
Nursing 103, Nutrition and Health (or equivalent)
Nursing 105, Communication in the Nursing Profession (or equivalent)

Nursing 373, Quantitative Analysis in the Health Sciences (or equivalent)

Nursing Course Work Requirements
Prelicensure
101 Nursing and Health*
106 Assessment of Clients in Health and Illness*
110 Pathophysiological Bases of Nursing Practice
111 Pharmacotherapeutics in Nursing Practice
205 Adult Health Nursing I*
206 Adult Health Nursing II*
207 Nursing Research
214 Psychiatric Mental Health Nursing*
215 Nursing of Women and Childbearing Families*
216 Child and Family Health Nursing*
217 Information Systems Utilized in Health Care*
300 Community Health Nursing*
304 Ethical and Legal Dimensions of Nursing Practice
308 Management and Leadership in Nursing
310 Senior Synthesis *

RN/BSN
200 Dimensions of Professional Nursing
207 Nursing Research (or equivalent)
217 Information Systems Utilized in Health Care*
220 Health Assessment*
301 Family and Community Nursing*
304 Ethical and Legal Dimensions of Nursing Practice (or equivalent)
308 Management and Leadership in Nursing
311 Synthesis in Nursing Practice*
* Includes a laboratory and/or clinical component

Graduate Studies

Cooperative Graduate Programs in Nursing

Master of Science in Nursing
The College of Nursing at St. Louis, in cooperation with the School of Nursing at University of Missouri-Kansas City, offers graduate nursing studies in three areas of clinical specialization:
- Health care of the adult.
- Health care of children.
- Health care of women.

This graduate program offers students three ways of completing the master of science in nursing degree: completion of a minimum of 36 credit hours with emphasis in the role of the nurse educator; completion of a minimum of 36 credit hours with emphasis in the role of the nurse leader of health systems; and completion of a minimum of 43 credit hours with emphasis in the role of advanced practice nurse (clinical nurse specialist or nurse practitioner). Those selecting the practitioner functional role option will be eligible to complete national certifying examinations. Opportunities are also available for completion of post M.S.N. requirements leading to eligibility for practitioner certification. Graduates
completing the clinical specialization or practitioner functional options are eligible for endorsement as advanced practice nurses in Missouri.

Admission Requirements
• B.S.N. from an accredited nursing program of B.S.N. program comparable to UM-St. Louis College of Nursing's B.S.N. degree.
• Minimum cumulative grade point average of 3.0 (4.0 scale).
• Current professional licensure with eligibility for licensure in Missouri.
• Basic cardiac life support certification
• Successful completion of an undergraduate descriptive and inferential statistics course
• Successful completion of an undergraduate health assessment course or equivalent
• Computer literacy.

The Nurse Practitioner option also requires:
• Two letters of reference (Neonatal option letters of recommendation must be from individuals involved in Level III NICU).
• Narrative outlining goals.
• Two years of clinical experience with chosen population (Experience for neonatal option must be in Level III NICU).

Availability of clinical resources may limit the number of applicants accepted to the practitioner option.

Degree Requirements

Nurse Educator
405, Values in Health Care Decision Making
406, Policy, Organization, and Financing of Health Care
408, Health and Society
409NE, Professional Role Development
410, Health Promotion Across the Life Span
411, Theoretical Foundations of Nursing Practice
412, Quantitative Methods of Nursing Research
414, Research Utilization in Nursing
420, Nursing Program and Curriculum Development
421, Instructional Strategies in Nursing Education
452, Synthesis Practicum
EDUC 410, The Adult Learner
ED REM 420, Classroom measurement and Evaluation OR
ED REM 421, Educational and Psychological Measurement

Nursing Leadership of Health Systems
405, Values in Health Care Decision Making
406, Policy, Organization, and Financing of Health Care
408, Health and Society
409NL, Role of the Nurse Leader
410, Health Promotion Across the Life Span
411, Theoretical Foundations of Nursing Practice
412, Quantitative Methods of Nursing Research
414, Research Utilization in Nursing

425, Managed Care Services
426, Health Resources Management
427, Theory and Practice in Nursing Leadership
452, Synthesis Practicum
Elective from Nursing, Business, or Managerial Decision Making and Informatics

Advanced Practice Nurse (Clinical Nurse Specialist or Nurse Practitioner)
405, Values in Health Care Decision Making
406, Policy, Organization, and Financing of Health Care
408, Health and Society
409NS/NP, Role of the Clinical Nurse Specialist/Nurse Practitioner
410, Health Promotion Across the Life Span
411, Theoretical Foundations of Nursing Practice
412, Quantitative Methods of Nursing Research
414, Research Utilization in Nursing
418, Pathophysiology for Advanced Nursing Practice OR
418N, Physiology/Pathophysiology of the Neonate
424, Health Assessment for Advanced Nursing Practice OR
424N, Advanced Health Assessment of the Neonate
427, Pharmacology for Advanced Nursing Practice OR
427N, Pharmacology for the Neonate
439, Adult Primary Care I: Diagnosis & Management in Advanced Nursing Practice OR
441, Family Health I: Diagnosis & Management in Advanced Nursing Practice OR
443, Child Health I: Diagnosis & Management in Advanced Nursing Practice OR
448, Neonatal Nursing I
440, Adult Primary Care II: Diagnosis & Management in Advanced Nursing Practice OR
442, Family Health II: Diagnosis & Management in Advanced Nursing Practice OR
444, Child Health II: Diagnosis & Management in Advanced Nursing Practice OR
447, Women's Health II: Diagnosis & Management in Advanced Nursing Practice OR
449, Neonatal Nursing II
454A, Advanced Practice Nursing: Internship I
454B, Advanced Practice Nursing: Internship II

Doctor of Philosophy in Nursing

The Ph.D. in nursing program at the University of Missouri-St. Louis affords students with academic, clinical, and research resources of the University of Missouri system through a cooperative arrangement with the Schools of Nursing in Kansas City and Columbia.

Students receive a strong foundation in scientific inquiry with a focus on a clinically relevant area for scholarship and research, hands-on research skills, strategies to promote nursing scholarship, and knowledge of the discipline of nursing. The program provides knowledge in theories, research methods, and empirical findings related to nursing science and advanced nursing practice.
Admission Requirements
Applicants must meet the following:
• Graduate of NLN Baccalaureate program or equivalent with 3.2 minimum GPA (4.0 scale).
• Graduate of NLN Master's program or equivalent with 3.5 minimum GPA (4.0 scale).
• GRE (composite score of 1500 or better desired).
• Three letters of reference.
• Original essay (37 pages) addressing doctoral study and research interests related to Health Promotion and Protection, Health Restoration and Support, and/or Health Care Systems.
• Interview by invitation contingent on ranking related to above criteria.

Degree Requirements
While each program of study is individualized, B.S.N. graduates complete a minimum of 72 hours of graduate-level course work that include a minimum of 12 hours for the dissertation. M.S.N. graduate course work which supports the chosen substantive area is individually evaluated to determine eligibility for transfer. The following defines the overall structure of the program:

Modes of Inquiry
Research and Inquiry, 8 -16 hours external to the College of Nursing, such as advanced statistics, research design, computer applications, or philosophical foundations of science.

Nursing Research and Inquiry, 8 -16 hours within the College of Nursing, such as advanced quantitative nursing research design, advanced qualitative nursing research design, health survey methods, issues in research design, doctoral seminar.

Dissertation, 12 hours.

Nursing Content Areas

Nursing Theory Analysis and Development, 8 -16 hours within the College of Nursing which advance the chosen substantive area, such as conceptual structures, nursing practice models, theory development, theoretical foundations, doctoral seminar.

Nursing Applied Sciences, 8 -16 hours within selected substantive area.

Collateral Support Courses, 12 hours external to the College of Nursing which support selected substantive area.

Professional Organizations

Sigma Theta Tau
The college is an official chapter—Nu Chi—of Sigma Theta Tau International Honor Society. Membership is offered by invitation to those students graduating the upper third of their class and to those recognized as outstanding community nursing leaders.

Student Nurses' Association
The College of Nursing is a constituent of the national Student Nurses' Association. The purpose of this organization is to provide a means for nursing students in the basic baccalaureate program the opportunity to connect with the nursing profession prior to licensure.

Black Student Nurses Association
The College is a constituent of the Black Student Nurses' Association. The purpose of this organization is to provide black nursing students in the prelicensure baccalaureate track the opportunity to serve as a support group for African-American students, collaborate with other African-American groups to compile archives relevant to African-American nurses, and to promote participation in interdisciplinary activities.

Continuing Education-Extension
Continuing Education offerings in the field of nursing are currently presented to provide nurses with new information, techniques, and trends within the nursing profession.

Credit courses which will apply to the B.S.N. program are offered at various off-campus sites.
Course Descriptions

All previous level nursing courses must be successfully satisfied prior to progressing to the next level nursing courses.

10 Orientation to Professional Nursing (0)
Prerequisites: Admission to four-year baccalaureate program. Mandatory eight-week introduction to the nursing program provides a comprehensive orientation to the program. Students are introduced to the academic and clinical expectations of the curriculum. Concerns critical for academic success (i.e., time management, effective study skills, stress management and dealing with test anxiety) are addressed.

100 Introduction to the Nursing Discipline (3)
This course introduces the historical and theoretical development of nursing as a discipline. Nursing is examined as an emerging 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.

101 Nursing and Health (6)
Prerequisites: Biology 114, Biology 116, Chemistry 5, Nursing 19, Nursing 106; pre- or corequisites: Nursing 106, Nursing 110, Nursing 111. Nursing 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.

103 Nutrition and Health (3)
This course examines the 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.

104 Foundations in Nursing and Health (5)
Prerequisite: Biology 113, 114 and 116; Chemistry for Health Professions (or equivalent), Nursing 100, 106 may be taken concurrently. This course emphasizes critical thinking, the teaching-learning process, and foundational practice concepts. Through modular laboratory opportunities, the student acquires the basic psychomotor skills necessary to provide safe and effective nursing care to clients experiencing common physiological alterations in health. This course includes classroom, laboratory and clinical experiences.

105 Communication in the Nursing Profession (3)
Prerequisite: None. 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.

106 Assessment of Clients in Health and Illness (3)
Prerequisite: Biology 114, Biology 116, Chemistry 5, Psychology 268, Nursing 10. 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.

110 Pathophysiological Bases of Nursing Practice (3)
Prerequisite: Biology 114, Biology 116, Chemistry 5 (or equivalent), Nursing 10. Focuses on the nature of disease, its causes, and the bodily changes that accompany it. Includes a study of general principles of disease, specific diseases of individual organs and systems and the clinical implications.

111 Pharmacotherapeutics in Nursing Practice (3)
Prerequisite: Biology 114, Biology 116, Chemistry 5 (or equivalent), Nursing 10; pre/corequisite: Nursing 110. Introduces key terminology, legal foundations, general principles and clinical applications of pharmacology.

200 Dimensions of Professional Nursing Practice (3)
Prerequisites: Admission to the College of Nursing as RN. Investigates the roles and responsibilities of the professional nurse within a rapidly changing health care delivery system. Key issues are explored with emphasis on health promotion and health. Graduates of diploma nursing programs will be awarded college credit for successful validation of basic nursing knowledge as part of this course.

205 Adult Health Nursing I (5)
Prerequisite: All 100 level nursing courses, Psych 268. 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.
206 Adult Health Nursing II (5)
Prerequisite: All 100 level nursing courses, Psych 268. 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.

207 Nursing Research (3)
Prerequisite: Nursing 373 (or equivalent). This course introduces the values and characteristics of quantitative and qualitative research within an ethical perspective. Students examine the research process through analysis and critique of nursing research.

214 Psychiatric Mental Health Nursing (4)
Prerequisite: All 100-level nursing courses; Psychology 268. 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 and 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.

215 Nursing of Women and Childbearing Families (4)
Prerequisite: All 100 level nursing courses, Psychology 268. 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.

216 Child and Family Health Nursing (4)
Prerequisite: all 100 level nursing courses, Psychology 268. 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.

217 Information Systems Utilized in Health Care (3)
Prerequisite: None. This laboratory course establishes competency in health information systems. The course incorporates the impact of information systems on health care delivery.

220 Health Assessment (3)
Prerequisites: Nursing 200 and Nursing 217 (may be taken concurrently) or consent of instructor. This laboratory course focuses on the knowledge, communication abilities, and technical skills necessary for comprehensive assessment of individuals of all ages.

224 Marriage and the Family (3)
(Same as Sociology 224.) Prerequisite: Sociology 10 or consent of instructor. The study of patterns of close relationships, and how these relationships are influenced by larger social forces. Topics include: love, dating, mate selection, cohabitation, alternative lifestyles, working families, parenting, single mothers, families in crisis, domestic violence, and divorce. Universal and variable aspects of family organization, family role systems, and changes in family social structure.

300 Community Health Nursing (4)
Prerequisites: All 200-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.

301 Family and Community Nursing (5)
Prerequisites: Nursing 200, 217 and 220. This practicum course introduces the concepts, principles, skills, and professional nursing roles essential to practice community-based professional nursing with families and groups.

304 Ethical and Legal Dimensions of Nursing Practice (3)
Prerequisites: Philosophy 156 (or equivalent). 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 value, increase sensitivity to others and to develop ethical reasoning abilities.
305 Values in Professional Nursing (3)
Prerequisites: All 200-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.

308 Management and Leadership in Nursing (3)
Prerequisites: All 200-level nursing courses; Economics 40 (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.

310 Senior Synthesis (5)
Prerequisites: all 200-level nursing courses, Nursing 300 and 308 (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.

311 Synthesis in Nursing Practice (5)
Prerequisites: Nursing 301. This practicum course focuses on community-based application and synthesis of professional nursing roles and responsibilities with selected populations determined to be at risk for a variety of health related problems. The course includes assessment of cognitive and affective growth achieve while in the BSN Completion Program.

320 Perioperative Nursing (2)
Prerequisite: Consent of instructor. Provides experiences in preoperative, intraoperative, and postoperative settings. Includes a clinical component.

322 Transcultural Nursing (3)
Prerequisite: Consent of instructor. Examines transcultural nursing concepts, theories and practices in relationship to human caring. Focuses on application and analysis of health care and scope of practice within selected cultural contexts. Includes practicum experiences.

325 Education and the Psychology of Human Sexuality (3)
(Same as Ed Psy 325). The course is designed to provide educators and other human services personnel with knowledge and understanding of various personal and social dimensions of human sexuality.

338 Sociology of Health (3)
(Same as Sociology 338.) Prerequisites: Sociology 10 and junior standing. 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.

341 Advanced Nursing Assessment and Management of Clients with Cardiac Dysrhythmias (3)
Prerequisite: Senior status. Focuses on advanced nursing assessment and management of clients with cardiac rhythm problems and conduction disturbances. Includes a clinical component.

342 Critical Care Nursing of the Adult (3)
Prerequisite: RN or completion of N 205 and 206 or equivalent. Focuses on health restoration, health maintenance, and health support of individuals with dysfunctions or trauma to major organ systems. Emphasis is on understanding pathophysiology and psychosocial processes related to nursing and collaborative interventions, and the development of a functional framework for data organization and analysis.

352 Primary Care Nursing (3)
Prerequisites: Completion of all junior level courses; Corequisite: Nursing 340. This course introduces the role of the advanced practice nurse as a principal provider of primary health care to families across the life span. Major issues relate to health care provided in a variety of community settings are addressed.

365 Women's Issues in Health Care (3)
This course is open to nursing majors and other persons interested in women's issues in health care. This seminar offers students the opportunity to explore women's issues in health care from the perspectives of both providers of health care and consumers of health care. Wellness, rather than pathology, is the emphasis of discussion of specific health care issues related to women. Student interest will determine specific issues to be examined.

370 Topics in Nursing (1-3)
Prerequisite: Consent of instructor. Explores special topics in the areas of clinical practice, nursing education, nursing administration, and professional development. No more than six hours may be taken under this option.
373 Quantitative Analysis in the Health Sciences (3)
Prerequisite: Math 30 or equivalent. This course focuses on concepts and applications of statistics in the health sciences. Topics include descriptive and inferential statistics, probability distributions of random variables, sampling and estimation. The course uses examples and content from health sciences to provide the basic concept structure for quantitative analysis.

399 Guided Study in Nursing (1-3)
Prerequisite: Consent of instructor. 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.

401 Health and Wellness in the Elderly (3)
Prerequisite: Graduate standing and consent of instructor. (Same as Gerontology 401) Factors contributing to longevity and health in old age, including genetic predisposition, lifestyle, culture, and environment are related to aspects of maintaining health and promoting wellness. Through a holistic approach, explores aspects of nutrition, exercise and activity, prevention of hazards to health, maintaining self-responsibility, managing stress, and meeting continued developmental, emotional and spiritual needs. Considers cross-disciplinary interventions to promote health and wellness in the elderly. Introduces the "Putting Prevention into Practice" model adapted to health promotion in the elderly.

405 Values in Health Care Decision Making (2)
Prerequisite: Admission to MSN program. This course explores values and beliefs as they shape professional nursing practice and influence clinical decision making. The course includes analysis of health care systems and how the values underpinning these systems influence nursing interventions and nursing care delivery.

406 Policy, Organization and Financing in Health Care (2)
Prerequisite: Admission to MSN program or consent of instructor. This course presents an overview of health care policy, organization and financing and how they impact professional nursing practice. Attention is given to the relationship between current health care trends and improving nursing health care delivery and client care outcomes.

408 Health and Society (2)
Prerequisite: Admission to the MSN program. This course addresses issues relevant to developing an understanding of the wide diversity of cultural influences on human behavior, including ethnic, racial, gender, and age differences. Emphasis is on recognizing and appropriately addressing comprehensive health care needs and implications for nursing interventions.

409NL Role of the Nurse Leader (3)
Prerequisite: Admission to the MSN program or consent of instructor. Examines roles and responsibilities of the nurse leader in a complex health care system.

409NE Role of the Nurse Educator (3)
Prerequisite: Admission to the MSN program or consent of instructor. Examines roles and responsibilities of the nurse educator in a variety of settings.

409NS/NP Role of the Clinical Nurse Specialist/Nurse Practitioner (2)
Prerequisite: Admission to the MSN program. In this course, the student explores professional role issues affecting advanced practice nurses (APNs). The course facilitates the role development of nurses who desire to function as primary care providers (nurse practitioners) or as specialists within a particular clinical area (clinical nurse specialists). Core concepts include: communication, collaboration, advocacy, negotiation, standards of practice, and subroles of advanced nursing practice.

410 Health Promotion Across the Life Span (3)
Pre or corequisite: Nursing 411, and any three of the following: Nursing 405, 406, 408, 409 (NA, NE, or NS/NP). This course is designed to provide students with a conceptual basis of health promotion and health protection for clients across the life span. Clients are conceptualized as individuals, families and populations. An application of various developmental theories for the child, adult, older adult, and family will provide the basis to individualize health care needs for various age and family groups. Core concepts include theories of health, health promotion and protection, epidemiology, disease and injury prevention, health education, growth and development, nutrition, and family systems theory.

411 Theoretical Foundations in Nursing (3)
Prerequisite: Admission to the MSN program. This course analyzes major concepts and theories relevant to nursing. Ethical issues and dilemmas inherent in advanced nursing practice are also addressed.

412 Quantitative Methods in Nursing Research (3)
Prerequisites: Nursing 373 or equivalent; Nursing 411 may be taken concurrently. This course provides the principles and techniques common to scientific investigation as applied to nursing. A plan of study for a nursing problem is developed.

414 Research Utilization in Nursing (3)
Prerequisites: N 412. This course prepares nurses to implement a research utilization model to validate practice. The theoretical basis for research utilization and practical instances of its application in nursing is examined. Opportunities are provided to develop a research utilization plan to address a clinical area of practice.
417 Nursing Case Analyses in Acute and Critical Care of the Elderly (3)
Prerequisite: N451, 461A or 461F. From clinical practice with elderly, case analyses of acutely and critically ill elderly are developed and discussed in seminar. This is a clinical course.

418N Physiology/Pathophysiology of the Neonate (3)
Prerequisites: Admission to the MSN Neonatal subspecialty track or consent of instructor. Corequisite: 404N. Concepts of embryology, neonatal physiology and pathophysiology are used to provide an in-depth study of normal functioning and alteration of normal physiological functioning in cells, tissues, organs, and organ systems. Alterations form the basis for understanding a variety of pathophysiological conditions and the manifestations and impact of abnormal physiological functioning on neonates. Both generalized processes and major system dysfunctions are addressed.

418P Advanced Pediatric Pathophysiology (3)
This course focuses on embryology of the major organ systems, as well as specific physiologic and pathophysiologic processes relevant to the child from birth through age 18. Implications for advanced nursing practice which result from alterations of normal physiologic functioning in cellular, tissue, and organ systems are examined. Emphasis is placed on the relationship between pathophysiology, decision making, and standards of advanced nursing practice.

420 Nursing Program and Curriculum Development (3)
Prerequisite: Nursing 409NE. Identifies and analyzes factors that determine content and organization of curricula in nursing programs and health care agencies. Addresses principles and processes for initiating and revising curricula. Examines systematic evaluation of curriculum at all levels.

421 Instructional Strategies in Nursing Education (3)
Prerequisite: Nursing 420 or consent of instructor. Focuses on analysis and development of teaching and learning strategies and skills in nursing education. Considers relationship of content and learning style to instructional methods utilized. Attention given to integration of technology in instructional design and delivery. Techniques for evaluating learner and teacher also explored.

424 Advanced Health Assessment of the Neonate (3)
Prerequisites: Admission to MSN Neonatal option or consent of instructor; Nursing 418N may be taken concurrently. A developmental and systematic approach to the advanced assessment of physiological, psychological, sociocultural and developmental aspects of the fetus, mother in the prenatal period, and the neonate is discussed. This approach builds on basic assessment skills and emphasizes perinatal, genetic, and embryologic factors impacting neonatal development. Ways to assess the pregnant woman for problems, the use of special diagnostic tests, and the assessment of the neonate also are explored. Forty hours of laboratory/clinical activities during the semester, which provide opportunities to implement various assessment and diagnostic procedures, complete appropriate health histories, perform complete physical examinations, and complete a perinatal history are required.

425 Managed Care Services (3)
Prerequisite: Admission to MSN or consent of instructor. Provides analysis of health care environment in managed care and its impact on nurse’s role.

426 Health Resources Management (3)
Prerequisite: Nursing 409 NL. Focuses on roles and responsibilities of nurse leader for fiscal and human resource management in both public and private sectors. Includes analysis of environment, health care organization within the system, and impact of resource management on nursing and health care.

427 Pharmacology for Advanced Nursing Practice (3)
Prerequisite: Nursing 418 or equivalent or consent of instructor. This course centers on clinical pharmacotherapeutics used for primary health care management. Emphasis is placed on the clinical use of drugs in the management of specific illnesses.

427N Pharmacology for the Neonate (3)
Prerequisites: 418N or consent of the instructor. Pharmacological agents used in the management of neonates are discussed. Pharmacologic principles are reviewed and applied to the use of drugs in the level II or III NICU. The clinical use of drugs in the management of specific illnesses of the neonate are explored. In addition, legal considerations for the Advanced Practice Nurse are stressed.

428 Theory and Practice in Nursing Leadership (3)
Prerequisite: Nursing 409NL. Focuses on theories and practices of advanced nursing leadership and management within complex health care organizations.
439 Adult Primary Care I: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisites: N 405, 406, 408, 410, 411, 412, 418, 424, 427; N409NS/NP & N 414 may be taken concurrently.
Clinical course designed to provide a theoretical and practical base for advanced practice nursing students to diagnose and manage health problems of adults. Emphasis is placed on clinical assessment and decision-making in the provision of direct patient care within a defined scope of practice. The student is expected to clinically apply the concepts and theories discussed in class in the advanced nursing care of adults who are experiencing problems related to the upper and lower respiratory system, cardiovascular system, gastrointestinal system, skin and infectious diseases. Clinical experiences are designed to enhance assessment and technical skills needed in diagnosing common health problems.

440 Adult Primary Care II: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisites: N 439. Clinical course designed to provide a theoretical and practical base for advanced practice nursing students to diagnose and manage health problems of adults. Emphasis is placed on clinical assessment and decision-making in the provision of direct patient care within a defined scope of practice. The student is expected to clinically apply the concepts and theories discussed in class in the advanced nursing care of adults who are experiencing problems related to the musculoskeletal, neurological, endocrine/metabolic, genitourinary, reproductive systems, the eye, and mental health. Clinical experiences are designed to enhance assessment and technical skills needed in diagnosing common health problems.

441 Family Health I: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisites: N 406, 406, 408, 410, 411, 412, 418, 424, 427; N 409 NS/NP & N 414 may be taken concurrently.
Clinical course designed to provide students with the opportunity to gain the concepts and skills essential to advanced practice nursing care of families experiencing acute and chronic health problems, with particular focus on women's and children's health issues. Emphasis is given to those health needs most commonly encountered by the Family Nurse Practitioner. A research- and theory-based approach to nursing interventions is used. Core concepts include family adaptation to acute and chronic conditions, health promotion, clinical decision-making, and ethical decision-making.

442 Family Health II: Diagnosis and Management in Advanced Nursing Practice (5)
Prerequisites: N 441. Clinical course designed to provide students with the opportunity to gain the concepts and skills essential to advanced practice nursing care of families experiencing acute and chronic health problems, with particular focus on adult clients. Emphasis is given to those health problems most commonly encountered by the Family Nurse Practitioner. A research- and theory-based approach

443 Child Health I: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisites: N 405, 406, 408, 410, 411, 412, 418, 424, 427; N409 NS/SP & N 414 may be take concurrently.
Clinical course designed to provide students the opportunity to apply skills from advanced physical assessment, pathophysiology, pharmacology, and theory to advanced nursing care of the child and family. Emphasis is placed on child and family developmental issues for advanced practice pediatric nurses. Normal cognitive, motor, social/emotional and language development and usual developmental challenges of each age group are addressed. Implications of the developmental stage of the child and family, level of developmental skill and developmental problems for the maintenance of health and management of illness by the advanced practice nurse are discussed. Core content includes information related to APN management of cultural and ethnic variations of growth and development problems; health maintenance; common pediatric behavioral problems; and recognition of circumstances that require interdisciplinary collaboration and referral. Clinical practice opportunities are arranged in collaboration with the instructor and planned in a variety of pediatric settings.

444 Child Health II: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisite: N 443. Clinical course designed to provide students the opportunity to apply skills from advanced physical assessment, pathophysiology, pharmacology, and theory to advanced nursing care of the child and family. Emphasis is placed on using models and theories that guide advanced practice care for clients with common pediatric problems. Implications of the developmental stage of the child and family, level of developmental skills and developmental problems for the maintenance of health and management of illness by the APN nurse are discussed. The SOAP format is used and includes pertinent history, physical examination, laboratory findings and differential diagnosis relevant to the individual client. Focus is on development of a plan of care that encompasses the various treatment modalities used in managing common pediatric health problems including specific pharmaceutical and symptomatic treatment. Clinical practice opportunities are arranged in collaboration with the instructor and planned in a variety of pediatric settings.
446 Women's Health I: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisites: N 405, 406, 408, 410, 411, 412, 418, 424, 427; N409 NS/SP & N 414 may be taken concurrently.
Clinical course designed to provide students the opportunity to apply knowledge and skills to advanced physical assessment, pathophysiology, pharmacology, and theory to advanced nursing care of women and families throughout the childbearing continuum. Emphasis is placed on using models and theories that guide advanced nursing practice and research-based care. Focus is on educating the advanced practice nurse to collaborate with women and their families to promote health and prevent disease. Within this context, the focus is on assessing, diagnosing, and planning care for women and families experiencing an uncomplicated childbearing continuum, as well as acute and/or chronic health care problems during preconception, pregnancy and the postpartum period, within a health promotion framework. The format includes pertinent history, physical examination, laboratory findings and differential diagnoses relevant to the individual client. Core concepts include adaptation of women through developmental stages, health risk assessment, health promotion, disease prevention, health education, primary care of women throughout the childbearing continuum, reproductive options, ethical decision-making, and grief and loss.

447 Women's Health II: Diagnosis & Management in Advanced Nursing Practice (5)
Prerequisite: N 446. Clinical course designed to provide students the opportunity to apply knowledge and skills to advanced practice nursing care of women and families throughout the lifespan. Emphasis is placed on using models and theories that guide advanced nursing practice and research-based care. Focus is on educating the advanced practice nurse to collaborate with women and their families to promote health and prevent disease. Within this context, the focus is on assessing, diagnosing, and planning care for women, as well as women experiencing common health problems within a health promotion framework. The format includes pertinent history, physical examination, laboratory findings and differential diagnoses relevant to the individual client. Core concepts include adaptation of women through developmental stages, health risk assessment, health promotion, disease prevention, health education, primary care of well women, ethical decision-making, and grief and loss. Focus is on the development of a plan of care that encompasses the various treatment modalities used in managing common women's health problems including specific pharmacological and non-pharmacological therapies.

449 Neonatal Nursing II (3)
Prerequisites: Nursing 424N, 427N, 418N or consent of instructor; Nursing 448 may be taken concurrently. The second of two courses that integrate the physiologic, pharmacologic, and assessment skills and principles in determining appropriate care of the ill neonate. Current research and evidence-based practices are used as the 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 40 hours of required clinical activities.

