UMSL Bulletin 1973-1974

University of Missouri-St. Louis

Follow this and additional works at: https://irl.umsl.edu/bulletin

Recommended Citation
https://irl.umsl.edu/bulletin/52

This Book is brought to you for free and open access by the University Archives at IRL @ UMSL. It has been accepted for inclusion in Bulletins by an authorized administrator of IRL @ UMSL. For more information, please contact marvinh@umsl.edu.
The University of Missouri-St. Louis is an equal employment and educational opportunity institution.
UMSL UNDERGRADUATE BULLETIN
This bulletin includes a description of undergraduate courses and announcement of undergraduate 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. 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 campus concerned. Inquiries regarding admission to the University of Missouri-St. Louis should be addressed to the Director of Admissions, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121.

UMSL University of Missouri-St. Louis
Volume 1 Number 6 May 31, 1973 General 1973 Series Number 6
Robert E. Smith, Director, Office of Public Information
John Chamberlain, Editor
Published by the UMSL Publications Editor's Office, 8001 Natural Bridge Road, St. Louis, Missouri 63121. UMSL is published ten times a year as follows: twice in January, May and August; once in March, April, October and November. Application to mail at second-class postage rates is pending at St. Louis, Missouri.

Table of Contents

5 University of Missouri-St. Louis
8 Campus Map
11 Admission
21 Degrees
23 Fees and Expenses
27 Student Financial Aid
31 Student Life
37 Special Programs
37 Programs for Missouri Residents at Other Universities
38 Pre-Engineering Program
38 Pre-Law Program
38 Pre-Medical Sciences Program
39 Pre-Pharmacy Program
40 Reserve Officers Training Program
40 Center of Community and Metropolitan Studies
40 Computer Center
41 Center for International Studies
41 Midwest Community Education Development Center
42 Urban Journalism Center
42 Counseling Service
42 Junior College District
43 General Regulations
47 College of Arts and Sciences
49 Administration of Justice Program
50 Department of Biology
52 Department of Chemistry
54 Department of Economics
56 Department of English
58 Department of Fine Arts
60 Department of History
61 Department of Mathematics
63 Department of Modern Foreign Languages and Literatures
67 Department of Philosophy
68 Department of Physics
71 Department of Political Science
72 Department of Psychology
75 Department of Sociology and Anthropology
79 School of Business Administration
87 School of Education
91 Department of Elementary Education
94 Department of Administration, Philosophy and Secondary Education
97 Department of Behavioral Studies and Research
99 Evening College
101 Extension Division
103 Graduate School
105 Description of Courses
107 Course Descriptions - College of Arts and Sciences
107 Administration of Justice
109 Anthropology
111 Art
112 Astronomy
113 Atmospheric Science
113 Biology
117 Chemistry
120 Economics
124 English
128 French
130 Geography
130 Geology
131 German
132 Greek
133 History
140 Interdisciplinary Courses
141 Italian
141 Latin
141 Literature in Translation
142 Mathematics
145 Music
148 Philosophy
151 Physics
155 Political Science
159 Psychology
163 Russian
164 Sociology
168 Spanish
170 Speech
171 Course Descriptions - School of Business Administration
176 Course Descriptions - School of Education
176 Elementary Education
178 Administration, Philosophy and Secondary Education
182 Other Offerings
183 Behavioral Studies and Research
184 Course Descriptions - Military Science
184 Air Force Aerospace Studies
185 Military Science
187 The Administration
190 Index
192 Academic Calendar
HISTORY OF THE UNIVERSITY OF MISSOURI

The University of Missouri, founded in 1839 by an act of the Missouri General Assembly, is the oldest state university west of the Mississippi River. The early university was patterned after the ideals of Thomas Jefferson, a vigorous advocate of public higher education. After passage by the Federal Government of the Morrill Act in 1862, the university became a land-grant as well as a state-supported institution.

The University has four campuses: Columbia, Kansas City, Rolla, and St. Louis. The oldest and largest campus was founded at Columbia in 1839, only 18 years after Missouri was granted statehood. The Rolla campus, originally the University of Missouri School of Mines and Metallurgy, dates back to 1870. The Kansas City campus, formerly the University of Kansas City, was added in 1963, and in the same year a completely new campus was opened in St. Louis.

The university has grown from a graduating class of two on the Columbia campus in 1843 to a total on-campus enrollment this year of approximately 47,000 students, representing every state and many foreign countries. One of the nation's 1,145 accredited colleges and universities, the University of Missouri ranks among the top fifteen in size of enrollment.

The university, as provided by the State Constitution, is governed by a nine-member Board of Curators. The president of the university, with the assistance of a university staff, directs and coordinates activities on the four campuses. The activities of each campus are under the supervision of a chancellor, who directs campus affairs within guidelines established by the board and the president.

As a state and land-grant institution, the University of Missouri has three basic missions: teaching, research, and extension. Through teaching, the faculty seeks to impart to its students the best of what man has learned; through research, to extend the limits of what is known; through extension, to provide all Missouri citizens the benefits of new knowledge.

The university is rich in tradition, yet looks also to the future, mindful that the purpose to which it is dedicated can only be achieved through devotion to the ideals of scholarship and continued search for new levels of attainment and creativity.
A member of the four-campus community since 1963, the University of Missouri-St. Louis plays an important role in urban education. Established to serve the rapidly growing need of Missouri's largest metropolitan area for high quality education at moderate cost, the university is living up to that continuing challenge.

The 128-acre campus in St. Louis county is developing rapidly. The year 1973 marks the tenth anniversary of the campus which serves more than 11,000 students. Nine major new buildings housing classrooms, laboratories, offices, continuing education and student union facilities have been completed on the campus. Facilities recently completed include an arts and sciences building, a combination social sciences, business and education complex and a multi-purpose building (which houses a gymnasium, swimming pool and physical conditioning facilities). Three parking garages and surface parking serve the commuter campus.

The start of the 1972-73 academic year marked the full-time employment of over 400 faculty members with more than 70 per cent holding doctoral degrees, far above the national average.

Over 6,300 degrees, both baccalaureate and graduate, have been granted so far to day and evening students.

Charged to “bring the university to the student,” the University of Missouri-St. Louis meets still a further challenge to bring the university and its great resources of education, research and service to the community, to the nation and to our dealings with other nations.

In order to extend the availability of higher education to the public, the Evening College degree programs parallel those offered in other divisions of the university. Degrees may be earned by attending evenings only.

KWMU, a 100,000 watt FM radio station presenting informational, cultural and entertainment programs to the area, went on the air in the spring of 1972. Instructional programming geared to special audiences is another service to be offered by KWMU.

Out of a natural concern for the urban area has evolved the Center of Community and Metropolitan Studies which fulfills a threefold function of teaching, research and community service, and provides a direct link between the scholarship of the faculty and the problems of the urban area.

Under a full-time dean of extension, the academic resources of the campus are further extended to the people of Missouri through credit and non-credit courses, and through consultation services offered to agencies, organizations and individuals.

The Center for International Studies expands and improves the teaching of international studies on all educational levels, undertakes and makes available research results and aids the public in understanding world affairs.

Above all is the university’s concentration on the student and the quality of education. The University of Missouri-St. Louis holds high its objective of academic excellence. All students are required to follow a curriculum that gives broad training in the liberal arts and sciences as well as depth in a major of the student’s choice. The university encourages students to qualify for advanced placement and credit, to enroll whenever possible in seminars, individual reading courses and courses emphasizing undergraduate research. Research is also conducted through graduate programs in business administration, chemistry, sociology, economics, education, history, political science and psychology. The curriculum is supplemented by a wide range of extracurricular activities.

The university is pledged to maintain a primary concern with superior teaching and frequent informal contacts between faculty and students. It is through this concern with the student and concentration upon quality in education that the University of Missouri-St. Louis aims to provide more creative research and service to the metropolitan community.
NOTE: Parking areas are designated by Roman numerals. Lots marked V are reserved for student parking.
Inquiries regarding entrance to all divisions of the University of Missouri-St. Louis should be addressed to the Director of Admissions, Office of Admissions and Records, 8001 Natural Bridge Road, St. Louis, Missouri 63121.

The policies of the University of Missouri-St. Louis comply with the provisions under Title VI of the Civil Rights Act of 1964. No person in the United States shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity of the university.

Directions to New Students New students must submit credentials before July 1 for the fall semester, December 1 for the winter semester and May 1 for the summer session.

All new students are required to submit application forms which may be obtained from the director of admissions. Official transcripts should be sent directly from each institution previously attended. Admission can be determined only after all credentials are on file.

Entering Freshmen Entering freshmen must submit a high school transcript certified by the proper official of the school in which the credits were earned, an official test score, and upon acceptance, a satisfactory medical history report.

Transfer Students An undergraduate student who has attended college elsewhere must submit an official high school transcript and official college transcripts from each college attended including statements of honorable dismissal. Upon notification of acceptance, a satisfactory report of medical history must be submitted by the applicant.

Graduate Students A graduate student must have a transcript sent from the institution conferring his bachelor's degree and from each graduate school attended. In addition, if accepted, the applicant must submit a satisfactory medical history report. All credentials submitted for admission become the property of the University of Missouri-St. Louis.

Advanced Payment Fee Upon notification of acceptance to the fall or winter semester, a student will be requested to submit a $50 non-
refundable advance payment on his registration fee. This amount is credited to the student's incidental fee when he enrolls in the university.

MISSOURI FRESHMEN

Missouri Freshmen Policy The freshman admissions policy is listed below.

1. Admission to a University of Missouri campus as a regular freshman student will be granted to an applicant who presents evidence which indicates he has a reasonable probability of success as demonstrated by the experience of students admitted in previous years.

2. The selection of a student for admission as a regular freshman will be based upon a combination of high school class rank and performance on a standardized college aptitude test and, where appropriate, upon recommendations by persons who are knowledgeable of the student's potential for success in university-level education. The specific standards for admission will be the same for each of the four campuses of the university. The following plans are available to applicants:

   Plan A: Graduates of fully accredited high schools may be admitted to the University of Missouri-St. Louis on the basis of their high school records and scores of a nationally standardized test. Applicants must have passed their high school courses with satisfactory marks. Admission by certificate is restricted to graduates of schools accredited by the University of Missouri, by other state universities of similar rank, by the North Central Association or by other recognized accrediting agencies.

   All admissions are provisional until the final high school transcript is received by the Admissions Office. The final transcript must state the date of graduation and the final class rank.

   Plan B: Students who are not graduates of a four-year high school and who are at least eighteen years of age may qualify for admission to the freshman class by examination. The examination will presume training and experience compensating for the lack of formal training in an accredited high school. Military personnel, veterans and other adults may qualify for admission by satisfactorily passing the high school level General Education Development tests prepared for the United States Armed Forces Institute.

   Other Applicants: Applicants who are not admissible according to the regular admission standards may be admitted to the summer session. Students earning six hours of "C" may submit an application after the close of the summer session, and if space is available, their application will be reviewed.

   Plan C: In the event that other schools accredited by the North Central Association or other recognized agencies admit to Missouri freshmenvon a deferred basis, qualified applicants will be admitted and notified of their admission in the order of receipt of completed applications. The director of admissions will accept applications for admission for the fall semester as of the preceding October 1 on the basis of six or more high school semesters. Completed applications, including high school transcripts and test scores, should be on file by February 1 in order to guarantee that they receive full consideration.

   Freshman Admission Tests Freshman admission tests are required of all freshman students enrolling in the university. The results of these tests are of benefit to both the student and his adviser in planning the student's program and in considering his educational and professional objectives.

   Policy Explanation Individuals applying for admission at one of the four campuses of the University of Missouri will be admitted on the basis of a combination of class rank and college aptitude test performance. In general, the lower the class rank the higher the test score must be to meet the admissions requirement and vice versa.

   Approved College Aptitude Tests Any one of the following tests may be used by individuals applying for admission as new freshmen to a University of Missouri campus to satisfy the test score requirement of the freshman admissions policy.

   1. (SCAT) Cooperative School and College Ability Test, Series II, Form 1C (College Level). This test is administered to Missouri high school students through the Missouri College Aptitude and Statewide Testing Program. Scores are reported to the high school which will submit the score to the university campus, usually as an entry on the high school transcript which accompanies the application form.

   2. (OSUP) Ohio State University Psychological Test, Form 24 or Form 25. This test is administered to Missouri high school students through the Missouri College Aptitude and Statewide Testing Program. Scores are reported to the high school which will submit the score to the university campus, usually as an entry on the high school transcript which accompanies the application form.

   3. (ACT) American College Testing Program. This test is administered at many locations across the United States under the auspices of the ACT program. The student should request that a test score report be sent to the university campus to which he applies for admission.

   4. (SAT) Scholastic Aptitude Test. This test is administered at many locations across the United States under the auspices of the College Entrance Examination Board. The student should request that a test score report be sent to the university campus to which he applies for admission.

Additional Information Additional and more detailed information on the university's new policy for freshman admission will be provided to Missouri high school guidance counselors. The same information will be sent to out-of-state counselors on request. High school students should contact their guidance counselors for additional information.
taken during the senior year at the earliest possible time. Students who plan to use the College Boards for placement test scores should present a score in English and in mathematics. All test scores should be on file in the Admissions Office before June 1. Students who plan to enroll in mathematics courses will be required to present scores from the Missouri Mathematics Placement Test. The Mathematics Placement Test is administered as part of the Missouri Colleges Placement Test battery. The University of Missouri-St. Louis is a testing center. Additional information may be obtained from the Admissions Office.

Preparation for College Applicants must present 15 acceptable high school units, excluding physical education and military science. The minimal recommended pattern is: English-four units; mathematics-two units, excluding general mathematics; science-one unit of laboratory science; social studies-one unit. For students planning to pursue a liberal arts degree, two units in one foreign language are recommended. It is recommended that any remaining units in addition to the above schedule be taken from such areas as art, music, economics, a second foreign language, two additional units of the same language, mathematics and science. The student should choose his remaining units in keeping with his career choice.

Advanced Standing for Freshmen The University of Missouri-St. Louis grants advanced standing in the form of credit hours to entering freshmen who, on the basis of performance on the Advanced Placement Tests of the College Entrance Examination Board and faculty administered tests, demonstrate proficiency in certain college-level courses such as English, mathematics, history, biology, chemistry, physics, accounting, political science and foreign languages.

Applications to take CEEB examinations and inquiries about the material covered should be addressed to College Board Advanced 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. These must be on file before the first day of classes.

Academically talented students who have finished a prescribed amount of secondary school work, less than required for graduation, may enroll in a college course for credit. Evidence of exceptional scholastic ability, emotional stability and social maturity must be presented through scores of a nationally standardized test and the approval and recommendation of the high school principal. This credit may be applied as advanced standing after the student has been admitted to the University of Missouri-St. Louis.

Out-of-state Applicants Out-of-state students must be graduates of an accredited high school. The combination of high school class rank and aptitude test performance for non-Missouri applicants should indicate an appreciably higher probability of success than that applied to graduates of Missouri high schools.

Out-of-state applicants may be considered for admission with the completion of six semesters of work provided space is available. A non-refundable application evaluation fee of $10 must accompany the application for admission. Checks or money orders should be made payable to the University of Missouri. Upon notification of acceptance, the applicant will be requested to submit a $50 non-refundable advance payment of his registration fee. This amount will be credited to the student’s incidental fee when he enrolls in the university. Non-resident students are subject to the non-resident tuition fees.

TRANSFER STUDENTS

Students from other colleges and universities must submit official transcripts of high school and college work, an application for admission, and a satisfactory medical history report. Official transcripts should be sent directly to the Office of Admissions from each institution previously attended. Hand-carried credentials will not be accepted. All credentials submitted for admission become the property of the university.

Out-of-state applicants must submit a $10 non-refundable application evaluation fee with their application for admission. Students whose grade point average is 3.0 or higher, based upon the University of Missouri-St. Louis 4 point system, will be admitted at any time. Students whose grade point average is 2.5 or higher will be accepted at any time during the semester prior to that for which entrance is requested. Students whose grade point average is 2.0 or higher may be accepted at any time during the last half of the semester prior to that for which entrance is requested. No student requesting transfer from another college or university whose grade point average is below 2.0 will be admitted. Application forms and credentials for the fall semester should be submitted by July 1; for the winter semester by December 1; and for the summer session by May 1.

Associate Degree Transfers from Junior Colleges A student admitted to the university and holding an associate degree oriented toward the baccalaureate degree, with a grade point average of “C” or above as validated by an accredited associate degree-granting institution, will be accepted in junior standing. However, this does not exempt the student from meeting the specialized lower division degree requirements and the specialized requirements of departments or divisions of the university. Courses completed in the Associate degree program will be evaluated for application to specific degree requirements by means of the same criteria used for transfer students from other colleges and universities, from other campuses of the University of Missouri, and from other divisions of the same university campus.

A student transferring to the university without an Associate degree oriented toward a baccalaureate degree will have his transcripts evaluated on a course by course basis.

Advanced Standing Advanced standing in the form of credit hours may be allowed for work satisfactorily completed in another college or university of recognized standing if such work satisfies the requirements of the division of the university in which the student registers. Courses with grades of “D” are not accepted. Advanced standing for the work of the senior year will not be granted. Claims for advanced standing, in order to receive recognition, must be made by the student within one semester after entrance.
ADMISSION

Except as indicated below, no junior college student shall receive credit for more than 16 hours in one semester exclusive of the required practical work in physical education. The maximum credit the student may earn in a junior college is 64 semester hours. After a student's credits, whenever earned and counted in the order earned, amount to a total of 64 hours, no additional credits may be allowed for work completed in a junior college. Exceptions to these limitations may be permitted under the following conditions:

1) A student with a superior scholastic record in junior college may be allowed more than 16 hours a semester if his dean has permitted excessive registration according to the following conditions: 17 hours if his grade point average is 2.75 or better; 18 hours if his grade point average is 3.0 or better; 19 hours if his grade point average is 3.5 or better. Grade point average is based upon the following grade point scale: Grade A—4 points; B—3 points; C—2 points; D—1 point; F (failure)—0 points. No student will be allowed more than 19 hours for a semester's work.

2) A student who enters junior college with advanced standing granted on the basis of examinations is not subject to the maximum of 64 hours if he has been granted such advanced standing on the basis of acceptable placement examinations. Examinations acceptable for advanced placement include those administered by the University of Missouri and certain of the examinations administered by the College Entrance Examination Board and the Educational Testing Service of Princeton, New Jersey. A student who has earned any previous college credit or who has once entered upon college work is not eligible to take part in this program designed particularly for entering freshmen.

3) A junior college student may, before graduation from junior college, complete in any approved senior college the work of one summer session without reducing the amount of credit he may be allowed from junior college.

Adults and Veterans Applicants who are veterans of military service or who are over twenty-one years of age and who do not qualify for admission as regular freshman students, but who by reason of special preparation or attainment or exceptional aptitude are judged qualified to pursue certain courses, may be admitted as special or irregular students. Grade point average is based upon the following grade point scale: Grade A—4 points; B—3 points; C—2 points; D—1 point; F (failure)—0 points. No student will be allowed more than 19 hours for a semester's work.

3) A junior college student may, before graduation from junior college, complete in any approved senior college the work of one summer session without reducing the amount of credit he may be allowed from junior college.

GRADUATE STUDENTS

Application for admission to the Graduate School should be made to the director of admissions, 108 Administration Building. Only graduates of an accredited college or university whose records indicate an ability to succeed in the graduate program involved may be admitted. Applicants are required to take both Aptitude and Advanced tests of the Graduate Record Examination, except in the field of business where the Admissions Test for Graduate Study in Business is required.

Copies of transcripts of the applicant's previous college or university work are to be submitted directly to the Office of Admissions by the registrar of the college or university. All materials for admission must be on file in the Office of Admissions not later than 60 days before the semester in which a student plans to enroll. Inquiries regarding admissions should be addressed to the Office of Admissions with an indication of the graduate program in which the applicant is interested.

STUDENTS FROM OTHER COUNTRIES

Prospective students living outside the United States and its possessions are advised to write the director of admissions at least one year prior to the date of desired admission. Information and forms concerning admission and approximate expenses will be sent to the students. Application papers and official records of previous school work should be furnished to the director of admissions. Upon the approval of these papers, the student will be notified by an official letter. No prospective student should make plans to leave his country without first obtaining this permission to enter the university.

All students will be required to

In the United States A foreign student now studying in the United States may be admitted to the university only after the completion of at least 24 semester hours of "C" or better quality work in an accredited school offering a college level program, provided the school's letter of admission was the basis for issuance of the student's visa. To complete his credential file, he must furnish original and official transcripts from each school attended, both in this country and abroad. No student should consider himself admitted to the university until an official letter has been received stating that he has been admitted.

THE EVENING PROGRAM

In general, the policies governing admission of students to the day program are applicable to the evening program. Students are admitted as follows:

Regular Student A student who meets the admission requirements as established by the faculty.

Unclassified Student A student qualified for admission who does not desire to work toward a degree.

Special Student A person over twenty-one years of age who does not qualify for admission as a regular student, but who by reason of special preparation or attainment may be judged qualified to pursue certain courses. This student will be admitted as a special student though not as a candidate for a degree.

An applicant who is not in good standing in the college or university he previously attended is not eligible for admission.

OTHER STUDENTS

Visiting Student Admission Students who do not wish to earn a degree from the University of Missouri-St. Louis may be admitted by certification as a Visiting College Student. Admission requires certification by the student's college or university that he is in good standing and has permission to enroll in approved course work and transfer the credit back to that institution. Visiting student admission is usually limited to the summer session. Classroom space limitations may not permit the admission of visiting students to the fall and winter terms. Application forms for certification can be obtained from the Admissions Office. At the close of the session, the student must request to have grades transferred to his respective college.

Hearer A hearer is registered and required to attend at least two-thirds of the sessions, but is not required to participate in any of the work of the course. He receives no academic credit. A student enrolled as a hearer may be dropped from the course when, in the judgment of his teacher and his dean, his attendance record in the course justifies such action. A student enrolled in a course as a hearer may not change to credit status during the term in which he is enrolled.

Credit for Military Service Credit may be allowed for many of the service training programs conducted by the various branches of the Armed Forces. The recommendations of the American Council on Education as set forth in A Guide to the Evaluation of Educational Experiences in the Armed Services will serve, in general, as a basis for granting such credit. In order to be counted toward a degree, the credit granted must be appropriate to the student's curriculum.

REGISTRATION FOR FORMER STUDENTS

Former students (not currently enrolled) should file a request for permit to re-enroll with the director of admissions at least thirty days in advance of the registration period.

If fall semester applicants receive an early decision admission, they may pre-register during July and early August. Pre-registration for the winter semester and the summer session is limited to students enrolled during the preceding term.

Each student eligible to take advantage of the pre-registration must have submitted the $50 non-refundable advance payment fee.

A student who enters after the regular registration period, may, because of closed courses, find difficulty in securing the subjects he desires; moreover, he may not be permitted to carry the full amount of work but must enroll for a proportionately reduced amount of work depending on the date of entrance. Ordinarily, no student will receive credit for work in any division of the university after the expiration of one-eighth of the scheduled time. The dates of the regular registration period are shown in the university calendar.
Detailed information regarding fees and expenses is furnished in the University of Missouri-St. Louis Schedule of Courses and a pamphlet, Tuition and Residency Rules, available from the Cashier's Office.

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

All university fees must be paid in full at the time of registration as a condition of admission to classes. Students who pre-register must pay fees by the announced deadline or the advance registration will be cancelled and the student will be required to register again and pay fees during the regular registration period as indicated on the university calendar. Registration is not complete until all fees are paid. Partial payment or deferment of fees cannot be honored. Fees are payable by cash, check or valid credit cards issued by Master Charge or BankAmericard.

For the purpose of all rules regarding enrollment fees, courses taken as a hearer and courses taken for reduced credit will be counted at their normal credit value in computing the amount of fees to be paid. Students enrolling in non-credit courses are required to pay fees according to the equivalent credit of the course.

A student who presents a check to the university in payment of student fees, which for any reason is not honored by the bank upon which it is drawn, will be reinstated only upon payment of the amount of the check and a reinstatement fee of $5. In addition, a fee for handling the returned check will be charged.

Incidental Fee All students enrolled in the university are required to pay an Incidental Fee as follows:

<table>
<thead>
<tr>
<th>Regular Semester</th>
<th>Incidental Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours Credit</td>
<td></td>
</tr>
<tr>
<td>9 or more</td>
<td>$250.00</td>
</tr>
<tr>
<td>5 or more</td>
<td>$125.00</td>
</tr>
</tbody>
</table>

For any other sessions not specified above and for partial enrollments the Incidental Fee shall be calculated at the rate of $29.00 per credit hour.

Pre-Payment on Incidental Fee

Students accepted for admission are required to make an advance deposit of $50.00 on the Incidental Fee. This payment is non-refundable but may be used as partial payment of fees if the applicant enrolls in the university.
within a year following payment.

Non-Resident Tuition Fee A Non-Resident Tuition Fee, in addition to the Incidental Fee and other required fees, must be paid by any student who at the time of registration has not been a resident of Missouri for a period of at least one year immediately preceding such registration. (Definition of "residency" is outlined in the University of Missouri pamphlet Tuition and Residency Rules available in the Cashier's Office.)

It is the duty of each student to register under the proper residence and to pay proper tuition fees, and it is also his duty to raise the question if there is a possibility that he is subject to such tuition fees.

The Tuition Fee, in addition to the Incidental Fee, for undergraduate students who are not residents of Missouri is:

### Regular Semester

- **Hours Credit**
- **Non-Resident Fee**
  - 1-6 ...........................  No Fee
  - 7 ................................ $150.00
  - 8 ................................ $300.00
  - 9 ................................ $400.00
  - 10 or more ....................... $500.00

### Summer Session

- **Hours Credit**
- **Non-Resident Fee**
  - 5 or more ........................ $12.25

For any other sessions not specified above and for partial enrollments the University Center and Activities Fee shall be calculated at the rate of $2.45 per credit hour or fraction thereof.

This fee is to be used for programs of broad interest within the university community. The fee is distributed as follows: bond retirement on Multi-Purpose Building: $2.50; bond retirement on University Center: $10.00; Athletics: $7.00; Student Activities: $5.00.

Music Fees In addition to the Incidental Fee there is a fee for applied music instruction as follows:

1. For Music Majors: A single fee of $45.00 per semester to cover all required applied music instruction.
2. For Non-Music Majors: A fee of $45.00 per semester for each area in which the student enrolls for applied music instruction, the defined areas being piano, voice, woodwinds, brass, percussion and strings.

Late Registration Fee Any student registering after the close of the regular registration period shall pay a late registration fee of $25.00.

Petition Fee Any student dropping and/or adding one or more courses at any one time, shall pay a fee of $5.00.

Parking Fee There will be a parking fee for each motor vehicle (except motorcycles and motorscooters) used by a student on campus based on $2.50 per credit hour up to a maximum of $25.00. The daily fee charge for students who do not use campus parking facilities regularly is 50 cents.

The fee for motorcycles and motorscooters on the St. Louis campus is fixed at one-half the above fees.

Detailed information on parking regulations and fee refunds is available from the Cashier's Office.

Student Insurance An optional accident and sickness insurance plan is available at low cost to students and their dependents. Information concerning premiums and coverage is available upon request from the Cashier's Office.

Transcript Fee A fee of $1.00 is charged for each official transcript of credits. A fee of 50 cents is charged for all photostatic copies of credits.

Diplomas Held for Delinquent Indebtedness A student is required to clear all delinquent indebtedness to the university before a diploma may be released or transcript issued.

Diploma Fees A fee of $5.00 is charged for each degree conferred by this campus. A $2.00 fee is charged for each certificate awarded.

Refund of Parking Fees Students leaving school or terminating parking privileges for which they have paid fees will receive upon return of scraps of their sticker a refund of fees paid in accordance with the following schedule:

### Regular Semester

<table>
<thead>
<tr>
<th>Schedule for refunds</th>
<th>Percentage refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st through 4th week</td>
<td>75%</td>
</tr>
<tr>
<td>5th through 8th week</td>
<td>50%</td>
</tr>
<tr>
<td>9th through 12th week</td>
<td>25%</td>
</tr>
<tr>
<td>13th week and after</td>
<td>No refund</td>
</tr>
</tbody>
</table>

### Summer Session

<table>
<thead>
<tr>
<th>Schedule for refunds</th>
<th>Percentage refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st through 2nd week</td>
<td>75%</td>
</tr>
<tr>
<td>3rd through 4th week</td>
<td>50%</td>
</tr>
<tr>
<td>5th through 6th week</td>
<td>25%</td>
</tr>
<tr>
<td>6th through 8th week</td>
<td>No refund</td>
</tr>
</tbody>
</table>
Financial aid is offered to students enrolled in the University of Missouri-St. Louis in the form of part-time employment, student loans, scholarships and awards.

To assist worthy students who otherwise might not be able to attend the university, the Board of Curators of the University of Missouri has established a system of financial aid. These grants are available to qualified Missouri residents for attendance on the University of Missouri campuses at Columbia, Kansas City, Rolla or St. Louis.

These scholarships and awards are administered under separate quotas. They are not transferable from one campus to another. The student should apply directly to the chairman of the Committee on Curators Scholarships at the campus he plans to attend.

Curators Freshman Scholars Program
Curators Freshman Scholars are selected in recognition of their outstanding academic achievement in high school and their potential for superior academic success in college.

These scholars are chosen on the basis of high school rank, test scores and the recommendation of the high school principal or counselor. Curators Freshman Scholars must rank in the top three per cent of their graduating class and in the top ten per cent on the college aptitude test. Students who are Missouri residents and who receive the certificate of recognition for showing highest scholastic promise in Missouri graduating classes are offered the designation of Curators Freshman Scholar. For every 100 students or fraction thereof in a high school graduating class, one student is designated as a Scholar.

The full amount of the incidental fee will be waived for each Curators Freshman Scholar during his freshman year at the university.

University Scholars Program University Scholars are selected in recognition of outstanding academic achievement while in college. University students classified as sophomores, juniors or seniors are designated University Scholars provided they have achieved a specified high cumulative collegiate grade point average (limited to approximately the top five per cent of each class) over at least 24 acceptable hours excluding summer session. Students transferring to the university from other institutions of higher education are eligible for the designation of University Scholar.
provided their cumulative collegiate grade point averages meet the established standards and sufficient funds are available.

University Scholars are designated after the close of each regular academic year. The normal stipend is $50.00 a semester for the following academic year if the student is a Missouri resident. Additional assistance depends upon the financial need of the individual. University Scholars in need of additional assistance should complete and submit an application for financial aid. A student who is not a resident of Missouri but is otherwise qualified for the designation of University Scholar may be so designated without any waiver of incidental fees.

University Waiver-of-Fees Program To the degree possible within budgetary limits, and for the purpose of assisting deserving Missouri students to attend the university, the incidental fee will be waived in whole or in part, in accordance with the degree of need as determined by standard need analysis procedure, for those undergraduate students who meet specified academic standards. The financial need assessment will be made through the student aid office.

Entering freshmen must meet these criteria: 1. Missouri residence; 2. Graduation from an accredited Missouri high school; 3. Rank in top twenty-five per cent of high school graduating class; 4. Rank in top twenty-five per cent on college aptitude test; and 5. Need for financial assistance. The applicant is advised to discuss this matter with his counselor.

Upperclassmen (sophomores through seniors) must have achieved a specified cumulative grade point average over at least 24 acceptable hours excluding summer session. Students transferring from other institutions of higher education will be considered on the same basis as continuing students. An upperclass student's eligibility for waiver of incidental fee will be determined annually after the close of the regular academic year. An application showing need for financial aid is required for the waiver-of-fees. Forms are available in the student aid office.

For detailed information on financial assistance programs and application deadlines please contact the Office of Student Financial Aid.

Address requests to:
University of Missouri-St. Louis
Student Financial Aid
Room 108, Administration Building
8001 Natural Bridge Road
St. Louis, Missouri 63121

RESERVE OFFICER TRAINING CORPS SCHOLARSHIPS

AFROTC College Scholarships
Scholarships are awarded to qualified cadets in the Air Force Reserve Officer Training Corps program. The scholarships include tuition, fees and laboratory expenses incurred during the regular session of the school year during which the cadet is enrolled in the AFROTC program. Scholarship recipients also receive $100.00 per month for the period and reimbursement for cost of books. Applications (by high school seniors) for the four-year scholarship should be submitted to Headquarters AFROTC, Maxwell Air Force Base, Alabama, prior to mid-November. Cadets who do not receive the four-year scholarship may continue to compete annually under the program locally administered by the Aerospace Studies Program, St. Louis University.

Further information is available from the Director, Aerospace Studies Program, St. Louis University, telephone 652-1022.

Army ROTC Scholarships In addition to four-year ROTC scholarships awarded to graduating high school students, Army ROTC scholarships are available to qualified second, third and fourth year students enrolled in Army ROTC. These scholarships pay full tuition, books and lab fees plus $100 monthly subsistence allowance for up to ten months of the school year. Selection for the three, two and one-year scholarships is based upon academic achievement, leadership potential and demonstrated motivation toward a career as a commissioned officer. Additional information may be obtained from the Professor of Military Science, Washington University, telephone 863-0100, extension 4662.
STUDENT AFFAIRS

The objective of the Student Affairs program is threefold. First, it serves as a laboratory for students to gain experience in accepting responsibility. Second, it gives students an opportunity to be active participants in the university community and thereby understand the totality of the university's goals. Third, it permits students to gain a long-term commitment not only to the ideals of higher education, but to an active and continuing support of the University of Missouri-St. Louis long after graduation.

To this end, a well-rounded program of activities and services has been designed to encourage students to become participating and integral members of the academic community and to facilitate such participation.

Office of the Dean The Office of the Dean supervises the entire Student Affairs program and coordinates the various activities and services promoted by the Office of Student Activities, the Office of Student Programming, the Office of Alumni Activities, the University Placement Office and the Student Health Center. In addition, the dean of students is designated by the University of Missouri “Rules of Procedure in Student Disciplinary Matters” as the primary officer for administration of discipline.

The dean's office initiates new projects for the benefit of the student body as a whole or various identifiable segments of the student body such as new students, older students, Evening College students, black students and handicapped students. A typical example is the International Services project geared to serving the needs of international students and to fostering the international dimension of education. There is no university owned or approved housing.

OFFICE OF STUDENT ACTIVITIES

Under the supervision of the director of student activities, this office works with a wide variety of student organizations which offer students an excellent opportunity to exercise responsibility and to shape university life. Student organizations include departmental clubs, fine arts groups, fraternities and sororities, religious organizations and a variety of special interest groups.

These recognized student
organisations have proved to be, in a very real sense, the backbone of the Student Affairs program. The university has made great efforts to assure that every recognised student organisation, entitled to bear the name of the university, be a strong and viable organization. Over the years, many organisations have brought distinction to themselves and to the university by the awards they have won.

The Office of Student Activities advises and assists these organisations in every way possible to facilitate the projects the students themselves carry out.

Information on group or individual travel in the United States or abroad for students and staff is available in the Office of Student Activities, Room 262, University Center. This information includes booklets on hotels, rail passes, student I.D. cards, air fares, and bicycle and motorcycle rentals.

The Office of Student Activities also administers a car pool service. Applications from students are matched by computer and the student is notified by mail of the names, addresses and telephone numbers of other students in his area with class schedules approximating his own.

OFFICE OF PROGRAMMING

The director of programming works with the University Program Board in the planning and execution of cultural and social events. These programs are planned for the benefit of the entire university community and, whenever possible, with consideration for the public community of St. Louis.

Included in the Program Board's offerings are a weekday (Monday-Tuesday) and a weekend (Friday-Saturday) film series, frequent informal concerts in the University Center Lounge featuring professional entertainers and a variety of music forms, lectures, concerts, performances by professional theatre companies, art exhibitions and the social activities connected with Homecoming.

Whenever possible the Program Board works in cooperation with the university Performing Arts and Cultural Events Committee (PACE). The poster collection which is displayed in the public areas of the buildings on campus is the result of one such cooperative effort.

OFFICE OF ALUMNI ACTIVITIES

The Alumni Association promotes the interests of the University of Missouri-St. Louis and establishes mutually beneficial relations between the university and its alumni. Membership is open to graduates and former students. Social activities such as Homecoming and Alumni Night provide an opportunity for alumni to meet and view the latest developments on campus. The annual Serendipity Day, sponsored by the association, provides high school seniors of the area with an opportunity to visit the campus and members of the university community. The association also awards a renewable scholarship to a freshman, sophomore, junior and senior student.

STUDENT HEALTH CENTER

The Student Health Center provides out-patient medical care primarily for students, and emergency medical care for all members of the university community.

The intramural program for women includes such offerings as tennis, basketball, soccer, racquet ball, volleyball, swimming, gymnastics, field hockey, dance and in addition, a variety of coed programs are being planned.

Recreation

With the completion of the new Multi-Purpose Building, campus facilities will now allow students, faculty and staff a wide scope of recreational possibilities including tennis, volleyball, basketball, table tennis, swimming, training and conditioning, weight training, handball, racquet ball and squash.

For information concerning hours or to reserve facilities contact the Athletic Office.

LIBRARY SERVICES

The Thomas Jefferson Library has approximately 340,000 volumes and seats approximately 1,000 students. Some 7,836 reels of microfilm, 500,000 microfiche and microcards, and 85,144 government documents augment a reference and research collection of 182,100 volumes. Thirty staff members and professional librarians are available to assist students and faculty members. Additional library materials are available through the Inter-Library Loan Service from other University of Missouri libraries. Faculty and graduate students engaged in research can request materials from other libraries in the country through this service.