448 Neonatal Nursing I (3)
Prerequisites: Nursing 424N, 427N, 418N or consent of instructor; Nursing 449 may be taken concurrently. The first of two courses that integrate 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 40 hours of required clinical activities.

451 Nursing Assessment of the Elderly (3)
Prerequisite: N404. Practice in adaptations of the traditional health history and physical examination of adults is addressed in this course focusing on the elderly. This is a clinical course, requiring a geriatric physician or advanced practice nurse preceptor.

452 Synthesis Practicum (3)
Prerequisites: All required courses in Nurse Educator or Nursing Leadership of Health Systems option or consent of instructor. Serves as opportunity to operationalize role of nurse educator or nurse leader in selected academic and/or clinical settings. Includes frequent clinical seminars.

454A Advanced Practice Nursing: Internship I (2)
Prerequisite: All required courses in the Advanced Practice Nurse option or consent of instructor; may be taken concurrently with Nursing 454B. Provides opportunity to initiate the Advanced Practice Nurse role with selected populations. Students participate in precepted experiences with clinical nurse specialists, certified nurse practitioners, and/or primary care physicians for a minimum of 225 hours. Frequent clinical seminars included.

454B Advanced Practice Nursing: Internship II (2)
Prerequisite: All required courses in Advanced Practice Nurse option or consent of instructor; may be taken concurrently with Nursing 454A. Students satisfy a minimum of 225 precepted hours with clinical nurse specialists, certified nurse practitioners, and/or primary care physicians and participate in frequent clinical seminars.
454C Advanced Practice Nursing: Internship III (2)
Prerequisite: All required courses in the Advanced Practice Nurse neonatal option or consent of instructor; may be taken concurrently with Nursing 454A and Nursing 454B. Serves as culminating precepted experience for students enrolled in the neonatal nurse practitioner option. Students work within Level III neonatal unit with certified neonatal nurse practitioners and/or neonatologists for a minimum of 150 clinical hours. Must be taken final semester of study.

457 Qualitative Methods in Nursing Research (3)
Prerequisites: Nursing 450; 455 or equivalent. This course introduces the skills necessary to understand and conduct qualitative research in nursing. Emphasis is placed on utilization of qualitative research methods in the study of selected nursing problems.

462 Nursing Case Analyses in Long-term Care of the Elderly (3)
Prerequisite: N451, 461A or 461F. From clinical practice with the elderly, nursing case analyses in long-term care of commonly living/frail elderly and nursing care of elderly in residential long-term care are developed. This is a clinical course, requiring an approved preceptor.

470 Special Topics in Advanced Practice Nursing (1-3)
Prerequisite: 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 Ph.D. levels.

473 Measurement of Nursing Phenomenon (3)
Prerequisites: N 445. The theoretical basis of measurement is presented in a foundation for the development and evaluation of measurement instruments and procedure for use in nursing research. Content is presented regarding measurement theories, techniques of construction, statistical analysis of reliability and validity and strengths and limitations of selected measures of nursing research.

475 Special Study in Graduate Nursing (1-3)
Prerequisites: Admission to the MSN program and/or consent of the 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.

477 Thesis/Directed Research Seminar (1)
Prerequisites: Nursing 455 and permission of thesis/directed research chair. Presentation and discussion of selected research problems in nursing.

478 Directed Research (1-6)
Prerequisites: Nursing 455 and permission of faculty research adviser. Individual participation in the investigation of a research problem of relevance to nursing under the direction of a faculty research adviser.

479 Research Thesis (1-6)
Prerequisites: Nursing 455 and permission of faculty. Individual investigation of a research problem of relevance to nursing. Student works under the direction of a faculty committee to prepare and orally defend a thesis.

480 Guided Nursing Research Seminar (3-6)
Prerequisites: Advanced graduate status and/or consent of instructor. Provides opportunity to work in collaboration with senior faculty and peers on a focused research topic relevant to nursing. May be repeated twice on unduplicated topics.

481 Nursing Theory Analysis and Development (3)
Prerequisites: Admission to Ph.D. program and N450 or equivalent. This course examines foundations of nursing using both traditional and hermeneutic methods of theory analysis and evaluation. Relevant historical and contemporary writings are analyzed.

485 Nursing Research I: Quantitative Methods in Nursing Research (3)
Prerequisites: Admission to the Ph.D. program. Focuses on quantitative research methods appropriate for nursing. Students examine research questions related to nursing phenomena and methods to address these questions. This course is designed to provide in-depth analysis of research design including such areas as measures, designs and interpretation. There is an emphasis on outcomes research related to relevant clinical nursing problems.

487 Integrative Review of Nursing Literature (3)
Prerequisites: Admission to Ph.D. program and consent of instructor. Focuses on critical analysis of theoretical and conceptual models that are commonly used as a basis for nursing research projects. Students examine the frameworks that are commonly used to guide research on nursing problems. Students prepare an integrative review, including areas such as conceptual models, measurement, statistical analysis and interpretation of findings.

488 Qualitative Methods in Nursing Research (3)
Prerequisites: N 485 and 486 or consent of instructor. Explores qualitative research methods used to build nursing's body of knowledge. Emphasis is placed on design, data generation and analysis, and dissemination of findings. Issues regarding qualitative research are identified and analyzed in respect to traditional and emerging designs.
490 Nursing Research II: Advanced Methods in Nursing Research (3)
Prerequisites: N 485. Focuses on advanced methods in nursing research that are applied in the student's preparation of a National Research Award Grant Application. Peer and faculty panels assist students in the critique and revision of their grant applications. Designed to provide students with hands-on experience in the preparation of grant applications that focus on outcomes research related to relevant clinical nursing problems.

491 Nursing Theory Analysis and Development (3)
Prerequisites: N 487. Examines conceptual and theoretical development in nursing through in-depth scholarly inquiry. A concept map showing relationships between and among terms is accomplished.

492 Nursing Research II: Quantitative Analysis of Nursing Data (3)
Prerequisites: N 490. Consolidates prior knowledge of quantitative analysis methods as applied to nursing phenomena, focusing on design and analysis issues that affect validity. Techniques commonly used in the analysis of health data are considered.

493 Psychometrics (3)
Prerequisites: N 490 and doctoral level statistics course and/or consent of instructor. Focuses on application of psychometric theories and practices related to instrumentation in nursing research. Basic methodologies and techniques for constructing, testing, and evaluating instruments will be discussed and applied. Content will focus on theoretical foundations of measurement, item construction, instrument design, item analysis, validity and reliability assessment. Criteria for evaluating existing instruments will also be discussed.

494 Structural Equation Modeling (3)
Prerequisites: Working knowledge of SPSS and consent of instructor. An advanced seminar in statistical techniques commonly used in nursing data analysis. Students develop a working knowledge of several covariance-modeling techniques including path analysis, confirmatory factor analysis and covariance structural modeling.

498 Doctoral Seminar (1-12)
Prerequisites: Admission to Ph.D. in Nursing Program and consent of instructor. Presentation and discussion of pertinent methodological and clinical issues related to doctoral candidate's research. Continuous enrollment is required.

499 Dissertation Research (1-12)
Prerequisites: All required course work; successful completion of written comprehensive examination. Investigation of an advanced nature culmination in successful defense of dissertation. Continuous registration is required.
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Robert Prouty, Clinical Assistant Professor  
O.D., Pacific University  

Paul Resler, Clinical Assistant Professor  
O.D., Illinois College of Optometry  

Byron A. Santos, Clinical Assistant Professor  
M.D., University of San Carlos  

Carol Scott, Clinical Assistant Professor  
O.D., Southern College of Optometry  

Craig Sorce, Clinical Assistant Professor  
O.D., University of Missouri-St. Louis  

Steven Szirovecz, Clinical Assistant Professor  
O.D., Indiana University  

Gary Vogel, Clinical Assistant Professor  
O.D., Illinois College of Optometry  

Donald E. Walter, Clinical Assistant Professor  
O.D., University of Houston  

Jack Yager, Clinical Assistant Professor  
O.D., The Ohio State University  

Natalie Yampolsky, Clinical Assistant Professor  
O.D., Illinois College of Optometry

General Information

The UM-St. Louis School of Optometry enrolled its first  
class in 1980, graduating 32 students in May 1984. The  
school is located on the South Campus complex of the  
University of Missouri-St. Louis at 7800 Natural Bridge  
Road. A modern five-story building houses the school's  
classrooms, laboratories, research facilities,  
administrative offices, library, and the Center for Eye  
Care campus facility (the University Eye Center).

The University Eye Center located on campus is open to  
the public, as well as to the faculty, staff, and students of  
the university. The primary goal of the center is to  
provide patients with high-quality vision care. This  
purpose is consistent with the overall goal of training  
well-qualified eye care practitioners.

In addition to the University Eye Center, the school  
operates the Optometric Center of St. Louis, a  
comprehensive optometric eye care facility in the Central  
West End of the city and the East St. Louis Eye Center,  
jointly owned and operated by the University of  
Missouri-St. Louis School of Optometry and Southern  
Illinois University at Edwardsville.

Situated in Missouri's largest metropolitan area, the  
school enjoys the city's strong community and  
professional support. The urban setting offers many  
opportunities for outreach programs, expanding the scope  
of optometric education and making available highly  
diverse programs of clinical training. Another asset of the  
school is the location of the national headquarters of the
American Optometric Association and the College of Optometrists in Vision Development, approximately twelve miles from the 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 stresses optics and basic health sciences and introduces students to optics of the visual system. The second year covers vision science and training in eye examination techniques. The third year emphasizes patient care and introduces the student to various specialty areas within optometry, such as contact lenses, pediatric and geriatric vision care, binocular vision and vision training, and low vision rehabilitation. The second and third years also include course work and clinical training in ocular disease and pharmacology. The fourth year provides additional patient care experiences and includes rotations through a variety of outreach programs, giving the student added experience in the treatment 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 Center, Optometric Center, and the East St. Louis Center, the School of Optometry has an externship program. When the faculty determines that students have reached a level of proficiency, they are approved for the externship program. Students must receive approval from the faculty and the director of externships 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, Veteran Administration hospitals, Indian Health Services hospitals, various specialty practices and private practices.

These eight-week externships are selected and scheduled according to the individual student=s interest, needs and future practice intentions. In this program, students leave the academic environment and begin working with selected practicing optometrists while continuing to be monitored by the centers through weekly reports of all patient experiences and activities.

Currently, the following externships are available: Colorado Optometric Center, Denver, CO; Eye Health Care Associates, Ltd., St. Louis, MO; Grace Hill Neighborhood Health Center, St. Louis, MO; Missouri Eye Institute, Springfield, MO; Missouri Eye Institute, St. Louis, MO; O'Donnell Eye Institute, St. Louis, MO; Omni Eye Services of Colorado, Denver, CO; Omni Eye Services of Georgia, Atlanta, GA; Scott Air Force Base, Scott AFB, IL; St. Louis Comprehensive Neighborhood Health Center, St. Louis, MO; Veteran's Administration, Columbia, MO; Veteran's Administration, Kansas City, MO; Veteran's Administration, Marion, IL; Veteran's Administration, Marion, IL; Washington University Eye Center, St. Louis, MO; Carl Albert Indian Health Service, Ada, OK.

Students may arrange their own off-campus clinical experiences with the approval of the director of externships.

In 1986 the Missouri Optometry Practice Act was revised by the state legislature to include treatment of certain eye diseases utilizing pharmaceutical agents. Thus optometry students at UM-St. Louis are uniquely situated to receive excellent training in this aspect of optometric practice. Roughly half of the states in the United States now have laws authorizing optometrists to prescribe drugs in the treatment of certain eye diseases. The training and clinical experience optometry students receive at UM-St. Louis in the diagnosis, treatment, and management of ocular disease is excellent and qualifies UM-St. Louis graduates to practice optometry in any state in the nation.

A student who satisfactorily completes all four years of the professional curriculum will be eligible to receive the doctor of optometry degree.

The School of Optometry is a member of the Association of Schools and Colleges of Optometry and is accredited by the Council on Optometric Education of the American Optometric Association, the official optometric agency recognized by the National Commission on Accrediting and by the International Association of Boards of Examiners in Optometry.

All optometry students enrolled in the University of Missouri-St. Louis School of Optometry are eligible for membership in the student optometric association, which is affiliated with the American Optometric Association. Through this organization, students become involved in local and national optometric activities. The organization provides 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 SVOSH (Student Volunteer Optometric Services to Humanity), an international organization of optometrists providing free vision care to people in impoverished nations, and the NOSA (National Optometric Student Association), which strives to recruit minority students into optometry and encourages retention of minority students.

In addition to the many activities through the School 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 modern, fully-equipped
gymnasium, and access to many social and cultural opportunities in St. Louis at reduced cost.

Admission Requirements
Semester:
English - 2
Biology (including laboratory)* - 2
Physics (including laboratory) - 2
Chemistry
    General (including laboratory) - 2
    Organic (including laboratory) - 1
Mathematics**
    Calculus - 1
    Statistics - 1
Psychology - 2
Social and Behavioral Sciences - 2 or
Quarter:
English - 3
Biology (including laboratory)* - 3
Physics (including laboratory) - 3
Chemistry
    General (including laboratory) - 3
    Organic (including laboratory) - 2
Mathematics **
    Calculus - 1
    Statistics - 1
Psychology - 2
Liberal Arts - 2

*One semester (or one quarter) of microbiology with laboratory is a requirement.

** Trigonometry as a prerequisite course for calculus must be completed in high school or college.

All courses used to satisfy the admission requirements must have been taken at a fully accredited institution or must be acceptable by an accredited institution toward degree credit. 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 school come from a variety of undergraduate backgrounds, such as biological sciences, psychology, education, and business.

Admission Test
All applicants are required to take the Optometry Admission Test (OAT). The OAT is offered each year in February and October. Results are sent to the applicant and schools of optometry approximately six to eight weeks after the date of testing. Official test scores are acceptable for up to three years from the testing date.

Applicants are encouraged to take the examination in February or October of the year preceding anticipated application to the School of Optometry. If applicants wish to enhance their scores, they are encouraged to repeat the examination. For an OAT application packet and additional information, contact:

Optometry Admission Testing Program
211 East Chicago Ave.
Chicago, IL 60611
(312) 440-2693.

Application Procedures
The Admissions Committee begins to process applications on August 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:

- Application.
- $50 non-refundable application fee.
- Official high school and college transcripts, followed by updated transcripts as they become available.
- Academic record form.
- Official Optometry Admission Test (OAT) results.
- A composite evaluation prepared by the preprofessional advisory committee at the educational institution the applicant is attending. Those applicants not currently attending college or who are at an institution that does not offer a committee evaluation will be required to submit four letters of recommendation.

Note: Faxed letter of recommendations and/or transcripts will not be accepted.

In addition to the standard application procedures, prospective students living outside the United States and its possessions must take the TOEFL. A student with a total TOEFL score below 650 will not be admitted to the School of Optometry.

Applications are processed and considered as they are received. Applicants are encouraged to begin the admissions process approximately one year in advance of their planned entrance date. Early submission of applications is encouraged.

Applications must be complete by March 15 to be considered for admission to the class entering in August of the same year. Application materials received after
March 15 will not be evaluated for the class entering in August of the same year.
All correspondence and inquiries, including transcripts, should be addressed to: Admissions Committee, School of Optometry, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121-4499, (314) 516-6263.

Selection Procedures
The Admissions Committee has the responsibility to review and evaluate all applicants and select the best qualified candidates. The committee considers: an applicant's overall grade point average, the grade point achieved in the sciences, any grade trends over the years in college, and the scores on the OAT. Concurrently, candidates are evaluated on less quantitative measures such as extracurricular activities and interests, related or unrelated work experience, written narrative, and letters of recommendation.

Those applicants whom the committee feels to be most competitive will be scheduled for an on-campus interview. The on-campus interview facilitates the committee's assessment of the applicant's interests, motivation, and personal characteristics. In addition, the on-campus interview allows the applicant to tour the facilities, meet with currently enrolled students, have questions answered regarding financial aid and housing, and learn more about the school. From this group of interviewed applicants, the entering class will be selected.

The policies of the University of Missouri-St. Louis and the School of Optometry comply with the provisions under those laws which forbid discrimination on the basis of race, color, sex, national origin, religion, age, handicap, or veteran status.

Acceptance Procedures
Students accepted for admission will begin receiving notices of acceptance in December prior to the year of anticipated matriculation. Notices of acceptance may be received as late as the following June. 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.

Students offered Admission have ten days from the date on the offer of admission to make a required $200 nonrefundable holding deposit.

UM-St. Louis Honors College Scholars Program
A cooperative program offered by the School of Optometry and the Pierre Laclede Honors College allows students to complete both their undergraduate and professional studies in a total of seven years. This program offers professional and academic advisement by School of Optometry faculty throughout the Honors College undergraduate experience, as well as offering early exposure to clinically related activities and participation in Optometry student association activities. The Scholars Program enables the UM-St. Louis Honors College undergraduate student to apply for formal admission to the School of Optometry after completion of Optometry prerequisites and three years at the Honors College.

Financial Aid
The University of Missouri-St. Louis maintains an Office of Student Financial Aid to assist eligible students in financing their education when their own and/or their families' resources are insufficient for this purpose. For information regarding available sources of student financial assistance contact: Student Financial Aid, 209 Woods Hall, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121-4499, (314) 516-5526. Scholarship and financial aid information is available and given to prospective students during the pre-interview process.

Fees
Detailed information regarding current fees and residency regulations is furnished in the Schedule of Courses, a newspaper schedule distributed before each semester registration, available at the Registrar's Office in Woods Hall. Students should be aware that fees shown are current as this publication goes to press, but fee changes may occur while this Bulletin is still in use.

The university reserves the right to change fees and other charges at any time without advance notice.

Education Fees (1999-00)
All students enrolled in the university must pay education fees based on either the schedule for Missouri residents or the schedule for nonresidents which follows.

Optometry Educational Fee
Regular Semester
Missouri Residents $442.50 per credit hour ($7,080.00 maximum for 16 credit hours)
*Nonresidents $890.00 per credit hour ($14,240.00 maximum for 16 credit hours)

All students are required to pay the following fees each semester: Instructional Computer Fee $8.60 per credit hour; Student Facility, Activity and Health Fee $24.10 per credit hour ($289.20 maximum for 12 or more credit hours).

Summer Session
A summer session is required between the third and fourth professional year. The education fee per credit hour for these sessions follows the same schedule as listed previously.
Nonresident Students

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. Students are responsible for registering under the proper residence and paying the proper educational fees.

Residence

Currently, five nonresident positions are allocated by state reciprocal agreements for residents of Kansas. Individuals who are admitted under these agreements will pay reduced educational fees. For additional information, contact: Optometry Program, Kansas Board of Regents, 700 S.W. Harrison, Suite 1410, Topeka, KS 66603 (785)296-3517.

Optometry students will be required to pay nonresident educational fees if they do not meet the university's residency requirements at the time of their enrollment. The definition of "residency" is outlined in the pamphlet Tuition and Residency Rules available from the Cashier's Office, (314) 516-5151.

Four-Year Professional Degree (O.D.) Curriculum

First Year

Fall Semester
504, Neuroanatomy
505, Geometric Optics
506, Practice Management I
508, Human Anatomy and Physiology
512, Biochemistry

Winter Semester
513, Physical Optics and Photometry
514, Clinical Optometry I
515, Ocular Optics
516, Physiological Optics Laboratory
517, Ocular Motility
518, Anatomy and Physiology of the Eye
519, Physical Optics and Photometry Lab

Second Year

Fall Semester
520, Ophthalmic Optics
521, Clinical Optometry II
522 Systemic Disease
524, Monocular Sensory Processes
541, Practice Management II
555, General Pharmacology

Winter Semester
530, Ophthalmic Dispensing
531, Clinical Optometry III
532, Binocular Vision and Space Perception
533, Ocular Disease I
535, Epidemiology

Third Year

Fall Semester
550, General Clinic I
553, Contact Lenses I
554, Binocular Vision Anomalies
556 Ocular Disease II
558, Geriatric Optometry
596, Public Health

Winter Semester
557, Environmental Vision
559, Ophthalmic Lasers
560, General Clinic II
561, Pediatric/Binocular Vision Specialty Clinic
562, Contact Lenses Specialty Clinic
563, Contact Lenses II
564, Low Vision
566, Ocular Assessment
567, Pediatric Optometry
582, Practice Management III

Fourth Year

Category 1 UM-St. Louis
Note: Must enroll in 573, 574, and 575, concurrently.
573, UM-St. Louis Pediatric/Binocular Vision Patient Care
574, UM-St. Louis Contact Lens Patient Care
575, UM-St. Louis Co-Management Patient Care

Category 2 Institutional
586, External Rotation in Institutional Patient Care

Category 3 Ocular Disease
585, External Rotation in Ocular Disease Patient Care

Category 4 Internal
Note: Must enroll in 576 and 577 concurrently
571, Community Service Rotation in Patient Care
572, East St. Louis Center Patient Care and/or
576, Optometric Center Patient Care
577, Optometric Center Low Vision Patient Care

Category 5 Specialty
578, External Rotation in Contact Lens Patient Care
579, External Rotation in Pediatric/Binocular Vision Patient Care
592, External Rotation in Low Vision Patient Care

Category 6 Elective
570, External Rotation in General Patient Care
580, Supplementary Rotation in General Patient Care
581, External Supplementary Rotation in General Patient Care

Required Courses
583, Practice Management IV
593, Clinic Seminar
Grades
The School of Optometry does not recognize satisfactory/un satisfactory grades for an optometry student enrolled in a course required for the doctor of optometry degree. The School of Optometry does not recognize a D grade for an optometry student enrolled in a course required for the doctor of optometry degree.

Time limitations
All of the required courses during the first 6 semesters of first course enrollment and all required courses for the O.D. degree must be completed within 6 years after the first course enrollment.

Graduate Studies

Physiological Optics
Physiological optics is a multidisciplinary area concerned with the study of normal and anomalous vision. The goal of this program is to train the next generation of researchers in clinical and basic vision science, to conduct research, and to educate faculty for schools of optometry. Students will be required to integrate basic skills in vision science with focal studies in an area of research emphasis.

This program will emphasize research aimed at new treatments and cures for vision disorders, as well as research in basic mechanisms of visual functions. The School of Optometry offers both an M.S. degree and a Ph.D. degree. Students may apply to the Graduate School for admission to either the M.S. or the Ph.D. program.

Admission Requirements
Students should have the appropriate background for graduate training in physiological optics and appropriate undergraduate courses for their anticipated research emphasis. Applicants must have a bachelor's degree from an accredited college or university within the United States or from an equivalent institution outside the United States. To be admitted as regular graduate students, applicants must have a grade point average of at least 3.0 in their overall undergraduate work, in their undergraduate major, and in any postbaccalaureate academic work. Students must arrange for transcripts to be submitted from all postsecondary academic work and to have at least three letters of recommendation sent by faculty members at previously attended colleges and universities. Students must also submit GRE scores (verbal, quantitative, and analytic). Applicants to the M.S. program must have combined scores on the verbal and quantitative sections of at least 1000; applicants to the Ph.D. program must have combined scores of at least 1100. In addition, students from countries where English is not a primary language must submit TOEFL scores of 550 or better. All materials and scores must be submitted by March 1 if an applicant wishes to be considered for financial assistance for the fall semester.

Master of Science in Physiological Optics

Degree Requirements
The M.S. degree requires 30 semester hours of course work, including the core courses. At least 25 of these hours will normally be taken from courses offered by the School of Optometry, with no more than 10 of these in Physiological Optics 490, Graduate Research in Physiological Optics. Each M.S. student will be required to teach at least two semesters in areas determined by the Graduate Committee in Physiological Optics.

The core courses for this program are:
Physiological Optics 400, Sensory Processes and Perception (3 credits)
Physiological Optics 401, Visual Optics (3 credits)
Physiological Optics 402, Ocular Anatomy and Physiology (3 credits)
Physiological Optics 403, Psychophysical Methods and Experimental Design (3 credits)
Physiological Optics 404, Sensory Neuroscience (3 credits)

Special Topics, Individual Studies, and Advanced Topics courses in Physiological Optics are also offered.

Each M.S. student must also complete a thesis based on research conducted during the program. The thesis must be approved by a committee of at least three members of the graduate faculty, at least two of whom must be from the graduate faculty in physiological optics.

Ph.D. in Physiological Optics

Degree Requirements
The doctoral degree requires 60 semester hours of course work, including the core courses. Each Ph.D. student will also be required to demonstrate proficiency in a foreign language, computer language, advanced statistical methods, or another acceptable tool skill. The tool skill and level of proficiency must be selected in advance in consultation with the Graduate Committee in Physiological Optics. Students will be required to teach at least two semesters in areas determined by the graduate committee.

Written qualifying examinations will be offered each semester. Students must declare their intent to take the examinations at least one month prior to the beginning of that semester or summer session. Full-time students must attempt qualifying examinations before beginning their third year of study.

The preparation of the dissertation will be supervised by a dissertation committee, which will be selected by the student and the student's adviser with input by the graduate committee. An oral examination of the written dissertation proposal will be conducted by the committee.
A public oral defense of the completed written dissertation is required.

The core courses for this program are:
- Physiological Optics 400, Sensory Processes and Perception
- Physiological Optics 401, Visual Optics
- Physiological Optics 402, Ocular Anatomy and Physiology
- Physiological Optics 403, Psychophysical Methods and Experimental Design
- Physiological Optics 404, Sensory Neuroscience
- Special Topics, Individual Studies, and Advanced Topics courses in Physiological Optics are also offered.

Continuing Education
The School of Optometry offers continuing education programs for optometrists throughout the Midwest region as well as nationwide. Courses on management of ocular diseases, ocular anomalies, and visual skills are held on a frequent basis. In addition to School 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 school are accepted by those states requiring continuing education credit for relicensure.

Continuing Education course information may be obtained by contacting:
University of Missouri-St. Louis School of Optometry
Office of Continuing Education
8001 Natural Bridge Road
St. Louis, MO 63121-4499
(314) 516-5615

Career Outlook

Doctor of Optometry Degree
A doctor of optometry is an independent health care professional who is specifically educated, clinically trained, and licensed to examine, diagnose, and treat conditions or impairments of the human vision system. They examine the eyes and related structures to determine the presence of vision problems, eye disease, and other ocular abnormalities.

Doctors of optometry are the major providers of vision care. They provide treatment by prescribing ophthalmic lenses or other optical aids, provide vision therapy to preserve or restore maximum efficiency in vision, and in most states (including Missouri) are authorized to prescribe drugs in the treatment of certain eye diseases.

Doctors of optometry can also detect certain general diseases of the human body such as diabetes, hypertension, and arteriosclerosis that have the potential capacity to affect vision. When an eye examination reveals diseases in other parts of the body, the optometrist will refer patients to the appropriate health care practitioner for treatment. Like physicians and dentists, optometrists are primary health care professionals.

The scope of optometry practice requires an understanding of the development of vision from infancy through adulthood, and the therapeutic and rehabilitative methods required to care for the problems of vision from infancy through the declining years.

Optometry is the largest eye care profession and one of the largest independent health care professions in the United States. Currently, some 28,900 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 population) is a reasonable average for the United States. Despite recent growth in the profession, few states meet this criteria.

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, including both older citizens and school children, is steadily growing. Increased demands for vision care result not only from population growth but also from increased understanding of how good vision relates to industrial production, student achievement, adjustments to aging, and other areas crucial to modern society.

The patients whom the practicing doctors of optometry treat may have varied and challenging needs. On any given day, an optometrist might be involved in restoring 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; 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.

Graduate Degrees

The master of science program provides research-oriented training beyond that offered in the professional program in optometry. Many optometry schools require that applicants for faculty positions hold an M.S. or Ph.D. degree as well as an O.D. degree. Additional employment possibilities for individuals with M.S. degrees are found in industry and in public and private research foundations.

The Ph.D. program prepares students as research professionals in vision science. Employment opportunities are available in college or university teaching and research, in research institutes, and in industry. Within academic optometry, individuals with both O.D. and Ph.D. degrees are in high demand as faculty members.
Course Descriptions

The following 400-level courses may be taken in the master of science or doctor of philosophy programs in physiological optics.

400 Sensory Processes and Perception (3)
Prerequisite: Consent of instructor required for graduate students not in Physiological Optics. Current views on the encoding of various aspects of the visual stimulus (intensity, space, time, and wavelength) that give rise to the perceptions of brightness, contour, motion, and color will be considered in this course. The psychophysical tools available to examine visual encoding will be emphasized. Other topics will include binocular vision and depth perception, information processing approaches to visual pattern recognition, and the similarities and interactions of the visual system with the other sensory modalities.

401 Visual Optics (3)
Prerequisite: Opt 406, Opt 505, or consent of instructor. This course deals with the optical properties of the eye. Included are a review of general optics including physical optics, paraxial and non-paraxial geometric optics, image quality, radiometry and photometry, and optical instrumentation. Topics in visual optics will include schematic eyes, measurement of the parameters of the eye, accommodation, retinal image size, refractive errors, visual axes, spectral absorption by the ocular media, and the optical performance of the eye.