The library is open from 7:30 a.m. to midnight, Monday through Thursday, 7:30 a.m. to 8:00 p.m. on Friday, 8:00 a.m. to 5:00 p.m. on Saturday, and 2:00 p.m. to 10:00 p.m. on Sunday. Special hours are posted for holidays, vacation periods and exam periods.

UNIVERSITY CENTER

The University Center (student union) includes facilities designed specifically for the non-academic activities of the campus community. Food service, both cafeteria and snack bar, an information and ticket desk, sundry counter, the University Bookstore, meeting rooms, work areas and informal lounges provide an environment making it easy for groups and individuals to work together.

UNIVERSITY BOOKSTORE

The Bookstore is self-supporting and is operated solely as an educational facility, subsidiary to and integrated with the academic program. A part of the income generated from the operation of the Bookstore is pledged to pay off the bonds on the University Center.

The Bookstore is the campus headquarters for the ordering and selling of textbooks and supplementary reading materials including paperback books. Small items such as pens, note books, and paper supplies are available in the Bookstore. The Bookstore also sells college jewelry (including class rings), pennants, stickers, sweatshirts and other insignia items. Commencement announcements and caps and gowns are ordered through the Bookstore.
students who are in good standing have the option of taking on a pass-fail grading basis up to 24 credit hours during their academic careers.

Under the system students may take elective courses or courses which satisfy the general education requirements. "Pass" grades ("A" through "D") have no numerical value in computing a student's overall academic average, but will satisfy hourly graduation requirements.

In most cases courses required for a specific degree may not be taken on the pass-fail basis. 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 pass-fail option by notifying the Office of the Dean of the appropriate division before the end of the first four weeks of the term. Instructors are not informed which students are taking courses on the pass-fail system.

A grade of "F" received on the pass-fail system will be computed in the overall grade-point average as if the student had received a grade of "F" on the regular grading scale.
The Thirteen departments of the College of Arts and Sciences have curricula designed to provide a general foundation in the liberal arts for all students. At the same time, a major in any of these departments affords a degree of specialization sufficient to prepare students for professional or graduate careers.

The college offers the bachelor of arts degree (A.B.) in anthropology, art history, biology, chemistry, economics, English, French, German, history, mathematics, music, philosophy, physics, political science, psychology, sociology and Spanish. The college also offers the bachelor of science (B.S.) degree in administration of justice, chemistry, economics, physics and applied physics (with a concentration in astrophysics possible), and a bachelor of music (B.M.) degree.

The college recognizes its unique urban location. Many departments orient some teaching and research toward the urban milieu of which the college is a part. The college also offers numerous off-campus courses in the metropolitan area through the auspices of the Extension Division.

During the first semester, freshmen are generally advised concerning the selection of course work in the Office of the Dean of the college. During or after his second semester, when the student has decided on a major or an academic objective, he should notify the Office of the Dean so that he may be assigned to an adviser in the appropriate discipline. Students are normally expected to declare the major or academic objective no later than the beginning of their junior year.

**General Education Requirements** The general education requirements of the university are binding on all students in the College of Arts and Sciences. (For a listing of these requirements see page 21). In addition, all students in the College of Arts and Sciences must take one course in non Euro-American studies and must meet the requirements set by the department in which they choose to major. In some circumstances, an interdisciplinary program involving two or more departments may be devised.

In order to expose all students to a culture radically different from their own, the College of Arts and Sciences requires that every student take a three-hour course which is not Euro-American. Such courses must focus primarily and substantially upon aspects of culture arising from the
natives of that culture and not upon the interactions of that culture with Euro-American cultures.

The college requirement in non Euro-American studies may be met by taking any one of the following courses:  Music 5, Art 145, Anthropology 201, 203, 205, 207, Philosophy 170, Political Science 253, 254, 255, 352 or History 61, 62, 361 or 362.

The state requirement (see page 43) of one course in American Government may be met by taking History 3, 4, 120, 301, 302, 303, 304, 305, 306, 314, 315a, 315b, 322a, or by taking Political Science 11, 170, 320, 335 or 376.

Transfer students to the university from other colleges or universities accredited by a regional accrediting agency may be awarded a maximum of eighteen hours of free elective credit in areas of study not now offered on this campus. In all cases acceptance of such free elective credit is subject to prior approval of the student's major department and the dean.

The university requirement in basic communicative and mathematic skills (see page 21) may be met in any one of the following ways:

**Communicative Skills:**
A. A satisfactory English score on the placement test and all "A's" and "B's" in high school English.
B. A grade of "C" or better in a college level English composition course.

**Mathematics Skills:**
A. Completing two years of high school mathematics exclusive of general mathematics or business mathematics with grades of "C" or better.
B. Receiving a satisfactory score on the mathematics placement test.
C. Passing a college level mathematics course.
D. Passing Mathematics 02

**Requirements for the A.B. Degree**
Every A.B. degree candidate must successfully complete a curriculum which includes either a departmental major or an approved integrated interdisciplinary field. A major must include at least 30 credit hours, but no more than 45 hours in the major department. The requirements of individual departments vary within these limits.

A.B. degree candidates must also complete 12 college credit hours or the equivalent in proficiency in one foreign language. (All foreign language courses numbered 100 or 101 meet this requirement.) Students entering with no high school foreign language units must enroll in Language 1 and complete the following sequence: 1, 2, 101, (or 100).

Two recent years of the language on the high school level, with above average performance, are necessary for the student to perform satisfactorily in Language 2. If the student's background is deficient, he may enroll in Language 1.

Three years of high school language are necessary for a student to enroll in Language 101 (or 100). A student with four high school units in one language is exempt from the language requirement.

Any student who wishes to be exempt and who has excelled in his courses or otherwise acquired language proficiency must take a proficiency examination which will be given in January and August. (Specific dates, times and places will be announced in the course schedules.) A passing grade will indicate that the student has achieved a level of proficiency equal to Language 101 and has fulfilled the foreign language requirement. A grade less than passing means that the student must take Language 101 (or 100). With the exception of native speakers, no student will be permitted to take a course above the 101 level without taking the proficiency examination.

Native speakers may meet the requirement by presenting proof of competence. The Department will certify native speakers of those languages taught at the university. Those proficient in other languages must submit certification of competence to the College of Arts and Sciences.

**Requirements for the B.S. Degree**
The college offers the B.S. degree in chemistry, physics, the administration of justice, and economics. In general, the requirements are the same as the A.B. degree except that more credit hours in the major discipline may be counted toward satisfying the 120 hours required for the degree. The college does not require a foreign language proficiency for this degree but individual departments may require a language for their majors.

**Requirements for the B.M. Degree**
The bachelor of music degree program requires, in addition to the university general education requirements, a non-Western course and courses in music and education leading to a teacher certification.

**Administration of Justice Program**

**Faculty**

- Gordon E. Misner, D. Crim. (University of California), director, professor
- Richard D. Baron, J.D. (University of Michigan), assistant professor
- Stanley E. Goldstein, J.D. (Washington University), assistant professor
- Hon. Theodore McMillian, J.D. (St. Louis University), assistant professor
- David L. Smith, J.D. (University of Minnesota), assistant professor and Statewide Extension Coordinator
- Ben Brashear, M.A., instructor
- Noel Criscuola, M.A., M. Crim., instructor
- William W. Stenzel, M.S. (Statistics), instructor
- Eugene J. Kissling, Ph.D. (St. Louis University), lecturer
- Harry G. Mollman, Ph.D. (University of Illinois), lecturer*
- Eugene P. Schwartz, M.S.W., coordinator, Extension Division

*Primary appointment, Department of Political Science
Department of Biology

Faculty

Lawrence D. Friedman, Ph.D. (University of Wisconsin), chairman, associate professor
Robert S. Bader, Ph.D. (University of Chicago), dean, College of Arts and Sciences, professor
Frank H. Moyers, Ph.D. (Johns Hopkins University), professor
Monroe W. Strickberger, Ph.D. (Columbia University), professor
Jacques J. Delente, Ph.D. (University of Caen), visiting associate professor
Harvey P. Friedman, Ph.D. (University of Kansas), associate professor
Gary T. Heberlein, Ph.D. (Northwestern University), associate professor
John E. Averett, Ph.D. (University of Texas-Austin), assistant professor
Albert T. Jud, A.B., assistant instructor

Departmental Recommendation

Because an important area of biology consists of the study of living organisms in their natural environment, each biology major is encouraged to attend a summer session, ordinarily between the junior and senior year, at a field biology station. Many biological stations offer financial support in the form of summer fellowships.
DEPARTMENT OF CHEMISTRY

Faculty and Staff
Charles W. Armbruster, Ph.D. (Washington University), Chairman
Associate Professor
Alan F. Berndt, Ph.D. (California Institute of Technology) Professor
M. Thomas Jones, Ph.D. (Washington University) Professor
Robert W. Murray, Ph.D. (Yale University) Professor
Lawrence Barton, Ph.D. (University of Liverpool) Associate Professor
Eugene R. Corey, Ph.D. (University of Wisconsin) Associate Professor
Joseph Feder, Ph.D. (Illinois Institute of Technology) Visiting Associate Professor
David L. Garin, Ph.D. (Iowa State University) Associate Professor
David W. Larsen, Ph.D. (Northwestern University) Associate Professor
Robert I. Stearns, Ph.D. (Tulane University) Visiting Associate Professor
Rudolph E. K. Winter, Ph.D. (The Johns Hopkins University) Associate Professor
Kenneth W. Barnett, Ph.D. (University of Wisconsin) Assistant Professor
Eric Block, Ph.D. (Harvard University) Assistant Professor
James S. Chickos, Ph.D. (Cornell University) Assistant Professor
Joyce Y. Corey, Ph.D. (University of Wisconsin) Assistant Professor
John L. Gutweiler, Ph.D. (Saint Louis University) Visiting Assistant Professor
Harold H. Harris, Ph.D. (Michigan State University) Assistant Professor
Barry L. Kalman, Ph.D. (Purdue University) Visiting Assistant Professor

Jane A. Miller, Ph.D. (Tulane University) Assistant Professor
Rosemarie Nassif, Ph.D. (Catholic University of America) Visiting Assistant Professor
Robert E. Penn, Ph.D. (Rice University) Assistant Professor
John I. Reynolds, Ph.D. (University of Washington) Visiting Assistant Professor
Robert A. Rouse, Ph.D. (Northwestern University) Assistant Professor
Paul L. Gierer, Ph.D. (Southern Illinois University-Carbondale) Research Associate
David P. Higley, Ph.D. (University of Texas-Austin) Research Associate
George Semeniuk, Ph.D. (Duke University) Research Associate
Frank E. Stary, Ph.D. (University of Cincinnati) Research Associate
Robert Cahanius, Glassblower
Jack L. Coombs, B.A. Laboratory Stores Manager
William Garrison, Electronics Technician
Norman Windsor, Electronics Technician

The Department of Chemistry offers courses for five undergraduate degree programs as well as a Ph.D. program. Information on the Ph.D. program is available in the UMSE Graduate Bulletin. The undergraduate degree programs offered are:

1. The Bachelor of Science in Chemistry (B.S.)
2. The Bachelor of Arts in Chemistry (A.B.)
3. The Bachelor of Science in Education - chemistry major (joint with School of Education)
4. The Bachelor of Arts in Chemistry - teacher certification (joint with School of Education)
5. The Bachelor of Arts in Chemistry - business option

The Bachelor of Arts in Chemistry: The candidate for the A.B. degree with a major in chemistry must complete 32 hours of chemistry including Chemistry 11, 12, 122, 202, 231, 232, 233, 261, 262, 263 and 289. A minimum of 32 credit hours and a maximum of 45 credit hours of chemistry may be applied toward the A.B. degree in chemistry. Each chemistry major must present a seminar and pass a comprehensive examination during his senior year.

Bachelor of Science in Chemistry: The candidate for the B.S. in Chemistry degree must complete the 32 hours of chemistry required for the A.B. and an additional 12 hours in chemistry including Chemistry 234, 264, 324, 341 and 343. The B.S. candidate must also select six hours from the fields of astronomy, biology, chemistry, mathematics or physics; at least three of these hours must be in Chemistry at the 200 level or higher. These six additional hours may be taken in Chemistry 290 (Chemical Research) and students are encouraged to elect this option.

A minimum of 47 and a maximum of 50 credit hours of chemistry may be applied toward the B.S. degree in Chemistry. B.S. degree candidates must present a seminar and pass a comprehensive examination during the senior year.

B.S. Degree in Secondary Education with Major in Chemistry: The general requirements for the B.S. degree in secondary education are given on page 96. Candidates for this degree with a major in chemistry must complete 32 hours of credit in chemistry following the same program as the A.B. degree in Chemistry with the following exceptions: Physics 1, 111, 112 and one laboratory course are required; Chemistry 280 is required instead of Chemistry 202 and 289; Chemistry 371...
DEPARTMENT OF ECONOMICS

Faculty
Robert Loring Allen, Ph.D. (Harvard University), professor
Joseph P. McKenna, Ph.D. (Harvard University), professor
Hugh O. Nourse, Ph.D. (University of Chicago), chairman, professor
Elizabeth M. Clayton, Ph.D. (University of Washington), associate professor
Thomas R. Ireland, Ph.D. (University of Virginia), associate professor
William E. Mitchell, Ph.D. (University of Missouri-Columbia), associate professor
Donald A. Murry, Ph.D. (Duke University), associate professor
Donald Phares, Ph.D. (Syracuse University), assistant professor
Robert L. Sorensen, Ph.D. (Virginia Polytechnic Institute), assistant professor
Peter J. Grandstaff, M.A., instructor
Merphil S. Kondo, M.A., instructor
Sharon G. Levin, M.A., visiting instructor
Emil Pagoulatos, M.A., instructor
James F. Veatch, M.A., instructor

*Joint appointment with School of Business Administration

BACHELOR OF ARTS IN ECONOMICS

General Education Requirements Each candidate for the bachelor of arts in economics must satisfy the general education requirements of the university. The candidate for the A.B. degree in economics must satisfy the general education requirements of the college's foreign language requirement. The non-Western area requirements may be met by taking any non-Western course. Students not majoring in economics may take any non-Western course on a pass-fail basis.

Candidates for the A.B. degree may take any course outside the major field, as well as Economics 50 and 51, on a pass-fail basis.

Related Area Requirements Candidates for the A.B. degree are required to take at least 33 hours in the major field, including all of the following courses: Economics 50, 51, 250 and 251.

CANDIDATES for the B.S. degree in secondary education with a major in economics should refer to page 96 of this catalog.

Departmental Recommendations In addition to the required courses listed above, the student may take electives in economics up to a total of 45 hours. Depending on the student's interest, additional electives should be chosen from related fields as business administration, history, mathematics, philosophy, political science, psychology, and sociology-anthropology. All electives should be chosen in close consultation with the student's adviser.

BACHELOR OF SCIENCE IN ECONOMICS

General Education Requirements Each candidate for the bachelor of science in economics must satisfy the general education requirements of the university. The candidate for the B.S. degree in economics are required to complete Business 31 and Business 140 (preferably before the end of the sophomore year). Mathematics 80 or Mathematics 101 is recommended.

Departmental Requirements Candidates for the B.A. degree in economics are required to take at least 33 hours in the major field, including all of the following courses: Economics 50, 51, 250 and 251. 

Candidates for the B.S. degree in secondary education with a major in economics should refer to page 96 of this catalog.

Pass-Fail Option No chemistry major may take a required Chemistry, mathematics, or physics course on the pass-fail option. The candidate for the B.S. degree may not take the six elective hours in science on the pass-fail option. The chemistry major may take language courses on the pass-fail option. Chemistry 11 and 12 may not be taken on pass-fail basis by any freshman student.

Courses in economics may be used to meet the university's social science area requirements. The college's foreign language requirement may be met in any language. The non-Western area requirements may be met by taking any non-Western course. Students not majoring in economics may take any economics course on a pass-fail basis.

Candidates for the A.B. may take any course outside the major field, as well as Economics 50 and 51 on a pass-fail basis.

Related Area Requirements Candidates for the A.B. degree are required to complete Business 31 and Business 140 (preferably before the end of the sophomore year). Mathematics 80 or Mathematics 101 is recommended.

Departmental Requirements Candidates for the B.A. degree in economics are required to take at least 33 hours in the major field, including all of the following courses: Economics 50, 51, 250 and 251.

Candidates for the B.S. degree in secondary education with a major in economics should refer to page 96 of this catalog.

Departmental Recommendations In addition to the required courses listed above, the student may take electives in economics up to a total of 45 hours. Depending on the student's interest, additional electives should be chosen from related fields as business administration, history, mathematics, philosophy, political science, psychology, and sociology-anthropology. All electives should be chosen in close consultation with the student's adviser.

BACHELOR OF SCIENCE IN ECONOMICS

General Education Requirements Each candidate for the bachelor of science in economics must satisfy the general education requirements of the university listed on page 21 and the general education requirements of the College of Arts and Sciences listed on page 47. Courses in economics may be used to meet the university's social science area requirement. The non-Western area requirement may be met by taking any non-Western course. Students not majoring in economics may take any non-Western course on a pass-fail basis. Candidates for the degree may take any course outside the major field, as well as Economics 50 and 51, on a pass-fail basis.

Related Area Requirements Candidates for the B.S. degree are required to complete Business 31 and Business 140 (preferably before the end of the sophomore year). Also required is either Mathematics 80 or Mathematics 101 as well as either Business 104 or Mathematics 122. Candidates are also required to take three of the following courses: Mathematics 102, Economics 366, Business 231, Business 375 or any
mathematics course numbered 175 or higher.

Departmental Requirements Candidates for the B.S. degree in economics are required to take at least 42 but no more than 45 hours in the major field, including all of the following courses: Economics 50, 51, 250, 251, 351 and 365.

Departmental Recommendations (Same as for bachelor of arts in economics.)

GEOGRAPHY COURSES

The Department of Economics offers including all of the following courses:

Jane Williamson, Ph.D. (Bryn Mawr College), chairman, associate professor
John T. Onuška, Jr., Ph.D. (Harvard University), associate professor
Peter Wolfe, Ph.D. (University of Wisconsin), associate professor
David Allen, M.A., assistant dean, College of Arts and Sciences, assistant professor
Steven Axelrod, Ph.D. (University of California, Los Angeles), assistant professor
Richard Cook, Ph.D. (University of Michigan), assistant professor
Richard Harris, Ph.D. (University of Iowa), visiting assistant professor
Curt H. Hartog, Ph.D. (University of Illinois), assistant professor
Charles Larson, Ph.D. (Indiana University), assistant professor
Bruce L. Liles, Ph.D. (Stanford University), assistant professor
Winslow S. Rogers, Ph.D. (Harvard University), assistant professor
James E. Tierney, Ph.D. (New York University), assistant professor
George A. von Glinhau, Ph.D. (University of North Carolina), assistant professor
Dwight Williams, Ph.D. (Ohio State University), assistant professor
Jerome Grollman, M.H.L., visiting assistant professor
Mary Brown, M.A., instructor
Michael Castro, M.A., instructor
Adam Casmier, M.A., visiting instructor
Ellie Chapman, M.A., instructor
Don Crinklaw, M.A., instructor
Janet Cuenca, M.A., instructor
Dorothy Doyle, M.A., instructor
Larry Ducan, M.A., instructor
James Flynn, M.A., instructor speech
Gene Graham, M.A., instructor
Barbara Heimburger, M.A., instructor
Sally Jackoway, M.A., instructor

General Education Requirements Each English major must satisfy the general education requirements of the university listed on page 21 and the general education requirements of the school or college from which he expects to receive his degree. Courses in English—except English 9, 10, 65, 115, 160, and 262—may be used to meet the university's humanities area requirement. The college's foreign language requirement may be met in any language. The non-Western area requirement may be met by any non-Western course. Any English course except English 9, 10, 65, and 262 may be taken pass-fail.

Departmental Requirements Each English major must complete a minimum of 36 hours and a maximum of 45 hours of English exclusive of English 9, 10 and 65. These courses must include:

1. Any two courses from the sequence English 131, 132, 133, 134, 135.
2. English 160. For English majors this course is a prerequisite or co-requisite for 300 level courses in English.
3. One of the following American literature courses: English 171, 172, 373, 374 or 375.

4. Four courses, one each from any of the following areas:
   a. Medieval (English 324, 325, 326)
   b. 16th-century (English 332, 337, 338, 339*, 341*)
   c. 17th-century (English 339*, 341*, 342, 345, 346*)
   d. 18th-century (English 346**, 352, 353, 364)
   e. 19th-century (English 365, 368, 369, 371, 372)
   f. 20th-century (English 376, 383, 384, 385)

*Will satisfy the requirement in either 16th or 17th century, but not both.
**Will satisfy the requirement in either 17th or 18th century, but not both.

Majors must complete a minimum of 18 hours in courses at the 200 level or above with an average of 2.0 or better in these courses. Transfer students must complete at UMSL a minimum of 12 hours in courses at the 200 level or above with an average of 2.0 or better in these courses.

Anyone who wishes to qualify for secondary certification must also complete the following:

1. An additional course in American literature (may include those listed under 3. above or English 376)
2. English 262 (taken concurrently with student teaching)
3. A minimum of 12 hours in composition, rhetoric, grammar and linguistics. (English 10, 65, 160 may count toward this total.) These 12 hours must include a course in advanced composition (English 160). Of
COLLEGE OF ARTS AND SCIENCES

these 12 hours, 6 must be in courses listed in the Bulletin under “Language” (English 220, 221, 322).

Courses in professional education listed as requirements under the Department of Administration, Philosophy, and Secondary Education are also required for secondary certification.

Departmental Recommendations The student should complete the requirement in the 131-135 sequence by the end of his sophomore year.

DEPARTMENT OF FINE ARTS

Faculty
Arnold Perris, Ph.D. (Northwestern University), chairman, associate professor music
Kenneth E. Miller, Ph.D. (Northwestern University), professor
Ronald Arnatt, D.M. (Westminster Choir College), associate professor
Warren T. Bells, D.M.A. (University of Michigan), associate professor
Gertrude Riba, (Metropolitan Opera), associate professor
Neil Bjurstrom, Ph.D. (University of Iowa), assistant professor
Clarence Drichta, M.M., assistant professor
Evelyn Mitchell, (Concert Pianist), assistant professor
Leonard Ott, Ph.D. (Michigan State University), assistant professor
**Franklin Perkins, Ph.D. (Washington University), assistant professor
*George Berry, Jr., instructor (bassoon)
**Kenneth Billups, M.M., instructor
Hubert Drury, M.M., instructor (piano)
*Jan Gippo, M.M., instructor (flute)
Laura Hearne, B.M., instructor (harp)

*Henry Loew, instructor (string bass)
*John MacEnulty, instructor (tuba)
*James Meyer, B.S., instructor (saxophone)
*Linda Moss, M.M., instructor (viola)
*Richard O'Donnell, instructor (percussion)
*Kenneth Patti, B.M., instructor (violin)
Delores Riley, M.A., instructor
Alan Rosenkoetter, instructor (guitar)
Evelyn Rubenstein, instructor (piano)
*Bernard Schneider, B.M., instructor (trombone)
*Gary Smith, M.M., instructor (trumpet)
*Janis Smith, B.M.E., instructor (flute)
Mary Kay Stamper, M.A., instructor
*Thomas Stubs, B.S., instructor (percussion)
**Linda Warren, M.M., instructor
*Christine Ward, M.A., instructor (clarinet)
*Richard Woodhams, instructor (oboe)
*Member, Saint Louis Symphony Orchestra
**Evening College

Music

Music: A.B.
Music Theory 3, 4, 111, 112, 141 (14 hours)
Music History and Literature 101, 102 and one 300 level (9 hours)
Principal Applied Music (6 hours)
Beginning Instrumental Techniques (10-13 hours) (Instrumental certification)
Conducting 151, 251 (4 hours)
Curriculum and Methods of Teaching Elementary and Secondary School Music (6 hours)
Professional Education and Student Teaching (15 hours)
Senior Readings 192 (2 hours)

MUSIC

The Department of Fine Arts offers a bachelor of arts (A.B.) with a major in music or music history and literature, and a bachelor of music (B.M.) with a major in music education. An audition is required for admission to the major.

Each major must satisfy the general education requirements of the university (see page 21). The B.M. program requires courses in music and music education which lead to teacher certification.

Foreign language study is required for applied voice students only.

Entrance requirements and standards of achievement in applied music are on file in the Fine Arts Department office. The music major should familiarize himself with this information.

Every music major will be required to participate in an approved ensemble and to study in his principal applied area each semester of his course of study. He will be required to appear in performances at the discretion of the department. Non-keyboard majors will be required to pass an examination in piano proficiency (Music 118 or equivalent).

A departmental major consists of the course requirements as listed below. Specific courses will be chosen in consultation with the student's adviser.

Music: A.B.
Music Theory 3, 4, 111, 112 (12 hours)
Music History and Literature 101, 102 and one 300 level (9 hours)
Advanced Music Theory 141, 151 (6 hours)
Principal Applied Area and Ensemble (20 hours)
Senior Readings 192 (2 hours)

Music History and Literature: A.B.
Music Theory 3, 4, 111, 112 (12 hours)
Music History and Literature 101, 102 (6 hours)

Advanced Music Theory 141, 151 (4 hours)
Music History and Literature, 300 level (9 hours)
Principal Applied Area: Piano (12 hours)
Senior Readings 192 (2 hours)

Music Education: B.M.
Music Theory 3, 4, 111, 112, 141 (14 hours)
Music History and Literature 101, 102 and one 300 level (9 hours)
Principal Applied Music (6 hours)
Beginning Instrumental Techniques (10-13 hours) (Instrumental certification)
Conducting 151, 251 (4 hours)
Curriculum and Methods of Teaching Elementary and Secondary School Music (6 hours)
Professional Education and Student Teaching (15 hours)
Senior Readings 192 (2 hours)

ART

The Department of Fine Arts offers a bachelor of arts (A.B.) with a major in art history. Each major must satisfy the general education requirements of the university (see page 21). It is recommended that the language requirement be in French or German. The major must complete 35 hours of art history courses, but no more than a maximum of 45 hours.

The department requires Art 1, 2, 201, 193, 305 or 310, 321 or 322, 326 or 327, and 341 or 342. The department recommends 9 hours in the following: Studio Art 40 or 50, Philosophy, History, Literature or Music History.
DEPARTMENT OF HISTORY

Faculty

William S. Maltby, Ph.D. (Duke University), chairman, associate professor
James D. Norris, Ph.D. (University of Missouri-Columbia), professor
James Neal Primm, Ph.D. (University of Missouri-Columbia), professor
Everett Walters, Ph.D. (Columbia University), interim chancellor, dean of faculties, professor
Roy Gene Burns, Jr., Ph.D. (University of Missouri-Columbia), associate professor
Walter Ehrlich, Ph.D. (Washington University), associate professor
Susan M. Hartmann, Ph.D. (University of Missouri-Columbia), associate professor
Howard S. Miller, Ph.D. (University of Wisconsin), associate professor
Richard H. Mitchell, Ph.D. (University of Wisconsin), associate professor
George F. Putnam, Ph.D. (Harvard University), associate professor
Richard W. Resh, Ph.D. (University of Wisconsin), associate professor
Arthur H. Shaffer, Ph.D. (University of California, Los Angeles), associate professor
Blanche M. Touhill, Ph.D. (St. Louis University), associate professor
Mark A. Burkholder, Ph.D. (Duke University), assistant professor
Jerry Cooper, Ph.D. (University of Wisconsin), assistant professor
Louis S. Gerteis, Ph.D. (University of Wisconsin), assistant professor
Steven Hause, Ph.D. (Washington University), assistant professor
Winston Hsieh, Ph.D. (Harvard University), assistant professor

Charles P. Korr, Ph.D. (University of California, Los Angeles), assistant professor
Ann B. Lever, Ph.D. (University of North Carolina), assistant professor
Edward Paynter, Ph.D. (University of California, Berkeley), assistant professor
Steven Rowan, Ph.D. (Harvard University), assistant professor
Margaret Sullivan, Ph.D. (St. Louis University), assistant professor
Martin G. Towey, Ph.D. (St. Louis University), assistant professor
P. Corby Finney, M.A., instructor
Robert Nelson, M.A., instructor
Anthony O'Donnell, M.A., instructor
James Roark, M.A., instructor

General Education Requirements

Each history major must satisfy the general education requirements of the university listed on page 21 and the general education requirements of the College of Arts and Sciences listed on page 47. Courses in history may be used to meet the university's social science area requirement. The college's foreign language requirement may be met in any language the student prefers. The non-Western area requirement may also be met by any non-Western course.

Departmental Requirements

A major in history consists of at least 36 hours with a maximum of 45 hours. The student must achieve an overall grade point average of 2.0 in all courses attempted in his major department, and must have a minimum of 36 hours of "C" work or better. Majors are required to take History 31 and 32; two courses from sequence History 3, 4, 5, 71, and 120; one course at the 290 level; two 300-level European History courses; two 300-level United States History courses; one 300-level course in another area; and two electives. Other areas, at present, consist of Asian, Latin American, Wars of National Liberation, Asian-American Relations, Quantitative Methods and History of Science. No more than 15 hours at the 300-level may be elected in any of these three divisions. History 265 may be elected by those students seeking certification.

DEPARTMENT OF MATHEMATICS

Faculty

Deborah Tepper Haimo, Ph.D. (Harvard University), professor
Edward Z. Andalafte, Ph.D. (University of Missouri-Columbia), associate professor
Raymond Balbes, Ph.D. (University of California, Los Angeles), associate professor
Gerald Peterson, Ph.D. (University of Utah), associate professor
Jerrold Siegel, Ph.D. (Cornell University), associate professor
Grant V. Welland, Ph.D. (Purdue University), associate professor
William Connett, Ph.D. (University of Chicago), assistant professor
Richard Friedlander, Ph.D., (University of California, Los Angeles) assistant professor
Rangachary Kannan, Ph.D. (Purdue University), visiting assistant professor

General Education Requirements

Each history major must satisfy the general education requirements of the university listed on page 21 and the general education requirements of the College of Arts and Sciences listed on page 47. Courses in history may be used to meet the university's social science area requirement. The college's foreign language requirement may be met in any language the student prefers. The non-Western area requirement may also be met by any non-Western course.

Departmental Requirements

A major in history consists of at least 36 hours with a maximum of 45 hours. The student must achieve an overall grade point average of 2.0 in all courses attempted in his major department, and must have a minimum of 36 hours of "C" work or better. Majors are required to take History 31 and 32; two courses from sequence History 3, 4, 5, 71, and 120; one course at the 290 level; two 300-level European History courses; two 300-level United States History courses; one 300-level course in another area; and two electives. Other areas, at present, consist of Asian, Latin American, Wars of National Liberation, Asian-American Relations, Quantitative Methods and History of Science. No more than 15 hours at the 300-level may be elected in any of these three divisions. History 265 may be elected by those students seeking certification.
Wisconsin), associate chairman, assistant professor
James C. Thorpe, Ph.D. (Princeton University), assistant professor
Frederick Wilke, Ph.D. (University of Missouri-Columbia), assistant professor

Kathleen Aubrey, M.S., instructor
Michael Avitahal, M.S., instructor
Thelma Balbes, M.A., instructor
Ta-Chean Hsu, M.S., instructor
Matthew Jurotich, M.Sc., instructor
Chang Je Kim, M.S., instructor
Arthur Kuehn, M.A., instructor
Barbara Matthei, M.A., instructor
Sanjiv Rangachari, M.Sc., instructor
Cynthia Siegel, M.S., instructor
Shirley Smith, M.S., instructor
Mary Ann Smola, A.M., instructor, assistant to the chairman
Mary Stephen, M.A., instructor
David Stevens, M.A., instructor
Patricia Stevens, M.A., instructor
James C. Thorpe, M.A., instructor

General Education Requirements All courses in mathematics except Mathematics 02 and 03 may be used to meet the university's three-course science and mathematics area requirement (see page 21). Each mathematics major must satisfy the general education requirements of the university listed on page 21 and the general education requirements of the College of Arts and Sciences listed on page 47 or the requirements of the School of Education, on page 87. The college's foreign language requirement must be met in German, French or Russian.

Related Area of Study Requirements In order to broaden a student's understanding of the sources and uses of mathematics, the department requires study in one or two areas related to mathematics. Each major must complete courses listed in any two of the following areas, with at least two courses from some one area:

(a) Astronomy 11 and 12
(b) Astronomy 222 and 223
(c) Biology 224 and 226
(d) Two semesters of work in biology at the 200 level or above, excluding Biology 224 and 226. At least one of the two semesters is to be Biology 321 or Biology 242 and 244 (counted as one course)
(e) Chemistry 11 and 12
(f) Chemistry 231 and one other 200 level course (or above)
(g) Mathematics 122 and two of Mathematics 222, Business 224, 375
(h) Two of Economics 351, 365, 366
(i) Philosophy 160, 250 and 360
(j) Physics 111 and 112
(k) Physics 221 and one other 200 level course (or above)
(l) Psychology 301 (for B.S. in Education majors only)

Departmental Requirements All introductory courses in mathematics, other than Mathematics 02 and 03 require as a prerequisite a satisfactory score on the mathematics portion of the Missouri College Placement Test. The dates on which this test is administered are given in the Student Information Handbook. Each mathematics major must complete, with a grade of "C" or better, at least six three-hour courses numbered above 201. These six courses must include one course from each of the following areas, with at least two courses from some one area:

1. Algebra-Number Theory: Mathematics 335, 340, 341
2. Analysis: Mathematics 310, 311, 316

A minimum of 12 hours of mathematics courses numbered 250 or above must be completed on the St. Louis campus with a grade of "C" or better. The student majoring in mathematics must achieve an overall grade point average of 2.0 in all mathematics courses in which he receives a grade.

Departmental Recommendations The department teaches a terminal course, Mathematics 15, for the student who wishes to take a mathematics course and whose major department does not require a course in mathematics. Mathematics 50 and Mathematics 151 are courses especially designed for the elementary education major:

The typical mathematics major will take the following sequence of courses: Mathematics 80, 175, 201, 250 and at least five courses numbered above 300.

In some instances the student's background may enable him to begin with Mathematics 175 or Mathematics 201; any student considering starting with a course in the sequence beyond Mathematics 80 is urged to consult with a member of the mathematics department. Majors preparing for graduate study are strongly advised to complete Mathematics 310, 311, 316, 340, 341 and 380.

DEPARTMENT OF MODERN FOREIGN LANGUAGES AND LITERATURES

Faculty
Marcus Allen, Ph.D. (University of Pittsburgh), chairman, associate professor of French
Enrique Noble, Ph.D. (University of Havana), professor of Spanish
Alfred F. Goessl, Ph.D. (Tulane University), associate professor of German
Robert Floyd Anderson, Ph.D. (Case Western Reserve University), visiting assistant professor of Spanish
Robert I. Cloos, Ed.D. (Rutgers University), assistant professor of German and education
Kay Cushman, Ph.D. (Indiana University), assistant professor of French
Fiorenza Di Franco, Ph.D. (Case Western Reserve University) visiting assistant professor of French
Ingeborg M. Goessl, Ph.D. (University of Kansas), assistant professor of German
Paul Hoffman, M.A. assistant professor of German
Carol Merrick, Ph.D. (University of Wisconsin) assistant professor of Spanish
Michael L. Rowland, Ph.D. (University of North Carolina), assistant professor of French
Sonja G. Stary, Ph.D. (University of Cincinnati), assistant professor of French
Marie Angele Abarnou, Licence-es·lettres, assistant instructor of French
John Antosh, M.A., instructor of German
Alexandra Butkoff, B.A., instructor of Russian
The Department of Modern Foreign Languages and Literatures offers work leading to the degree of bachelor of arts, and a field of concentration in foreign language and literature for the elementary and secondary school teacher. The requirements are:

General Education Requirements
Each language major must satisfy the general education requirements of the University listed on page 21 and the general education requirements of the College of Arts and Sciences listed on page 47. Courses in foreign language, literature and civilization may be used to meet the university’s humanities area requirement. The foreign language requirement of the College of Arts and Sciences may be met in any language.

Departmental Requirements
Students electing to major in the Department of Modern Foreign Languages and Literatures must have completed course 2 or its equivalent 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. All students seeking the A.B. in a foreign language and who desire a teaching certificate, must meet the departmental requirement of 33 hours. In addition, they must take course 264 (Curriculum and Methods), and fulfill the Professional Secondary Educational Requirements of the School of Education. Those students seeking the B.S. degree in education, with a concentration in a foreign language are required to complete 30 hours, of which 12 must be on the 300 level. Students working toward a degree in elementary education, with related work in a foreign language, should consult the School of Education concerning their program. Demonstration of a high level of proficiency in a foreign language may reduce the number of credit hours required for the major. Native speakers of a foreign language should consult the department concerning appropriate placement.

French
Each major in French must complete the following courses: 101, 171, or 172, 180, 200, 280, 281, and four courses on the 300 level. The following courses in other departments are recommended: Anthropology 345, Language and Culture; Anthropology 346, Grammatical Theory; English 131 and 132, English Literature Survey; German 110; Spanish 110; History 328, 329, Modern France.

German
Each major in German must complete the following courses: 101, 102, 108, 201, 202, 208, 210, and four courses on the 300 level, one of which must be 399 (seminar). The following courses in other departments are recommended: Anthropology 345, Language and culture; Anthropology 346, Grammatical Theory; English 131, 132, English Literature Survey; French 110; Spanish 110; History 345, 346, Modern Germany; Philosophy 105, Philosophy and Literature.