402 Ocular Anatomy and Physiology (3)
Prerequisite: Consent of instructor required for graduate students not in Physiological Optics. The structures and fluids of the eye and orbit, their interactions and functions are considered in this course. Specific topics include the eyelids, tearfilm, conjunctiva, cornea, iris, ciliary body, vasculature, aqueous humor, vitreous body, and the retina.

403 Psychophysical Methods and Experimental Design (3)
Prerequisite: Consent of instructor required for graduate students not in Physiological Optics. Advanced methodology for the design and analysis of experiments in a variety of areas of visual science are considered in this course. Both basic and applied topics will be considered. Special emphasis will be placed on psychophysical methodology, signal detection analysis, and scaling techniques.

404 Sensory Neuroscience (3)
Prerequisite: Opt 405, Opt 504, or consent of instructor. This course will deal with the neural organization of the sensory systems with an emphasis on vision. It will include a review of general neurophysiology and neuroanatomy as they relate to the processing of environmental stimuli into neural information, as well as experimental approaches utilized in neurobiology. Topics to be covered include neural transduction and sensory coding by receptors and neurons, constraints on perception defined by the functional organization of the nervous system, sensory development and plasticity as related to neural development, and evolution of sensory systems.

405 Neuroanatomy (5)
Prerequisite: Graduate standing. Detailed gross and microscopic anatomy of the human central nervous system with a special emphasis on the cranial nerves, nuclei, and the visual system. Students may not receive credit for both Opt 405 and Opt 504.

455 Visual Information Processing (2)
Prerequisite: Completion of core or consent of instructor. This course covers a variety of topics related to the computer modeling of visual problems, such as the detection of surfaces and three-dimensionality, the perception of color, and the encoding of motion. Computer models will be evaluated in terms of their efficiency, veridicality, and relation to biology.

456 Oculomotor Systems (2)
Prerequisite: Completion of core or consent of instructor. The intra- and extraocular muscle systems illustrate the role of visual and other sensory information in feedback control systems. Topics include the control of eye movements, accommodation and pupil size, and their synekistic relationship in the near triad. The anatomy, physiology, and pharmacology of the muscles, kinematics, methods of measuring eye movements, neurophysiology of eye movements, and perceptual phenomena are also discussed.

470 Individual Studies in Physiological Optics (2)
Prerequisite: Consent of instructor. This course designation can be used to cover a variety of topics in visual science. In general, very specific topics of limited interest will be presented as individual studies. Individual studies and advanced topics enable the student's course of study to be sharply tuned to his or her major area of interest.

490 Graduate Research in Physiological Optics (1-15)
Prerequisite: Consent of instructor. Research in an area selected by the student in consultation with faculty members. May be taken to a maximum of 10 hours for the M.S. and 15 hours for the Ph.D.

497 Interdisciplinary Geriatric Care (2)
( bzeme as Gerontology 497.) Prerequisite: Consent of instructor. Interdisciplinary approaches that address the medical and social needs of the elderly will be examined. Information about geriatric care and social issues affecting the well-being of older adults will be provided. Clinical, theoretical, and educational perspectives will be presented.
499 Current Topics in Optometry and Vision Science (1)
Prerequisite: Consent of instructor. This seminar course examines and analyzes current publications in eye care and vision research. May be taken as an optometry elective to a maximum of 3 hours.

The following 500-level courses are taken in the Doctor of Optometry (O.D.) program.

504 Neuroanatomy (4)
Detailed gross and microscopic anatomy of the human central nervous system with a special emphasis on the cranial nerves, nuclei, and the visual system.

505 Geometric Optics (4)
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.

506 Practice Management I (2)
An introduction to the profession of optometry, including a consideration of the characteristics of a profession, the history of optometry, the profession’s legal limitations, and major optometric organizations. The ethical basis of the practice of optometry will be explored, including a consideration of the theories and principles of normative ethics, biomedical ethics and the responsibilities of the health care practitioner, professional codes of ethics and ethical issues that arise in the practice of optometry. Ethical case studies will be extensively used. This is an interactive course, requiring active participation on the part of the student.

508 Human Anatomy and Physiology (6)
The general anatomy of the human body and the physiology of the major organ systems including the peripheral and autonomic nervous system, the cardiovascular, respiratory, endocrine, digestive, and reproductive systems will be presented. The anatomy of the head and neck will be emphasized and the histology of the basic tissue types and organs will be related to general human anatomy and physiology. (Five hours lecture, two hours laboratory/week.)

512 Biochemistry (3)
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.

513 Physical Optics and Photometry (2)
Prerequisite: Optometry 505. Basic photometric concepts, measurements of light levels, applications in ergonomics, visual and photographic optics. Physical optics including diffraction, interference, polarization, birefringence, and lasers.

514 Clinical Optometry I (2)
Selected tests for ocular assessment including case history, visual acuity, and ophthalmoscopy.

515 Ocular Optics (3)
Prerequisite: Opt 505. The eye as an image-forming mechanism, the schematic eyes, the optical role of the pupil, the retinal image and its evaluation. Nature, classification, and etiology of ametropia. Experimental models of refractive errors. Entopic phenomena. Mechanism and optical aspects of accommodation.

516 Physiological Optics Laboratory (1)
Experiments designed to accompany Opt 515 and Opt 517.

517 Ocular Motility (3)
Prerequisite: Opt 504. The anatomy, physiology, neurology, measurement, characteristics, and control of the intra- and extraocular system.

518 Anatomy and Physiology of the Eye (5)
Prerequisite: Opt 504 and Opt 508. Vegetative anatomy and physiology of the eye, optic nerve, orbit, and adnexa will be discussed. This includes discussion of embroyology and the dynamics of ocular fluids and includes a two-hour laboratory.

519 Physical Optics and Photometry Laboratory (1)
Prerequisite: Concurrent enrollment in Opt 513. Experiments designed to accompany Opt 513.

520 Ophthalmic Optics (4)
Prerequisite: Opt 513, 515, and 519. Ophthalmic materials, physical characteristics of lenses and frames, paraxial optics of ophthalmic lenses, ophthalmic prisms, lens specifications, special lenses, multifocal lenses, unique designs, aniseiktonic lenses, aberration theory and its application to lens design, lenses for low vision, protective eyewear, selection and dispensing eyewear, management of a dispensary.

521 Clinical Optometry II (5)
Prerequisite: Opt 514. Continuation of clinical optometry. Patient care in the areas of refraction, binocular integration, perimetry, and bimicroscopy.

522 Systemic Disease (3)
524 Monocular Sensory Processes (5)
Monocular sensory mechanisms of vision, photoreception, visual neurophysiology, spatial and temporal effects, visual acuity and resolution, adaptation, brightness discrimination, and color vision. Topics include a consideration of both the psychophysical aspects and neurophysiological bases of these mechanisms.

530 Ophthalmic Dispensing (1)
Prerequisite: Opt 520. Clinical experience in verification and dispensing of ophthalmic materials.

531 Clinical Optometry III (5)
Prerequisite: Opt 521. Correlation and analysis of optometric data. Emphasis on diagnosis, prognosis, and therapy of visual problems.

532 Binocular Vision and Space Perception (4)
Prerequisite: Opt 521 and 524 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.

533 Ocular Disease I (4)
Prerequisite: Opt 522. The etiology, epidemiology, symptoms, signs, and course sequelae of ocular disease and anomalies. Disease and anomalies of lids, orbit, conjunctiva, cornea, sclera, iris, ciliary body, lens, vitreous, retina, choroid, and optic nerve.

535 Epidemiology (2)
A review of descriptive statistics, probability sampling, correlation, and prediction. The essentials of epidemiological study procedures and a discussion of the epidemiology of vision disorders.

541 Practice Management II (2)
Prerequisite: Opt 506. Principles of human interpersonal relationships. The enhancement of listening and verbal skills will be provided. Emphasis will be preparing the student to understand and manage the many human interpersonal relationships necessary in the practice of optometry.

550 General Clinic I (6)
Prerequisite: Opt 531 and successful completion of all first and second year course work required. The clinical examination and care of general clinic patients, along with the fitting and dispensing of lenses and frames.

553 Contact Lenses I (3)

554 Binocular Vision Anomalies (4)
Prerequisite: Opt 531 and 532 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.

555 General Pharmacology (3)
Prerequisite: Opt 508 and 522. General principles of drug actions on the organ systems, central and peripheral nervous systems, methods of administration, pharmacological actions, side effects, and drug interactions. Regulatory agencies, laws, and drug abuse.

556 Ocular Disease II (4)
Prerequisite: Opt 533. The etiology, epidemiology, systems, signs, course sequelae and management of posterior segment ocular disease and the anomalies and ocular manifestations of systemic diseases. Disease, abnormalities and management of neurological conditions which affect the lids, pupils, extraocular muscles, optic nerve and visual system.

557 Environmental Vision (2)
This course considers the relationship of the eye and vision to all aspects of one's environment including home, work, recreation, and transportation. Emphasis will be placed on protecting the eye from injury and maximizing vision performance.

558 Geriatric Optometry (2)
(Same as Gerontology 458.) 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.

559 Ophthalmic Lasers (1)
Principles and applications of lasers for ophthalmic use. Emphasis will be placed on demonstration where possible. Topics will include the principles, physics and safety concerns of ophthalmic lasers. Lasers used in retinal imaging, and in the care of glaucoma, cataract, refractive conditions, and cosmetic conditions will be discussed and demonstrated. Co-management of patients requiring ophthalmic laser treatment will also be covered.

560 General Clinic II (6)
Prerequisite: Opt 550 and successful completion of all Fall semester third year course work required. Same as General Clinic I.
561 Pediatric/Binocular Vision Specialty Clinic (1)
Prerequisite: Opt 554 and successful completion of all Fall semester third year course work required. The clinical examination and care of patients in the optometric specialty areas of binocular vision and pediatric vision.

562 Contact Lens Specialty Clinic (1)
Prerequisite: Opt 553 and successful completion of all Fall semester third year course work required. The clinical examination and care of patients in the optometric specialty area of contact lenses.

563 Contact Lenses II (3)
Prerequisite: Opt 553. 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.

564 Low Vision (3)
The etiology, epidemiology, symptoms, signs, and course 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.

565 Ocular Pharmacology (3)
Prerequisite: Opt 555. Pharmacology principles, methods of administration, doses, contraindications, and adverse effects of drugs used for the diagnosis and treatment of abnormalities of the eye, adnexa and visual system. Ocular manifestations of systemic medications.

566 Ocular Assessment (1)
Prerequisite: Enrollment in General Clinic I or II. 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.

567 Pediatric Optometry (3)
Prerequisite: Opt 531. 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.

568 Clinical Medicine (2)
Prerequisite: Opt 522 and 555. Diagnostic principles and medical management. Comprehensive health history, physical examination and neurological screening with particular association to ocular health conditions. Clinical chemistry and interpretation of clinical laboratory tests, criteria for referral to other providers and emergency office procedures. Co-management practice with other primary care physicians will be emphasized.

569 Ocular Photography (2)
(Elective) Prerequisite: Consent of instructor. Optical principles and clinical techniques in photographing the internal and external eye and its adnexa. Includes laboratory exercises on use of the most common types of clinical cameras.

570 External Rotation in General Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. 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.

571 Community Service Rotation in Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of patients at St. Louis area community health centers. This course fulfills one of the clinic courses required for graduation.

572 East St. Louis Center Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of patients at the East St. Louis Eye Center. This course fulfills one of the clinic courses required for graduation.

573 UM-St. Louis Pediatric/Binocular Vision Patient Care (3)
Prerequisite: Successful completion of all first, second, and third year course work required. 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 Opt 574 and Opt 575.

574 UM-St. Louis Contact Lens Patient Care (3)
Prerequisite: Successful completion of all first, second, and third year course work 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 Opt 573 and Opt 575.

575 UM-St. Louis Co-Management Patient Care (1)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care in the co-management clinic with ophthalmologists 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 Opt 573 and Opt 574.
576 Optometric Center Patient Care (6)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of patients at the University of Missouri-St. Louis Optometric Center. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with Opt 577.

577 Optometric Center Co-Management Patient Care (1)
Prerequisite: Successful completion of all first, second, and third year course work required. Comprehensive clinical care of patients in the co-management clinic with ophthalmologists at the University of Missouri-St. Louis Optometric Center. This course fulfills one of the clinic courses required for graduation. This course must be taken in conjunction with Opt 576.

578 External Rotation in Contact Lens Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. 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.

579 External Rotation in Pediatric/Binocular Vision Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. 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.

580 Supplementary Rotation in General Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. 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.

581 External Supplementary Rotation in General Patient Care (7)
Prerequisites: Successful completion of all first, second, and third year course work is required. Comprehensive clinical care of general population of optometric patients at an external site approved by the School of Optometry's Externship Council.

582 Practice Management III (3)
Prerequisites: Opt 506 and Opt 541. 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, and recall systems. The establishment, development, and management of an optometric practice from a business point of view. Legal developments, governmental relationships, legislation and the legislative process, malpractice, professional ethics, taxes, fee structures, insurance, and accounting methods.

583 Practice Management IV (2)
Prerequisite: Successful completion of all first, second, and third year course work required. Further in-depth discussion in practice management.

585 External Rotation in Ocular Disease Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. 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.

586 External Rotation in Institutional Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. 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.

588 Directed Research (3)
(Elective) Credit is given for independent research. Projects may be laboratory, library, or clinically based research in any area of vision science. All projects must be undertaken under the supervision of a three-member faculty committee. This elective may be repeated once.

589 Directed Readings (1)
(Elective) Credit is given for independent literature review of a specific topic in any area of basic or clinical vision science. Readings are to be supervised by a two-person faculty committee and at least one member of this committee must be selected from among the full-time regular faculty. Credit is awarded upon approval of a written paper regarding the selected topic. This elective may be repeated once.

591 Geriatric Patient Care Delivery (3-6)
(Elective) Prerequisite: Consent of Geriatric Residency Instructors. Direct optometric patient care to a population that is largely geriatric. Emphasis will be on integrating specialty care available for these patients to provide comprehensive vision care. Two hours of direct patient care per week are required per hour of credit. In addition, the student will attend weekly supervisory meetings. May be repeated with consent of instructor for a total of 18 credits. Patient care will become more independent of direct supervision and the type of patients seen will be more varied with each repeat.
592 External Rotation in Low Vision Patient Care (7)
Prerequisite: Successful completion of all first, second, and third year course work required. 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.

593 Clinic Seminar (1)
Prerequisite: Successful completion of all first, second, and third year course work required. 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.

594 Topics in Geriatric Optometry (3)
(Elective) Prerequisite: Opt 558. This course will address concerns and options in providing optometric care to a geriatric population. New techniques, research, and public policy changes will be discussed to assist students in assembling a global perspective on delivering health care to a specific population.

595 Computer Applications in Optometric Practice (2)
(elective) Prerequisite: Second professional year or consent of instructor. An introduction to microcomputers and computerized office management systems. This course is designed to provide students with training in the use of computers, office management software, and microprocessor technology in an optometric office.

596 Public Health (2)
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. The relationship of vision care to these topics is emphasized.

598 Clinical Applications of Current Topics in Visual Science (2)
(elective) Prerequisite: Consent of instructor. A seminar on the use of new discoveries in visual science in clinical optometry. Students will participate in selecting the topics, which will change from year to year, with the guidance of the instructor. The course will also include laboratory demonstrations of seminar topics.
Pierre Laclede Honors College
General Information

The Pierre Laclede Honors College goal is to enrich significantly the educational experience of a select group of highly motivated and intelligent undergraduates. With this in mind, it enrolls promising students who give clear indication that they are ready to accept academic challenges and become creatively involved in the learning process together with a team of similarly committed instructors.

Given this special mission, the college has a unique structure and identity. Unlike the university's other schools and colleges, it has no academic departments or areas of its own, and it grants no degrees. Instead, it brings together a cross section of the university's students and teachers in a special curriculum.

The College offers two academic formats:

1. A four-year program open to entering freshmen and extending over a student's entire undergraduate career;

2. A two-year program open to a select group of third-year students who are either continuing or have transferred to the university and are engaged in work on a major.

The Honors College Writing Portfolio

Both programs include participation in the Honors College writing program, Writing through the Curriculum, which involves formal courses in composition (at least one of Honors 10, 210, and 310) and informal consultations with the director of the writing program. In the final year, this culminates in the compilation of a personal Honors College writing portfolio.

Undergraduate Research

All Honors College students must fulfill a 6-credit-hour independent study requirement (see below under Curriculum). Many students meet all or part of this requirement by undertaking a research project supervised by faculty in their major department. Additional financial support is available for supervised undergraduate research projects in all majors.

Faculty

Honors College instructors are drawn from faculty in the various academic departments and areas in those colleges and schools which have an undergraduate component. What these teachers have in common is a willingness to work closely with a select, diverse group of intellectually curious and academically high-achieving students. They demonstrate this by designing courses directed toward such an audience and based on small discussion seminars. Thus the honors faculty is an organic body, growing each semester as new faculty join in the honors project. The newcomers invariably include individuals whose teaching and scholarship have been singled out for special distinction. Their talents add to the Honors College's already rich instructional pool of more than 100 regular and full-time faculty.

Honors Scholars

Honors College scholars are highly qualified individuals from a broad range of public and private secondary schools and colleges. They enter the college with different backgrounds and interests and remain part of it while simultaneously enrolling in classes and pursuing bachelor's degrees in other academic divisions of the university.

Most honors students major in the traditional liberal arts disciplines spanning the humanities, social sciences, mathematics, and natural sciences, but about a third focus on using their undergraduate education to prepare for careers in business, education, nursing, or engineering. Whatever their undergraduate majors, most Honors College students plan to go on to graduate study or professional schools, although a significant number successfully seek employment immediately after graduation. Honors faculty and staff provide advice and guidance in both course choice and career plans.

Curriculum

Pierre Laclede Honors College offers both a four-year program (for students admitted as freshmen) and a two-year program (for transfer students from within the UM-St. Louis or from outside the university).

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 or under its auspices. 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, usually in innovative ways. In their junior and senior years, honors scholars also 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 (15 credit hours):

Scholars take Honors 10, 20, and 30, 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 either a Western or a Non-Western Traditions seminar.

10, Freshman Composition
20, Cities and Good Lives: Knowledge, Decisions, and Consequences.
30, Critical Analysis
111-5, The Western Traditions Series
121-5, The American Traditions Series (elective)
131-5, The Non-Western Traditions Series
Second Year (6 credit hours):
Scholars take two of the following Honors classes:
201, Inquiries in the Humanities
202, Inquiries in the Fine and Performing Arts
203, Inquiries in the Social and Behavioral Sciences
204, Inquiries in Mathematics and Computing
205, Inquiries in the Sciences
206, Inquiries in Business
207, Inquiries in Education
208, Inquiries in Nursing

Honors students in the four-year program may also take Honors 210 to meet their advanced composition graduation requirement. Students choosing this honors elective normally take it during their third year (or as soon as they have completed 60 credit hours).

During the first two years, honors scholars 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 (19 credit hours):
Honors scholars in the four-year program take at least four seminars (12 credit hours) from the Advanced Seminar (301-308) and/or Research Seminar (351-358) series. They may take more, and many do where this is compatible with their major and/or minor requirements. 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 390-399). During the final year, students also take Honors 310, a 1-credit capstone for the Honors College writing program.

Two-Year Program (22 credit hours total):
Scholars in this program will take a combination of Honors College courses and also earn honors independent study credit 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 (9 credits):
During the first year of the two-year program, students take three honors seminars, including 210, Advanced Composition: Writing the City; one course from the Inquiries series (201-208); one course from either the

Advanced Seminar (301-308) or Research Seminar (351-358) series. In addition, 3 credit hours of independent study may be taken during this year, normally in or closely related to their major.

Fourth Year (7 credits):
The final year of the two-year program involves three courses chosen from the 200- and 300-level options, including 310, the honors writing portfolio (1 credit hour) and at least one course chosen from the 301-308 or 351-358 series. In addition, students will complete their independent study requirements with 3 or 6 hours of project, internship, or research work.

Other academic features and requirements.

Pass/Fail.
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 and stipend awards, general eligibility guidelines, and the admissions process are available from the Honors College administrative office at (314) 516-6870 or from the office of admissions.

Scholarships and stipends.
Every new freshman or transfer student admitted to the Honors College receives academic scholarship support. Scholars continue to receive these awards as long as they meet the criteria associated with their particular scholarship grant.

Good academic standing.
To remain in good standing, a student must maintain a cumulative GPA, in all his or her UM-St. Louis 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 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.

UM-St. Louis: an Urban Land Grant Institution
Given its location in St. Louis, and because it is part of an urban land grant university, Pierre Laclede Honors College seeks to encourage awareness of the manifold benefits of pursuing an undergraduate education in a dynamic and varied urban community. This is accomplished partly through the honors curriculum (for instance, Honors 20 and 210 are focused on "the city") through facilitating cultural and other outings in the city, and by encouraging students to include in their academic program courses, research projects, and/or internships which exploit the university's manifold connections with city people and its partnerships with leading city institutions such as the Missouri Botanical Gardens, the Missouri Historical Society, and the
Mercantile Library of St. Louis. Many honors students fulfill all or part of their independent study requirements working through such partnerships.

International Study and Other Exchange Programs
Honors students are encouraged to consider a semester's or a year's study at another institution. This can be done through the university's Center for International Studies, which administers exchanges with more than 70 universities in Europe, Africa, Asia, Australia, and South and Central America. Or students may, through the National Student Exchange (administered for the university by the Honors College), attend any one of more than 100 universities in the United States and Canada.
Course Descriptions

Please note the codes attached to the following course descriptions. These codes designate which Honors courses will fulfill, or help to fulfill, your general education graduation requirements.

(H) fulfills a Humanities requirement.
(SS) fulfills a Social Sciences requirement.
(SM) fulfills a Natural Sciences or Mathematics requirement.
(CW) fulfills a writing requirement.

Selected Honors courses may also meet divisional area study requirements, for instance in global awareness or cultural diversity. Please note also that several Honors courses, particularly in the 200- and 300-levels can be used to fulfill major, minor, and certificate requirements, where that has been agreed by other divisions or departments of the University.

The Honors College course lists, published each semester, identify clearly those seminars which fulfill these various requirements.

Important note: Unless otherwise indicated, all Honors seminars and courses require students to obtain the consent of the dean or associate dean of the Honors College at registration.

10 Freshman Composition (3)
Prerequisite: Consent of the dean of the Honors College.
Theory and practice of writing expository prose. Emphasis on individual tutorial. Assignments will be linked with topics discussed in Honors 101. (CW)

20 Cities and Good Lives: Knowledge, Decisions, and Consequences (3)
Prerequisite: Consent of the dean of the Honors College. Introduces students to the city and to a wide range of academic disciplines relevant to acquiring knowledge about the city, to making decisions about the city, and to understanding the impact of those decisions on the lives of people who work, play, and live in the city. Involves students with city institutions, organizations, and people, and introduces several main disciplinary areas offered by the University of Missouri-St. Louis. [H or SS].

30 Critical Analysis (3)
Prerequisite: Consent of the dean of the Honors College. An introduction to the forms and techniques of rational discussion. The emphasis is on improving skills in identifying, analyzing, evaluating, and formulating arguments. Topics include deductive and non-deductive reasoning, causal analysis, analogical arguments, logical fallacies, vagueness and ambiguity, methods of definition, and argumentative writing. (H)

111-115 Western Traditions (3)
Prerequisite: 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.

111, Western Traditions: Humanities [H].
112, Western Traditions: Arts (H)
113, Western Traditions: Social and Behavioral Sciences (SS)
114, Western Traditions: Mathematics (H or SS)
115, Western Traditions: the Sciences (H or SS)

121 - 125 American Traditions (3)
Prerequisite: Consent of the dean of the Honors College. Honors seminars in the American Traditions series involve readings and discussion 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. American Traditions 123 (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.

121, American Traditions: Humanities (H)
122 American Traditions: The Arts (H)
123 American Traditions: Social and Behavioral Sciences (SS)
124 American Traditions: Mathematics (H or SS)
125 American Traditions: The Sciences (H or SS)

131-135 Non-Western Traditions (3)
Prerequisite: Consent of the dean of the Honors College. Study of Non-Western societies, "traditional" or "modern," offers a reminder that, however defined, "the West" does not encompass the full range of human potentiality whether in terms of culture, values, behavior or ideas. Based on reading of significant primary texts and/or important secondary works, these seminars remind us of the realities of human diversity and provide perspectives on our own world. Non-Western Traditions seminars may be used to satisfy cultural diversity general education requirements.

131 Non-Western Traditions: Humanities (H)
132 Non-Western Traditions: The Arts (H)
133 Non-Western Traditions: Social and Behavioral Sciences (SS)
134 Non-Western Traditions: Mathematics (H or SS)
135 Non-Western Traditions: The Sciences (H or SS)
201-208 Honors Inquiries (3)
Prerequisite: 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.

201, Inquiries in the Humanities (H)
202 Inquiries in the Fine and Performing Arts (H)
203 Inquiries in the Social and Behavioral Sciences (SS)
204 Inquiries in Mathematics and Computing (SM)
205 Inquiries in the Natural Sciences(SM)
206 Inquiries in Business (H or SS)
207 Inquiries in Education (H or SS)
208 Inquiries in Nursing (H, SS or SM)

210 Honors Advanced Composition: Writing the City (3)
Prerequisite: 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 210 meets the Advanced Composition requirement of the university. (CW)

304 Advanced Honors Seminar in Mathematics and Computing (SM)
305 Advanced Honors Seminar in the Sciences (SM)
306 Advanced Honors Seminar in Business (H or SS)
307 Advanced Honors Seminar in Education (H or SS)
308 Advanced Honors Seminar in Nursing (H, SS, or SM)

310 Independent Portfolio Writing (1)
Prerequisites: Consent of the Dean of the Honors College and senior status. Open only to Honors College students and not acceptable for graduate credit. Students in this course will meet on a regular basis with the Director of Writing and other appropriate Honors faculty to revise and polish samples in the Honors writing portfolio which the student has compiled during his or her Honors College enrollment. With the assistance of the Director, the student will write an in-depth analysis of his or her writing and will select the best examples of writing in his or her Honors Portfolio. During this independent study, the student may request help with research skills, writing issues, or application procedures for post-graduate courses or employment. Required of all students admitted and enrolled after August 1998; optional for others. (CW)

351-358 Research Seminar (3)
Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Modeled on and for some students affording a preview of the postgraduate or professional research seminar, Honors Research seminars bring students face to face with primary research, as appropriate in the library, the laboratory, and/or field work, utilizing appropriate disciplinary perspectives and secondary reading. These courses may be cross-listed with other advanced courses in appropriate departments/divisions of the university, and as such may carry specific course prerequisites and/or require the specific consent of the instructor.

351 Research Seminar in the Humanities (H)
352 Research Seminar in the Fine and Performing Arts (H)
353 Research Seminar in the Social and Behavioral Sciences (SS)
354 Research Seminar in Mathematics and Computing (SM)
355 Research Seminar in the Sciences (SM)
356 Research Seminar in Business (H, SS or SM)
357 Research Seminar in Education (H or SS)
358 Research Seminar in Nursing (H or SS)

301 Advanced Honors Seminar in the Humanities (H)
302 Advanced Honors Seminar in the Fine and Performing Arts (H)
303 Advanced Honors Seminar in the Social and Behavioral Sciences (SS)
390 Independent Study in Honors (1-6)
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 390, 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 no later than the deadline for university registration. (H or SS)

391-399 Honors Independent Research (3)
Prerequisites: Consent of the Dean of the Honors College. Open only to Honors College students and not acceptable for graduate credit. Honors students who wish to conduct individual research projects under the supervision of a member of the university's regular or full-time faculty may register for undergraduate credit and receive financial support on a cost-of-research basis. Such projects will usually be given appropriate course numbers in the student's major (or minor) department. Where this is not possible or otherwise inappropriate, students may register for credit in the Honors 39x Independent Research series. In order to qualify for financial support and academic credit, completed proposal forms, together with a brief description of the research project, must be approved and signed by an appropriate member of the faculty and submitted to the Honors College not later than the semester deadline for university registration. May be repeated for credit where the research topic/problem is substantially different or where it can be significantly extended. Faculty approval must be obtained for repeat credit.