Spanish
Each major in Spanish must complete the following courses: 101, 102, 108, or 211, 280, 281, and four courses on the 300 level, one of which must be 399. The following courses in other departments are recommended: Anthropology 345, Language and culture; Anthropology 346, Grammatical Theory; English 131, 132, English Literature Survey; French 110; German 110; History 311, Spain; History 375, 376, Latin America.

Requirements for the A.B. Degree
Every A.B. degree candidate must successfully complete a curriculum which includes either a departmental major or an approved integrated inter-disciplinary field. A major must include at least 30 credit hours, but not more than 45 hours in the major department. The requirements vary within these limits. A.B. candidates must also complete 13 college credit hours or the equivalent in the same foreign language. All foreign language courses numbered 100 or 101 meet this requirement. Students entering
with no high school foreign language units must enroll in Language 1 and complete the following sequence: 1, 2, 100 or 101. Experience has indicated that two recent years of the language on the high school level, with above average performance, are necessary for the student to perform satisfactorily in Language 2. If the student's background is deficient, he may enroll in Language 1. Three years of high school language are necessary for a student to enroll in Language 100 or 101. A student with four high school units in one language is exempt from the language requirement. Any student who wishes to be exempt and who has excelled in his courses or otherwise acquired language proficiency must take a proficiency examination, which will be given in January and August. (Specific dates, times and places will be announced in the course schedules). A passing grade will indicate that the student has achieved a level of proficiency equal to Language 101 and has fulfilled the foreign language requirement. A grade less than passing means that the student must take at least Language 100 or 101. In no case, with the exception of native speakers, will a student be permitted to enroll in a course above the 101 level without taking the proficiency examination. Native speakers may meet the requirement by presenting proof of competence. The Department will certify native speakers of those languages taught at the University. Those proficient in other languages must submit certification of competence to the College of Arts and Sciences.

DEPARTMENT OF PHILOSOPHY

Faculty

Henry L. Shapiro, Ph.D. (Columbia University), chairman, assistant professor
Edward B. Costello, Ph.D. (Northwestern University) associate professor
James F. Doyle, Ph.D. (Yale University), associate professor
Peter Fuss, Ph.D. (Harvard University), associate professor
Robert M. Gordon, Ph.D. (Columbia University), associate professor
J. Ronald Munson, Ph.D. (Columbia University), associate professor
John E. Clifford, Ph.D. (University of California, Los Angeles), assistant professor
David A. Conway, Ph.D. (Princeton University), assistant professor
Paul R. Gomberg, Ph.D. (Harvard University), assistant professor
Daniel L. Lehockey, Ph.D. (University of Wisconsin) visiting assistant professor
Stephen E. Norris, Ph.D. (University of Pittsburgh) assistant professor
James H. Walters, Ph.D. (University of Wisconsin) assistant professor
David J. Griesedieck, M.A. (Princeton University), instructor
Will C. Harris, B. Phil. (Oxford University) visiting instructor

The Department of Philosophy offers a program of study leading to the degree of bachelor of arts with a major in philosophy. Many courses in this program are, by design, of general interest to all students. Several courses address themselves to issues raised by various fields of activity, such as art, education, law or the natural and social sciences, and will be of interest to students concerned with these fields. Courses primarily for philosophy majors offer complementary approaches—through logical analysis, the study of philosophical classics, and exploration of selected problems—aiming at a balanced concentration in philosophy. Wherever possible, instruction in philosophy relies on discussion in which students are active participants.

General Education Requirements

Students majoring in philosophy must satisfy the general education requirements of the university listed on page 21 and the general education requirements of the College of Arts and Sciences listed on page 47. Students may take any course in philosophy to meet the university's humanities area requirement.

Departmental Requirements

Philosophy majors are required to complete 30 hours of philosophy including the following:

1) Philosophy 160
2) Three courses in the history of philosophy (selected from the two series Philosophy 201-207 and Philosophy 301-307), two of which must be at the 300 level.
3) Three courses selected from Philosophy 235, 250, 318, 320, 321, 325 and 360

No philosophy courses taken on a pass/fail basis may be used to fulfill the requirements for the major.

With the consent of the department, qualified majors in philosophy may earn departmental honors by 1) completing at least six hours and no more than nine hours of Philosophy 291 (Senior Thesis) during the senior year; 2) submitting an acceptable thesis before the end of the senior year; and 3) passing an oral
examination based on the subject of the thesis. In such cases, the 30 hours required for a major in philosophy will include the credit earned in Philosophy 291.

No more than 45 hours in philosophy may be accepted toward the degree.

Departmental Recommendations
Students who expect to apply for graduate study in philosophy should consult their departmental advisor about specific course requirements. The department recommends that philosophy majors, especially those who intend to pursue graduate study, elect Greek, Latin, German or French to meet the foreign language requirement.

DEPARTMENT OF PHYSICS
Faculty
Corneliu Eftimeiu, Ph.D. (University of Bucharest), chairman; professor
James C. Gravitt, Ph.D. (Vanderbilt University) associate professor
Peter H. Handel, Ph.D. (University of Vanderbilt) associate professor
Bob L. Henson, Ph.D. (Washington University), associate professor
Robert Hight, Ph.D. (University of Missouri-Columbia), associate professor
Philip B. James, Ph.D. (University of Wisconsin), associate professor
Jacob J. Leventhal, Ph.D. (University of Florida), associate professor
Frank E. Moss, Ph.D. (University of Virginia), associate professor
Gerald R. North, Ph.D. (University of Wisconsin), associate professor
John S. Rigden, Ph.D. (Johns Hopkins University), associate professor*
Charles C. Foster, Ph.D. (Indiana University), assistant professor

Larry J. Lee, Ph.D. (Washington University), assistant professor
Suzanne Gronemeyer, A.M., instructor
Ray E. Elmes, manager of physics laboratories
Leonard Piskorski, senior machinist
Walter Hofheinz, senior electronist
*Joint appointment with School of Education

The Department of Physics offers both the A.B. and the B.S. degrees.

BACHELOR OF ARTS IN PHYSICS

The A.B. program is tailored to the student who wishes to preserve the option for specialization in graduate school without sacrificing the advantages of a liberal undergraduate education. The requirements for an A.B. degree with a major in physics are:

General Education Requirements All physics majors must complete the requisite courses to fulfill the university and College of Arts and Sciences general education requirements for the A.B. degree. (See pages 21 and 47). A minimum of thirteen hours of foreign language is required. French, Russian or German are recommended, but other languages are acceptable. The departmental requirements stated below may be used to satisfy the science and mathematics requirements.

Related Area of Study Requirements Twenty-one hours of mathematics including Mathematics 80, 122, 175, 201, 302, 303, and 304 are required. Mathematics 303 and 304 strongly recommended. Students with experience in digital computer programming may be excused from Mathematics 122.) Chemistry 11 and 12 or equivalent is required.

General Education Requirements All of the university and College of Arts and Sciences general education requirements for the A.B. degree, with the exception of the foreign language requirement, must be met by candidates for the bachelor of science in physics degree. The science and mathematics requirements are satisfied by the requirements listed below.

Related Area of Study Requirements Twenty-one hours of mathematics including Mathematics 80, 122, 175, 201, 302, 303, and 304 are required. (Students with experience in digital computer programming may be excused from Mathematics 122.) Additional hours in mathematics at the 200 level or beyond are highly recommended. Chemistry 11 or equivalent is required.

Departmental Requirements
At least 49 but no more than 51 hours of physics including Physics 1, 10, 111, 112, 113, 200, 201, 221, 223, 311, 312, and at least two of the following: 225, 241, 282, 331 are required.

BACHELOR OF SCIENCE IN PHYSICS

The B.S. degree provides the student with a choice of three programs, each of which is designed to fit the special needs of the individual student.

1) Physics Option The physics option may be elected by those students who desire a greater concentration of physics and mathematics. It is recommended for the student desiring to enter graduate study in physics. The requirements for a B.S. degree with the physics options are:

General Education Requirements All of the university and College of Arts and Sciences general education requirements for the A.B. degree, with the exception of the foreign language requirement, must be met by candidates for the bachelor of science in physics degree. The science and mathematics requirements are satisfied by the requirements listed below.

Related Area of Study Requirements Twenty-seven hours of mathematics including Mathematics 80, 122, 175, 201, 302, 303, and 304 are required. (Students with experience in digital computer programming may be excused from Mathematics 122.) Additional hours in mathematics at the 200 level or beyond are highly recommended. Chemistry 11 or equivalent is required.

Departmental Requirements
At least 49 but no more than 51 hours of physics including Physics 1, 10, 111, 112, 113, 200, 201, 221, 223, 225, 311, 312, 331, 335, 343 and 344 are required.

2) Astrophysics Option This option may be elected by students who wish an exposure to astronomy in order to enter graduate study in astrophysics or to enter the aerospace industry. In addition to a rigorous physics background this program offers astronomy courses in cooperation with the McDonnell Planetarium. The requirements for the B.S. degree with the astrophysics option are the same as for the physics option, except as noted below:

General Education Requirements Same as physics option.

Related Area of Study Requirements Twenty-seven hours of mathematics including Mathematics 80, 122, 175, 201, 302, 303, and 304 are required. (Students with experience in digital computer programming may be excused from Mathematics 122.) Additional hours in mathematics at the 200 level or beyond are highly recommended. Chemistry 11 or equivalent is required.

All students are urged to begin the calculus sequence (Mathematics 80) as soon as possible.

Departmental Requirements
At least 49 but no more than 51 hours of physics including Physics 1, 10, 111, 112, 113, 200, 201, 221, 223, 225, 311, 312, 331, 335, 343 and 344 are required.

By the Department of Physics
but no more than 51 hours of physics including Physics 1, 10, 111, 112, 113, 200, 201, 221, 223, 225, 241, 311, 312, 331, 333, 334, 335, Astronomy 11 and 12 or equivalent are required.

3) Applied Physics Option This option is designed for those students who desire a career in the research and development field. This option prepares the student for employment in technical industry or for graduate study in applied or engineering sciences by a concentration on subjects such as electronics. The requirements for the B.S. degree, applied physics option are:

General Education Requirements All of the general education requirements for the A.B. degree, with the exception of the foreign language requirement, must be met by candidates for the bachelor of science in applied physics degree. There is no foreign language requirement. The science and mathematics requirements are satisfied by requirements listed below.

Related Area of Study Requirements Twenty-seven hours of mathematics including Mathematics 80, 122, 175, 201, 302, 303 and 304 are required. (Students with experience in digital computer programming may be excused from Mathematics 122.) Additional hours of mathematics are recommended. Chemistry 11 or equivalent is required. Additional hours of chemistry are recommended. All students are urged to begin the calculus sequence (Mathematics 80) as soon as possible.

Departmental Requirements A minimum of forty-five hours and a maximum of forty-nine hours of physics including Physics 1, 10, 111, 112, 113, 200, 201, 221, 223, 241, 311, 312, and 325 are required. In addition, the student must elect two courses from Physics 353, 354, 355 and 356.

Research and Teaching As a part of its undergraduate program, the Physics Department offers students at the junior and senior levels the opportunity to participate in the teaching and research of the department. Members of the department are actively involved in such research areas as nuclear physics, solid state physics, molecular physics and elementary particle physics. Such participation is included in an effort to prepare the student for the independent effort required in industry or in graduate school.

Bachelor of Science in Education with a Major in Physics The bachelor of science in education with a major in physics is designed for the student who wishes to teach physics in a secondary school system. The program is designed to give the student a firm foundation in the history, philosophy and principles of physics. The requirements for the bachelor of science in education degree with a major in physics are stated below.

General Education Requirements All majors must complete the requisite courses to fulfill the university and School of Education General Education Requirements for the bachelor of science in education degree. The School of Education and the Department of Physics requirements are stated below.

Departmental Requirements Physics: Thirty-one hours of physics including Physics 1, 10, 111, 112, 113, 201, 202, 221, 282, 311, 312 are required. Education: Eighteen hours of education including Education 101, 163, 268, 271 and 302 are required.

Related Areas of Study Requirements Psychology 1, 2 and 271 (9 hours total) are required. Psychology 1 and 2 may be used to satisfy six hours of the General Education Requirements. Nineteen hours of mathematics including Mathematics 40, 80, 175 and 201 are required. Mathematics 122 and 302 are recommended.

DEPARTMENT OF POLITICAL SCIENCE

Faculty
E. Terrence Jones, Ph.D. (Georgetown University), chairman, associate professor
Edwin H. Fedder, Ph.D. (American University), director, Center for International Studies, professor
Werner F. Grunbaum, Ph.D. (University of Chicago), professor
Norton E. Long, Ph.D. (Harvard University), director, Center of Community and Metropolitan Studies, curator's professor
Eugene J. Meehan, Ph.D. (London School of Economics), professor
Robert S. Sullivant, Ph.D. (University of Chicago), dean, Graduate School, professor
Bryan T. Downes, Ph.D. (Washington University), associate professor
Kenneth F. Johnson, Ph.D. (University of California, Los Angeles), associate professor
Harell R. Rodgers, Jr., Ph.D. (University of Iowa), associate professor
Lyman T. Sargent, Ph.D. (University of Minnesota), associate professor
The Department of Political Science offers work leading to two undergraduate degrees: the A.B. degree in the College of Arts and Sciences and the B.S. degree in the School of Education. Every candidate for the B.S. degree must take at least one course in five of the following seven fields:

- Group I: Public Law
- Group II: Political Process
- Group III: Public Administration
- Group IV: Comparative Politics
- Group V: Theory and Methodology
- Group VI: Urban and Regional Politics
- Group VII: International Relations

Every candidate for the B.S. degree in the School of Education with a major in political science must satisfy the university's social science area requirement. The College's foreign language requirement may be satisfied in any foreign language and the non-Euro-American requirement in any approved non-Euro-American course.

DEPARTMENT OF PSYCHOLOGY

Faculty
Lewis J. Sherman, Ph.D. (University of Illinois), chairman, professor

These hours may be used in partial satisfaction of the general education requirements in the social sciences. Each student is encouraged to elect at least one course in statistics or accounting. As well as possible each student should determine if he expects to continue in graduate work in political science or law, or is preparing for government service, foreign service or elementary or secondary school teaching, and should consult with his adviser regarding other recommended electives.

Departmental Requirements Every candidate for the A.B. degree with a major in political science must take 36 to 45 hours of political science including Political Science 11 and 12. Each major must take at least one course in five of the following seven fields:

- Group I: Public Law
- Group II: Political Process
- Group III: Public Administration
- Group IV: Comparative Politics
- Group V: Theory and Methodology
- Group VI: Urban and Regional Politics
- Group VII: International Relations

Every candidate for the B.S. degree in the School of Education with a major in political science must meet degree requirements prescribed by the School of Education on page 87. The minimum course work in political science is 30 hours rather than the 36 hours required for the A.B. degree.

For the A.B. degree with a major in political science, the non-Western requirement may be met by any non-Western course.

Group I: Public Law
Group II: Political Process
Group III: Public Administration
Group IV: Comparative Politics
Group V: Theory and Methodology
Group VI: Urban and Regional Politics
Group VII: International Relations

The requirements for the A.B. degrees must also be met.

The Department of Political Science offers work leading to the A.B. degree in four areas of concentration: (1) Graduate School Preparation, (2) Child Care and Development Specialization, (3) Community Mental Health Specialization, and (4) General Psychology Major.

General Education Requirements Each psychology major must satisfy the general education requirements of the University listed on page 21 and the general education requirements of the College of Arts and Sciences listed on page 47 of the undergraduate catalog. Courses in psychology may be used to meet the university's social science area requirement. Students who seriously anticipate going on to advanced graduate work in psychology are strongly advised to satisfy the foreign language requirement of the College of Arts and Sciences by taking French, German or Russian. Otherwise, any language will be acceptable to the Department of Psychology. The non-Western requirement may be met by any non-Western course.

EDMUND S. HOWE, PH.D. (UNIVERSITY OF LONDON), PROFESSOR
ARTHUR L. IRION, PH.D. (STATE UNIVERSITY OF IOWA), PROFESSOR
ALAN G. KRASNOFF, PH.D. (UNIVERSITY OF TEXAS), PROFESSOR
FREDERICK J. THUMIN, PH.D. (WASHINGTON UNIVERSITY), PROFESSOR
THERESA S. HOWE, PH.D. (UNIVERSITY OF CALIFORNIA AT BERKELEY), ASSOCIATE PROFESSOR
JAMES T. WALKER, PH.D. (UNIVERSITY OF COLORADO), ASSOCIATE PROFESSOR
D. J. ZERBOLIO, PH.D. (MICHIGAN STATE UNIVERSITY), ASSOCIATE PROFESSOR
JOHN J. BOSWELL, PH.D. (TULANE UNIVERSITY), ASSOCIATE PROFESSOR
CHARLES GOUAUX, PH.D. (PURDUE UNIVERSITY), ASSOCIATE PROFESSOR
DONALD D. LISENBY, PH.D. (WASHINGTON UNIVERSITY), ASSOCIATE PROFESSOR
SAMUEL J. MARRIT, PH.D. (STATE UNIVERSITY OF NEW YORK AT BUFFALO), DIRECTOR, COUNSELING SERVICE, ASSISTANT PROFESSOR
MILES L. PATTERSON, PH.D. (NORTHWESTERN UNIVERSITY), ASSOCIATE PROFESSOR
DENTON J. STEWART, PH.D. (TEXAS TECHNICAL UNIVERSITY), ASSOCIATE PROFESSOR
DAVID R. ZIFF, PH.D. (UNIVERSITY OF TEXAS), ASSOCIATE PROFESSOR

*Primary appointment, School of Business Administration

The Department of Psychology offers work leading to the A.B. degree in four areas of concentration: (1) Graduate School Preparation, (2) Child Care and Development Specialization, (3) Community Mental Health Specialization, and (4) General Psychology Major.

General Education Requirements Each psychology major must satisfy the general education requirements of the College of Arts and Sciences. The minimum course work in psychology including Introductory Psychology (preferably in the freshman year), and immediately afterwards Psychology 101 and 219. At least nine additional hours must be at the 190 level or above. In no case will more than 45 hours of psychology be applied toward the A.B. degree in psychology.

1) Graduate School Concentration
This course of study would be most suitable for students planning application to a doctoral program in psychology. In addition to the departmental requirements, these students are also required to take Psychology 192, 193 and 261 and one of the following: 214, 254, 255, 257, 258 or 265.
The following two areas of concentration would be most appropriate for students with no plans for doctoral training who have decided to make their careers in community activity or child-related fields and would prefer a somewhat more integrative focus than might be obtained in the General Psychology Major area.