391 Honors Independent Research in the Humanities (H)
392 Honors Independent Research in the Fine and Performing Arts (H)
393 Honors Independent Research in the Social and Behavioral Sciences (SS)
394 Honors Independent Research in Mathematics and Computing (M)
395 Honors Independent Research in the Sciences (S)
396 Honors Independent Research in Business (H, SS, or SM)
397 Honors Independent Research in Education (H or SS)
398 Honors Independent Research in Nursing (H, SS or SM)
399 Honors Independent Research in Engineering (SM)
Other Programs
UM-St. Louis/Washington University Joint Undergraduate Engineering Program

Administration

John Russell, Dean
Ph.D., University of Illinois at Urbana Champaign
Bernard J. Feldman, Associate Dean
Ph.D., Harvard University
Gloria Gardner, Academic Adviser
B.S., Kent State University

Faculty

Philip V. Bayly, Professor and Advisor
Ph.D., Duke University
Christopher I. Byrnes, Professor
Ph.D., University of Massachusetts
Richard A. Gardner, Professor
Ph.D., Purdue University
Phillip L. Gould, Professor and Adviser
Ph.D., Northwestern University
Robert O. Gregory, Professor Emeritus and Adviser
DSc, Electrical Engineering, Washington University
Raimo J. Hakkinen, Professor
Ph.D., California Institute of Technology
Kenneth Jerina, Professor and Advisor
D.Sc., Washington University
I. Norman Katz, Professor
Ph.D., Massachusetts Institute of Technology
David A. Peters, Professor
Ph.D., Stanford University
William F. Pickard, Professor
Ph.D., Harvard University
Daniel L. Rode, Professor
Ph.D., Case Western Reserve University
Shankar M. L. Sastry, Professor
Ph.D., University of Toronto
Barbara A. Shrauner, Professor
Ph.D., Harvard University (Radcliffe)
Barry E. Spielman, Professor
Ph.D., Syracuse University
Srinivasan Sridharan, Professor
Ph.D., University of Southampton
Kevin Z. Truman, Professor and Adviser
Ph.D., University of Missouri - Rolla
James C. Ballard, Associate Professor
M.A., Washington University
Roger D. Chamberlain, Associate Professor
D.Sc., Washington University
Theodosios Korakianitis, Associate Professor
Sc.D., Massachusetts Institute of Technology
Ricardo L. Actis, Adjunct Professor
D.Sc., Washington University
Harold J. Brandon, Affiliate Professor
D.Sc., Washington University
Alan C. Wheeler, Affiliate Professor
Ph.D., Stanford University
Mario P. Gomez, Adjunct Professor
Ph.D., Stanford University
William J. Murphy, Adjunct Professor
D.Sc., Washington University
Matthew G. Dreifke, Adjunct Associate Professor and Adviser,
M.S., Washington University
John D. Corrigan, Adjunct Assistant Professor
Ph.D., University of Missouri

General Information

The Joint Undergraduate Engineering Program of UM-St. Louis and Washington University was approved in 1993 by the University of Missouri and the Coordinating Board for Higher Education to support nontraditional, placebound students who wish to pursue a bachelor's degree in engineering.

The program is designed to offer course work beyond the pre-engineering courses at UM-St. Louis and the area community colleges. Pre-engineering and general education courses are offered at UM-St. Louis, and upper-level engineering courses are offered on the Washington University campus. 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 (B.S.C.E.), a bachelor of science in electrical engineering (B.S.E.E.), or a bachelor of science in mechanical engineering (B.S.M.E.).

Professional engineering degree programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The B.S.C.E., the B.S.E.E., and the B.S.M.E. have been designed to meet ABET accreditation requirements. However, ABET does not consider degree programs for accreditation before there are graduates. Thus, the first graduates of any new engineering degree program do not technically receive ABET-accredited degrees, but they are typically permitted to take the examinations required for engineering licensure after demonstrating that the course work they completed is at least equivalent to that which one would find in an ABET-accredited degree program.

Program Goal

The goal of the UMSL/WU Joint program is consistent with the mission of UM-St. Louis, which is to provide a high-quality education to enhance the occupational and professional careers of citizens in the entire region, including the minorities and economically disadvantaged population and to provide a well-trained, sophisticated work force for the St. Louis region. The partnership is an appropriate way for Washington University to share its campus, resources, and personnel with the citizens of Missouri.
Degree Program Educational Objectives

B.S. in Civil Engineering
Civil Engineering Practice encompasses the fields of structural engineering, transportation, environmental engineering, and construction. The mission of the undergraduate program is to prepare students for professional practice with fundamental knowledge in essential mathematical and scientific disciplines in an environment that provides opportunities for personal, academic, and professional growth. Graduates of the program will have:

- Ability to apply knowledge of basic scientific, mathematical, and engineering principles to solve Civil Engineering Problems in its four subdisciplines.
- Ability to design and conduct experiments as well as to analyze date.
- Ability to conceive and complete a comprehensive design project in one of the subdisciplines using design standards in the context of realistic constraints.
- Sound understanding of issues pertaining to professional practice and societal implications thereof.
- Ability to contribute as team members and leaders in the workplace, as well as in the community.
- Ability to communicate effectively through oral, written, visual, and graphic media.
- Ability to function in multidisciplinary engineering teams in design of a major project.
- Understanding of the need for lifelong learning, professional, and ethical responsibility.
- Awareness of regional and global opportunities and challenges, contemporary issues, and professionalism through exposure to practicing civil engineer.
- Ability to relate academic learning to practical experience so that they enhance each other.

B.S. in Electrical Engineering
The mission of the Electrical Engineering program is to instill knowledge and understanding of the fundamental principles necessary to become proficient in electrical circuits, computer systems, digital and linear electronics, electromagnetic engineering, signal analysis, and electrical laboratory methods. Graduates will have:

- Ability to design and analyze advanced and complex systems in at least one of the following areas:
  1. Solid-state devices and circuits
  2. Control components and systems
  3. Communications
  4. Computer software and hardware
  5. Electrical power and energy.
  This ability will include the integration of thoroughly mastered mathematics and science in solving engineering problems.
- Proficiency with experimental instrumentation and techniques spanning areas of electrical energy systems and digital systems. This proficiency will include the ability to design and conduct experiments, as well as ability to analyze and interpret data.
- Proficiency in engineering design of a system, component, or process to meet desired needs.
- Ability to communicate, both orally and in writing, with special emphasis on technical writing.
- Ability to interact effectively with other people providing experience in working with other students in teams as both a team leader and a team member.
- Understanding and appreciation of one’s professional and ethical responsibility and historical and contemporary global and societal issues.
- Recognition of the need for and ability to engage in lifelong learning.

B.S. in Mechanical Engineering
Mechanical engineers are concerned with the technologies of manufacturing, energy conversion, machine design, instrumentation and control of physical processes and the environment. The mission of this undergraduate program is to prepare students for professional practice with a solid, scientifically grounded foundation in all four major stems of mechanical engineering: mechanisms and mechanical design, dynamics and control, fluid mechanics, and thermal science and materials science. The following objectives or goals are key focal points in the mechanical engineering program. Graduates will:

- Apply fundamental scientific and engineering concepts involving dynamics and systems, material science, mechanics and solids and the thermal-fluid sciences to identify, formulate, and solve a variety of mechanical engineering problems.
- Design, modify, conduct, and analyze experiments in the areas of thermal-fluid sciences, solid mechanics, and dynamical systems.
- Directly perform system, process, and component selection to satisfy specific engineering-related needs through application of mechanical design philosophy in engineering practice.
- Communicate in oral and written presentations using graphic and/or visual media appropriate for an engineering business environment.
- Operate productively in individual or multidisciplinary, team-oriented projects.
- Be exposed to modern developments, products, and tools as they relate to engineering practice.
- Be exposed to practicing engineers and their jobs and be taught the importance of high ethical and professional standards.
- Obtain the broad-based education necessary to understand the impact of engineering solutions in their global and societal contexts.
- Recognize the need for, and obtain tools necessary to engage in, lifelong learning.
- Be afforded opportunities to participate in cooperative education, internships, research experiences, or
International exchange programs to gain experience beyond the classroom.

Admission

Admission to candidacy for these degrees is granted jointly by the University of Missouri-St. Louis and Washington University.

Degree Requirements

Bachelor of Science in Civil Engineering
Bachelor of Science in Electrical Engineering
Bachelor of Science in Mechanical Engineering

A program of 137 semester hours is required for the bachelor of science in civil engineering, a program of 131 semester hours is required for the bachelor of science in electrical engineering, and a program of 139 semester hours is required for the bachelor of science in mechanical engineering, as shown below.

All majors must complete the university general education requirements, the pre-engineering requirements and the core engineering requirements. Except with special permission of the program faculty, to be eligible to take the other upper-level engineering courses (those with course numbers starting with the letter "J"):

All students must first complete JEMT 217, Engineering Mathematics, with a minimum grade of C-.

Mechanical and electrical engineering majors must also complete JEE 180, Introduction to Electrical Networks with a minimum grade of C-.

Civil engineering majors must complete either JEE 180, Introduction to Electrical Networks, or JCHE 343, Environmental Engineering Chemistry, with a minimum grade of C-.

A minimum grade of C- is necessary to meet the prerequisite requirement for any course.

Pre-Engineering Requirements

Mathematics 80, Analytic Geometry/Calculus I
Mathematics 175, Analytic Geometry/Calculus II
Mathematics 180, Analytic Geometry/Calculus III
Mathematics 202, Differential Equations
Chemistry 11, Introductory Chemistry I
Chemistry 12, Introductory Chemistry II
Physics 111, Physics: Mechanics and Heat
Physics 112, Physics: Electricity, Magnetism and Optics
Engineering 144, Statics
Engineering 145, Dynamics
English 10, Composition

Humanities and Social Sciences Electives

The student's choice of humanities and social sciences electives must meet both the UM-St. Louis general education requirements and the humanities and social sciences requirements of the Joint Undergraduate Engineering Program. Check with your adviser for details. In particular: A course in American history or government or in Missouri history or government must be included. The cultural diversity requirement must be fulfilled. At least 8 credit hours must be in one department or area within humanities or social sciences; of these 8 credit hours, at least 1 credit hour must be in a course at the junior level or higher, taken at a four-year institution. Some courses that fulfill the humanities [H] or social sciences [SS] breadth of study requirement do not count as humanities and social sciences electives; an example would be a statistics course taught in economics or psychology. See the Office of the Joint Undergraduate Engineering Program for a listing of courses that do not count as humanities or social sciences electives in this program, or check with your adviser.

Engineering Core Requirements

JCS 36, Introduction to Computing
JEMT 217, Engineering Mathematics
JEC 210, Engineering Communications
JME 220, Thermodynamics
JME 225, Materials Science
JME 331, Control Systems *
JEE 180, Introduction to Electrical Networks* OR
JCHE 343, Environmental Engineering Chemistry
JEE 150, Electrical Laboratory I *
*Required for electrical and mechanical engineering majors only.

Civil Engineering Major Requirements

JCE 045, Engineering Graphics
JCE 116, Surveying
JCE 241, Structural Analysis
JCE 242, Structural Design
JCE 252, Environmental Engineering Science
JCE 276, Open Channel Hydraulics
JCE 319, Soil Mechanics
JCE 320, Soil Exploration and Testing
JCE 374, Economic Decisions in Engineering
JCE 375, Introduction to Urban Planning
JCE 376, Site Planning and Engineering OR
JCE 382, Design of Water Quality Control Facilities
JCE 384, Probabilistic Methods in Civil Engineering Design
JCE 399, Senior Civil Engineering Seminar
JCE 372, Legal Aspects of Construction OR
JEP 361, Introduction to Environmental Law and Policy
JME 141, Mechanics of Deformable Bodies
JME 270, Fluid Mechanics
JME 280, Fluid Mechanics Laboratory
Civil Engineering Electives (200-399)

Electrical Engineering Major Requirements

JEMT 226, Probability and Statistics for Engineering
JEE 160, Digital Logic
JEE 190, Introduction to Digital and Linear Electronics
JEE 214, Electromagnetic Fields
Joint Undergraduate Engineering Program

JEE 227, Power, Energy, and Polyphase Circuits
JEE 279, Signal Analysis for Electronic Systems and Circuits
JEE 316, Electrical Energy Laboratory
JEE 355, Digital Systems Laboratory
JEE 380, Senior Design

Electrical Engineering Electives (200-399)

Mechanical Engineering Major Requirements
JEMT 226, Probability and Statistics for Engineering
JME 041, Introduction to Engineering Design or
JCE 045, Engineering Graphics and
JME 041A, The Engineering Design Process
JME 141, Mechanics of Deformable Bodies
JME 204, Analytical Approaches to Design
JME 221, Energetics for Mechanical Engineers
JME 222, Machine Design
JME 270, Fluid Mechanics
JME 280, Fluid Mechanics Laboratory
JME 271, Principles of Heat Transfer
JME 281, Heat Transfer Laboratory
JME 317, Dynamic Response of Physical Systems and
JME 318, Dynamic Response Laboratory
JME 390, Senior Design
JME 394, Mechanical Engineering Design Lab
Mechanical Engineering Electives (200-399)

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.

Minor in Environmental Engineering Science

A program of 18 semester hours is required to earn the minor in environmental engineering science. The minor is designed to provide formal recognition to recipients of bachelor's degrees in civil, electrical, or mechanical engineering that they have acquired the education necessary for entry-level careers as environmental professionals. They will also have a solid foundation to undertake graduate-level education in environmental engineering science.

Enrollment in all courses in the minor in environmental engineering science is limited to students who have been admitted to candidacy for the bachelor of science in civil engineering, the bachelor of science in electrical engineering, or the bachelor of science in mechanical engineering in the UM-St. Louis/ Washington University Joint Undergraduate Engineering Program. The minor may be awarded only to students who earn the bachelor of science in civil engineering, the bachelor of science in electrical engineering, or the bachelor of science in mechanical engineering in the UM-St. Louis/ Washington University Joint Undergraduate Engineering Program.

JCHE 343, Environmental Engineering Chemistry
JCE 252, Environmental Engineering Science (EE, ME majors) OR
JCE 375, Introduction to Urban Planning (CE majors)
JCE 308, Environmental Engineering Laboratory - Water/Soil OR
JCE 309, Environmental Engineering Laboratory - Air
JCE 382, Design of Water Quality Control Facilities
JEP 337, Environmental Risk Assessment
JEP 361, Introduction to Environmental Law and Policy

Engineering Design and Engineering Science Requirements

The number of semester hours assigned to each engineering course in the Joint Undergraduate Engineering Program is further divided into hours of engineering design, engineering science, and basic science content. Engineering topics is the sum of engineering science hours and engineering design hours. The following table shows the design hours and engineering science hours for courses in the engineering programs.

Each engineering student must complete a curriculum that contains at least 48 hours of engineering topics semester hours, including all courses: pre-engineering requirements, engineering core requirements, major requirements, and electives. Civil, electrical, and mechanical engineering majors should consult with their advisers to select electives at the 200 and 300 level that include sufficient engineering design and engineering science content to produce the required totals. Transfer courses from other institutions do not necessarily have the same engineering science and engineering design content as their equivalents in the UM-St. Louis/Washington University Joint Undergraduate Engineering Program. Students who include transfer courses in their curricula should consult with their advisers to be sure that these requirements are met.

Fees

Students register on the UM-St. Louis campus and pay UM-St. Louis fees plus an engineering fee for both pre-engineering and engineering courses. Limits on enrollments are determined by the availability of resources.
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For Further Information

For information about enrolling in this program, please contact the UM-St. Louis/Washington University Joint Undergraduate Engineering Program at (314) 516-6800, or the Washington University School of Engineering and Applied Science at (314) 935-6100.

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.
Course Descriptions

Prerequisites may be waived by consent of the joint program faculty.

Engineering

10 Introduction to Engineering (1)
Course consists of a series of lectures on engineering, fields of study within engineering, the engineering profession, types of work activities, and professional registration. Introduction to team building and the teamwork approach to projects and problem-solving common in an engineering curriculum and in the engineering profession. Guest lecturers will participate.

144 Statics (3)
Prerequisites: Math 175 and Physics 111. 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.

145 Dynamics (3)

All courses listed below require admission to candidacy for a degree in the UM-St. Louis/Washington University Joint Undergraduate Engineering Program. Prerequisites may be waived by consent of the Joint Program faculty. Audits are not permitted.

Chemical Engineering

JCHE 343 Environmental Engineering Chemistry (3)
Prerequisite: Chemistry 12. Introduction to the engineering aspects of air, water, soil, and geosphere chemistry. Toxicology and hazardous wastes. Pollution sources, dynamics, and ultimate fates. Sampling, control strategies, and regulations.

Civil Engineering

JCE 045 Engineering Graphics (3)
Prerequisite: Junior standing. Techniques in graphic communication and problem solving and design utilizing freehand sketches and computer graphics. Principles of orthographic projection, pictorial drawing, sectional views, dimensioning and tolerancing. Computer drawing and modeling: layout techniques, editing commands, drawing management, and plotting. Design project: individual or small group assignments, the design process, preliminary sketches, analysis, project modeling, detail and assembly drawings. This course is required for civil engineering majors.

JCE 116 Surveying (3)
Horizontal and vertical control surveys, including traverses, triangulation, trilateration, and leveling; basic adjustments of observations; geodetic data; coordinate systems. Basic route surveying, including horizontal and vertical curves.

JCE 241 Structural Analysis (3)

JCE 242 Structural Design (3)
Prerequisites: JME 225 and JCE 241. 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.

JCE 252 Environmental Engineering Science (3)
Prerequisite: JME 270 (may be taken concurrently) or permission 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 waste water, 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 waste water. Design of processes and facilities used for treating drinking water, waste water, and sludge disposal. Waste minimization and recycling in both industrial and municipal settings.

JCE 274 Hydraulics and Hydrology (3)
Prerequisite: JME 270 (may be taken concurrently). The concepts and theory of hydraulics and hydrology are discussed through lectures and practical engineering applications. Open channel flow, hydrograph analysis, watershed hydrology, frequency concepts, hydraulic design, and sedimentation are addressed.

JCE 276 Open Channel Hydraulics (3)
Prerequisite: JME 270. 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.
JCE 300 Independent Study (1-6)
Prerequisites: Junior standing and consent of faculty adviser. Independent investigation of a civil engineering topic of special interest to a student performed under the direction of a faculty member.

JCE 308 Environmental Engineering Laboratory - Water/Soil (3)
Prerequisite: JCHE 343. Laboratory experiments to illustrate the application of engineering fundamentals to environmental systems. Characterization and control of water/soil pollutants. Introduction to relevant analytical instrumentation and laboratory techniques. Laboratory work supported with theoretical analysis and modeling as appropriate.

JCE 309 Environmental Engineering Laboratory - Air (3)
Prerequisite: JCHE 343. Laboratory Experiments to illustrate the application of engineering fundamentals to environmental systems. Characterization and control of air pollutants. Introduction to relevant analytical instrumentation and laboratory techniques. Laboratory work supported with theoretical analysis and modeling as appropriate.

JCE 310 Design of Timber Structures (3)
Prerequisites: JCE 241 and ICE 242. Study of basic physical and mechanical properties of wood and design considerations. Design and behavior of wood beams, columns, beam-columns, connectors, and fasteners. Introduction to plywood and glued laminates members. Analysis and design of structural diaphragms and shear walls.

JCE 316 Introduction to Elasticity (3)
Prerequisites: JCE 141. Introduction to elasticity: indicial notation, stress and strain, material laws. Plane stress and plane strain problems and illustrations. Torsion of prismatic bars. Energy principles: virtual work, potential energy and complementary energy theorems, reciprocal theorems. Introduction to plates and shells.

JCE 319 Soil Mechanics (3)

JCE 320 Soil Exploration and Testing (1)
Prerequisite: JCE 319 (may be taken concurrently). Soil exploration; in-situ 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.

JCE 325 Professional Engineering Services (3)
Prerequisites: Senior standing. Introduction to use and integration of professional services for Project Design and Delivery Systems in construction projects will be presented. The relationship between owner and professional service personnel, architects, engineers, contractors, and construction managers will be explored in detail. The role, techniques, procedures, management principles, and professional responsibilities will be presented and discussed. Real projects will be presented to illustrate various project delivery systems used in design and construction. These points will be illustrated through a semester-long team project.

JCE 337 Matrix Structural Analysis (3)
Prerequisites: JCE 241. Course will cover analysis of framed structures, planar and 3-D, using beam-column elements and shear walls and floors. Flexibility and stiffness analyses are performed by generating the matrices and carrying through the analyses step by step with a matrix manipulator program. A commercially available program is used to check at least one problem.

JCE 358 Structural Stability (3)
Prerequisites: Senior standing. Course will cover the following topics: classification of instability phenomena, imperfection sensitivity, illustration with mechanical models, systems with finite degrees of freedom, postbuckling analysis using perturbation techniques, stability and nonlinear behavior of struts, plates, and cylindrical shells, nonconservation problems, and numerical methods.

JCE 360 Highway and Traffic Engineering (3)

JCE 362 Transportation Planning (3)
Prerequisites: Senior standing. Course will cover the following: fundamentals of multimodal transportation planning, urban study components, including study design and organization, origin-destination analysis, traditional traffic model processes of trip generation, distribution and assignment, urban transportation entity analysis (shopping centers, terminals, etc.), state and regional study components, including state and national needs and capital improvement programs, regional funding capabilities and related national transportation policy and legislative acts.
JCE 364 Foundations (3)  
Prerequisites: JCE 242, JCE 319 and JCE 320. Principal problems in design and construction of foundations for bridges and buildings. Bearing capacity of deep and shallow foundations; pressure on retaining walls and slope stability; modern developments in piling, cofferdams, open caissons, pneumatic caissons.

JCE 365 Airport Planning and Construction (3)  
Prerequisites: Senior standing. Fundamentals of airport planning location, construction, and legislative and fiscal implementation. Location principles with respect to the region and the site. Analysis of air travel demand models. Air control systems and navigation principles affecting airport design. Design of the site for runway, taxiway, and terminal location. Pavement and construction principles with respect to design. Current federal policy and fiscal programming for airport planning. Principles of integration with ground transport systems.

JCE 366 Advanced Design of Concrete Structures (3)  
Prerequisites: JME 225, JCE 241, JCE 242. Flexural behavior and design, strength and deformation of rectangular and nonrectangular sections, shear strength, beam-columns, long columns, slab systems, design of frames, and footings will be covered.

JCE 369 Construction Management Project (3)  
Prerequisites: JCE 373 and JEP 281. The course entails the study of principles and steps involved in the development of a project from design through bidding and construction with emphasis on preconstruction planning and construction operations. The students will be required to submit a report on project budget, bidding strategy and construction schedule. Lecture topics will be supplemented by a resource pool of consultants on estimating, scheduling and contracting who will provide advice and guidance to the students.

JCE 372 Legal Aspects of Construction (3)  
Prerequisite: Junior standing. A survey of the legal problems of the construction manager. Including but not limited to, liability in the areas of contracts, agency, torts, assurance, bad judgment and oversight.

JCE 373 Construction Operations and Management (3)  
Prerequisite: Junior standing. The construction industry, its development, components, and organization. Contracting methods. Applications and limitations. Selection of equipment using production analysis and economics. Field engineering, including form design, shoring, embankment design. Purchasing and change orders. Safety and claims.

JCE 374 Economic Decisions in Engineering (3)  
Prerequisite: Junior standing. Principles of economics involved in engineering decisions. Decisions between alternatives based on the efficient allocation of resources. Topics include the time element in economics, analytical techniques for economy studies, and taxes.

JCE 375 Introduction to Urban Planning (3)  
Prerequisite: Senior standing. A focus on the fundamental factors and techniques that the civil engineer must consider: population, economic base, land use, urban design, regional analysis, fiscal analysis, zoning, and public facilities analysis. Synthesis of these techniques into a major student project, typically involving groups of three to six students. Each project is assigned by the instructor and usually involves a real-life situation or problem that requires original data collection. In-class presentation, discussion, and critique of each group project.

JCE 376 Site Planning and Engineering (3)  
Prerequisite: Senior standing. A focus on the legal, engineering, and economic aspects of planning and design of facilities at a site-specific level. Concepts of legal and economic feasibility of site design are developed in conjunction with the study of civil engineering activities involved in dealing with urban design alternatives for residential, commercial, industrial, and recreational land uses. Case studies and review of current legislation affecting site planning and engineering are undertaken, culminating in a major design project.

JCE 377 Decision Analysis and Construction Applications (3)  
Introduction and application of systems engineering and statistics toward solving construction and civil engineering problems. Included are the following topics: network and linear programming models, construction and evaluation of decision trees to clarify choice of actions under uncertainty, probability distributions, sample statistics, linear regression models, sampling plans for quality assurance. Personal computer usage emphasized for problem solving.

JCE 378 Knowledge-Based Expert Systems in Civil Engineering (3)  
Prerequisite: JCS 36. Topics relating to the development of expert systems discussed with emphasis on application in civil and structural engineering. Subjects include knowledge engineering, frame- and rule-based expert systems, use of expert shells and tools, prototyping, and reasoning with uncertainty. Case studies and computer exercises supplement lectures. Students are expected to develop a prototype expert system.

JCE 380 Computer Applications in Construction Management (3)  
Prerequisite: JCE 373. A comprehensive study of computer applications in construction management. Topics include: configuration of hardware/software requirements for the management of a typical project; application programs used in project date base management and project schedule/cost control systems; data management techniques and development of custom reports for use in project management and control.
JCE 382 Design of Water Quality Control Facilities (3)  
Prerequisite: JCE 252. Application of environmental engineering principles to design of water and wastewater treatment facilities. Critical review of process design issues associated with physical, chemical, and biological treatment processes. Definition of problems and objectives, evaluation of alternatives, and use of these concepts in process design. Design-oriented class/group project.

JCE 384 Probabilistic Methods in Civil Engineering Design (3)  

JCE 386 Design of Masonry Structures (3)  
Prerequisite: JCE 242. History of masonry construction; masonry materials and components; loadings for masonry structures; fundamentals of working stress design; fundamentals of strength design; design of gravity load resisting elements; design of lateral load resisting elements; details, connections and joints; design of low-rise buildings; design of high-rise buildings; design for water penetration resistance; quality control/inspection.

JCE 399 Senior Civil Engineering Seminar  
Prerequisite: Senior standing. Students will research assigned topics of importance to graduates entering the Civil Engineering profession and prepare oral presentations and a written report. Student presentations will be augmented by lectures from practicing professionals. Topics include professional registration, early career development, graduate study, effective presentations, construction quality, and case histories of civil engineering projects.

Computer Science

JCS 36 Introduction to Computing (4)  
Workshop course (lectures and supervised laboratory sessions) covering the fundamental organization and operating principles of digital computers and the systematic design and development of well-structured programs. After an intensive exposure to algorithmic principles and programming techniques and practices using the JAVA language, students learn about a computer's internal structure through the use of a simple Von Neumann machine simulator.

Electrical Engineering

JEE 150 Electrical Laboratory I (3)  
Prerequisite: JEE 180. Lectures and laboratory exercises related to sophomore topics in introductory networks and basic electronics.

JEE 160 Digital Computers I: Organization and Logical Design (3)  
Prerequisite: JCS 36. 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; fundamentals of digital circuits and systems; computer organization and control; memory systems; arithmetic unit design. Occasional laboratory exercises.

JEE 180 Introduction to Electrical Networks (3)  
Prerequisites: Physics 112 and Math 202 (may be taken concurrently). Elements, sources, and interconnects. Ohm's and Kirchhoff's laws, superposition and Thevenin's theorem. The resistive circuit, transient analysis, sinusoidal analysis, and frequency response.

JEE 190 Introduction to Digital and Linear Electronics (3)  
Prerequisite: JEE 180. 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.

JEE 214 Engineering Electromagnetics I: Fundamentals (3)  
Prerequisite: JEMT 217. 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.

JEE 227 Power, Energy, and Polyphase Circuits (3)  
Prerequisite: JEE 180. 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.

JEE 262 Digital Computers II: Architecture (3)  
Prerequisite: JEE 160. 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.
JEE 279 Signal Analysis for Electronic Systems and Circuits (3)
Prerequisites: JEE 180 and JEMT 217. 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.

JEE 280 Network Analysis (3)

JEE 290 Principles of Electronic Devices (3)
Prerequisite: Physics 112. Introduction to the solid-state physics of electronic materials and devices, including semiconductors, metals, insulators, diodes and transistors. Crystal 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.

JEE 292 Electronic Devices and Circuits (3)

JEE 305 Product Engineering (3)
Prerequisites: JEM 226. Introduction to the principles of concurrent design and development and the importance of continuous interaction among engineering, finance, manufacturing, and marketing. Function analysis, value analysis, quality function deployment triad, and designing the best product with the least effort. Request for foolproof production: six sigma design, statistical process control (the "seven tools") and positive preventive action (the "five whys"). Lean production. Case studies will be integrated throughout.

JEE 310 Engineering Electromagnetics II: Applications (3)
Prerequisite: JEE 214. Study of important applications of electromagnetic theory. Solution of electrostatic and magnetostatic problems involving Laplace's equations subject to boundary conditions. Maxwell's equations, including boundary conditions for dielectrics and conductors, reflection and transmission characteristics with effects due to losses. Study of guided waves in rectangular and optical wave guides, including effects of dispersion. S-parameters and transmission networks, including S-matrix properties, relation to impedance, reflection coefficient, VSWR, and Smith chart. Study of antennas, including exposure to terminology and thinwire antennas.

JEE 316 Electrical Energy Laboratory (3)
Prerequisite: JEE 150. 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.

JEE 321 Communications Theory and Systems (3)
Prerequisites: JEE 279 and JEMT 226. 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.

JEE 327 Special Topics in Real-Time Processing (3)
Prerequisite: Senior Standing. Microcontrollers and digital signal processors are often utilized in applications such as communications systems, automotive control systems, biomedical instrumentation, consumer appliances, and industrial control systems. The purpose of this course is to examine a variety of issues regarding the real-time application of embedded microprocessor systems. Topics will include digital processing, the operation of sensors and transducers, signal representation, system design and software development. Classes will include lecture and laboratory sessions. Depending on student interest, exemplary applications from the following list will be studied: automotive control, biomedical instrumentation, communication systems, speech processing, data compression, and audio and acoustic processing.
JEE 332 Control Systems II (3)
Prerequisite: JEE 331. The control of physical systems with a digital computer, microprocessor, or special-purpose digital hardware is becoming very common. Course continues JEE 331 to develop models and mathematical tools needed to analyze and design these digital, feedback-control systems. Linear, discrete dynamic systems. The Z-transform. Discrete equivalents to continuous transfer functions. Sampled-data control systems. Digital control systems design using transfer and state-space methods. Systems comprised of digital and continuous subsystems. Quantization effects. System identification. Multivariable and optimum control.

JEE 345 Digital Signal Processing (3)

JEE 355 Digital Systems Laboratory (3)
Prerequisites: JEE 160 and JEE 190. Procedures for reliable digital design, both combinational and sequential; understanding manufacturers' specifications; use of special test equipment; characteristics of common SSI, MSI, and LSI devices; assembling, testing, and simulating design; construction procedures; maintaining signal integrity. Several single-period laboratory exercises, several design projects, and application of a microprocessor in digital design. Microprocessor programs are written in assembly language on a host computer and downloaded to the laboratory station for debugging. One lecture and one laboratory period a week.

JEE 358 Computer-Aided Design of Electronic Systems (3)
Prerequisites: JEE 190 and 279. Introduction to computer-aided techniques in the solution of network and electronic design problems, including filters; analysis of linear and nonlinear circuits; methods for numerical integration, evaluation of the Fourier integral; numerical methods for solving differential equations, automated methods for design; sparse matrix techniques. Use of problem-oriented languages such as SPICE. Methods for the analysis and design of digital circuits and systems.

JEE 360 Digital Computers: Switching Theory (3)
Prerequisite: JEE 160. Advanced topics in switching theory as employed in the analysis and design of various information- and material-processing systems. Combinational techniques: minimization, logic elements, bilateral devices, multiple output networks, symmetrical and iterative functions, threshold logic, state identification and fault detection, hazards, and reliable design. Sequential techniques: synchronous circuits, state tables, machine minimization, state assignment, asynchronous circuits, finite state machines.

JEE 363 Digital Integrated Circuit Design and Architecture (3)
Prerequisite: JEE 190 and JEE 262. Brief review of device characteristics important to digital circuit operation, followed by detailed evaluation of steady-state and transient behavior of logic circuits. Implications of and design techniques for very large-scale integrated circuits including architecture, timing, and interconnection. Students must complete detailed design and layout of a digital circuit. Major emphasis on MOS digital circuits with some comparisons to other technologies.

JEE 364 Digital Systems Engineering (3)
Prerequisite: JEE 190. Design and characterization of digital circuits, reliable and predictable interconnection of digital devices, and information transfer over buses and other connections. Topics include: Review of MOSFET operation; CMOS logic gate electrical characteristics; System and single-point noise margin and noise budgets; Figures of merit for noise-margin and poser-delay product, and tradeoff between noise margin and propagation delay; Transmission-line driving including reflection, termination, non-zero transition time; lumped and distributed capacitance loads, non-linear terminations, and applicable conditions for lumped approximations; Coupled transmission lines, forward and backward crosstalk, short line approximations, ground bounce, and simultaneous switching noise; Timing, clocking, and clock distribution for digital circuits; Prediction of metastability error rates and design for acceptable probability of failure. Examples and design exercises using systems and interconnections selected from current Computer Engineering practice such as RAMBUS, PCI bus, GTL, LVDS, and others.

JEE 368 Applied Optics (3)
Prerequisite: JEE 214. Topics relevant to the engineering and physics of conventional as well as experimental optical systems and applications explored. Items addressed include geometrical optics, Fourier optics such as diffraction and holography, polarization and optical birefringence such as liquid crystals, and nonlinear optical phenomena and devices.

JEE 380 Senior Design Project (3)
Prerequisite: Senior standing. Working in teams, students address design tasks assigned by faculty. Each student participates in one or more design projects in a semester. Projects are chosen to emphasize the design process, with the designer choosing one of several paths to a possible result. Collaboration with industry and all divisions of the university is encouraged.
Engineering and Policy

JEP 281 Topics in Engineering Management (3)
Prerequisite: Junior standing. Techniques relating to managing engineering professionals and engineering activities are introduced and discussed. The engineer's transition into project and project team management. Role of engineering and technology in major corporations. Engineering managerial functions, including production and use of financial information in planning, scheduling, and assessing engineering projects. Motivation of individual and group behavior among technical professionals. Macroeconomic factors influencing technical decision-making and engineering project management. Additional topics will vary from year to year, but will typically include government relations, regulation, compensation, ethics, production, operations, the quality function, and technological innovation.

JEP 337 Environmental Risk Assessment (3)

JEP 361 Introduction to Environmental Law and Policy (3)
Prerequisite: Junior standing. Survey of the most prominent federal laws governing environmental compliance and pollution control. Examines laws applicable to environmental impact statements, air pollution, water pollution, and hazardous waste. Addresses policy concerning the relative merits of using technological capabilities as compared to health risks in setting environmental standards. Discusses the need for environmental regulation to protect societal resources.

Engineering Communications

JEC 210 Engineering Communications (3)
Prerequisites: English 10 and junior standing. Persistent concerns of grammar and style. Analysis and discussion of clear sentence and paragraph structure and of organization in complete technical documents. Guidelines for effective layout and graphics. Examples and exercises stressing audience analysis, graphic aids, editing, and readability. Videotaped work in oral presentation of technical projects. Writing assignments include descriptions of mechanisms, process instructions, basic proposals, letters and memos, and a long formal report.

Engineering Mathematics

JEMT 217 Engineering Mathematics (4)
Prerequisite: Math 202. 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.

JEMT 226 Probability and Statistics for Engineering (3)
Prerequisite: Math 180. 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. This course is required for electrical and mechanical engineering majors.

Mechanical Engineering

JME 41 Introduction to Engineering Design (3)
An introduction to engineering design in the context of mechanical engineering. The course is presented in two parallel tracks. In the hands-on laboratory track, students first complete a series of experiments that introduce physical phenomena related to mechanical engineering. Understanding of these phenomena is achieved by designing and building simple devices and machines. The hands-on track then proceeds to a design contest in which 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. In the engineering graphics track, students learn the fundamentals of spatial reasoning and graphical representation. Freehand sketching skills include pictorial and orthographic views are applied to the design process. Computer modeling techniques provide accuracy, analysis and visualization tools necessary for the design of the contest machine. Detailing the design for production (including fasteners, dimensioning and tolerancing on part and assembly drawings) is applied to the student's contest machine.
JME 41A The Engineering Design Process (2)
An introduction to engineering design in the context of mechanical or civil engineering. In the hands-on laboratory, students first complete a series of experiments that introduce physical phenomena related to mechanical or civil engineering. Understanding of these phenomena is achieved by designing and building simple devices and machines. This 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. Specifically designed for those ME students who have earned credit for a CAD course before entering the Joint Engineering Program.

JME 141 Mechanics of Deformable Bodies (3)

JME 204 Analytical Approaches to Design (3)
Prerequisites: JME 041; JME 141 and JME 217 (may be taken concurrently). 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, optimization, geometric representation for visualization and manufacture, and product life cycle concerns. Case studies introducing and applying analytical techniques such as kinematic/dynamic analysis and the finite element method will be presented. This course is required preparation for subsequent design project courses.

JME 220 Thermodynamics (3)
Prerequisites: Math 175, Chemistry 11 and Physics 111. Classical thermodynamics, thermodynamic properties, work and heat, first and second laws. Entropy, irreversibility, availability. Application to engineering systems.

JME 221 Energetics for Mechanical Engineers (3)

JME 222 Introduction to Machine Design (3)
Prerequisites: JCS 36, JME 141 and Math 202. Design of machines and machine components using advanced concepts and analytical tools. Overview and definition of feasibility, synthesis, and analysis as used in design. Determination of loads, material properties, factors of safety and their statistical distributions. Analysis of stress and performance. Failure criteria: yielding, fracture, fatigue, stress-corrosion cracking, creep, etc. Formulation of solutions and optimization of design. Applications to design of shafts, springs, fasteners, belts, chains, bearings, gears, and screws. Use of computer techniques to determine velocities, accelerations, and forces in mechanisms and in stress analysis of components.

JME 225 Materials Science (4)
Prerequisite: Chemistry 11. 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.

JME 262 Materials Engineering (3)
Prerequisite: JME 225. This course deals with the application of fundamental materials science principles in various engineering disciplines. Topics covered include design of new materials having unique property combinations, selection of materials for use in specific service environments, prediction of materials performance under service conditions, and development of processes to produce materials with improved properties. The structural as well as functional use of metals, polymers, ceramics, and composites will be discussed.

JME 270 Fluid Mechanics (3)

JME 271 Principles of Heat Transfer (3)

JME 280 Fluid Mechanics Laboratory (1)
Prerequisite: JME 270. Physical laboratory exercises focusing on fluid properties and flow phenomena covered in JME 270. Calibration and use of a variety of equipment; acquisition, processing, and analysis of data by manual as well as automated methods.
JME 280 and JME 271. Physical laboratory exercises, including some numerical simulations and computational exercises, focusing on heat-transfer phenomena covered in JME 271. 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.

JME 300 Independent Study (1-6)
Prerequisites: Junior standing and consent of the faculty adviser. Independent investigation of a mechanical engineering topic of special interest to a student performed under the direction of a faculty member.

JME 316 Advanced Strength and Introductory Elasticity (3)
Prerequisite: JME 141. Introduction to elasticity; indicial notation, stress and strain, material laws. Plane stress and strain problems and illustrations. Torsion of prismatic bars. Energy principles: virtual work, potential energy and complementary energy theorems, reciprocal theorems.

JME 317 Dynamic Response of Physical Systems (2)

JME 318 Dynamic Response Laboratory (2)
Prerequisite: JME 317 and JME 318 must be taken during the same semester. Laboratory problems focusing on materials covered in JME 317.

JME 319 Experimental Methods in Fluid Mechanics (3)

JME 324 Manufacturing Processes (3)
Prerequisite: Senior standing. Introduction to the processes used in making basic components for machines and structures. Emphasis is on the underlying scientific principles for such manufacturing processes as casting, forging, extrusion and machining.

JME 325 Materials Selection in Engineering Design (3)
Prerequisite: Senior standing. 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.

JME 329 Flexible Manufacturing Automation (3)
Prerequisite: Senior standing. Survey of the application of robots in the automation of manufacturing industries. Use of robots to increase productivity, to improve quality or to improve safety. Special studies of applications of robots in painting, welding, inspection and assembly.

JME 331 Control Systems I (3)

JME 344 Solar Energy (3)
Prerequisites: JME 220, JME 270, and JME 271. Course will cover extraterrestrial solar radiation, solar radiation on the earth's surface, weather bureau data, review of selected topics in heat transfer, methods of solar energy collection including flat panel and concentrating collectors, solar energy storage, transient and long-term solar system performance.

JME 350 Computer-Integrated Manufacturing (3)
Prerequisite: Senior standing. Analysis and design of computer-integrated systems for discrete parts and assemblies manufacturing. Process planning, control, manufacturing decision support systems, microcomputers and networks. Programming of spatially oriented tasks, code generation, system integration. CIMLab assignments.
JME 353 Facilities Design (3)
Prerequisite: Senior standing. The goal of the course is to provide the student with the information and analytical tools necessary to take a product design into production and for the design of an efficient manufacturing facility that will make the production feasible. Quantitative methods in the design of manufacturing facilities. Space allocation, assembly line design, material-handling systems, utilities and environmental design for manufacturing facilities. Facility-location selection. Plant-layout development. Building, organization, communications and support system design. Material-handling equipment, flow and packaging. Automated storage and retrieval systems design. Computer aided design of manufacturing facilities. Environmental requirements and design. Utilities design. In a major project, students will be required to analyze the design of a product and plan the manufacturing facility for its production.

JME 372 Fluid Mechanics II (3)

JME 374 Analysis and Design of Turbomachinery (3)
Prerequisite: Senior standing. The principles of thermodynamics and fluid dynamics applied to the analysis, design and development of turbomachinery for compressible and incompressible flows. Momentum transfer in turbomachines. Design of axial and radial compressors and turbines, diffusers, heat exchangers, combustors, and pumps. Operating characteristics of components and performance of power plants.

JME 376 The Engineering Properties of Materials (3)
Prerequisite: Junior standing. A detailed look at the mechanical, chemical, and surface properties of materials. Topics include elastic properties; plastic deformation; viscoelastic behavior; chemical resistance; corrosion resistance; and the electromagnetic properties of metal, plastic, ceramic, and composite systems.

JME 378 Analysis and Design of Piston Engines (3)
Prerequisite: Senior standing. The principles of thermodynamics and fluid dynamics applied to the analysis, design and development of piston engines. Examination of design features and operating characteristics of diesel, spark-ignition, stratified-charge, and mixed-cycle engines. Study of the effects of combustion, fuel properties, turbocharging and other power-boosting schemes on the power, efficiency and emission characteristics of the engines.

JME 380 Building environmental Systems Parameters (3)
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.

JME 381 Air-Conditioning Systems and Equipment I (3)

JME 382 Air-Conditioning Systems and Equipment II (3)

JME 390 Senior Design Project (4)
Prerequisite: Senior standing. Working in small groups, students address design tasks assigned by faculty. Each group completes three design projects in a semester. Projects are chosen to emphasize the design process, with the designer choosing one of several paths to a possible result. Collaboration with industry is encouraged.

JME 394 Mechanical Engineering Design Lab (1)
Prerequisites: JME 204 and JME 222; JME 390 (may be taken concurrently.) Students are assigned individual design problems of sufficient complexity to require integration of several machines or machine elements. Projects consist of an open-ended, original design or a creative redesign of a machine or a mechanical component or system. Manufacturing and testing of a prototype and performing laboratory evaluation of mechanical systems requiring the application of those engineering science principles inherent to mechanical engineering is expected of each student. Guidance and consultation are provided by the course instructors and staff.
Faculty

Victor Birman, Professor; Director
Ph.D., Israel Institute of Technology
James H. Hahn, P.E., Associate Professor Emeritus
Ph.D., University of Missouri-Rolla
C. Ben Basye, P.E., Professor Emeritus
Ph.D., Iowa State University
Anton de S. Brasunas, P.E., Professor Emeritus
Sc.D., Massachusetts Institute of Technology
David A. Shaller, Assistant Professor Emeritus
J.D., Cleveland State University

General Information

The UM-Rolla Engineering Education Center was started in 1964 at the request of St. Louis industry and with the encouragement of local universities. It offers master of science degrees in the following areas:

- Aerospace engineering
- Civil engineering
- Computer engineering
- Electrical engineering
- Engineering management
- Engineering mechanics
- Environmental engineering
- Manufacturing engineering
- Mechanical engineering

Admission to candidacy for these degrees is granted by the University of Missouri-Rolla. Normally admission is granted to persons holding B.S. degrees in engineering from ABET-accredited schools and whose undergraduate GPA places them in the upper third of their graduating class.

An appropriately selected program of 30 credit hours is required for the master of science degree. Both thesis and non-thesis programs are available.

Course Listings

Course listings for the various semesters may be obtained by writing or phoning the Engineering Education Center. Course descriptions are listed in the UMR graduate catalog.

The Engineering Education Center also provides information to St. Louis area residents about UMR programs in Rolla. The center can assist area pre-engineering students with transfer to the Rolla campus and with entry into the cooperative training programs that exist between UMR and numerous U.S. industries. This co-op program allows engineering students to gain valuable industrial experience during their school years and to be partially or totally self-supporting.

Fees

Fees for Engineering Center programs are different from those on the UM-Rolla or UM-St. Louis campus. For information about the UM-Rolla graduate engineering evening program on the UM-St. Louis campus, write to UM-Rolla Graduate Engineering Education Center, University of Missouri, 8001 Natural Bridge Road, St. Louis, Missouri 63121, or phone (314) 516-5431. http://www.umr.edu/~umreec.
Students interested in Reserve Officer Training Corps programs may enroll in either the Army ROTC program at UM-St. Louis or the Air Force ROTC program sponsored at UM-St. Louis through Saint Louis University. These programs provide undergraduate and graduate students with the opportunity to combine academic study with a military officer training program.

For further information concerning the Army ROTC program, contact the Military Science Department at Washington University, telephone 935-5537 or check out our Web site at http://userfs.cec.wustl.edu/~rotc. For information on the Air Force ROTC program, contact the Aerospace Science Department at Saint Louis University, telephone 977-8227.

Army ROTC

The purpose of the Military Science Department is to develop young men and women into junior commissioned officers for positions of responsibility in the Army Reserve, Army National Guard, or Active Army.

Benefits

Army ROTC offers UM-St. Louis students:

1) A challenging, important, well-paid job at graduation in one of the many professional fields that the modern Army has to offer. Army officers serve in such fields as intelligence, military police, communications, engineering, transportation management, finance, combat arms, hospital administration, nursing, and research and development. Starting salary with allowances of an active duty second lieutenant is approximately $27,000. Within four years he/she should be promoted to captain with a salary and allowances of nearly $48,000. Reserve officers attend one weekend per month and an annual two-week training camp.

2) College financing. All advance course and Army ROTC scholarship students receive $200/month stipend. Only scholarship students receive $450 for books and supplies. Also, advance course students may join the Reserves as an office trainee and receive pay while in college.

3) Full-time enrolled students may compete for the Army ROTC scholarship. The scholarship pays for tuition, fees, and books.

4) Option of two careers. Upon graduation and commissioning as officers in the U.S. Army, students may fulfill their obligation by serving on active duty or reserve duty. Reserve officers spend one weekend a month being a soldier. Officers who serve on active duty receive 30 days paid vacation every year, free medical and dental care, travel, and the opportunity to pursue advanced degrees with educational assistance from the Army on a fully funded or partially funded basis.

The Program

College students who complete the ROTC program earn commissions as second lieutenants in the U.S. Army. The ROTC program may be completed in several different ways as outlined below.

1) Four-Year Program. The military science program is traditionally offered as a four-year program. It is best to start as a freshman, but special arrangements can be made for those who start as sophomores. The first two years of military science are voluntary without service obligation, and are designed to give students a perspective on their leadership ability and what the Army can offer them. The student who decides to continue in ROTC and pursue a commission signs an agreement with the Department of the Army to accept a commission upon completion of the last two years of military science. In return the Army agrees to provide a subsistence allowance (up to $4,000) and to provide all necessary uniforms and military science books.

2) Two-Year Program. The two-year program is designed to provide greater flexibility in meeting the needs of students desiring commissions in the U.S. Army. UM-St. Louis students who did not participate in the four-year program and junior college transfer students are eligible for enrollment. Basic prerequisites for entering the two-year program are:

A) The students must be in good academic standing (minimum 2.0 GPA) and pass an Army medical examination.

B) The student must have two academic years of study remaining (undergraduate, graduate, or combination). The student will attend a six-week summer camp to catch up with the students in the four-year program. Attendance at the basic camp does not obligate the student in any way and is only intended to give the student a look at Army life and opportunities. The student will be paid approximately $750 for attendance at basic camp.

Veterans

Veterans of any of the armed forces may qualify for advanced placement and should contact the Military Science Department for details.

Scholarships

The Army ROTC currently has scholarships in effect, which pay toward tuition, fees, and books, and provide $200/month for the academic year.

These scholarships cover either four, three, or two years. UM-St. Louis freshmen and sophomores should apply in January for the two- and three-year scholarships. Scholarship students may incur a four-year active duty obligation; however, they may request reserve duty to serve with the Army National Guard or Reserve.
Qualifications
All students who desire to enter the Army Reserve Officer Training Corps must be U.S. citizens, in good physical condition, and have high moral character. Students must be at least 17 years old to enroll and not over 30 when they receive their commission. Additional qualifications to be admitted into the advanced course include an academic average of C or better and passing an Army medical examination.

Academics
UM-St. Louis Army Reserve Officers Training Corps academics consist of two parts:

1) Earning a degree in the student=s chosen academic subject.

2) Completing 18 credit hours (four-year program) or 12 credit hours (two-year program) of the military science curriculum. The courses in military science are college-level academic courses which receive full academic credit toward the student=s elective degree requirements in the College of Business Administration and the College of Education. The curriculum consists of classroom instruction and a leadership laboratory in which students receive leadership experience.

Leadership Laboratory
Leadership laboratory is required of all students enrolled in military science courses. Classes are two hours every Thursday afternoon from 4 p.m. to 6 p.m., unless otherwise designated. In addition, students attend one field training exercise each semester. Leadership laboratory develops individual military skills and leadership ability through participation in drill and ceremonies, survival training, mountaineering, field-training exercises, and exposure to progressively greater responsibilities within the Cadet Corps organization.

Graduate Study
The Army realizes the importance of a graduate degree for its personnel. There are several programs available to assist ROTC graduates in obtaining an advanced degree. The Army sends selected second lieutenants immediately to graduate school (with full pay and allowances) to pursue advanced degrees in engineering and the physical sciences. Other officers may postpone active duty for two years to continue graduate study. Students who are accepted into medical school may take up to four years to complete their studies. There are numerous opportunities for an officer to complete a master=s degree in service and receive financial assistance from the Army.

Special Training
Selected volunteers may attend one of several special schools during the summer: the Airborne Course at Fort Benning, GA; Air Assault School at Fort Campbell, KY; or the Northern Warfare School in Alaska. Successful course completion earns the coveted badge (such as the jump wings or air assault wings) associated with each school. Special cadet troop leadership training is available on a limited basis. Students participating in the program live and work with an active Army unit during part of one summer.

Cadet Activities
Army ROTC students may participate in many extracurricular activities during the year. Social activities include the Army Military Ball, a fall canoe trip down the Meramec River, picnics, and informal parties. Army ROTC students also support various campus and community service activities. Interested students also participate in the Raider Club, Drill Team, Color Guard, and Ranger Challenge Team.
Course Descriptions

Military Science

101 Introduction to ROTC (2)
Make your first new peer group at college one committed to performing well and enjoying the experience. Increase self-confidence through team study and activities in basic drill, physical fitness, rappelling, leadership reaction course, first aid, making presentations and basic marksmanship. Learn fundamental concepts of leadership in a profession in both classroom and outdoor laboratory environments.

102 Introduction to Leadership (3)
Learn/apply principles of effective leading. Reinforce self-confidence through participation in physically and mentally challenging exercises with upper division ROTC students. Develop communication skills to improve individual performance and group interaction. Relate organizational ethical values to the effectiveness of a leader.

201 Self/Team Development (3)
Learn/apply ethics-based leadership skills that develop individual abilities and contribute to the building of effective teams of people. Develop skills in oral presentations, writing concisely, planning of events, coordination of group efforts, advanced first aid, land navigation and basic military tactics. Learn fundamentals of ROTC=s Leadership Development Program.

202 Individual/Team Military Tactics (3)
Introduction to individual and team aspects of military tactics in small unit operations. Includes use of radio communications, making safety assessments, movement techniques, planning for team safety/security and methods of pre-execution checks. Practical exercises with upper division ROTC students. Learn techniques for training others as an aspect of continued leadership development.

301 Leading Small Organizations I (3)
Series of practical opportunities to lead small groups, receive personal assessments and encouragement, and lead again in situations of increasing complexity. Uses small unit defensive tactics and opportunities to plan and conduct training for lower division students both to develop such skills and as vehicles for practicing leading.

302 Leading Small Organizations II (3)
Continues methodology of MS 301. Analyze tasks; prepare written or real guidance for team members to accomplish tasks. Delegate tasks and supervise. Plan for and adapt to the unexpected in organizations under stress. Examine and apply lessons from leadership case studies. Examine importance of ethical decision making in setting a positive climate that enhances team performance.

401 Leadership Challenges and Goal Setting (3)
Plan, conduct and evaluate activities of the ROTC cadet organization. Articulate goals, put plans into action to attain them. Assess organizational cohesion and develop strategies to improve it. Develop confidence in skills to lead people to manage resources. Learn/apply various Army policies and programs in this effort.

402 Transition to Lieutenant (3)
Continues the methodology form MS 401. Identify and resolve ethical dilemmas. Refine counseling and motivating techniques. Examine aspects of tradition and law as related to leading as an officer in the Army. Prepare for a future as a successful Army lieutenant.
These courses are taught at Saint Louis University, Washington University, or University of Missouri-St. Louis. Students should check the Schedule of Courses each semester for locations.

Air Force ROTC

The objective of the Air Force Reserve Officer Training Corps is to qualify students for appointment as active duty second lieutenants in the United States Air Force. However, any student may enroll in the freshman/sophomore-level aerospace studies courses, and students may also enroll in the junior/senior-level courses with permission of the professor of aerospace studies.

UM-St. Louis offers the two- and four-year AFROTC programs through an agreement with Saint Louis University.

The four-year program is tailored for students with three or more years of undergraduate studies remaining. Students with junior standing or above may apply for entry into the two-year program. Entry into the two-year program is competitive and is based on standardized test scores, academic major, grade-point average, physical examination, personal interview with the professor of aerospace studies, and successful completion of a summer field training session at an Air Force base. Applicants must be full-time students and must remain in good academic standing.

Reserve Officer Training Corps

The AFROTC Program is divided into the general military course (GMC), the freshman/sophomore level curriculum; and the professional officer course (POC), the junior/senior level curriculum. The GMC covers two main themes; the Air Force today and the Air Force way. The courses of the POC emphasize the professional development of the future Air Force officer. The curriculum covers Air Force leadership and management and preparation for active duty. Field trips to Air Force bases supplement classroom instruction and familiarize the cadet with Air Force operations and organization.

To be commissioned, AFROTC students/cadets must:

1) Pass a medical exam at a military medical facility.
2) Obtain a favorable evaluation on an Armed Forces personal history security investigation.
3) Flying applicants must complete commissioning requirements before age 26-1/2, and nonflying applicants must complete commissioning requirements by age 30. However, the age limit for nonflying applicants may be extended to age 35 for outstanding individuals.
4) Be of good character (as determined by a favorable record with law enforcement authorities).
5) Successfully complete all AFROTC course requirements.
6) Complete at least a baccalaureate degree.

Air Force ROTC textbooks are loaned to all AFROTC students without charge. Students in the POC will receive a monthly subsistence allowance of $150 per month for a maximum of 20 months, an Air Force uniform, in excess of $700 for the summer field training course, and a travel allowance to and from the training location.

In addition to the AFROTC courses offered for academic credit, the Aerospace Studies Department sponsors the Arnold Air Society and Angel Flight. Arnold Air Society is a national honorary service organization, and membership is open to anyone interested in bringing to the local community a better understanding of the Air Force mission and its leaders.

AFROTC field training is offered during the summer months at selected bases throughout the United States, usually between a student's sophomore and junior years. Students in the four-year program participate in four weeks of field training. Major areas of study include junior officer training, aircrew/aircraft orientation, career orientation, survival training, base functions and Air Force environment, and physical training.

Students applying for entry into the two-year program must successfully complete six weeks of field training prior to enrollment in the professional officer course. The major areas of study included in the six-week field training program are essentially the same as those conducted at four-week field training, plus the academic curriculum of the general military course including leadership laboratory. POC cadets are eligible for a $1,000 per semester federal AFROTC scholarship.

Leadership Laboratory is taken once per week throughout the student's enrollment in AFROTC. Instruction is conducted within the framework of an organized cadet corps with a progression of experiences designed to develop each student's leadership potential. Leadership laboratory involves 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. It also includes field trips to Air Force installations throughout the United States.

Other training volunteers may attend various special cadet training programs such as light aircraft training, parachute jump training, and advance cadet training. Students participating in the latter work with an Air Force unit during part of the summer.

The Air Force offers four-, three-, and two-year scholarships to qualified students. These scholarships pay tuition, certain fees, and textbook cost. Scholarship recipients receive $150 per month subsistence allowance.
For further information on the Air Force ROTC program at UM-St. Louis, call (314) 977-8227, or at Southern Illinois University at Edwardsville (SIUE), call (618) 692-3180.

Aerospace Studies

The Aerospace studies program is divided into two parts: the general military course, the freshman/sophomore level curriculum, and the professional officer course, the junior/senior level curriculum. The GMC covers two main themes: the Air Force today and the Air Force way. The courses of the POC emphasize the professional development of the future Air Force officer. The curriculum covers Air Force leadership and management and preparation for active duty. Field trips to Air Force bases supplement classroom instructions and familiarize the cadet with Air Force operations and organizations.

Leadership laboratory is taken two hours per week throughout the student's enrollment in the AFROTC. Instruction is conducted within the framework of an organized cadet corps with a progression of experiences designed to develop each student's leadership potential. The first two years of the leadership laboratory includes a study of Air Force customs and courtesies, drill and ceremonies, issuing military commands, instructing, directing and evaluating the preceding skills, studying the environment of an Air Force officer and learning about areas of opportunity available to commissioned officers. The last two years of lab consist of activities classified as advanced leadership experiences. They involve planning and controlling military activities of the cadet corps, preparation and presentation of briefings and other oral and written communications, and providing interviews, guidance, and information which will increase the understanding, motivation, and performance of other cadets.

AFROTC cadets must also successfully complete supplemental courses to enhance their utility and performance as commissioned officers. These include university courses in English composition and mathematical reasoning. Specific courses are designated by the professor of aerospace studies.