2) Child Care and Development Concentration
This area is ideal for double majors in education and psychology or for a student interested in dealing with children in a variety of career fields. In addition to the departmental requirements, these students are required to take at least five of the following courses (two of them must be at the 200 level): Psychology 111, 150, 170, 171, 172, 205, 206, 216, 249, 256.

3) Community Mental Health Concentration
This area is ideal for double majors in another social science, particularly in social work and sociology or for a student interested in any of the human service fields. In addition to the departmental requirements, these students are required to take at least five of the following courses (two of them must be at the 200 level): Psychology 45, 99, 105, 145, 155, 156, 160, 225, 246, 248, 254, 260 and 265.

4) General Psychology Major
This area is suitable for students interested primarily in a general liberal education in psychology without any particular career or professional concentration. In addition to the departmental requirements, these students are also required to take one of the following: Psychology 214, 254, 255, 257, 258 or 265.

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY
Faculty
George J. McCall, Ph.D. (Harvard University), chairman, professor sociology and anthropology
K. Peter Etzkorn, Ph.D. (Princeton University), professor sociology and anthropology
Jerome Himelhoch, Ph.D. (Columbia University), professor sociology
Solomon Sutker, Ph.D. (University of North Carolina), professor sociology
Sarah Boggs, Ph.D. (Washington University), associate professor sociology
Murie Poling-Breay, Ph.D. (New York School of Social Work), associate professor sociology
Sara Smith Sutker, Ph.D., (University of North Carolina), associate professor sociology
Harry H. Bash, Ph.D. (University of Pennsylvania), assistant professor sociology
William Erickson, Ph.D. (University of Illinois), assistant professor sociology
Richard A. Ferrigno, Ph.D. (St. Louis University), assistant professor sociology
Sherif el Hakim, Ph.D. (Johns Hopkins University), assistant professor sociology
Judith Handel, Ph.D. (University of California), assistant professor sociology
Herman W. Smith, Ph.D. (Northwestern University), assistant professor sociology
Mae E. Gordon, M.S., instructor sociology

Anthropology Faculty
Lloyd Collins, Ph.D. (University of Arizona), associate professor anthropology
Thomas H. Hay, Ph.D. (Michigan State University), assistant professor anthropology
Stuart Plattner, Ph.D. (Stanford University), assistant professor anthropology
S. B. Scheiner, Ph.D. (University of California), assistant professor anthropology

The Department of Sociology and Anthropology offers the A.B. degree with the three-fold aim: (1) to prepare for graduate school students desiring to work professionally in sociology, anthropology and social service; (2) to provide a broad background in the social sciences for those interested in a liberal education and in careers in business and government; and (3) to prepare students for careers in either social service work not requiring graduate study or in certain areas of secondary education. A program of graduate studies leading to the M.A. in sociology is also offered by the department. The department of Sociology and Anthropology offers work leading to two undergraduate degrees: the A.B. degree in the College of Arts and Sciences and the B.S. degree in the School of Education. (See School of Education for details)

Students may declare a major in Sociology by filling out a petition form in the office of the Dean of Arts and Sciences (refer to Section IV under "Degrees" in the catalog). After declaration, a copy of the student's academic file is sent to the department. These records are maintained by the general undergraduate
Each Sociology major should obtain urging to consult with their faculty undergraduate program. Sociology advisor who also acts as Studies in Sociology-Anthropology” sociology major is assigned to a COLLEGE OF ARTS AND SCIENCES from this advisor. In addition, each faculty advisor. The students are urged to consult with their faculty advisor early in planning their undergraduate program.

General Education Requirements

Students with undergraduate majors in the department of Sociology and Anthropology must satisfy the general education requirements of the university listed on page 21, and the general requirements of the College of Arts and Sciences listed on page 47. Courses in sociology or anthropology may be used to meet the university’s social science area requirements. Any natural language may be used to meet the College of Arts and Sciences foreign language requirement (see page 48). The Asian-African area requirement may be met by any non-Western course.

Departmental Program Emphases

Three emphases are recognized within the departmental program of undergraduate studies: Sociology, Undergraduate Social Service, and Anthropology.

Related Area Requirements Sociology majors should take at least six credit hours in one or more of the following areas: economics, political science, philosophy and psychology. All sociology majors expecting to continue their studies in graduate school are strongly advised to be well prepared in mathematics, computer science and philosophy of science.

Sociology Core Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soc. 10</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>Soc. 110</td>
<td>Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>Soc. 120</td>
<td>Quantitative Techniques or Math 102</td>
<td>4</td>
</tr>
<tr>
<td>Soc. 130</td>
<td>Research Methods</td>
<td>4</td>
</tr>
</tbody>
</table>

Eighteen (18) hours of major elective credit selected from departmental courses. Of the 18 elective hours:

a) no more than 3 hours in Sociology and no more than 3 hours in Anthropology under the 100 level will be counted toward the 18 elective hours.

b) at least 3 credit hours must be taken on the 300 level in Sociology.

Majors must take one 100 level course before taking 200 level courses in Sociology. This 100 level prerequisite may be taken concurrently with a 200 level course provided that it is Sociology 110, 120, or 130. Majors must take two of the following: Sociology 110, 120, or 130 before taking a 300 level course in Sociology.

UNDERGRADUATE SOCIAL SERVICE MAJOR

Related Area Requirements Same as for Sociology Majors.

Undergraduate Social Service Major Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soc. 10</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>Soc. 110</td>
<td>Sociological Theory</td>
<td>3</td>
</tr>
<tr>
<td>Soc. 120</td>
<td>Quantitative Techniques or Math 102</td>
<td>4</td>
</tr>
<tr>
<td>Soc. 130</td>
<td>Research Methods</td>
<td>4</td>
</tr>
<tr>
<td>Soc. 242</td>
<td>Sociological Aspects of Social Work</td>
<td>3</td>
</tr>
</tbody>
</table>

Soc. 296 Practicum in Supervised Field Experience and Operational Research (3)


THE B.A. IN ANTHROPOLOGY

Majors in anthropology should take at least six credit hours in one or more of the following areas: economics, geography, political science, or psychology. Students planning to pursue graduate studies in physical anthropology should take at least nine units in biology. All students expecting to continue their studies in graduate school are strongly advised to be well prepared in computer science, sociological theory and the philosophy of science. Since the discipline of anthropology encompasses four areas of emphasis: cultural anthropology, linguistics, archaeology and physical anthropology, selection of courses in related areas as well as from departmental offerings should be made with reference to the student’s area of interest and in consultation with a departmental advisor.

Related Area Requirements One course in philosophy, chosen from either Philosophy 160, 250, or 335 should be completed by majors in anthropology prior to enrollment in Anthropology 291 Senior Seminar.

Anthropology Requirements:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthro.</td>
<td>5</td>
<td>Human Origins (4)</td>
</tr>
<tr>
<td>Anthro.</td>
<td>11</td>
<td>Man, Culture &amp; Society (3)</td>
</tr>
<tr>
<td>Soc.</td>
<td>120</td>
<td>Quantitative Techniques (4)</td>
</tr>
<tr>
<td>Anthro.</td>
<td>325</td>
<td>Comparative Social Organization (3)</td>
</tr>
<tr>
<td>Anthro.</td>
<td>291</td>
<td>Theories of Anthropology (3)</td>
</tr>
<tr>
<td>Anthro.</td>
<td>390</td>
<td>Senior Seminar (3)</td>
</tr>
</tbody>
</table>

Twelve (12) credit hours of credit selected from the offerings in anthropology and/or sociology are required.* It is recommended that majors take at least one course in anthropological linguistics.

*Only three credit hours of lower division courses may be counted in satisfaction of this requirement.
School of Business Administration

FACULTY

Emery C. Turner, D.B.A. (Washington University), dean, professor of accounting
Donald H. Driemeier, D.B.A. (Washington University), associate dean, associate professor of finance
Sioma Kagan, Diplom-Ingenieur, Ph.D. (Columbia University), professor of international business
Frederick E. May, Ph.D. (University of Michigan), professor of management and psychology
Dik Twedt, Ph.D. (Northwestern University), professor of marketing
Robert E. Markland, D.B.A. (Washington University), associate professor of management
R. Frank Page, Ph.D. (University of Illinois), C.P.A., associate professor of accounting
Donald Rogoff, D.B.A. (Michigan State University), associate professor of finance
Robert A. Schuchardt, D.B.A. (Washington University), associate professor of accounting
James P. Tushaus, Ph.D. (University of Illinois), associate professor of marketing
George C. Witteried, M.B.A., J.D. (Northwestern University), associate professor of industrial relations
Larry D. Baker, D.B.A. (Indiana University), assistant professor of management
Andre Corbeau, Ph.D. (Tulane University), assistant professor of quantitative management science
Nicholas DiMarco, Ph.D. (Case-Western Reserve University), assistant professor of management

David P. Gustafson, Ph.D. (Stanford University), associate professor of management
Nicolas DiMarco, Ph.D. (Case-Western Reserve University), assistant professor of management

Andre Corbeau, Ph.D. (Tulane University), assistant professor of quantitative management science
Admission

The School of Business Administration at the University of Missouri-St. Louis is a two year, junior-senior level program. Prerequisites for admission to the School of Business Administration are:

1. At least a 2.00 average for all qualifying work with a minimum of sixty (60) semester hours.
2. Completion of the general education requirements for the Bachelor of Science in Business Administration.
3. At least a 2.00 average for work attempted at the University of Missouri-St. Louis is required at the time of admission.

Qualifying courses generally include all courses from the Arts and Sciences and such other courses as may be considered to be supportive to the study of management. No more than fifteen hours of introductory courses in Business Administration (courses numbered below 200) may be counted as qualifying work toward admission. Students transferring to the University of Missouri-St. Louis will be considered as candidates for admission on the basis of an examination of their individual records. The examination will result in either regular admission or a specification of requirements to be met prior to admission.

The sixty (60) hours of work needed for admission should include: fulfillment of the university general education requirements (required of all students pursuing a degree from the university); Business Administration 140—Fundamentals of Financial Accounting and 145—Fundamentals of Managerial Accounting; Economics 50 and 51—Principles of Economics; and Business Administration 31—Elementary Statistics. A student is also required to include a science lecture, a non-Western course, two behavioral science courses, and required mathematics course work within his first sixty hours. These are requirements of the School of Business Administration.

General Education Requirements

All business administration students must complete the requisite courses to fulfill the university general education requirements listed on page 21.
School of Business Administration

### Requirements

Each student will be required to meet the following requirements of the School of Business Administration:

#### I. Non-Business Course Requirements

The following courses required of all School of Business Administration students may be taken to fulfill part of the forty-two (42) hour university general education requirement:

- **A.** Economics 50 and 51 6 hours
- **B.** Minimum mathematics proficiency of Mathematics 102—Finite Mathematics 4
- **C.** Two courses in the behavioral sciences 6
- **D.** A course in a non-Western subject 3
- **E.** One lecture course in a biological or physical science 3

#### Remaining university general education requirements

| A. Humanities | 20 hours |
| B. Mathematics or Foreign Language | 42 hours |

#### II. Requirements in Mathematics or Foreign Language

Each student is required to present either:

- **A.** Thirteen hours (13) of one foreign language or Mathematics 101 or 80 and one additional quantitative course chosen from Mathematics 175; Business Administration 231, 308, 331, 375 or 385; or Economics 365. (Mathematics 80 is prerequisite to higher mathematics; Mathematics 101 is a terminal mathematics course for those desiring no additional mathematics.)
- **B.** A minimum of Mathematics 101 or 80 and one additional quantitative course chosen from Mathematics 175; Business Administration 231, 308, 331, 375 or 385; or Economics 365. (Mathematics 80 is prerequisite to higher mathematics; Mathematics 101 is a terminal mathematics course for those desiring no additional mathematics.)

The 13 hours in language may not be included among the 42 hours of the general education requirements; they may be counted among the hours designated for free electives (see IV below).

#### III. Required Business Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Admin. 140—Fundamentals of Financial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Business Admin. 145—Fundamentals of Managerial Accounting</td>
<td>3</td>
</tr>
<tr>
<td>Business Admin. 31 or 131—Elementary Statistics*</td>
<td>3</td>
</tr>
<tr>
<td>Business Admin. 156—Legal Environment of Business</td>
<td>3</td>
</tr>
<tr>
<td>Business Admin. 106—Basic Marketing</td>
<td>3</td>
</tr>
<tr>
<td>Business Admin. 202—Fundamentals of Production</td>
<td>3</td>
</tr>
<tr>
<td>Business Admin. 204—Financial Management</td>
<td>3</td>
</tr>
<tr>
<td>Business Admin. 310—Management as a Behavioral Science I</td>
<td>3</td>
</tr>
<tr>
<td>Business Admin. 391—Seminar in Business Policy and Administration</td>
<td>3</td>
</tr>
<tr>
<td>Business Electives</td>
<td>18</td>
</tr>
</tbody>
</table>

#### Remaining business course requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration 31 will be offered through the summer session of 1974. Only Business Administration 131 will be offered after the fall semester of 1974.</td>
<td>45 hours</td>
</tr>
</tbody>
</table>

#### IV. Free electives

There are thirty-three (33) free elective hours. Up to nine (9) of these hours may be taken in the School of Business Administration; the remaining must be earned outside of the school. The combined hours in business and economics may not exceed seventy-eight (78).

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanities</td>
<td>33 hours</td>
</tr>
<tr>
<td>Social Science</td>
<td>120 hours</td>
</tr>
</tbody>
</table>

#### Limitation on Discipline Concentration

While a certain level of concentration in one of the various fields of business is desirable, students should not concentrate their course selection to the extent that they limit their future job flexibility. Therefore, no more than 15 hours beyond required courses is allowed in any discipline with the exception of accounting. In accounting, a student may take 18 hours beyond the required courses.

#### General Education Requirements as Applicable to the Business Student

The specific requirements of the School of Business Administration may be used in partial fulfillment of the general education requirements as follows:

- A student must demonstrate a minimum proficiency in mathematics, defined by the School of Business Administration faculty as the equivalent of Mathematics 102—Finite Mathematics, Mathematics 101—College Algebra or Pre-Calculus Mathematics, Finite Mathematics and a science lecture. (This assumes that a student does not transfer in a proficiency of college algebra, pre-calculus mathematics or greater.)

**NOTE:** The general education requirements spell out a number of courses to be taken in an area, not the specific courses. If a student has a very strong background in a particular discipline which is demonstrated to the satisfaction of the department, i.e., mathematics, he may begin at a level above the basic courses. For example, his first course in mathematics could be Mathematics 102—Finite Mathematics. Such a student would still be required to satisfy the general education requirement calling for three courses from the science and mathematics area. His courses would, of course, show a greater sophistication in that particular area of competence.
C. Language-Mathematics Option

A student pursuing a B.S. degree in Business Administration may exercise:

(1) A language option which requires 13 hours of a foreign language. This is satisfied by taking a sequence of courses numbered 1--five hours credit, 2--five hours credit, and 101--three hours credit. Such students must still meet the School of Business Administration finite mathematics and science lecture requirements and take the necessary mathematics or science course to fulfill the general education requirements. The 13 hours of foreign language will be counted toward hours for graduation under the “Free Electives” heading.

(2) A mathematics option would be fulfilled by a student taking, as a minimum, the equivalent of Mathematics 101--Survey Calculus, plus one additional quantitative course such as: Economics 365--Economic Statistics and Econometrics; Business Administration 231--Intermediate Statistics; Business Administration 308--Production and Operations Management; Business Administration 331--Multivariate Analysis; Business Administration 375--Operations Research; or Business Administration 385--Mathematical Programming. If a student desires to take additional mathematics, he should take Mathematics 80--Analytic Geometry and Calculus I rather than the survey calculus course. His next mathematics course, then, would logically be Mathematics 175--Analytic Geometry and Calculus II.

D. Social Sciences includes economics, history, political science, psychology, and sociology-anthropology. A student seeking a B.S. degree in Business Administration automatically fulfills this requirement. The social science requirement is met by:

(1) satisfying the state requirement, (History 3 or 4--American Civilization, or Political Science II-Government in Modern Society, are some of the courses which fulfill this requirement), (2) meeting the School of Business Administration requirement of Economics 50 and 51--Principles of Economics; 2) Mathematics courses taken in meeting the general mathematics proficiency or courses taken in the mathematics option and, (3) Courses taken to meet language option.

The B.S. in Business Administration student may elect up to twelve (12) of the above twenty-four (24) pass-fail hours in School of Business Administration electives. Business courses specifically required by the school are not available on the pass-fail option to the B.S. in business administration student. The non-business administration student may take any business administration course on a pass-fail basis provided prerequisites are met.

Students transferring into the School of Business Administration from other institutions are required to take at least twenty-one (21) hours of credit within the school on a regular grade basis.

Non-Western Courses The faculty of the School of Business Administration requires that a student take one course in a non-Western subject which can be fulfilled by taking such courses as History 210 or 211--Asian Civilization. (This is not a complete list of the courses which fulfill the non-Western requirement.)

Pass-Fail Option Students in the School of Business Administration may elect to take up to twenty-four (24) hours of course work on a pass-fail basis. Specifically exempted from the pass-fail, however, are those courses designed to fulfill a School of Business Administration specific course requirement. This would mean that the following are not available on the pass-fail option: 1) Economics 50-51--Principles of Economics; 2) Mathematics courses taken in meeting the general mathematics proficiency or courses taken in the mathematics option and, 3) Courses taken to meet language option.

Students plan to include Fundamentals of Accounting, Principles of Economics, and Elementary Statistics in their sophomore schedules since these courses are prerequisite to virtually all upper division course work in business. While not required, it is recommended that Fundamentals of Digital Computer Programming be taken by School of Business Administration students. This course may be taken in the sophomore year.

All schedules should be formulated in cooperation with an academic adviser. Prospective students for the School of Business Administration should see an academic adviser in the School of Business Administration at the beginning of their sophomore year.
The Teacher Education Program, which is the responsibility of the School 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.

The curricula of the three departments of the School of Education include work leading toward a bachelor of science in education degree with specialization in any of the following: early childhood education, elementary education, special education and secondary education. In cooperation with other schools and colleges of the university, the School of Education provides a program for students pursuing other degrees but planning a teaching career in secondary education.

Eligibility for admission to the School of Education is based upon the following criteria:

1. **Satisfactory Completion of Two Years of College Work** - A minimum of 60 semester hours of work must be completed with a grade point average of 2.0 or above. The grade point average used in considering admission to the school is calculated as a gross total representing all institutions attended and all courses attempted, provided that such courses are applicable toward the degree sought.

2. **Minimum Deficiencies in General Education** - A student may have no more than nine hours of deficiencies in general education.

3. **Special Requirements** - Specific prerequisites and/or other special science in education degree or they may elect to receive degrees from other colleges and schools in the university and meet teacher certification requirements. NOTE: Admission to the School of Education is not the same as admission to the Teacher Education Program. Students admitted to the School of Education must also be admitted to the Teacher Education Program.
Candidates apply for formal admission to the Teacher Education Program. Candidates must meet these requirements for admission:

1. Full admission to the Teacher Education Program.
2. Completion of 90 semester hours of approved course work.
3. A grade point average of 2.2 or above. (NOTE: this requirement will be in effect starting with all students who do their student teaching during the 1973-74 academic year.)