Cadets in the four-year program participate in four weeks of field training. Cadets in the two- or three-year programs (exception for prior AF service) must attend the six-week FT session, which is identical to the four-week program plus 90 hours of GMC curriculum. Field training is offered during the summer months at selected bases throughout the United States, usually between a student's sophomore and junior years. Major areas of study include Air Force orientation, officer training, aircrew/aircraft orientation, survival training, base functions, and physical training.

Students applying for entry into the two- or three-year program must successfully complete six weeks of field training prior to enrollment in the professional officer course. The major areas of study included in the six-week field training program are essentially the same as those conducted at four-week field training, plus the academic curriculum of the general military course including leadership laboratory. No direct academic credit is awarded for field training.

Federal scholarships are available for AFROTC cadets--any academic major may apply. Applications are to be submitted by detachment personnel to Headquarters Reserve Officers Training Corps, Maxwell Air Force Base, AL.

Participation in AFROTC is not required to take aerospace courses.

Lower Division (General Military)

Aerospace studies courses (AS-101 through AS-202) are basic courses designed to acquaint students with the United States Air Force and the opportunities available as an officer. Grades earned in these courses will be computed in the student's overall grade point average, but credit hours for these courses will not be included in the total hours for graduation.
Course Descriptions

AS-101/102 The Air Force Today (2)
A survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps. Featured topics include: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force officer opportunities, group leadership problems, and an introduction to communication skills. Leadership Laboratory is mandatory for AFROTC cadets, and it complements this course by providing students with followership experiences. Classroom activity, two hours per week; Leadership Laboratory two hours per week, each semester.

AS-201/202 The Air Force Way (2)
Survey course designed to facilitate the transition from Air Force ROTC cadet to Air Force ROTC candidate. Featured topics include: Air Force heritage, Air Force leaders, Quality Air Force, an introduction to ethics and values, introduction to leadership, group leadership problems, and continuing application of communication skills. Leadership Laboratory is mandatory for Air Force ROTC cadets, and it complements this course by providing cadets with their first opportunity for applied leadership experiences discussed in class. Classroom activity, two hours per week; Leadership Laboratory two hours per week, each semester.

Upper Division (Professional Officer) Courses

Aerospace Studies courses AS-301 through AS-402 are advanced courses designed to improve communication and management skills required of Air Force officers. Credit hours of these courses may be included in the hours needed for graduation at the discretion of individual departmental chairpersons.

AS-301/302 Air Force Leadership and Management (3)
The study of leadership and quality management fundamentals, professional knowledge, Air Force doctrine, leadership ethics, and communication skills required of an Air Force junior officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied. A mandatory leadership laboratory complements this course by providing advanced leadership experiences in officer type activities, giving students the opportunity to apply leadership and management principles of this course. Classroom activity, three hours per week; Leadership Laboratory two hours per week, each semester.

AS-401/402 Preparation For Active Duty (3)
Examines the national security process, regional studies, advanced leadership ethics, Air Force doctrine. Special topics of interest focus on the military as a profession, officership, military justice, civilian control of the military, preparation for active duty, and current issues affecting military professionalism. Within this structure, continued emphasis is given to refining communication skills. An additional Leadership Laboratory complements this course by providing advanced leadership experiences, giving students the opportunity to apply leadership and management principles of this course. Classroom activity, three hours per week; Leadership Laboratory two hours per week, each semester.

Field Training
Field Training provides leadership and officership training in a military environment, which demands conformity to high physical and moral standards. Within this structured environment, cadets are screened for officer potential as measured against field training standards. Motivation and professional development is achieved through various programs such as flight orientation, marksmanship, and survival training. Students in the four-year program participate in four weeks of field training. Field training is offered during the summer months at selected bases throughout the United States, usually between a student’s sophomore and junior years. Major areas of study include: Air Force Orientation, Officer Training, aircrew/aircraft orientation, survival training, base functions and physical training.
Reciprocal Programs
Unless otherwise stated, students interested in one of the following programs should contact the admissions office at the school where the program is offered.

Nebraska
The University of Nebraska in Lincoln offers programs for a limited number of Missouri residents in architecture, community and regional planning, construction management, and actuarial science where students may pursue bachelor's degrees.

Illinois
A cooperative agreement exists between Southern Illinois University-Edwardsville and UM-St. Louis which permits students of one institution to take courses at the other institution as a regular part of their academic program. For further information consult the registrar's office or the dean's office.

Kansas
The following programs are offered to Missouri residents at various Kansas universities:

Humanities University of Kansas, Lawrence, with an M.A. in Oriental languages and literature, and a B.A. and M.A. in Slavic languages and literature (not Russian). A Ph.D. in Slavic languages and literature is also offered.

Grain milling and technology Kansas State University, Manhattan, with a B.S., M.S., or Ph.D. in bakery science and management, feed science and management, or milling science and management.

Horticulture Kansas State University, Manhattan, with a B.S. in horticulture therapy.

Joint Programs in Law and Dentistry
The University of Missouri-St. Louis and the University of Missouri-Kansas City provide joint programs in law and dentistry for academically able students who are committed to public service. These special programs are designed to serve students seeking a career in public-service law or students who wish to practice dentistry in medically underserved communities.

UM-Kansas City will hold a reserved seat in its School of Law or in the School of Dentistry for qualified UM-St. Louis entering freshmen and make it available to them after they complete the required undergraduate studies at UM-St. Louis.

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 at an overseas location for a year, semester or summer. Spending time abroad as a student is an enriching experience both academically and personally, providing students with the opportunity to study within a different culture.

The Center for International Studies provides UM-St. Louis students with opportunities to study at over 75 different universities in more than 30 countries around the globe. Through individual advising at the center's Study Abroad Office, students can find the program best suited to their personal, academic, and career goals. Internship possibilities are also available for qualified students.

Fees and Financial Aid
The cost of the program depends on the services provided and the country and city of study. For most programs, participants continue to pay UM-St. Louis fees plus airfare, room and board, and spending money. Few programs require an additional fee. Students are usually housed in dormitories or are assisted in finding apartments. In most cases, students are able to apply financial aid to a study abroad program. Study abroad scholarships are available for qualified applicants through the Center for International Studies.

Application
Generally, applications are due at the end of January for fall, mid-February for summer, and the end of September for winter semester. Some programs require application two semesters prior to participation. 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, approval of the proposed course of study via the department/divisional advisory process, and familiarity with or willingness to learn the foreign language of instruction. Most programs are designed for undergraduate students in their junior or senior years of study; however, a limited number of programs for freshmen, sophomores, and graduate students are available.

For further information contact the Study Abroad Office, Center for International Studies, 304 SSB, 516-6497
Programs at other Universities

Study Abroad Programs and Exchange Partners

Austria
Karl-Franzens-University Graz

Belgium
University of Antwerp

Canada
Carleton University
Dalhousie University
Ecole Polytechnique
McGill University
McMaster University
St. Mary's University
Technical University of Nova Scotia
Université de Montréal
Université de Sherbrooke
Université du Québec à Montréal
Université Laval
University of Calgary
University of Manitoba
University of New Brunswick
University of Ottawa
University of Waterloo
University of Western Ontario
York University

China
Nanjing University

Czech Republic
Masaryk University

Denmark
Aarhus University

England
University of East Anglia
University of Lancaster
Missouri London Program
Business Internship in London Program
Journalism Internship in London Program

Finland
University of Helsinki
University of Oulu
Seindjoki Polytechnic

France
Université Jean Moulin, Lyon(3)
Ecole Superieure de Commerce de Saint Étienne
University of Sciences and Technologies de Lille
Université Louis Pasteur, Strasbourg (1)
Université de Marc Bloch, Strasbourg (2)
Université Robert Schuman, Strasbourg (3)

Germany
University of Stuttgart
Ruhr University Bochum
University of Leipzig
Fachhochschule Jena
Hochschule Bremen
University of Bonn

Ghana
University of Ghana

Greece
Aristotle University of Thessaloniki

Hungary
Kossuth Lajos University

Iceland
University of Iceland

Ireland
National University of Ireland, Cork
National University of Ireland, Galway

Italy
University of Bologna
University of Parma

Japan
Obirin University
Semester in Nakajo Program
Toyo University

Lithuania
Vilnius University

Malta
University of Malta

Mexico
Centro de Enseñanza Técnica y Superior
Centro de Investigacion y Docencia Económicas (CIDE)
El Colegio de Jalisco
Universidad de Guadalajara
ITESM-Guaymas Campus
Universidad Autonoma de Baja California
Universidad Nacional Autonoma de Mexico
Universidad of San Luis Potosi
Instituto del Estudios Superiores de Tamaulipas
Instituto Tecnologico Autonomo de Mexico (ITAM)
Instituto Tec. y de Est. Sup. de Monterrey (ITESM)

Spain
Universidad Autónoma de Madrid
Universidad Complutense de Madrid
Universidad Santiago de Compostela

Sweden
Lund University

Switzerland
University of Basel

Taiwan
Yuan-Ze University
National Taiwan Normal University
International Studies Certificates
Undergraduate

The Center for International Studies offers, in cooperation with the College of Arts and Sciences, certificate programs in Africana, East Asian, European, Latin American, and International Studies, and in cooperation with the College and the College of Business Administration, the International Business certificate. Students seeking certificates (except African Diaspora or International Business) must take an independent study course (three hours) in which a research paper will be written focusing upon some aspect of the particular field or on one of the fields offered in the program.

Requirements for Each Program

Africana Studies Certificate
Students seeking the Africana Studies Certificate have two options: an emphasis in African Studies and an emphasis in African Diaspora Studies.

I. African Studies:
1) At least one course in two of the following four areas for a total of nine hours:
   Area 1: Anthropology
   124, Cultures of Africa
   Area 2: Art and Art History
   117, African Art
   Area 3: History
   81, African Civilization to 1800
   82, African Civilization Since 1800
   Area 4: Political Science
   258, African Politics

2) One course in two of the following areas, a total of six hours:
   Area 1: Anthropology
   234, Cultural Continuity and Change in Sub-Saharan Africa
   235, Women in Sub-Saharan Africa
   Area 2: Art and Art History
   *215, Topics in Tribal Arts
   * Note: Students should take Art History 215 only when the topic is appropriate to Africa.
   Area 3: History
   380, West Africa to 1800
   381, West Africa Since 1800
   382, History of Southern Africa

   Area 4: Sociology
   245, Sociology of South Africa

3) An independent study course (three hours) in which a research paper will be written on some aspect of African Studies

II. African Diaspora Studies
1) Interdisciplinary 40: The Black World (3)
2) One course from each of the following areas, a total of six hours.

   Area 1: Africa
   Anthro 124: Cultures of Africa
   History 81: African Civilization to 1800
   History 82: African Civilization Since 1800

   Area 2: Diaspora
   Anthro 05: Human Origins
   History 06, African-American History
   History 83: The African Diaspora to 1800
   History 84: The African Diaspora Since 1800
   History 212: African-American History: From Civil Rights to Black Power
   3. At least one course from each of the following areas, a total of six hours:

   Area 1: Africa
   Anthro 234: Cultural Continuity and Change in Sub-Saharan Africa
   Anthro 235: Women in Sub-Saharan Africa
   Art History 117: African Art
   History 380: West Africa to 1800
   History 381: West Africa Since 1800
   History 382: History of Southern Africa
   PolSci 258: African Politics
   Sociology 245: Sociology of South Africa

   Area 2: Diaspora
   Comm 332: Intercultural Communication
   English 70: African-American Literature
   History 319, Topics in African-American History
   History 385: African Diaspora to 1800
   History 386: African Diaspora Since 1800
   Music 6: Introduction to African-American Music
   PolSci 232: African Americans and the Political System
   *Psych 392: Selected Topics in Psychology: African-American Psychology
   Sociology 360: Sociology of Minority Groups

   * Note: Students should take Psychology 392 only when the African American Psychology topic is offered.
East Asian Studies Certificate

1) First- and second-year Chinese, Japanese, Korean, or other appropriate Asian language (20 hours taken in four semesters).
2) History 61 and History 62, East Asian Civilization
3) One course in three of the following six areas, a total of nine hours:

   Area 1: Anthropology
   110, Cultures of Asia

   Area 2: Art and Art History
   107, The Arts of China
   108, The Arts of Japan
   208, Topics in Asian Art

   Area 3: History
   361, Modern Japan: 1850 to Present
   362, Modern China: 1800 to Present
   *393, Senior Seminar

   *Note Students should take History 393 only when the topic is appropriate to East Asia.

   Area 4 Music
   9, Non-Western Music I
   10, Non-Western Music II

   Area 5: Philosophy
   120, Asian Philosophy

   Area 6: Political Science
   155, East Asian Politics
   *359, Studies in Comparative Politics
   *388, Studies in International Relations

   *Note Students should take PolSci 359 or PolSci 388 only when the specific topic is appropriate.

European Studies Certificate

1) Four semesters of college work or the equivalent in a modern European foreign language.
2) History 32, Topics in European Civilization: 1715 to the Present.
3) One course each from at least four of the following eight areas, a total of 12 hours. Students should consult advisers at the Center to determine how these courses can best be arranged to meet their interests.

Area 1: Art and Art History
   135, Renaissance Art
   145, Baroque Art
   235, Topics in Renaissance Art
   245, Topics in Seventeenth- and Eighteenth-Century European Art
   255, Topics in Nineteenth- and Twentieth-Century European Art

Area 2: Economics
   238, Comparative Economic Systems

Area 3: English
   127, Survey of European Literature from 1650 to the Second World War
   128, The Contemporary World in Literature
   132, English Literature II
   323, Continental Fiction
   346, Restoration and Eighteenth-Century Drama
   364, The Eighteenth-Century English Novel
   365, The Nineteenth-Century English Novel
   372, Literature of the Late Nineteenth and Early Twentieth Centuries
   383, Modern British Fiction

Area 4: History
   31, Topics in European Civilization: Emergence of Western Europe to 1715
   341, The Age of the Renaissance
   342, The Age of Reformation
   345, Europe 1763 - 1871, Revolution, Reaction and Reform
   347, Europe in the Belle Epoque (1870-1914)
   348, Europe 1900 - 1950: War and Upheaval
   349, Europe, 1950 - Present: Peace and Prosperity
   351, Contemporary France: Since 1870
   352, Germany in the Modern Age
   354 History of Russia From 1917-Present

Area 5: Foreign Languages and Literatures
   FRENCH
   110, Modern French Literature in Translation
   150, European Literature in Translation: Special Topics
   211, Contemporary French Culture
   281, French Literature II: Nineteenth and Twentieth Centuries
   341, Seventeenth-Century French Theatre and Poetry
   342, Seventeenth-Century French Prose
   353, Eighteenth-Century French Literature
   354, Eighteenth-Century French Theatre and Novel
   362, Nineteenth-Century French Novel
   371, Twentieth-Century French Novel
   375, Modern French Theatre

   GERMAN
   110, Masterpieces of German Literature in Translation
   150, European Literature in Translation: Special Topics
International Studies Certificate

1) Satisfactory completion of the language requirements for the degree program in which the student is enrolled.

2) PolSci 180, World Politics.

3) A total of 12 hours from at least three of the following nine areas:

Area 1: Anthropology
201, Comparative Economic Behavior
202, Culture, Politics, and Social Organization

Area 2: Biology
120, Environmental Biology

Area 3: Business Administration
316, International Marketing
317, International Management
380, International Business

Area 4: Communication
332, Intercultural Communication
354, Comparative Telecommunication Systems
356, International Communication

Area 5: Economics
230, International Economic Analysis
231, International Finance
238, Comparative Economic Systems
331, International Economic Analysis: Finance
International Business Certificate

1) Students must complete a minimum of 12 hours in the Business Internship Program in London or in some other approved overseas study program.

2) One course from Area 1 and one from Area 2, a total of six hours.

Area 1: Business Administration:
- 316, International Marketing
- 317, International Management
- 380, International Finance

Area 2: International Studies:
- Anthro 238: Culture and Business in East Asia
- Econ 230: International Economic Analysis
- Econ 231: International Finance
- Econ 238: Comparative Economic Systems
- Econ 240: Economic Development
- PolSci 283: International Political Economy
- PolSci 388: Studies in International Relations. (International Relations of East Asia)
- Sociology 241: Selected Topics in Macro-sociology. (Work and Industry in Japan)
- Sociology 354: Sociology of Business and Work Settings

In lieu of a course from Area 2, students may substitute one course (3 hours) at the advanced level of a foreign language. Advanced level is defined as a course beyond the 13 hour introductory language sequence.

3) An independent study course is not required for this certificate option.

Note: Students participating in other approved overseas study programs such as Hogeschool Holland Business School, Ecole Superieure de Commerce de Saint Etienne, or Université Jean Moulin, may also qualify to apply 12 credit hours toward the International Business Certificate.

Graduate Certificate in International Studies

A Graduate Certificate in International Studies is a program of study featuring advanced, multidisciplinary course work designed for individuals, including teachers and other professionals, who wish to expand their knowledge and understanding of international and cross-cultural affairs. The Certificate is sponsored by the Center for International Studies, and the Departments of Economics, History, Foreign Languages and Literatures, and Political Science. A broad set of course offerings is available in these and other departments, with the flexibility for students to tailor the program to their particular interests and needs. The program has been developed as a vehicle for bringing together the resources of a distinguished faculty in international studies and for providing an opportunity for further graduate learning.

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

Students must complete at least 12 hours chosen from the following list of core courses:

Anthropology
- 425, Peoples and Cultures of Southeast Asia
- 430, Global Refugee Crisis

Business Administration
- 416, International Finance, Investment, and Commercial Relations
- 417, International Business Operations
- 443, International Accounting
- 430, International Trade
- 431, International Monetary Analysis

History
- 410, Readings in European History to 1715
- 415, Readings in European History Since 1715
- 420, Readings in East Asian History
- 425, Readings in Latin American History
- 430, Readings in African History

Political Science
- 450, Proseminar in Comparative Politics
451, Seminar in Comparative Politics
480, Proseminar in International Relations
481, Seminar in International Relations
488, Studies in International Relations
Sociology
410, Comparative Social Structures

Students may complete an additional six hours chosen from the following:
Business Administration
316, International Marketing
317, International Management
* 380, International Finance

* Note: Students may not count both Bus. Admin. 416 and 380.

Communication
332, Intercultural Communication
354, Comparative Telecommunication Systems
356, International Communication

Criminology and Criminal Justice
305, Comparative Criminology and Criminal Justice

Economics
331, International Economic Analysis: Finance
395, Special Readings

English
323, Continental Fiction

History
314, American Foreign and Military Affairs, 1900-Present
320, History of Feminism in Western Society
345, Europe 1763 - 1871 Revolution, Reaction and Reform
347, Europe in the Belle Epoque (1870 - 1914)
348, Europe 1900-1950: War and Upheaval
349, Europe, 1950-Present: Peace and Prosperity
351, Contemporary France: Since 1870
352, Germany in the Modern Age
353, Russian History to 1917
354, History of Russia from 1917-Present
355, History of Spain
361, Modern Japan: 1850 to Present
362, Modern China: 1800 to Present
372, History of Latin America: Since 1808
381, West Africa: Since 1800
382, History of Southern Africa
390, Special Readings

Foreign Languages and Literatures
French 362, Nineteenth-Century French Novel
French 365, Modern French Poetry
French 371, Twentieth-Century French Novel
French 375, Modern French Theatre
German 315, German Classicism and Romanticism
German 320, German Realism and Naturalism
German 345, Modern German Literature
German 398, Survey of German Literature Part II
Spanish 310, Spanish Literature from 1898 to 1939
Spanish 315, Spanish Literature from 1939 to Present
Spanish 320, Realism and Naturalism in the Nineteenth-Century Spanish Novel
Spanish 321, Poetry and Drama of the Nineteenth Century
Spanish 340, Spanish-American Literature of the Nineteenth Century
Spanish 341, Modernismo
Spanish 345, Spanish-American Literature of the Twentieth Century
Spanish 351, Spanish-American Fiction in the Twentieth Century
Spanish 360, Spanish-American Poetry from Modernismo to the Present
Music
325, Music of the Romantic Period
326, Music of the Twentieth Century

Political Science
351, Comparative Public Policy and Administration
359, Studies in Comparative Politics
385, International Law
386, Studies in War and Peace
388, Studies in International Relations
485, Directed Readings and Research in International Relations

Sociology
342, World Population and Ecology
The video instructional program offers an alternative for the student who is far from campus, whose physical disability, work schedule, or other responsibilities make it difficult for him/her to attend traditional classes. Video lessons for various courses are available for viewing on cable television stations as well as in UM-St. Louis libraries.

St. Louis Area Cable Stations
Continental Cable, and United Video in St. Louis County; AT&T Cable in the city will air courses over the Higher Education Channel (HEC). (Charter, Continental, United Video & AT&T Cable).

Course Listings
The following courses from the UM-St. Louis curriculum are offered:

Anthropology

019 Archaeology
This telecourse uses dramatic onsite filming to enable students to explore how archaeologists reconstruct ancient societies and explain how they evolved. Students will understand how archaeology and anthropology interact, with emphasis on how people have behaved in the past. Acc@

025 World Cultures
This telecourse is an ethnographic survey of the major culture areas of the world. It is an introductory cultural anthropology course that studies the structure and processes of culture. This course satisfies the Cultural Diversity requirement.

124 Cultures of Africa
This telecourse offers a basic ethnographic survey of African cultures, with attention to social groupings, tribalism, religion, language, social change, the ecological relationship between humans and nature. This course satisfies the Cultural Diversity requirement.

350 Special Studies
This telecourse offers a glimpse into the science of anthropology through a variety of approaches, theories, controversies, and solutions encountered in the field. Students will gain insight into the practices of foreign cultures and the beliefs of their own culture in addition to the importance of diversity of human behavior.

Biology

001 General Biology (For Non-Science Majors)
This telecourse provides a firm foundation in the fundamental principles of biology. "cc"

120 Environmental Biology (3)
This telecourse provides a survey of the current outlook for the global environment, describing threats that different natural systems face and the ties that bind human society to

Video Instructional Program

070 Introduction to Cinema
This telecourse examines the history, rhetoric, and aesthetics of film. The content is designed to bring Hollywood filmmaking into clear focus as an art form, as an economic force, and as a system of representation and communication. Film theory and criticism will be studied, as well as major genres, authors, and artists. Introduction to Cinema explores how Hollywood films work technically, artistically, and culturally. The course also probes the deeper meaning of American movies—the hidden messages of genres, the social and psychological effects of Hollywood film style, and the mutual influence of society and popular culture on filmmaking. "cc"

232 Effective Communication in the Organization: Tool for Leadership (3)
Prerequisites: Junior standing or consent of instructor. Telecourse designed to equip students with communication skills applicable to the organizational context. The course will present effective strategies for the articulation of ideas, with particular emphasis on the development of leadership skills.

Education

308 Foundations of Adult Basic Education (3)
This telecourse discusses the various characteristics of the adult learner, including needs, interests, physiological factors, interpersonal relations, and communications. The video demonstrations present teaching practices in adult basic education. This course focuses on the need of corporate and industry trainers as well as ABE and GED teachers.

You will work with topics in teaching basic reading: word recognition, comprehension, writing for the student=s needs, basic and intermediate mathematical skills, selection and use of materials, learning contracts, learning styles, and other methods to individualize instruction, as well as student recruitment and retention and corporate classroom management. This is an important class offered at a time when there are more adult students than teachers.

History

031 Topics in European Civilization: Emergence of Western Europe to 1715
This telecourse offers lectures and discussions on the development of Western European society and tradition from approximately 800 to 1715. "cc"
032 Topics in European Civilization: 1715 to the Present
This telecourse offers lectures and discussions on the development of Western European society and tradition from 1715 to the present. "cc"

History 31 or History 32 may be taken separately.

150 The People's Century, Part I
This telecourse provides unique insight into the turbulent events of the last 100 years by combining rare archival film footage with the testimony of ordinary people who lived through the century's sweeping changes and who recount their firsthand experiences. "cc"

350 The People's Century, Part I, Special Studies
This telecourse provides unique insight into the turbulent events of the last 100 years by combining rare archival film footage with the testimony of ordinary people who lived through the century's sweeping changes and who recount their experiences firsthand as well as special readings, reports and/or research. "cc"

Psychology

003 General Psychology
This telecourse is an introductory college level course that covers the fundamental principles and major concepts of psychology. The content is designed to provide a broad introductory survey of the general principles of human behavior. "cc"

245 Abnormal Psychology
Prerequisite: Psych 03, General Psychology. This telecourse introduces the major theoretical models for explaining and treating disorders - psychodynamic, behavioral, cognitive and biological. Ten of the 13 programs feature specific disorders, including anxiety disorders, personality disorders, the schizophrenias, sexual disorders, substance abuse, and the disorders of childhood. The first program concerns assessment, while the last two provide information on treatment and prevention. This approach serves the introductory abnormal psychology student, while allowing individual faculty latitude to underscore the approach to which they subscribe. "cc"

268 Human Growth and Behavior
Prerequisites: Psych 3. This telecourse uses special readings, reports, and/or field research as well as video and audio courses to explore the stages of life as an introduction to developmental psychology.

280 The Psychology of Death and Dying
(Also as Gerontology 280.) Prerequisite: Psych 3. This telecourse will address the psychological aspects of death and dying for both adults and children. The psychological reactions of terminally ill patients and their families will also be examined, and therapeutic interventions will be discussed.

Social Work

280 Human Behavior in the Social Environment (3)
Prerequisite: Biology 1 and Sociology 160 or Psych 160 or permission of instructor. This telecourse will focus on the normative stages in the life span, 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

312 Women's Social Issues
Prerequisites: Social Work 280 or consent of the instructor. This telecourse is designed to help students identify gender stereotypes and barriers and how they impact on women's lives. This course will help students become more sensitive to the social and welfare concerns of women. The course also explores how gender intersects with other social systems, such as age, class, disability, ethnicity, race, religion, and sexual orientation. Emphasis will be placed on integrating a knowledge base of women's needs with professional social work practice.

Sociology

010 Introduction to Sociology
This telecourse is an introductory college level course designed to give students an in-depth look at sociological approaches to human behavior, including types of social organizations, patterns of social interaction, and social influences on individual conduct.
CBHE Articulation Agreement

The Coordinating Board of Higher Education Articulation Agreement outlines statewide undergraduate general education requirements which satisfy the general requirements for students transferring into UM-St. Louis and students transferring out of UM-St. Louis to other public higher education universities in the state.

1) Communication skills in the English language, three courses—at least two of which must be written; one oral communication course is recommended.

2) Humanities, three courses from at least two disciplines.

3) Physical and/or biological sciences, two courses including at least one with its associated laboratory component.

4) Mathematics, one course—college algebra, an alternative course that includes a significant component of college algebra, or a course which has college algebra as a prerequisite.

5) Social and behavioral sciences, three courses from at least two disciplines.

All institutions shall recognize the validity of other institutions' general education requirements when the minimum requirements as specified above are met. However, some foreign language and/or upper-division general education courses or upper-division graduation requirements may be required by the receiving institution whenever all native students are obligated to satisfy the same requirements.

Baccalaureate professional schools or programs may specify exceptions to the credit-hour and course-distribution minimums established in this section by promulgating these exceptions and by establishing specialized articulation programs related to associate of science degrees as detailed in that section of these transfer guidelines. In these instances, transferring students are not exempted from satisfying the specialized lower-division requirements of departments or divisions of an institution into which a student wishes to transfer.
Code of Student Conduct

200.010 Standard of Conduct Amended March 20, 1981; August 3, 1990; May 19, 1994

A student enrolling in the university assumes an obligation to behave in a manner compatible with the university's function as an educational institution.

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, nothing restrains the administration of the University of Missouri from taking appropriate action, including, but not limited to, the imposition of sanctions under Section 200.020(C), against students for conduct on or off university premises in order to protect the physical safety of students, faculty, staff and visitors.

B. CONDUCT for which students are subject to sanctions falls into the following categories:

1. Academic dishonesty, such as 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 of paraphrase or direct quotation of the published or unpublished work of another person without fully and properly crediting the 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. Attempted or actual theft 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.

6. Unauthorized possession, duplication or use of keys to any university facilities or unauthorized entry to or use of university facilities.

7. Violation of university policies, rules or regulations of campus policies including, but not limited to, those governing residence in university-provided housing, or the use of university facilities, or the time, place and manner of public expression.

8. 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.

9. Disruptive or disorderly conduct or lewd, indecent, or obscene conduct or expression.

10. Failure to comply with directions of university officials acting in the performance of their duties.

11. Illegal or unauthorized possession of firearms, explosives, other weapons, or dangerous chemicals.

12. Actual or attempted theft or other abuse of computer time, including but not limited to:

a. Unauthorized entry into a file to use, read, or change the contents, or for any other purpose.

b. Unauthorized transfer of a file.

c. Unauthorized use of another individual=s identification and password.

d. Use of computing facilities to interfere with the work of another student, faculty member or university official.

e. Use of computing facilities to interfere with normal operation of the university computing system.

f. Knowingly causing a computer virus to become installed in a computer system or file.

Appendix
Student Disciplinary Matters

Rules of Procedures in Student Disciplinary Matters
Adopted November 8, 1968, Amended March 20, 1981; December 8, 1989; and May 18, 1994

200.020 RULES OF PROCEDURES IN STUDENT CONDUCT MATTERS

A. PREAMBLE. The following rules of procedure in student conduct matters are hereby adopted in order to insure as far 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 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.

B. DEFINITIONS. As used in these rules, the following definitions shall apply:

1. Primary Administrative Officers. As used in these procedures, a Primary Administrative Officer is charged with the responsibility for the administration of these student conduct procedures and refers to the person or persons on each campus designated.

2. Student Panel. A panel of students appointed by the Chancellor, from which shall be selected by the Chair, upon the request of a student charged before the Student Conduct Committee, not more than three (3) students to serve with the Student Conduct Committee.

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 Conduct Committee. As used in these procedures, a 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.

C. SANCTIONS.

1. The following sanctions may be imposed upon any student found to have violated the Student Conduct Code; more than one (1) of the sanctions may be imposed for any single violation:
   a. Warning. A notice in writing to the student that the student is violating or has violated 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 is found to be violating any institutional regulation(s) during the probationary period.
   c. Loss of Privileges. Denial of specified privileges for a designated period of time.
   d. Restitution. Compensation 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 other related discretionary assignments.
   f. Residence Hall Suspension. Separation of the student from the residence halls for a definite period of time, after which the student is eligible to return. Conditions for readmission may be specified.
   g. Residence Hall Expulsion. Permanent separation of the student from the residence halls.
   h. University Dismissal. An involuntary separation of the student from the institution for misconduct apart from academic requirements. It 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.

2. Preliminary Procedures. The Primary Administrative Officer shall investigate any reported student misconduct before initiating formal conduct procedures and give the student the opportunity to present a personal version of the incident or occurrence. The Primary Administrative Officer may discuss with any student such alleged misconduct and determine whether 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 (7) calendar days.

D. RECORDS RETENTION. Student conduct records shall be maintained for five (5) years after university action is completed.

E. POLICY AND PROCEDURES.

1. Primary Administrative Officers. The Chief Student Affairs Administrator on each campus or designee is the primary officer except in cases of academic dishonesty, where the Chief Academic Administrator responsible for administering the Student Conduct Code or designee is the primary administrative officer.

2. Preliminary Procedures. The Primary Administrative Officer shall investigate any reported student misconduct before initiating formal conduct procedures and give the student the opportunity to present a personal version of the incident or occurrence. The Primary Administrative Officer may discuss with any student such alleged misconduct and the student 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.

3. Informal Dispositions. The Primary Administrative Officer shall have the authority to impose appropriate sanctions and shall fix a reasonable time within which the student shall accept or reject a proposed informal disposition. A failure of the student either to accept or reject within the time fixed shall be deemed to be an acceptance and, in such event, the proposed disposition shall become final upon expiration of such time. If the student 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.

   a. Student Conduct Committee:
      1) The Committee shall be appointed by the Chancellor and shall have the authority to impose appropriate sanctions upon any student or students appearing before it.
      2) The Committee, when appropriate or convenient, may be divided by the Chair of the Committee into Hearing Panels, each panel to be composed of at least five (5) Committee members, which may include a maximum of two (2) students, present at the hearing, including a designated chair. A Hearing Panel has the authority of the whole Committee in those cases assigned to it. The Chair of the Committee or of a Hearing Panel shall count as one (1) member of the Committee or Hearing Panel and have the same rights as other members.
      3) Each Chancellor shall appoint a panel of students, to be known as the Student Panel. Upon written request of a student charged before the Committee, made at least seventy-two (72) hours prior to the hearing, the Chair of the Committee or Hearing Panel shall appoint from the Student Panel not more than three (3) students to sit with the Committee or two (2) students to sit with the Hearing Panel (as stated in 4.a.(2)) for that particular case. When students from the Student Panel serve at the request of a student charged, they shall have the same rights as other members of the Committee or Hearing Panel.
   b. General Statement of Procedures. A student charged with a breach of 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.
   c. Notice. The Primary Administrative Officer shall initiate student conduct proceedings by arranging with the Chair to call a meeting of the Committee and by giving written notice by certified mail or personal delivery to the student charged with misconduct. The notice shall set forth the date, time and place of the hearing before the Committee. Notice by certified mail may be addressed to the last address currently on record with the university. Failure by the student to have a current correct local address on record with the university shall not be construed to invalidate such notice. The notice shall be given at least seven (7) consecutive days prior to the hearing, unless a shorter time be fixed by the Chair for good cause. Any request for continuance shall be made in writing to the Chair, who shall have the authority to continue the hearing if the request is timely and made for good cause. The Chair shall notify the Primary Administrative Officer and the student of the new date for the hearing. If the student fails to appear at the scheduled time, the Committee may hear and determine the matter.

5. Right to Petition for Review (other than university expulsion, university dismissal or university suspension).
   a. In all cases where the sanction imposed by the Committee is other than university expulsion, university dismissal, or university suspension, the Primary Administrative Officer or the Student may petition the Chancellor or designee in writing for a review of the decision within five (5) calendar days after written notification. A copy of the Petition for Review must also be served upon the nonappealing party within such time. The Petition for Review shall state the grounds or reasons for review, and the nonappealing party may answer the petition within five (5) calendar days.
   b. The Chancellor or designee 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 or designee reviews the decision, the action of the Chancellor shall be final unless it is to remand the matter for further proceedings.
   6. Right of Appeal (university expulsion, university dismissal or university suspension only).
   a. When a student is expelled, dismissed or suspended from the university by the Committee, the Primary Administrative Officer or the student may appeal such decision to the Chancellor or designee by filing written notice of appeal with the Chancellor within ten (10) calendar days after notification of the decision of the Committee. A copy of the Notice of Appeal will contemporaneously be given by the student to the Primary Administrative Officer or by the Primary Administrative Officer to the student. 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 or designee shall review the record of the case and the appeal documents and may affirm, reverse or remand the case for further proceedings and shall notify each party 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.

7. Status During Appeal. 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
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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.

8. 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 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. Procedures shall satisfy the requirements of the Board of Curators> Bylaws, Article V, and shall contain procedures herein before stated 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. 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 charged with misconduct, read the notice of hearing and charges and verify the receipt of notices of charges by the student, report any continuances requested or granted, establish the presence of any adviser or counselor of the student, and call to the attention of the student charged and the adviser any special or extraordinary procedures to be employed during the hearing and permit the student to make suggestions regarding or objections to any procedures for the Conduct Committee to consider.
   a. Opening Statements
      1) The Primary Administrative Officer shall make opening remarks outlining the general nature of the case and testify to any facts the investigation has revealed.
      2) The student 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.
      1) University witnesses are to be called and identified or written reports of evidence introduced as appropriate.

2) The Committee may question witnesses at any time.
3) The student 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. Student Evidence.
      1) The student shall have the opportunity to make a statement to the Committee about the charge.
      2) The student may present evidence through witnesses or in the form of written memoranda.
3) The Committee may question the student or witnesses at any time. The Primary Administrative Officer may question the student or witnesses.
   d. Rebuttal Evidence. The Committee may permit the university or the student to offer a rebuttal of the other's presentation.
   e. Rights of Student Conduct Committee. The Committee shall have the right to:
      1) Hear together cases involving more than one (1) student which arise out of the same transaction or occurrence, but in that event shall make separate findings and determinations for each student;
      2) Permit a stipulation of facts by the Primary Administrative Officer and the student involved;
      3) Permit the incorporation in the record by a reference of any documentation, produced and desired in the record by the university or the student charged;
      4) Question witnesses or challenge other evidence introduced by either the university or the student at any time;
      5) Hear from the Primary Administrative Officer about dispositions made in similar cases and any dispositions offered to the student appearing before the Committee;
      6) Call additional witnesses or require additional investigation;
      7) Dismiss any action at any time or permit informal disposition as otherwise provided;
      8) 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 Primary Administrative Officer such time as the Committee may determine reasonable under the circumstances to answer or explain such additional matters;
      9) 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;
      10) 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.

2. Rights of Students Upon Hearing. A student 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. Have students from the Student Panel sit with the Committee or Hearing Panel;
   d. Hear or examine evidence presented to the Committee;
   e. Question witnesses present and testifying;
   f. Present evidence by witnesses or affidavit;
   g. Make any statement to the Committee in mitigation or explanation of the conduct in question;
   h. Be informed in writing of the findings of the Committee and any sanctions it imposes; and
   I. Request review or appeal to the Chancellor as herein provided.
3. Determination by the Student Conduct Committee. The Committee shall then make its findings and determinations in executive session out of the presence of the Primary Administrative Officer and the student charged. Separate findings are to be made:
   a. As to the conduct of the student, and
   b. On the sanctions, if any, to be imposed. No sanctions shall be imposed on the student unless a majority of the Committee present is reasonably convinced by the evidence that the student has committed the violation charged.

4. 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 and the student charged forthwith.

5. 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.

6. 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.

7. Record of Hearing. A taped 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 both the university and the student.

8. Sexual Assault. In cases of alleged sexual assault:
   a. The accuser and the accused are entitled to the same opportunities to have others present during a campus disciplinary proceeding;
   b. The accuser and the accused shall be informed of the outcome of any campus disciplinary proceeding brought alleging a sexual assault.

Financial Aid Appeals

The University of Missouri-St. Louis has an established financial aid appeals procedure. An aid applicant can raise questions or appeal the offer, or lack of an offer, of financial aid if not satisfied. The general provisions for appeals procedures are as follows:

1) An aid applicant who is not satisfied with the fact that no aid was offered, or was not pleased with the type and/or amount of aid that was offered, may make a written appeal to the Student Financial Aid Appeals Committee reconsideration of the aid request and/or ask for a personal hearing.

2) If on review of all the facts of the case, including any new information which the applicant may provide, the Committee can a) approve an exception to university policy; b) deny the request; c) approve a modified version of the request.

3) If the Appeals Committee cannot provide a satisfactory solution, he/she may refer the written appeal with all pertinent information to the Director of Financial Aid. Where academic progress is an issue, the student may ask an academic adviser or counselor to write or speak in the student's behalf. If a satisfactory solution is worked out, the case is closed.

4) If step three did not solve the problem, it is referred to the campus Faculty-Senate Committee on Student Aid. In ordinary practice it is rare for a case to be appealed beyond this step.

5) If, however, the applicant is still not satisfied after review by committee, the case is to be referred to the Chancellor.

6) The next appeal is the President.

7) The final university appeal would be for the President to refer a case to the Board of Curators.

Grievance About Grade

On each campus of the University of Missouri it is the Chancellor who is ultimately responsible to the President and the Board of Curators for all campus programs, policies, and activities. On the University of Missouri-St. Louis campus the Chancellor has delegated responsibility for overseeing the grade appeal process to the Vice Chancellor for Academic Affairs. The Vice Chancellor is therefore responsible for assuring that grade appeals are handled in a fair and timely manner. More specifically, that officer is responsible for seeing that the procedures outlined below are appropriately followed.

Informal Procedures

At any time after the awarding of a grade, for a course or an assignment in a course, a student may discuss the grade with her or his instructor and request that the instructor review
the grade. If the instructor does review the grade he or she is, of course, free to change the grade or not as is appropriate.

**Formal Procedures**
The following procedures apply if the above informal procedure does not resolve a dispute concerning a grade to the student's satisfaction and if the process is initiated within thirty working days of the start of the first regular semester (fall or winter) following the semester for which the grade was given, or thirty days after the assignment of the grade (whichever is later).

1. If the student has not already done so, he or she discusses the contended grade fully with the course instructor. The student should prepare for this meeting by taking all relevant written work (test, reports, etc.) with him/her. If the issue is not resolved, and the student wishes to pursue the appeal, she or he should consult the administrative officer of the department or discipline housing the course in question. (This officer will normally be someone below the level of the Dean.) The administrative officer will discuss the appeal with the course instructor, and will inform the student of the result of this discussion. (That result may be the instructor's agreement to change the grade, her or his refusal to change the grade, or her or his agreement to discuss the case further with the student.) The administrative officer may require that the student put the appeal in written form before the administrative officer discusses it with the instructor.

2. If the matter remains unresolved, the student may, within 10 working days of being notified of the result of the discussion between the administrative officer and the instructor, or within 10 working days of her or his last discussion with the instructor, submit a detailed written statement of the complaint to the administrative officer. The administrative officer will refer it to a faculty committee composed of at least three faculty members in the department or unit offering the course or if such are not available, in closely allied fields. This committee will investigate the matter, meeting, as it may deem necessary, with the student, the instructor, and possibly others. Following its inquiries and deliberations, but prior to making its final recommendations, the faculty committee will submit a copy of its findings to the course instructor. If the course instructor elects to comment on the findings to the committee, this must be done in writing within 7 working days. After further consideration, but within 30 working days after receiving the student's statement, the faculty committee will submit its findings with its recommendations and reasons for those recommendations directly to the course instructor, with a copy to the administrative officer.

3. If the faculty committee recommends that the grade be changed, the administrative officer will ask the instructor to implement the recommendation. If the instructor declines, the administrative officer will change the grade, notifying the instructor and the student of this action. Only the administrative officer, upon the written recommendation the faculty committee, will effect a change in grade over the objection of the instructor who assigned the original grade.\(^1\)

4. If the faculty committee recommends that the grade not be changed, the administrative officer will notify the student of this action. The student may then appeal to the dean of the school or college within which the course in question is housed, who will determine whether the above procedures have been properly observed. If the Dean determines that the procedures have not been appropriately followed, and that their not being followed may have substantively affected the outcome, the case will be returned to the faculty unit for review by the same, or, if the Dean so determines, by a different committee.

5. If the Dean denies the procedural appeal the student may ask the Vice Chancellor for Academic Affairs, acting as the Chancellor's designee, to conduct a procedural review. The Vice Chancellor is not obligated to conduct such a review and will normally do so only where there is compelling evidence of procedural irregularities. If the Vice Chancellor finds the procedures have not been appropriately followed, and that their not being followed may have substantively affected the outcome, the case will be returned to a lower level for rereview. As the Vice Chancellor is acting as the designee of the Chancellor, there is no appeal beyond this level.

**Student Organization Policy**

**Policy on Student Organizations**
The university recognizes that the acquisition of knowledge is not confined to the formality of the classroom and that much can be gained through the activities of student organizations. To assure maximum freedom for students and to assure that organizational activities are orderly, responsible, and appropriate to the mission of the university, certain principles and procedures are established through which organizations gain university recognition.

**I Procedures for Recognition**

**A. To obtain recognition or to register, an organization shall submit to the Vice Chancellor for Student Affairs, through the Office of Student Activities, a recognition or registration form which shall include:**

1) The name of the organization.

2) A statement of the general purpose of the organization and the means for accomplishing it. The statement should

\(^1\) Under current campus policy, transcript notation of 'DL' automatically becomes an F after one regular semester. These changes, which the Registrar is mandated to make, are not considered grade changes and are consistent with this Grade Appeal Policy. Students may appeal these changes provided the appeal is initiated within 30 working days of the notification of the change.
demonstrate that the organization's purpose is to broaden the scope of general learning, extend knowledge of specialized areas, or to serve the professional, cultural, social or recreational interests of the university community, consistent with the educational goals of the university. The statement must not conflict with policies governing recognized organizations as listed below.

3) The names of at least three officers or responsible representatives, including student numbers, addresses and telephone numbers; these persons must be students registered at the university of Missouri-St. Louis.

4) A statement of any affiliation with any other organization not registered with the university, and a copy of the organization's constitution.

5) Organizations seeking recognition must include a copy of their constitution and/or by-laws, the name of a UM-St. Louis faculty or staff member who agrees to serve as an adviser, and the name of a student member of the organization who will serve as the organization's representative on the Student Government Association.

6) Upon submission of the recognition or registration form, the organization shall be granted temporary privileges until the request for recognition is acted upon by the Senate Student Affairs Committee or the request to register is approved by the Director of Student Activities or his/her designee.

B. To maintain recognition or registration, an organization must update their recognition form or re-register with the Office of Student Activities no later than two weeks following the beginning of the fall semester.

II Privileges of Recognized Organizations

1) Use of campus facilities and services for organizational activities as provided in the university regulations.

2) Use of the university name in connection with publicity, but only for identification purposes, and in no way to imply support of the university for any position of the organization.

3) Participation in university-sponsored events.

4) Application for supplemental financial assistance.

5) Participation as a voting member of Student Government Association. Organizations who register may not apply for supplemental assistance and may not be voting members of Student Government Association.

III Policies Governing Recognized or Registered Organizations

1) Organizations shall comply with the Rules and Regulations of the University of Missouri and the St. Louis campus.

2) Organizations' membership policy shall not discriminate for reasons of color, creed, national origin or gender. Any organization may petition to the Vice Chancellor for Student Affairs for exemption from the requirement as it applies to gender. Academic and professional organizations which have discriminatory membership policy based on gender shall not be recognized.

3) Organizations' membership shall not be subject to approval by anyone other than the local campus membership.

4) Organizations are expected to maintain fiscal responsibility.

5) Registered organizations are encouraged to seek the advice of faculty and other members of the university community.

6) Recognized organizations are required to seek the advice of faculty and other members of the community.

7) Recognized organizations are required to participate in the Student Governance process.

IV Procedure for Review of Grievances

A. Any member of the university community may bring charges against a recognized organization for breach of the above policies or procedures.

B. Such charges, except those pertaining to discrimination, are brought initially to the Vice Chancellor for Student Affairs, who may:

1) Dismiss the charges, in which case an appeal may be made to the Senate Student Affairs Committee.

2) Settle the charges in a way acceptable to both parties or,

3) Refer the charges to the Senate Student Affairs Committee.

C. Penalties may range from withdrawals of one or more privileges to withdrawal of recognition or registration. Assessment of penalties shall also provide for the conditions leading to reinstatement of such privileges for recognition.

D. Either party to the charges may appeal the decision of the Senate Student Affairs Committee to the Chancellor.

Policy on Hazing

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 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 publicly which is conspicuous and not normally in good taste, engaging 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 or tolerate hazing of any type by an organization, or by an individual against another individual.

The Office of Student Activities 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.
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Should it be determined that a student organization or any of its members is guilty of hazing as previously defined, sanctions may include but are not limited to:

A. Automatic and indefinite suspension of campus recognition or registration with an accompanying loss of all campus privileges (i.e. use of facilities, student services, etc.);

B. Disciplinary action against those members involved in the incident(s) including suspension or expulsion from the university.

Implementation: Each organizational president (or equivalent officer) is required to read and sign the university's Policy on Hazing at the first regular meeting at which he or she presides. This policy, signed by the incoming president (or equivalent officer), must accompany any notification of a change in officers submitted to the Office of Student Activities. Failure to do so will result in the automatic imposition of inactive status on the organization with an accompanying loss of all university privileges until such time as the signed policy is submitted.

The University of Missouri-St. Louis is an affirmative action/equal opportunity employer committed to excellence through diversity.

Therefore, the university enthusiastically complies with and vigorously enforces each Federal and State Executive Order, law and regulation, University of Missouri Rules and Regulations and University of Missouri-St. Louis directive that prohibits discrimination against employees, students, and others based upon age, ancestry, color disability, national origin, race, religion, sex, or veteran status. The above compliance is established upon, but not limited to, the following employment and education related equal opportunity laws:

- Civil Rights Act of 1964, Title VII, as amended
- Executive Order 11246, Equal Employment Opportunity
- Equal Pay Act of 1963, as amended
- Age Discrimination in Employment of 1967, as amended
- Vietnam Era Veterans Readjustment Assistance Act of 1974, as amended
- Executive Order 11141, Age Discrimination
- Rehabilitation Act of 1973, Section 503, as amended
- Rehabilitation Act of 1973, Section 504, as amended
- Civil Rights Act of 1964, Title VI, as amended
- education Amendments of 1972, Title IX
- Americans with Disabilities Act of 1990

Based upon the foregoing documents, the Board of Curators of the University of Missouri has adopted the appropriate equal opportunity policies and procedures. The Chancellor is responsible for the implementation of equal opportunity at UM-St. Louis. Assisting the Chancellor and each Vice Chancellor is the Office of Equal Opportunity (OEO).

All equal opportunity functions for the campus are centralized in the OEO.

Equal Opportunity Policies of the University of Missouri-St. Louis

The following university policies govern the Office of Equal Opportunity (OEO): Equal Employment/Educational Opportunity Policy—The Curators of the University of Missouri do hereby reaffirm and state the policy of the University of Missouri on Equal Employment/Educational Opportunity, Sexual Harassment.

Equal opportunity is and shall be provided for all employees and applicants for employment on the basis of their demonstrated ability and competence without discrimination on the basis of their race, color, religion, sex, national origin, age, disability, or status as a Vietnam era veteran. Equal opportunity is and shall be also provided for all students and applicants for admission in compliance with existing legislation.

University of Missouri Equal Opportunity Statement

The University of Missouri-St. Louis is committed to equal employment and educational opportunities without regard to conditions of race, color, sex, religion, national origin, age, physical ability, veteran status, or individuals with HIV, AIDS, or ARC.

Each administrative unit of the university employing personnel, admitting students, or entering into contracts is charged with implementation of the university's commitments, and maintenance of records to demonstrate good faith efforts, in admission and training, recruiting and hiring, compensating and promoting, layoff and dismissal, granting of tenure, contracting and purchasing, and access to facilities and programs.

As an employer of persons and as an institution accountable to taxpayers and the general public, the university must have administrative and management practices that are designed for the best use of talent for operational effectiveness and efficiency.

(1) Recruitment and employment of personnel

a. Recruitment of professors and academic personnel in research and continuing education/extension is primarily the responsibility of deans, directors, chairpersons, and department heads.

b. Recruitment of administrative, service, and support staff, except for top-ranking administrative personnel, is primarily the responsibility of the personnel office of each campus, and the director of Human Resources for the University of Missouri-St. Louis administration. Selection is the responsibility of the administrative head of the employing unit.
c. Administrative efforts are made to recruit and employ minorities, women, the handicapped, and members of protected age groups.

d. The university maintains relationships with governmental agencies, community groups, and other organizations which may be of assistance in furthering recruitment and employment of minority groups, handicapped persons, and women into departments and units which have imbalances. Personnel sources are advised of the university's commitment to equal opportunity and affirmative action.

e. Imbalances exist when available talent among specified minorities, women, handicapped, or protected age group members is proportionately underrepresented in a particular personnel category in the university.

Underrepresentation is determined by an analysis of the appropriate employment market which is generally national or regional for major administrators, professors, and academic personnel in research and continuing education/extension. The appropriate employment market is generally the state or local community for most administrative positions and for service and support staff.

f. Advertisement and notices of employment opportunities indicate a filing date for consideration.

g. Notice of employment and training opportunities are made to existing personnel.
h. Employment applications meet federal and state requirements relating to equal opportunity.

I. The Office of Equal Opportunity maintains records to demonstrate efforts and results of efforts to achieve equity and to act affirmatively and reasonably to correct imbalances.

(2) Salaries, wages, and benefits

a. University compensation and benefit programs are administered without regard to conditions of race, color, sex, religion, national origin, age, physical ability, or veteran status.

b. The salary range for academic positions is determined in advance of recruitment on the basis of prevailing national levels and departmental scales for the educational attainment, experience, and specialty desired.

(3) Facilities, activities, and working conditions

a. University facilities are maintained on an equitable and nondiscriminatory basis.

b. Physical facilities have been adapted within the limits of the financial resources available to insure access to the university by the physically handicapped.

c. Opportunities for involvement in university activities are provided on an equitable or nondiscriminatory basis.

(4) Promotion and training

a. Promotions, contract renewals, the granting of tenure, and reductions in force of academic personnel are handled in accordance with established university procedures and qualification criteria for all persons and free of discrimination.

b. University policy requires that promotions, demotions, layoffs, recalls from layoffs, transfers, and temporary hires for service and support personnel are determined without regard to conditions of race, color, sex, religion, national origin, age, physical ability, or veteran status.

c. Participation in training and educational programs sponsored by the university, including apprenticeships, is open to all employees within eligible job classifications.

d. The university offers developmental programs for professional and personal growth to enhance promotion potential.

(5) Student admission and retention

a. The university gives students equal access to its academic programs without regard to conditions of race, color, sex, religion, national origin, age, or physical ability. Furthermore, the university seeks to recruit, enroll, retain, and graduate minority group members and women in those fields in which they are underrepresented.

b. The University of Missouri has a unique responsibility for graduate and professional public higher education in the state of Missouri. Therefore, academic departments offering doctoral and/or advanced professional programs in disciplines and professions in which there is a deficiency of minorities and women have adopted methods to encourage enrollment, retention, and graduation of minority group members and women.

c. Affirmative action is taken to offer graduate teaching and research assistantships to minorities and women.

d. Business, government, industry, and labor are solicited to assist and provide support to minorities and women through financial aid and by providing work experiences as they pursue academic objectives.

e. Personnel representatives of prospective employers using university services and facilities to interview and recruit students must be equal opportunity employers, and must give all qualified students equal opportunity for interviews, without regard to conditions of race, color, sex, religion, national origin, age, disability, or veteran status.

(6) Appeal and grievance procedures

a. Grievance procedures are available for the processing of complaints and grievances of alleged discrimination based on conditions of race, color, sex, religion, national origin, age, physical ability, or veteran status.

b. A student grievant has access to the student grievance procedures through the Office of Student Affairs, the school or college, the campus, and central administration.

c. The Office of Equal Opportunity currently provides advice and information to grievants on the grievance procedures.

(7) Records and reports

a. The administrative head of each university unit must be prepared to demonstrate that equal opportunity is practiced and that affirmative action is taken in recruiting and employment of full-time and part-time personnel, admission and retention of students, provision of facilities and programs, and purchasing and contracting.
b. Each responsible administrative unit of the university must be prepared to show that procedures followed and selections made are in compliance with policies on equal employment and affirmative action. Admissions applications are retained for one year and employment applications are retained for one year.

University business involving contracts and bids for various services are retained in compliance with University of Missouri record management policies.

c. Those responsible for recruiting, admitting, and retaining students "undergraduate, graduate and professional" maintain files and records documenting efforts to provide equal opportunity and act affirmatively to attract and retain minority group members, women, and older and handicapped persons. A report is made annually to the appropriate administrative committee.

d. Campus administrative officers have records demonstrating efforts to provide equal opportunity and show affirmative action in the interests of minority group members, women, and handicapped and older persons in the availability and use of university facilities, including recreational facilities.

e. Those responsible for personnel recruitment and employment personnel, including graduate teaching and research assistants, have records that reflect their adherence to equal opportunity and affirmative action practices.

f. Academic or administrative units receiving complaints or grievances based on allegations of discrimination report those cases to the Office of Equal Opportunity.

(8) Reviewing and monitoring

a. A university Committee on Equal Employment Opportunity and Affirmative Action (EEO/AA) is appointed annually by the Chancellor.

b. EEO/AA committee membership includes a reasonable cross section of personnel, including a representation of women, minorities, and the handicapped.

c. The EEO/AA committee advises the Director of Equal Opportunity on matters relating to affirmative action and university equal employment policy.

d. Administrative officers (chancellor, vice chancellors, deans, directors, department chairpersons, and all other supervisory personnel) are responsible for implementation of equal opportunity and affirmative action policies and practices within their areas of jurisdiction, and the effectiveness of implementation will be an element in the evaluation of the performance of each officer.

(9) Dissemination

a. Equal opportunity and affirmative action policies and programs are disseminated throughout the university and discussed at appropriate school, college, departmental, management, and supervisory meetings. The subjects covered include attraction, admission, and retention of students; recruitment, employment, training, promotion, and transfer of employees.

b. University employees, faculty, staff, and students are kept informed of equal opportunity programs and affirmative action goals through campus publications and communications, the Personnel Policy Manual, the Faculty Handbook, divisional and departmental meetings, staff orientation programs, and posters.

c. Copies of the Equal Employment and Affirmative Action policies are available to a cross section of community organizations, news media, area colleges, secondary schools and recruiting sources.

d. Copies of the Affirmative Action Policy will be made available on request to employees, applicable governmental agencies, and contractors or subcontractors.

e. University invitations to bid, purchase orders, and specifications to architects and engineers contain the university's equal opportunity policy.

f. University correspondence, employment notices and advertising, academic information, and other public notices contain the university's equal opportunity phrase.

Sexual Harassment

This University of Missouri policy aims for an increased awareness regarding sexual harassment by making available information, education and guidance on the subject for the university community.

A. Policy Statement--It is the policy of the University of Missouri, in accord with providing a positive discrimination-free environment, that sexual harassment in the workplace or educational environment is unacceptable conduct. Sexual harassment is subject to discipline, up to and including separation from the institution.

B. Definition--Sexual harassment is defined for this policy as either:

(i) unwelcome sexual advances or requests for sexual activity by a university employee in a position of power or authority to a university employee or a member of the student body, or

(ii) other unwelcome verbal or physical conduct of a sexual nature by a university employee or a member of the student body to a university employee or a member of the student body, when:

1. Submission to or rejection of such conduct is used explicitly or implicitly as a condition for academic or employment decisions; or

2. The purpose or effect of such conduct is to interfere unreasonably with the work or academic performance of the person being harassed; or

3. The purpose or effect of such conduct to a reasonable person is, to create an intimidating, hostile, or offensive environment.