4. Completion of general education requirements and near completion of course requirements in the teaching major.
5. A grade of C or better in all professional education courses so designated by the Department of Elementary Education and the Department of Administration, Philosophy and Secondary Education—lists of these courses are available in the Office of Teacher Education Advisement and Certification, the Office of Clinical Experiences, and from advisers. (NOTE: this requirement will be in effect starting with all students who do their student teaching during the 1973-74 academic year.)
6. Satisfactory recommendation by students' teaching area representatives in the Teacher Education Program.
7. Completion of prerequisite courses in professional education.
8. Completion at the University of Missouri-St. Louis of not less than 12 hours of approved course work.
9. A grade point average of 2.2 in the teaching field—secondary education students only. (NOTE: this requirement will be in effect starting with all students who do their student teaching during the 1973-74 academic year.)

SCHOOL OF EDUCATION

Office of Teacher Education Advisement and Certification

The Office of Teacher Education Advisement and Certification provides advisory assistance to students interested in becoming teachers. Questions about applying for admission to the Teacher Education Program, sequence of courses, prerequisites, graduation and certification requirements, and related matters should be directed to that office.

Advisement

The curricula for teacher education vary considerably. It is necessary to plan the four year program of studies carefully with the adviser in order to avoid inappropriate course selections resulting in the extension of the program beyond the minimum of 120 semester hours for the degree. Late entry into a teacher education sequence, changing from one curriculum to another, or changing the degree objective usually results in additional required course work beyond the minimum of 120 semester hours.

Course descriptions should be examined carefully for prerequisites since in many cases it will be virtually impossible to proceed to other courses without having completed these prerequisites.

Students planning to teach in secondary schools must meet state requirements for their chosen teaching fields. Some of these demand specific subject concentrations within Arts and Sciences disciplines; other involve specific preparation in more than one discipline. Students should seek advice from the Office of Teacher Education Advisement and Certification as early in their preparation as possible; in planning their junior and senior years, they should consult with their assigned advisers regularly.

Office of Teacher Education Advisement and Certification

The Office of Teacher Education Advisement and Certification provides advisory assistance to students interested in becoming teachers. Questions about applying for admission to the Teacher Education Program, sequence of courses, prerequisites, graduation and certification requirements, and related matters should be directed to that office.

Advisement

The curricula for teacher education vary considerably. It is necessary to plan the four year program of studies carefully with the adviser in order to avoid inappropriate course selections resulting in the extension of the program beyond the minimum of 120 semester hours for the degree. Late entry into a teacher education sequence, changing from one curriculum to another, or changing the degree objective usually results in additional required course work beyond the minimum of 120 semester hours.

Course descriptions should be examined carefully for prerequisites since in many cases it will be virtually impossible to proceed to other courses without having completed these prerequisites.

Students planning to teach in secondary schools must meet state requirements for their chosen teaching fields. Some of these demand specific subject concentrations within Arts and Sciences disciplines; other involve specific preparation in more than one discipline. Students should seek advice from the Office of Teacher Education Advisement and Certification as early in their preparation as possible; in planning their junior and senior years, they should consult with their assigned advisers regularly.
Missouri-St. Louis is responsible for issuing teaching certificates to students who have completed the requirements for the degree bachelor of science in education. Students who will receive the bachelor of science in education degree must complete the Application for Degree form and Application for Certification. Students who will receive the degree bachelor of science in education must complete the Application for Certification and fill out the State Certification forms.

The School of Education is also responsible for recommending for certification those students who have completed degrees from other colleges and schools in the university and for certification requirements. In addition, the School has responsibility for advisement and recommendation to the State Department of Education of those post-degree students seeking teacher certification. Immediately after the semester in which certification requirements are completed, students must go to the Office of Teacher Education Advisement and Certification and fill out the State Certification forms.

All requests and inquiries regarding certification should be directed to the Office of Teacher Education Advisement and Certification.

Office of Clinical Experiences All matters pertaining to off-campus clinical experiences in teacher education are the responsibility of this office.

Pre- and Post-Student Teaching Clinical Experiences Arrangements for these Clinical Experiences are handled by the Office of Clinical Experiences. When arrangements have been completed, students will be given letters verifying their status in the University of Missouri-St. Louis Teacher Education Program. Officials of local schools and agencies now require such letters because of the large numbers of people wishing to visit their institutions.

Student Teaching Students must make formal application for admission to student teaching as outlined on P. 88. When they have been admitted to student teaching, the Office of Clinical Experiences will work out assignments with appropriate school district officials. Students should not contact school officials or teachers about possible student teaching assignments. The need to coordinate assignments so that all those admitted to student teaching may be accommodated, agreements with school districts maintained, and time of school officials protected, are the bases for this policy. Failure to observe this request is grounds for removal from student teaching.

Student Teaching is not offered during the summer.

Requests for further information about student teaching policies and procedures should be directed to the Office of Clinical Experiences in the School of Education.

Teacher Education Resource Center The Teacher Education Resource Center is an instructional facility open to teacher education students and faculty. It has three major components, each with its own staff, that together constitute an integral part of the Teacher Education Program. The Instructional Materials Laboratory in which is housed a large collection of instructional materials including basic textbook series, children's books, trade books, school reference books, models, maps, globes, filmstrips, and charts.

The Instructional Media Laboratory which affords opportunities for students to acquaint themselves with and develop their skills in using instructional media.

The Instructional Television Laboratory for video taping and filming teaching and counseling episodes, for microteaching with immediate feedback, and for research in teacher education.

Teacher education students will find themselves using the Teacher Education Resource Center continuously throughout the program. Questions about policies and procedures guiding the use of the various components of the Resource Center should be directed to the Coordinator of the Teacher Education Resource Center in the School of Education.

Educational Services Center The Educational Services Center is a facility that is designed for a wide variety of on-campus clinical experiences in several teacher education curricula. At present it houses the Reading Clinic and the Counselor Education Clinic.

DEPARTMENT OF ELEMENTARY EDUCATION

Faculty
Wallace Z. Ramsey, Ed.D. (University of Missouri-Columbia), chairman, professor
Richard W. Burnett, Ed.D. (Indiana University), director, Reading Clinic, professor
Hans C. Olsen, Ed.D. (University of Illinois), director, Reading Clinic, professor
Huber M. Walsh, Ed.D. (University of California, Los Angeles), professor
Walter J. Cegelka, Ed.D. (Syracuse University), associate professor
Donald R. Greer, Ph.D. (University of Missouri-Columbia), coordinator, Teacher Education Resource Center, associate professor
Robert E. Rea, Ph.D. (Southern Illinois University), associate professor
Elizabeth P. Watson, Ed.D. (Indiana University), associate professor
Dick Miller, Ed.D. (Utah State University), assistant professor
John L. Morris, Ph.D. (St. Louis University), assistant professor (on leave)
Leo V. Rodenborn, Ed.D. (Oklahoma State University), assistant professor
Sister Sara Rowland, Ph.D. (St. Louis University), assistant professor
Thomas R. Schnell, Ph.D. (Southern Illinois University), assistant professor
The Department of Elementary Education offers three programs leading to a bachelor of science in education degree: early childhood education, general elementary education, and special education (mentally retarded). It also provides needed courses for post-degree students seeking teacher certification in elementary education and the education of the mentally retarded. In addition, the Department offers a program of studies leading to a master of education degree in the area of elementary education and special education (mentally retarded, emotionally disturbed, and learning disabilities).

**Early Childhood Education**  The Early Childhood Education program is especially designed for those who wish to teach in kindergarten and grades one through three. Students who elect this program are urged to use electives to complete requirements of the general Elementary Education program. This will prepare them for a wider range of teaching opportunities.

**DEPARTMENTAL REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ed. 101</td>
<td>The School in Contemporary Society</td>
<td>3</td>
</tr>
<tr>
<td>Ed. 140</td>
<td>Elementary School Organization, Management and Techniques of Teaching</td>
<td>3</td>
</tr>
<tr>
<td>Ed. 150</td>
<td>Children’s Literature and Language Arts</td>
<td>3</td>
</tr>
<tr>
<td>Ed. 302</td>
<td>Psychology of Teaching and Learning</td>
<td>3</td>
</tr>
<tr>
<td>Ed. 315</td>
<td>Principles of Early Childhood Education</td>
<td>3</td>
</tr>
</tbody>
</table>

**GENERAL EDUCATION REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 10</td>
<td>English</td>
<td>3</td>
</tr>
<tr>
<td>Speech</td>
<td>Speech</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 50 and 51 (No credit toward graduation is granted for Mathematics 15 unless both Mathematics 50 and 51 are completed)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>Biological Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Physical Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Science Lab</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Humanities</td>
<td>8</td>
</tr>
<tr>
<td>Psychology 1, 2, and 270</td>
<td>9 hours</td>
<td></td>
</tr>
<tr>
<td>Political Science 11 or 376</td>
<td>3 hours</td>
<td></td>
</tr>
<tr>
<td>History 3 and 4</td>
<td>6 hours</td>
<td></td>
</tr>
<tr>
<td>Sociology 224</td>
<td>3 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Science</td>
<td>8</td>
</tr>
</tbody>
</table>

**RELATED AREA REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ed. 137 Music</td>
<td>2 hours</td>
<td></td>
</tr>
<tr>
<td>Ed. 139 Art</td>
<td>3 hours</td>
<td></td>
</tr>
<tr>
<td>Ed. 110 Elements of Health Education</td>
<td>3 hours</td>
<td></td>
</tr>
<tr>
<td>Ed. 155 Physical Education Activities in the Elementary School</td>
<td>3 hours</td>
<td></td>
</tr>
</tbody>
</table>

**DEPARTMENTAL REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ed. 101</td>
<td>The School in Contemporary Society</td>
<td>3</td>
</tr>
<tr>
<td>Ed. 140</td>
<td>Elementary School Organization, Management and Techniques of Teaching</td>
<td>3</td>
</tr>
<tr>
<td>Ed. 150</td>
<td>Children’s Literature and Language Arts</td>
<td>3</td>
</tr>
<tr>
<td>Ed. 302</td>
<td>Psychology of Teaching and Learning</td>
<td>3</td>
</tr>
<tr>
<td>Ed. 315</td>
<td>Principles of Early Childhood Education</td>
<td>3</td>
</tr>
</tbody>
</table>
SCHOOL OF EDUCATION

Ed. 150 Children's Literature and Language Arts ... 3 hours
Ed. 151 Teaching of Science in the Elementary School ............... 3 hours
Ed. 152 Teaching of Social Studies in the Elementary School ... 3 hours
Ed. 153 Teaching Mathematics in the Elementary School ........... 3 hours
Ed. 302 Psychology of Teaching and Learning ............. 3 hours
Ed. 325 Teaching Reading in the Elementary School ....... 3 hours
Ed. 251 Elementary School Student Teaching ... 6 hours

AREAS OF CONCENTRATION

12 semester hours of Humanities, Social Sciences or Natural Sciences and Mathematics. Must be courses numbered 100 or above which are not used to meet the requirements in professional education or related areas. Courses not to be taken in more than three departments .................. 12 hours

Electives ............... 18 hours

120 hours

Special Education The Special Education curriculum is designed for students who wish to become teachers of the mentally retarded. Since special education teachers must also be qualified as regular elementary or secondary teachers, provisions for that is made in the special education program.

SCHOOL OF EDUCATION

Faculty

Robert R. Gard, Ed.D. (Arizona State University), chairman, associate professor
H. E. Mueller, Ed.D. (University of Missouri-Columbia), director of admissions and registrar, professor
Harold E. Turner, Ed.D. (George Peabody College), professor
Henry R. Weinstock, Ed.D. (University of Georgia), professor
Joy E. Whitener, Ed.D. (Washington University), dean, Evening College, Professor
Walter Ehrlich, Ph.D. (Washington University), associate professor
Angelo Puricelli, Ph.D. (St. Louis University), assistant dean, Extension Division, associate professor
John S. Rigden, Ph.D. (Johns Hopkins University), associate professor
Charles G. Smith, M.S., athletic director, associate professor
Blanche M. Touhill, Ph.D. (St. Louis University), associate professor
Paul D. Travers, Ed.D. (George Peabody College), associate professor
Clive C. Veri, Ph.D. (University of Nebraska), associate dean, Extension Division, associate professor
Robert I. Cloos, Ed.D. (Rutgers University), assistant professor
Clarence Drichta, M.M., assistant professor
Dennis Fallon, Ph.D. (University of Minnesota), assistant professor
Charles Fazzaro, Ed.D. (West Virginia University), assistant professor
Richard J. Friedlander, Ph.D. (University of California, Los Angeles), assistant professor
Charles Granger, Ph.D. (University of Iowa), assistant professor

Jane A. Miller, Ph.D. (Tulane University), assistant professor
Everett Nance, Ed.D. (Western Michigan University), director, Midwest Community Education Center, assistant professor
Jerry L. Pulley, Ed.D. (University of Missouri-Columbia), assistant professor
Virgil N. Sapp, B.S., dean, Extension Division, assistant professor
Robert J. Starr, Ed.D. (University of Missouri-Columbia), assistant professor
Margaret Sullivan, Ph.D. (St. Louis University), assistant professor
Martin Towey, Ph.D. (St. Louis University), assistant professor
Samuel E. Wood, Ed.D. (University of Florida), coordinator of clinical experiences, School of Education, assistant professor
Dorothy Doyle, M.A., instructor
Charlyn Fox, M.S., instructor
Barbara Heinburger, M.A.T., instructor
Barbara Mann, M.S., instructor
Edith Young, M.Ed., instructor

Secondary Education The Department of Administration, Philosophy and Secondary Education offers an undergraduate program in Secondary Education. Students may prepare for teaching in both junior and senior high schools (grades 7-12). Secondary education students may earn the bachelor of science in education degree or they may pursue other degrees and complete the necessary sequence of courses and experiences offered by the department. Post-baccalaureate students may earn secondary certification; they are advised by the Office of Teacher Education Advisement and Certification.

DEPARTMENTAL REQUIREMENTS IN SPECIAL EDUCATION

Ed. 313 Psychology of the Exceptional Child ............... 3 hours
Ed. 240 Education of the Mentally Retarded ......... 3 hours
Ed. 310 Interpretation of Educational Tests and Measurements .... 3 hours
Ed. 312 Speech and Language Problems of Exceptional Children .... 3 hours
Ed. 369 Analysis and Correction of Reading Disabilities 3 hours
Ed. 252 Elementary School Student Teaching in Special Education ... 6 hours

Electives ............... 15 hours

120 hours

DEPARTMENTAL REQUIREMENTS IN ELEMENTARY EDUCATION

See page 92.

RELATED AREA REQUIREMENTS IN ELEMENTARY EDUCATION

See page 93.

DEPARTMENTAL REQUIREMENTS IN ELEMENTARY EDUCATION

See page 92. (Education 251 not required)

DEPARTMENTAL REQUIREMENTS IN ELEMENTARY EDUCATION

Ed. 313 Psychology of the Exceptional Child ............... 3 hours
Ed. 310 Interpretation of Educational Tests and Measurements .... 3 hours
Ed. 312 Speech and Language Problems of Exceptional Children .... 3 hours
Ed. 369 Analysis and Correction of Reading Disabilities 3 hours
Ed. 252 Elementary School Student Teaching in Special Education ... 6 hours

Electives ............... 15 hours

120 hours

DEPARTMENTAL REQUIREMENTS IN ELEMENTARY EDUCATION

See page 92.

RELATED AREA REQUIREMENTS IN ELEMENTARY EDUCATION

See page 93.

DEPARTMENTAL REQUIREMENTS IN ELEMENTARY EDUCATION

See page 92. (Education 251 not required)
Secondary Education requirements include the following:

**UNIVERSITY GENERAL EDUCATION REQUIREMENTS**

See page 21.

**PROFESSIONAL REQUIREMENTS**

The department requires 21 hours of work in prescribed courses in education and psychology. These 21 hours enable students to meet State professional education standards.

- **Ed. 101** The School in Contemporary Society ........ 3 hours
- **Ed. 163** Techniques of Secondary School Teaching .... 3 hours
- **Psych. 171** Adolescent Psychology ........ 3 hours
- **Ed. 302** Psychology of Teaching and Learning ....... 3 hours
- **Ed. Methods Course in Teaching Major ............. 3 hours
- **Ed. 271** Secondary School Student Teaching ....... 6 hours
- **Graduate Programs** NCATE-approved

M.Ed. programs are offered in secondary education, elementary administration, and secondary administration.

**TEACHING FIELDS**

Secondary teaching fields require 30 to 40 hours of specific subject requirements. Early advisement is essential. At present, the following teaching fields are offered at UMSL:

- Business education
- English education
- Foreign language education (French, German, Spanish)
- Mathematics education
- Music education (see page 59.)
- Physical education
- Science education (biology, chemistry, physics)
- Social studies education ........ 30-40 hours

- Electives .................. 17-27 hours

- **21 hours**

- **30-40 hours**

- **17-27 hours**

- **120 hours**

**DEPARTMENT OF BEHAVIORAL STUDIES AND RESEARCH**

**Faculty**

- Thomas E. Jordan, Ed.D. (Indiana University), interim chairman, professor
- William L. Franzén, Ph.D. (University of Wisconsin), dean, School of Education, professor
- George E. Mowrer, Ed.D. (University of Missouri-Columbia), professor
- Harold W. Richey, Ph.D. (University of Kansas City), professor
- Arthur E. Smith, Ph.D. (St. Louis University), associate dean, School of Education, professor
- King M. Wientge, Ed.D. (Washington University), professor
- Margaret C. Fagin, Ed.D. (Syracuse University), associate professor
- Jon C. Marshall, Ed.D. (University of Kansas), associate professor
- W. Ray Rhine, Ph.D. (University of Texas), associate professor
- Gaylen Wallace, Ed.D. (Oklahoma State University), associate professor
- Barbara Fulton, Ph.D. (University of Missouri-Columbia), assistant professor
- Rickey L. George, Ph.D. (Northwestern University), assistant professor
- Joseph Kuzniar, Ed.D. (West Virginia University), assistant professor
- Robert Packard, Ph.D. (University of Minnesota), assistant professor
- Robert Tolsma, Ph.D. (Iowa State University), assistant professor
- Doris Knight, M.Ed., instructor

The Department of Behavioral Studies and Research furnishes courses vital to the undergraduate and post-degree certification programs offered by the School of Education. In addition, the department provides programs leading to master of education degrees in elementary guidance and counseling and secondary guidance and counseling.
Evening College

The Evening College provides a regular degree granting program consisting of seven different degrees for students unable to attend day classes. All evening degree programs conform to the same requirements and standards as day programs.