C. Non-Retaliation--This policy also prohibits retaliation against any person who brings an accusation of discrimination or sexual harassment or who assists with the investigation or resolution of sexual harassment.

Notwithstanding this provision, the university may discipline an employee or student who has been determined
to have brought an accusation of sexual harassment in bad
faith.

D. Redress Procedures--Members of the university
community who believe they have been sexually harassed
may seek redress, using the following options:
1. Pursue appropriate informal resolution procedures as
defined by the individual campuses. These procedures are
available from the campus Affirmative Action/Equal
Opportunity Officer.

2. Initiate a complaint or grievance within the period of time
prescribed by the applicable grievance procedure. Faculty
are referred to Section 370.010, "Academic Grievance
Procedures"; staff to Section 380.010, "Grievance
Procedure for Administrative, Service and Support Staff";
and students to Section 390.010, "Discrimination Grievance
Procedure for Students."

Pursuing a complaint or informal resolution procedure does
not compromise one's rights to initiate a grievance or seek
redress under state or federal laws.

E. Discipline--Upon receiving an accusation of sexual
harassment against a member of the faculty, staff, or student
body, the university will investigate and, if substantiated,
will initiate the appropriate disciplinary procedures. There is
a five-year limitation period from the date of occurrence for
filling a charge that may lead to discipline.

An individual who makes an accusation of sexual
harassment will be informed:
1. At the close of the investigation, whether or not
disciplinary procedures will be initiated; and
2. At the end of any disciplinary procedures, of the
discipline imposed, if any.

Auxiliary Aids for Students with Disabilities

240.040 Policy Related to Students with Disabilities
Executive Order No. 21, 11-1-84; Amended 2-25-97.

A. EQUALITY OF ACCESS

The University of Missouri (UM) strives to assure that no
qualified person with a disability shall, solely by reason of
the disability, be denied access to, participation in, or the
benefits of any program or activity operated by UM. Each
such qualified person shall receive reasonable
accommodations to provide equally effective access to
educational opportunities, programs, and activities in the
most integrated setting appropriate unless provision of such
reasonable accommodation would constitute an undue
hardship on the university or would substantially alter
essential elements of the academic program or course of
study or would otherwise compromise academic standards.
This policy shall apply to all programs, services, and
activities of the university, including but not limited to
recruitment, admissions, registration, financial aid,
academic programs, advising, counseling, student health,
housing and employment.

B. FEDERAL AND STATE LAWS

This policy is intended to be consistent with Section 504 of
the Rehabilitation Act of 1973, which states that no
recipient of federal financial assistance may discriminate
against qualified individuals with disabilities solely by
reason of disability. This policy is also intended to be
consistent with the Americans with Disabilities Act of 1990
and the Missouri Human Rights Act.

C. FACILITIES

Each program or activity, when viewed in its entirety, shall
be accessible to otherwise qualified and eligible students
with disabilities. Facilities, or parts of facilities, constructed
or renovated for UM use will be designed and built so that
they are accessible to and usable by persons with
disabilities, in accordance with the ADA Accessibility
Guidelines or other accessibility standards properly adopted
by the campus. Accessible on-campus housing and food
service will be provided at the same cost and with the same
program options to qualified students with disabilities as are
afforded to non-disabled students. When any UM classes,
programs or activities are held in private facilities, thorough
efforts shall be made to obtain facilities which are
accessible.

D. COORDINATION OF PROGRAMS AND SERVICES
FOR STUDENTS WITH DISABILITIES

1. Campus disability support service (DSS) offices or other
designated campus units are responsible for coordination of
programs, services, and classroom accommodations for
qualified applicants for admission and qualified enrolled
students with disabilities. Such coordination relates solely to
disability issues. Determinations as to whether a student is
otherwise qualified often will be based on the academic
requirements developed by the faculty. Specific services
available to qualified students with disabilities will be
provided by the university in conformity with the
requirements of federal and state law.

1. From the U.S. Justice Department's ADA Title II
Technical Assistance Manual, Section II.2.8000:
Qualified individual with a disability. In order to be an
individual protected by Title II, the individual must be a
"qualified" individual with a disability. To be qualified,
the individual with a disability must meet the essential
eligibility requirements for receipt of services or
participation in a public entity's programs, activities, or
services with or without: 1) Reasonable modifications
to a public entity's rules, policies, or practices; 2)
Removal of architectural, communication, or
transportation barriers; or 3) Provision of auxiliary aids
and services.
Appendix

The "essential eligibility requirements" for participation in many activities of public entities may be minimal. For example, most public entities provide information about their programs, activities, and services upon request. In such situations, the only "eligibility requirement" for receipt of such information would be the request for it. However, under other circumstances, the "essential eligibility requirements" imposed by a public entity may be quite stringent.

2. Determinations as to whether requested services and requested accommodations are required will be made initially by the Coordinator of DSS. Accommodation of the disability will be determined by the coordinator and faculty member, and if either disagrees with the prescribed accommodation, such disagreement shall be described in writing promptly and submitted to the Chancellor or his/her designee for resolution in a prompt manner.

3. Initial determinations and any disagreements submitted to the Chancellor or his or her designee will take into consideration all relevant factors including, but not limited to, the following:
   a. current documentation of the specific disability and of the need for the requested services or accommodations;
   b. the essential elements of the academic program or course of study being pursued;
   c. the fact that the law does not require a university to substantially alter essential elements of its academic program or course of study or to otherwise compromise its academic standards.

4. All students seeking disability-related services and/or accommodations must disclose the presence of a specific disability to DSS. Before receiving requested services and/or accommodations, the student will be required to provide the DSS office with current medical or other diagnostic documentation of a disability from a qualified physician or other qualified diagnostician, as well as current documentation of the need for accommodations. In cases where existing documentation is incomplete or outdated, students may be required to provide additional documentation at the student's expense.

5. It is the student's responsibility to self-identify, to provide current and adequate documentation of his/her disability, and to request classroom accommodations, through the DSS office. The appropriate documentation must be provided in a timely manner to ensure full resolution of accommodations prior to the student's entrance into the program or course of study. Documentation review and accommodations planning by DSS, including consultation with faculty and/or other campus entities that may be affected in providing accommodations, will be done on an individualized case-by-case basis.

6. Reasonable classroom accommodations will be provided to otherwise qualified and eligible students with disabilities who have self-identified and who have provided satisfactory documentation in support of their timely request for such accommodations, in compliance with federal and state mandates. These accommodations shall not affect the substance of the educational programs or compromise educational standards.

7. In addition to providing accommodations needed to ensure nondiscrimination in access to educational opportunities by otherwise qualified students with disabilities, the university is responsible for ensuring that no qualified disabled student is denied the benefits of or excluded from participation in a university program because of the absence of auxiliary aids, services, and/or other reasonable accommodations. Auxiliary aids, services, and/or other accommodations include but are not limited to interpreters (sign or oral), readers, scribes, adaptive equipment, and other appropriate services or equipment necessary for course or program accessibility.

8. While funding for accommodations to ensure equally effective access is provided by the university, funding for auxiliary aids, accommodations, and/or services in some instances may be shared with state vocational rehabilitation agencies. The law does not require and the university does not provide prescription devices or other devices/services of a personal nature (e.g. personal attendants) for students with disabilities.

E. ESTABLISHMENT OF CAMPUS POLICIES
Chancellors are directed to establish campus policies and/or procedures consistent with this order. These should cover, at a minimum, treatment of disability-related information and appropriate regard for confidentiality, responsibilities of students in applying for services through DSS, time lines to assure that students make accommodation requests in a timely manner, guidelines to assure that disability documentation is reasonably current, a description of the process of individualized assessment of each student's disability documentation and accommodation request(s), the role of faculty in determining the essential elements of the academic program or course of study and the academic standards involved in the accommodations planning and review process within the context of academic program requirements, and processing of complaints and grievances including a procedure for appeal when faculty and/or academic administrators or administrators in other involved campus entities do not agree with the DSS on the requirements of this policy.

ILLUSTRATION: The medical school at a public university may require those admitted to its program to have successfully completed specified undergraduate science courses.

AIDS Policy Statement
Current knowledge indicates college and university students or employees with AIDS, ARC, or a positive antibody blood test do not pose a health risk to either students or employees in a usual academic or residential setting. The policy of University of Missouri is to permit students and employees with AIDS to continue to engage in as many of their normal
pursuits as their condition allows. Managers should be sensitive to the medical problem and ensure that such employees are treated consistent with the treatment of other employees. Students will be allowed to continue their enrollment and activities (including continued residency in student housing) as long as they continue to meet academic standards and medical evidence indicates their conditions are not a threat to themselves or others. Every effort will be made to maintain confidentiality at all times.

The university also has a legitimate interest in the welfare of all students, employees, and visitors to the campus. Every reasonable precaution will be taken to minimize the risk that an employee's or student's condition will present a health and/or safety hazard to others.

The university will not discriminate against individuals with HIV infection, AIDS or ARC, but this protection does not include individuals with secondary infections or diseases that would constitute a direct threat to the health or safety of others or who may because of the disease or infection be unable to perform duties of their employment. In such cases, the appropriate university personnel or student policy will determine what changes, if any, will be made in the student's or employee's academic or work program.

In the event of public inquiry concerning AIDS on campus, the Chancellor or the Chancellor's designee will provide appropriate information on behalf of the university. Existing policies regarding confidentiality of employee and student records will be followed.

Consistent with its concern for students and employees with AIDS, the university offers a range of resources through the AIDS Task Force on each campus and through other campus services.

a. Student, employee, and management education and information;
b. Referral to agencies and organizations that offer supportive services for life-threatening illnesses;
c. Consultation to assist employees in effectively managing health, leave, and other benefits.

The AIDS Task Force on each campus will continue to meet periodically to review and update policy and to make recommendations as new medical facts become available. Each Task Force will continue to encourage programs to educate all members of the campus community about the reality of AIDS.

To address specialized needs, each campus is authorized to adopt and implement special policies related to AIDS which are consistent with this policy statement.

The Office of Equal Opportunity is located in 414 Woods Hall. The telephone number is 516-5695.

Affirmative Action on Committee Appointments Policy

A part of the implementation of the Affirmative Action Plan of the University of Missouri, any person appointing any committee for the university or any campus, in selecting the membership, shall give due consideration to the inclusion in such membership of women and minorities unless membership thereon is ex-officio.

UM Board of Curators Policy on Maintaining a Positive Work and Learning Environment

1. The University of Missouri is committed to providing a positive work and learning environment where all individuals are treated fairly and with respect, regardless of their status. Intimidation and harassment have no place in a university community. To honor the dignity and inherent worth of every individual student, employee, or applicant for employment or admission is a goal to which every member of the university community should aspire and to which officials of the university should direct attention and resources.

2. With respect to students, it is the university's special responsibility to provide a positive climate in which students can learn. Chancellors are expected to provide educational programs and otherwise direct resources to creative and serious measures designed to improve interpersonal relationships, to help develop healthy attitudes toward different kinds of people, and to foster a climate in which students are treated as individuals rather than as members of a particular category of people.

3. With respect to employees, the strength we have as a university is directly related to maintaining a positive work environment throughout the institution. The university should provide a positive recruiting and work environment focused on the duties and skills of the work to be performed. It is the expectation of the university that all employees and potential employees will be treated on the basis of their contribution or potential contribution without regard to personal characteristics not related to competence, demonstrated ability, performance, or the advancement of the legitimate interests of the university. The General Officers are expected to provide training programs for supervisors to assist in achieving this objective.

4. With respect to violations of the policy, faculty, staff and students may utilize their respective grievance procedures approved by the Board of Curators. The approved grievance procedures are as follows: Grievance procedure in Section 370.010 for faculty; grievance procedure in Section 380.010 for staff; and grievance procedure in Section 390.010 for students, and each such procedure shall be deemed as amended to include grievances filed under this policy. This policy shall not be interpreted in such a manner as to violate the legal rights of religious organizations, or military organizations associated with the Armed Forces of the United States of America.
A. GENERAL
1. It is the policy of the University of Missouri to provide equal opportunity for all enrolled students and applicants for admission to the university on the basis of merit without discrimination on the basis of their race, color, religion, sex, national origin, age, or disability, or Vietnam era veteran status. Sexual harassment shall be considered discrimination because of sex.

2. To insure compliance with this policy, all University of Missouri prospective or enrolled students shall have available to them this student discrimination grievance procedure for resolving complaints and/or grievances regarding alleged discrimination.

3. This grievance procedure neither supersedes nor takes precedence over established university procedures of due process for any and all matters related to Academic Dishonesty, Grade Appeals, Traffic Appeals, Disciplinary Appeals, or other specific campus procedures which are authorized by the Board of Curators and deal with faculty/staff responsibilities.

4. These proceedings may be terminated at any time by the mutual agreement of the parties involved.

B. DEFINITIONS

1. A complaint is an informal claim of discriminatory treatment. A complaint may, but need not, constitute a grievance. Complaints shall be processed through the informal procedure herein set forth.

2. A grievance is the written allegation of discrimination which is related to:
   a. Recruitment and admission to the institution.
   b. Admission to and treatment while enrolled in an education program.
   c. Employment as a student employee on campus.
   d. Other matters of significance relating to campus living or student life, including, but not limited to: Assignment of roommates in resident halls; Actions of fraternities and sororities; Membership in and/or admission to clubs/organizations; Student Health Services; Financial aid awards.

3. A student is any person who has applied for admission or readmission, or who is currently enrolled, or who was a student of the university of Missouri at the time of the alleged discrimination.

4. Persons with disabilities--For the purpose of this student discrimination grievance procedure, a "person with a disability" has been substituted for "handicapped individual' (Section 504, Rehabilitation Act of 1973) and shall be defined as "...any person who
   a. Has a physical or mental impairment which substantially limits one or more of such person's major life activities,
   b. Has a record of such impairment, or
   c. Is regarded as having such an impairment."

For purpose of this definition, A "major life activity" means any mental or physical function or activity which, if impaired, creates a substantial barrier to employment and/or education.

Any reference in this document to written materials or to written or oral presentations within the student discrimination grievance procedure may be adjusted to accommodate persons with disabilities for whom the stated materials or required presentations would not be appropriate. Cost of such accommodation will be borne by the university, with no charge to the individual.

5. Appropriate Administrative Officer--The primary administrative officer on the staff of the Chancellor (in the area of Student Affairs/Services, Administrative Services, Development, and Academic Affairs) having administrative responsibility for the unit in which the discrimination is alleged to have occurred.

6. Grievance Consultant--At any step the Director of Equal Opportunity or of Affirmative Action may be asked to serve as a consultant by any of the parties involved in this grievance procedure.

C. COMPLAINTS

1. Policies and Procedures--A student with a complaint will be provided with copies of appropriate policies and procedures pertaining to student complaints and grievances, and the Chief Student Personnel Administrator or his/her designee and the Officer for Equal Opportunity or for Affirmative Action shall be available to assist the student in understanding the opportunities afforded through such policies and procedures. The student may choose to have an adviser participate in any stage of the grievance procedure, subject to the restrictions of the hearing procedures set forth in Section 390.010 F.

2. Joint Complaint--If more than one student is aggrieved by the same action, these students may, by mutual written agreement among themselves, file with the Chief Student Personnel Administrator a complaint and pursue their complaints jointly under this grievance procedure. If the
number of students in such a case is so large as to make it impracticable for them to be heard individually in a joint proceeding, they may, by mutual agreement, elect one or more of their number to act on behalf of them all.

3. Students may informally discuss a complaint with the relevant supervising administrator. Every reasonable effort should be made to resolve the matter informally at this administrative level. If a satisfactory resolution is not reached, the student may pursue the matter through each level of administrative jurisdiction up to and including the Appropriate Administrative Officer, or file a grievance within the time specified in D.1.b.

4. Complaints Involving Recruitment
   a. Undergraduate applicants must first present complaints about recruitment to the Director of Admissions. If a satisfactory resolution is not reached, the applicant may appeal the matter to the immediate supervising officer of the Director of Admissions.
   b. Applicants for graduate study may request a meeting with the academic department head and the dean of the college, or their designees, who are actually involved in the recruitment effort to discuss the matter informally. If a satisfactory resolution is not reached, the applicant may appeal to the Dean of the Graduate School and finally to the Appropriate Administrative Officer.

5. Complaints Involving Admissions (Undergraduate or Professional)
   a. Undergraduate and professional student applicants shall present complaints to the Director of Admissions or to the dean of the school or college, depending upon where the application was originally filed.
   b. This university official shall compare the person's academic qualifications against the official university admissions criteria and review the denial. If the denial is sustained, the applicant may appeal this decision to the official's immediate supervisor or to the appropriate admissions committee.

6. Complaints Involving Admissions (Graduate)
   Applicants to the Graduate School may ask for a meeting with the academic department head of the program to which the applicant was seeking admission.
   This official shall explain the reasons for the denial of recommendation for admission. If a satisfactory resolution is not reached, the applicant may then appeal to the Dean of the Graduate School or to the appropriate admissions committee. If the denial is upheld, the applicant may appeal the decision to the appropriate administrative officer.

7. Complaints Involving Admissions to or Treatment in an educational Program or in the Granting of Assistantships - An undergraduate or graduate student enrolled at the institution who has a discrimination complaint involving admission to or treatment in an educational program or in the granting of assistantships may request a conference with the appropriate department head and with the dean of the school or college (or the dean's designee) to discuss the matter informally. If a satisfactory resolution is not reached, the student may present a grievance pursuant to Section 390.010 F.

8. Complaints Involving Nonacademic Matters Related to Campus Living and Student Life-A currently enrolled student who has a university-related complaint concerning discrimination in nonacademic matters including but not limited to assignment of roommates, actions of fraternities and sororities, membership in and/or admissions to clubs/organizations, student health services and financial aid awards may request a conference with the appropriate administrative supervisor, department head and/or director to discuss the matter informally. If a satisfactory resolution is not reached, the student may present a grievance pursuant to Section 390.010 D.

9. Complaints Involving Student Employment on Campus. A student enrolled at the university who alleges that discrimination occurred either in applying for work or while working as a student employee at a university job may request a conference with the supervisor, department head or director of the employing unit to discuss the matter informally. If a satisfactory resolution is not reached, the student may present a grievance pursuant to Section 390.010 D.

10. Complaints Involving Financial Aid (Undergraduate, Graduate, Professional): a. Undergraduate, graduate, and professional student aid applicants shall present complaints to the Director of Student Financial Aid where the application was originally filed or the award originally made.
   b. This university official shall compare the person's financial and academic qualifications against the official university financial aid criteria and review the award, amount, or denial of the aid. If the original judgment is sustained, the applicant may appeal this decision to the official's immediate supervisor or to the appropriate financial aid committee.

D. INITIATING A GRIEVANCE

1. Policies and Procedures—student with a grievance will be provided copies of appropriate policies and procedures pertaining to student complaints and grievances, and the Chief of Student Personnel Administrator or designee and the Office for Equal Opportunity or for Affirmative Action shall be available to assist the student in understanding the opportunities afforded through such policies and procedures. The student may choose to have an adviser participate in any stage of the grievance procedure, subject to the restrictions of the hearing procedures set forth in Section 390.010 F.
   a. Joint Grievance—If more than one student is aggrieved by the same action, these students may, by mutual written agreement among themselves, file with the Chief Student Personnel Administrator a grievance and pursue their grievances jointly under this grievance procedure. If the
number of students in such a case is so large as to make it impractical for them to be heard individually in a joint proceeding, they may, by mutual agreement, elect one or more of their number to act on behalf of all of them.

b. Regardless of their nature, all discrimination grievances are to be filed with the Chief Student Personnel Administrator. A grievance must have been filed by a student within one-hundred-eighty (180) calendar days of the date of the alleged discriminatory act.

2. Filing a Grievance

a. All grievances must be presented in writing and contain the following information:

1) A clear concise statement of the grievance which includes the name of the person(s) against whom the grievance is made, the date(s) of the alleged discrimination and a statement describing the specific supporting evidence;

2) A brief summary of the prior attempts to resolve the matter which includes the names of persons with whom the matter was discussed and the results of those previous discussions;

3) A specific statement of the remedial action or relief sought.

b. Within seven (7) working days, the original grievance form with an explanation will be returned to the student if, in the judgment of the Chief Student Personnel Administrator, the statements are vague or do not meet the above requirement. The student may make the necessary corrections and resubmit the grievance within seven (7) days.

3. Any grievance not filed within the time limits specified in Section 390.010 D.1.B shall be deemed waived by the grievant. The Chief Student Personnel Administrator may extend the time limits only if adequate cause for an extension of the time limits can be shown by the student.

4. For informational purposes, copies of the grievance shall be forwarded to the Appropriate Administrative Officer and the Director of Equal Employment and/or Affirmative Action.

5. Within fifteen (15) working days of receipt of a grievance that satisfies the requirement of Section 390.010 D.1.b, the Appropriate Administrative Officer with the consent of the parties involved may establish an informal hearing with the aggrieved student, the responding faculty/staff/organization, the respondent's supervisor and the Appropriate Administrative Officer's designee. The Appropriate Administrative Officer shall not involve himself/herself in this meeting. If this informal means of resolving the grievance fails, a grievance committee will be impaneled as called for in Section 390.010 E.1.

E. FORMATION OF GRIEVANCE COMMITTEE

1. It is the Appropriate Administrative Officer's responsibility to initiate the selection of the grievance committee within fifteen (15) working days after the request for the formation of a grievance committee or after the completion of the informal hearing provided for in Section 390.010 F.5 without satisfaction to the grievant.

2. A grievance hearing panel shall be established by October 1 of each year from which a grievance committee should be constituted. The panel shall consist of ten (10) faculty, ten (10) staff and ten (10) students. Selection of the panel will be made by the Chief Student Personnel Administrator from recommendations by the appropriate faculty, staff and student associations. Selection of membership will consider sex, race, disability, academic rank, student classification and employee classification. Membership on the hearing panel shall be for two years. A member's term shall expire on September 30 of the second year unless he/she is serving at that time on hearing committee still in the process of reviewing an unresolved grievance. In such case, the member's term shall expire as soon as the committee has submitted a written report of its findings and recommendations to the Appropriate Administrative Officer.

3. A hearing committee shall be composed of five (5) members. The grievant shall select two (2) members from the grievance hearing panel provided by the Chief Student Personnel Administrator. The responding faculty/staff/organization shall select two (2) members from the grievance hearing panel. Both parties should have their selections made within 15 working days of the receipt of the request. The four committee members shall then select an additional member from the grievance hearing panel to serve as chair. Neither members of the immediate departmental unit nor student members of pertinent student organizations involved in the grievance shall be eligible to serve on the committee.

4. Any person selected to a grievance committee will be expected to serve on such committee and to be present at all sessions. If a member is absent from a single session, he/she will be required to review all tapes or transcribed proceedings of that session prior to the next meeting of the committee. Should a member be absent from two sessions or should a member request to be excused from service for reasons of illness, necessary absence from the campus or other hardship, then that member shall be replaced in the same manner used in the original selection (see Section 390.010 E.3). If a member is unable or ineligible to serve for whatever reason, the replacement shall review all tapes or written transcripts and all submitted evidence prior to service on the committee. Five members of the hearing committee, duly selected as in Sections 390.010 E.3 and E.4 must attend the opening and closing session of the hearing.
F. HEARING PROCEDURES FOR FORMAL GRIEVANCES

1. It shall be the responsibility of the Appropriate Administrative Officer to coordinate the procedures contained herein, to make provisions for hearing rooms, to coordinate secretarial and recording services and to otherwise serve the grievance committee as needed.

2. At the first organizational meeting of the grievance committee, the committee shall elect a chairperson from among the members to preside over subsequent meetings.

Then the chairperson shall schedule a hearing at the earliest convenient time when all affected parties can be present.

3. A quorum consists of a minimum of four members of the committee except as provided by Section 390.010 E.4.

4. The grievance committee shall invite the grievant and the responding person to all hearings. Attendance at the hearings shall be limited to persons who have an official connection with the case as determined by the chairperson. The grievant and the responding person may choose to be accompanied by an adviser. Others whose participation in the hearing is considered essential in order to assist the committee in establishing the facts of the case shall appear before the committee only long enough to give testimony and to answer questions of committee members.

5. It is within the duties and responsibilities of all members of a grievance committee to commit themselves to observe procedures consistent with fairness to all parties concerned. For example, it is a matter of principle that members of the grievance committee will not discuss a case with anyone outside of the hearing process and that their finding will not be influenced by anything other than the evidence presented to them in meetings in which all affected parties are present.

6. The grievance committee shall set forth the rules of procedure for the hearing within the guidelines set forth herein. The chairperson may, for good cause and with the concurrence of a majority of the entire committee, authorize deviation from the suggested format, in which case the principal parties shall be notified.
   a. The grievant shall be heard first in all phases of a grievance hearing and shall be primarily responsible for the presentation of his/her position.
   b. The adviser of the grievant or respondent may advise that person and may briefly explain his or her position but shall not be permitted to testify or to cross-examine.
   c. A reasonable time limit should be established for opening and closing statements and shall be announced prior to the hearing.
   d. Length of hearing sessions may be established in advance; every effort should be made to conduct the hearing as expeditiously as possible, with equal fairness to both parties.
   e. The interested parties shall provide the chairperson with the names of the adviser and potential witnesses at least forty-eight (48) hours prior to the hearing. It is the responsibility of the interested party, working with the chairperson, to ensure the presence of these individuals in a timely manner.
   f. After initial witnesses for both parties have been heard, such witnesses may be recalled for additional questioning if requested by either party or the grievance committee. The committee may call new witnesses whose testimony it deems relevant or helpful.
   g. In order to promote the truthful, unfettered exchange of information and ideas, all testimony pertaining to the grievance hearing shall be held in confidence.
   h. Only evidence relevant to the grievance may be introduced. Questions regarding the admissibility of evidence shall be decided by the chairperson.

7. At any point in the proceedings prior to the time at which the committee reaches its final decision, the grievant may withdraw any portion or all of the grievance with the consent of a majority of the committee members and of the respondent. In all cases of withdrawal at the consent of the committee and of the respondent, the grievant shall not have the privilege of reopening the same grievance at any time in the future. In the event that the student refuses to participate further in the committee hearing, the committee may choose to continue the case or to move to closure with an appropriate closing statement as per Section 390.010 F.9.

8. A confidential tape recording of the grievance hearing shall be made and will be accessible to the parties involved, the committee, the Appropriate Administrative Officer, the Chancellor, the President, members of the Board of Curators and authorized representatives on a need-to-know basis. Either party to the grievance may request that the committee provide a written transcript of testimony. The cost of preparation of such a transcript is to be paid by the party making such request unless Section 390.010 B.4 is applicable. After the report of the grievance committee has been prepared, the tapes and relevant materials will be sealed and filed in the Appropriate Administrative Office. Unless extraordinary circumstances apply, these materials will be destroyed at the end of five years.

9. At the conclusion of the grievance hearing, the members of the grievance committee shall meet in closed session to deliberate upon their findings. A majority vote of the entire committee shall be required on all decisions. The grievance committee shall make a written report on findings and recommendations to the Appropriate Administrative Officer of the university, with copies to the grievant(s) and the responding person(s). The written report will contain:
   a. A statement of the purpose of the hearing,
   b. Issues considered,
   c. A summary of the testimony and other evidence presented, d. Findings of fact as developed at the hearing, and
   e. Recommendations for final disposition of the case.

10. The Appropriate Administrative Officer will make his/her decision. This decision and the actions that have
been taken shall be presented to both parties in writing. If the administrative officer does not accept the recommendations of the grievance committee, a written statement of the reasons for so ruling must be given to both parties and to the chairperson of the committee.

11. If requested by the grievant or the responding party, normally within seven (7) calendar days of the notification of the decision, the decision of the Appropriate Administrative Officer may be subject to a review of the records by the Chancellor. Any review and decision by the Chancellor shall be made normally within thirty (30) calendar days. The decision of the Chancellor can be appealed to the President, who shall have thirty (30) calendar days in which to make a decision, which shall be final.

12. Grievances shall receive prompt attention. The hearing and the report of the grievance committee shall normally be completed within sixty (60) calendar days of the formation of the grievance committee, and a final decision shall be made by the Appropriate Administrative Officer normally within ten (10) calendar days thereafter. In any case in which these time schedules should prove to be inadequate, the committee shall present, in writing, an amended time schedule to all parties involved.
# University of Missouri-St. Louis

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2001-2002 ACADEMIC CALENDAR

SUMMER SESSIONS 2002

Session I (4 weeks)
May 20, Monday, classes begin at 8:00 a.m.
May 27, Monday, Memorial Day holiday
June 14, Friday, session closes, end of day

Session II (8 weeks)
June 17, Monday, classes begin at 8:00 a.m.
July 4, Thursday, Independence Day holiday
August 7, 8, 9, Wednesday, Thursday, Friday
final examinations (8 wks. session only)
August 9, Friday, session closes, end of day

Session III (4 weeks)
June 17, Monday, classes begin at 8:00 a.m.
July 4, Thursday, Independence Day holiday
June 12, Friday, session closes, end of day

Session IV (4 weeks)
July 15, Monday, classes begin at 8:00 a.m.
August 9, Friday, session closes, end of day
August 11, Sunday, summer commencement

"Opened in Fall 2000, the Millennium Student Center is the largest and most student-friendly building in the state of Missouri..."