Degrees offered consist of the bachelor of arts, bachelor of science in the administration of justice, bachelor of science in business administration, bachelor of science in chemistry, bachelor of science in economics, bachelor of science in education and the bachelor of science in physics. No time limit has been set to restrict the period of time during which an Evening College student must complete the requirements for a degree.

As a service for persons wishing to maintain their professional competence or broaden their educational background, the Evening College offers a broad array of college credit courses which may be taken by students not working toward a degree. Pre-professional courses are also available.

College credit courses are offered in administration of justice, anthropology, art, astronomy, biology, business administration, chemistry, economics, education, English, French, geography, geology, German, history, mathematics, music, philosophy, physics, political science, psychology, sociology, Spanish and speech.

Recognizing the value of continuing education, many institutions, businesses and industries in the St. Louis metropolitan area, (through various incentives) encourage employees to avail themselves of the educational opportunities which the Evening College affords.

In addition, the Veterans Administration has approved either full or part-time study in the Evening College for educational benefits. If a student has never received Veterans Educational Assistance benefits, he should contact the St. Louis Office of Veterans Administration for an application form.

Information concerning scholarships and financial assistance for Evening College students may be found under the Student Financial Aid section of this catalog (see page 27) or by contacting the Financial Aid Office, 10 Administration Building.

Students may qualify for advanced placement credit through the College Level Examination Program and military service training.
EVENING COLLEGE

Since most Evening College students are employed full time, they are permitted to carry less than a full academic load. However, evening classes are scheduled between 5:20 p.m. and 9:25 p.m. in such a way as to enable the student to carry a full load if he so desires.

Evening College classes are conducted according to the same standards traditionally maintained by the University. The library, laboratories, cafeteria, business office, placement service, health service, bookstore, etc., are available to evening students during evening hours.

Counseling and Advising Services As part of the Evening College's attempt to assist its students and prospective students in their course planning and vocational choice, counseling and advising services are available during day and evening hours. A staff of professional counselors and advisors will help the individual prepare a program appropriate to his or her needs. There is no fee for this service. Appointments may be arranged by calling the Evening College office either day or evening.

Transfer students or students who have accumulated 40 semester hours and who wish to be assigned to a major area advisor and to graduate from the Evening College must file a Declaration of Degree Candidacy form.

Admission Applications for admission to the Evening College may be obtained by contacting the Office of the Director of Admissions. For information relating to the policies governing admission to the Evening College, see page 18.

As a land-grant college and state university, the University of Missouri-St. Louis serves three primary needs in the community: teaching, research and public service. Its Extension Division acts as the liaison between the university and the community to provide educational opportunities for individuals, regardless of educational level, competency, area of interest or profession, to enhance their own lives and make a greater contribution to the economic, social and cultural development of the community and state.

The Extension Division is the focus for a wide variety of problem-oriented research, credit courses and non-credit programs involving the greater St. Louis area and the State of Missouri.

The Extension Division includes the following areas:

EXTENSION ARTS AND SCIENCES

Arts and Sciences Extension includes the disciplines of the humanities, the social sciences, the arts and music, literature, the sciences, English and mathematics. The programs in Arts and Sciences Extension are oftentimes interdisciplinary and frequently deal with pressing social concerns or problems.

There are joint faculty appointees in four departments of the College of Arts and Sciences. A new internship program has been established for students from these academic departments to get first-hand experience in community organizations and institutions under the supervision of Extension faculty and off-campus specialists.

EXTENSION BUSINESS ADMINISTRATION

Extension continuing education programs in Business Administration are offered to the general public in a variety of subject areas. Such programs may range from extensive courses to brief, specialized seminars designed for specific problems or current interests. Particular concerns of the Business Administration Extension area include economic development, organizational development, management improvement, and individual and professional growth.

EXTENSION EDUCATION

The overall aim of Extension Education is to provide services which translate
EXTENSION DIVISION

into better teaching and learning situations in the public and private school classroom. The programs and courses offered serve a threefold purpose: 1) provides for meeting and completing Missouri certification requirements; 2) provides a basis for work on an advanced degree; and 3) provides for in-service professional growth.

PROGRAMS FOR WOMEN

Special assistance for mature students returning to the campus is provided through the office for women's programs. Services include help in educational, vocational and career planning; a modest testing program related to the above and available at a fee of $1.00; counseling relative to college credit available through the College Level Examination Program (CLEP).

CREDIT COURSES

The Extension Division offers many undergraduate courses at off-campus locations. This office coordinates and facilitates credit courses by the College of Arts and Sciences, School of Business Administration and School of Education. Hospital employees and nurses in training may take courses in anatomy, chemistry, English, history, microbiology, psychology and sociology. Third and fourth year undergraduate courses are offered to business, industry and government employees.

NON-CREDIT PROGRAMS

The office of non-credit programs functions as a service unit for the Extension Division. The major responsibilities of this office are the administration and facilitation of continuing education programs on campus and all campus-sponsored continuing education programs off campus.

ENROLLMENT

Any individual, group or organization can initiate or participate in educational programs administered by the UMSL Extension Division to meet their own particular needs. Faculty, staff, and full-time regularly enrolled students at the University of Missouri-St. Louis may enroll in a non-credit Extension program at reduced fees or payment of direct costs (such as meals and instructional materials). Enrollment is contingent on availability of space.

Graduate programs leading to the doctor of philosophy degree are offered by the chemistry and psychology departments. Programs leading to the master of arts and master of science degrees are offered in biology, economics, English, history, mathematics, political science and sociology. In the School of Education, a master of education degree is offered with specializations in the areas of elementary or secondary education, elementary or secondary school administration and elementary or secondary guidance and counseling. In the School of Business Administration, a graduate program leading to the master of business administration degree is offered. Additional graduate programs are being developed.

Information regarding graduate programs is given in the Graduate Bulletin. Inquiries regarding specific graduate programs may be addressed to the Office of Admissions, the Graduate School, or the appropriate department or school.
All undergraduate courses offered at the University of Missouri-St. Louis are listed by departments or fields of learning in alphabetical order within the school or college. For a description of graduate courses see the *Graduate Bulletin*. Approximately four weeks prior to the opening of each semester a *Schedule of Courses* is published listing the specific courses to be offered for that semester with the time of meeting, the building and room number of each course.

This catalog includes only those courses given on the campus of the University of Missouri-St. Louis. Separate catalogs are issued by the University of Missouri-Columbia, University of Missouri-Rolla and University of Missouri-Kansas City.

The university reserves the right to cancel without notice any course listed in the *General Undergraduate Catalog*, the *Schedule of Courses* or the *Graduate Bulletin* for any semester or to withdraw any courses which do not have adequate enrollment at the close of the registration period.

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

- 0 to 09: non-degree credit.
- 1 to 99: courses primarily for freshmen and sophomores.
- 100 to 199: courses primarily for upperclassmen, no graduate credit.
- 200 to 299: courses for undergraduates, appropriate professional students and graduate students, except those whose graduate major is in the department in which the course is given.
- 300 to 399: courses for undergraduates, appropriate professional students and for graduate students without restriction as to the student’s graduate major.
- 400 to 499: primarily for graduate students and appropriate professional students in special programs, upperclass students are admitted to courses in this series only with the approval of the dean of the division in which the course is offered (see the *Graduate Bulletin*).
### DESCRIPTION OF COURSES

Each course offered in the College of Arts and Sciences and in the School of Education indicates the semester in which the course is customarily offered or the frequency with which the course is customarily offered. Information that a course will be offered in a given semester may mean there are plans to offer it either in day or evening hours. This information is tentative. It is subject to change at any time without prior notification and it does not indicate offers to contract. Descriptions of courses offered in the School of Business Administration and in the Evening College do not indicate semester frequency of offering. The Announcement and Schedule of Courses should be consulted.

<table>
<thead>
<tr>
<th>Code</th>
<th>Offered Every Fall</th>
<th>Offered Every Winter</th>
<th>Offered in Summer (Absence of This Letter Does Not Necessarily Mean That the Course Is Never Offered in Summer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>offered every fall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>W</td>
<td>offered every winter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>offered in summer (absence of this letter does not necessarily mean that the course is never offered in summer)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F&amp;W</td>
<td>offered every fall and winter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alt. F</td>
<td>offered every alternate fall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alt. W</td>
<td>offered every alternate winter</td>
<td></td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>offered on a variable basis</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Individual restrictions of certain courses are listed under prerequisites. Thus "consent of department" or "consent of instructor" means that departmental consent (approval or permission) or consent of the instructor is required for that course.

### Credit

The unit of credit at the university 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. In general, a course valued at three semester hours meets for three periods weekly for one semester.

Following the title of the course, the numbers of hours of credit is given in parentheses; thus Business Law (3). If the credit is variable, to be fixed in consultation with the teacher, that fact is shown by (credit arranged) or by the minimum and maximum credit, as Research (2-8).

**Prerequisites**

A minimum grade of "C" shall be required to meet the prerequisite requirement of any course except with permission of the department in which the second course is to be taught. An academic standing prerequisite is stated by class, as senior standing (senior class standing). Requirements for class standing are variable; a student should ascertain the requirements for his particular division. The minimum grade requirement in a preceding required course is specified by a capital letter and the course designation, as "C" in Chemistry 1 (a grade of "C" or better in chemistry course 1). GPA refers to grade point average.

### DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

#### ADMINISTRATION OF JUSTICE

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>202</td>
<td>The Criminal Justice System: Conflicting Perspectives I (3) (F)</td>
<td>Prerequisite: Junior standing or consent of instructor. An examination of the conflicting and converging needs and skills of three social roles necessary for a sound criminal justice system in a democratic society. The objectives, methods, and techniques of operational justice will be studied.</td>
</tr>
<tr>
<td>205</td>
<td>The Juvenile Justice System (3) (F&amp;W)</td>
<td>Prerequisite: AOJ 100 or consent of instructor. An analysis of substantive criminal law and its procedural aspects.</td>
</tr>
<tr>
<td>220</td>
<td>Criminal Law and Procedure (3) (F&amp;W)</td>
<td>Prerequisite: AOJ 100, Junior standing, or consent of instructor. An analysis of substantive criminal law and its procedural aspects.</td>
</tr>
<tr>
<td>221</td>
<td>Evidence (3) (F)</td>
<td>Prerequisite: AOJ 220 or equivalent, or consent of instructor. Fundamental questions of evidence and theory of proof, including hearsay, documentary proof, self-incrimination, relevance, and presumptions.</td>
</tr>
<tr>
<td>225</td>
<td>The Juvenile and the Law (3) (F&amp;W)</td>
<td>Prerequisite: Junior standing. A study of the relationship of the civil and administrative law as an instrument for the control and protection of juveniles. Subject matter will be discussed in relationship to the legally protected rights of juveniles.</td>
</tr>
<tr>
<td>227</td>
<td>Poverty and the Justice System (3) (W)</td>
<td>Prerequisite: AOJ 220 or equivalent, or consent of instructor. Examination of the relationship of the civil and administrative law as an instrument for the control and protection of juveniles. Subject matter will be discussed in relationship to the legally protected rights of juveniles.</td>
</tr>
</tbody>
</table>

#### Freshman Seminar (3) (F&W)

Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.

#### The City (3) (F&W) (Same as History 99, Political Science 99, Psychology 99, Sociology 99, and Economics 99)

Prerequisite: 12 hours of college credit. 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.

#### The Juvenile and the Law (3) (F&W)

Prerequisite: AOJ 100, Junior standing, or consent of instructor. An analysis of substantive criminal law and its procedural aspects.

#### The Juvenile Justice System (3) (F&W)

Prerequisite: AOJ 100 or consent of instructor. An examination of the conflicting and converging needs and skills of three social roles necessary for a sound criminal justice system in a democratic society. The objectives, methods, and techniques of operational justice will be studied.
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

250 Police Administration (3) (F)
Prerequisite: AOJ 100 or consent of instructor. Organization and administration of police systems; peculiar characteristics of police organizations and police personnel, relation of police departments to other public agencies; control and responsibility of police departments. In general, the application of generalizations from public administration to police systems.

251 Special Administrative Problems in the Administration of Justice (1-6) (V)
Prerequisite: Consent of instructor. Selected topics, approved by the faculty, to fill special agency educational needs offered only in special seminars, workshops, conferences, and institutes in cooperation with the Extension Division.

260 Police-Community Relations (3) (W)
Prerequisite: AOJ 100 or consent of instructor. An analysis of current Police-Community Relations in large central cities, and a study of the development of Police-Community Relations units. An analysis of the internal and external problems involved in a successful program development.

290 Special Readings (1-6) (V)
Prerequisite: Consent of instructor. Individualized study, under regular faculty supervision, designed to meet particular educational needs of selected students.

295 Field Placement (3) (F&W)
Prerequisite: Soc. 120, AOJ 200 and 220, or consent of instructor. Field placement under faculty supervision, in administration of justice agencies. It may be substituted for AOJ 399 (may be repeated once for credit.)

310 COMMUNITY APPROACHES TO PREVENTION AND CONTROL OF CRIME AND DELINQUENCY (3) (F&W)
Prerequisite: AOJ 100 and 200 and Senior standing, or consent of instructor. An analysis of the rationale and the principles of community organizations as they seek to address the problems of crime and delinquency. Programs in the St. Louis Metropolitan Area will be used as case studies.

325 CRIMINAL LAW IN ACTION (3) (F&W)
Prerequisite: AOJ 220 or equivalent, and Senior standing or consent of instructor. An examination of the legal and social objectives of the criminal law and the diverse limitations on the exercise of police power.

330 CORRECTIONAL INSTITUTIONS (3) (F)
Prerequisite: 100 and 200 and Senior standing, or consent of instructor. The Correctional Setting as an aspect of the criminal justice system. An analysis of the administrative involvement and a study of the modes of organization and management which seem applicable to these types of settings.

340 PROBATION AND PAROLE (3) (W)
Prerequisite: 100 and 200 and Senior standing, or consent of instructor. The historical development of the rehabilitative ideal of probation and parole. An analysis of the principles of probation and parole, both juvenile and adult.

360 COMPARATIVE JUSTICE SYSTEM (3) (V)
Prerequisite: AOJ 200 and 220 and Senior standing. Analysis of the criminal justice systems of selected nations in an attempt to identify similarities and dissimilarities with American practice. Particular attention will be focused upon the police and corrections systems.

380 SEMINAR IN ADMINISTRATION OF JUSTICE (3) (F&W)
Prerequisite: Soc. 120, AOJ 200 and 220, Senior standing, or consent of instructor. Study of selected special problems in the administration of justice. (May be repeated for credit.)

399 INDEPENDENT STUDY AND RESEARCH (3) (F&W)
Prerequisite: Soc. 120, AOJ 200 and 220, Senior standing or consent of instructor. Directed research and reading. May involve the performance of a research task in cooperation with an operating criminal justice agency. (May be repeated once for credit.)

ANTHROPOLOGY

Prerequisites may be waived by consent of instructor.

5 Human Origins (4) (with laboratory) (F&W)
Prerequisite: None. A survey of the field of physical anthropology with emphasis upon the development of man as an animal. Will consider the genetic forces of evolution, fossil men, race formation, and the origin of culture from a scientific point of view.

11 Man, Culture and Society (3) (F&W)
A survey of types of societies—bands, tribes, chiefdoms, states and peasantry and of selected aspects of culture and social structure. Introduction to linguistics, social and cultural anthropology as scientific disciplines.

45 Race (3) (V)
Prerequisite: 12 hours of college course credit. Origins and functions of conceptions of race. Biological and social definitions of race; the function of racial ideologies for societies; social historical and psychological bases of racism in the U.S.; the consequences of racism for the individual and societies.

51 Introduction to Anthropological Linguistics (3) (V)
Relation between man and language in synchronic and historical perspective. The design features of language equality, diversity, and relativity in structures and functions of language, including non-Western languages.

90 Freshman Seminar (3) (V)
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.

201 Cultures of Middle America (3) (V)
Prerequisite: Anthropology 11 or consent of the instructor. An introduction to Mexican and Central American from an anthropological point of view. The evolution of the indigenous civilizations of the Aztec and Maya, of the conquest and colonial experiences, and the development of modern communities.

203 Cultures of South Asia (3) (V)
Prerequisite: Anthropology 11 or consent of the instructor. A survey of the cultures of South Asia including the prehistory of the area, the ethnographic and linguistic groupings and the social organization and cultural systems of these groups. This course satisfies the Asian-African requirement of the College of Arts and Sciences.

205 Cultures of Southeast Asia (3) (V)
Prerequisite: Anthropology 11 or consent of the instructor. A survey of the cultures of Southeast Asia including the prehistory of the area, the ethnographic and linguistic groupings, and their social organization and cultural systems of these groups. This course satisfies the Asian-African requirement of the College of Arts and Sciences.

207 Cultures of Native North America (3) (V)
Prerequisite: Anthropology 11 or consent of the instructor. A survey of the aboriginal cultures of North American including prehistory of the area, the ethnographic and linguistic groupings, and the social organization and cultural systems of these groups.

227 Urban Anthropology (3) (V)
Prerequisite: Anthropology 11. A comparative analysis of the cultural roles of urban centers and the processes of urbanization in non-Western and
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

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.

243 Economic Anthropology (3) (V)
Prerequisite: Anthropology 11 or consent of instructor. An introduction to the range of economic organizations found in the world. Anthropological models of production and exchange. The notion of "rationality" as applied to non-Western economic systems. The contribution of anthropology to the understanding of economic development.

245 Political Anthropology (3) (V)
Prerequisite: Anthropology 11 or consent of instructor. A review of the pertinent literature on the political process in native and non-Western societies with emphasis upon local-level politics in traditional modern interface of emerging nations.

253 Contrastive Analysis (3) (V)
Prerequisite: Anthropology 51 or consent of instructor. Examination of two models-structural linguistics and transformational grammar-for the purpose of formulating a contrastive grammar of a western and non-western language.

265 Religion, Magic and Science (3) (V)
Prerequisite: Anthropology 11 or consent of instructor. A survey of supernatural elements of cultural systems and the place of religion in human societies with emphasis upon non-Western, traditional societies.

277 The Mind of Man: Culture and Cognition (3) (V)
Prerequisite: Anthropology 11 or 111; or consent of instructor. An introduction to psychological anthropology focusing on cultural influences on cognition and perception. Theories of "primitive mind" will be reviewed in historical perspective, and cross-cultural research in perception, learning and cognition considered. Recent studies of sociocultural systems and cognitive styles will be examined and their implications for education explored.

291 Senior Seminar
Prerequisite: Anthropology 381, senior standing. A continuing investigation of the problems anthropologists choose to explain, the ways they go about explaining these issues, and the procedures used to examine anthropological explanations.

325 Comparative Social Organization (3) (F)
Prerequisite: Anthropology 11 or consent of instructor. The range and variation of social organization primarily in non-Western cultures. Processes of system maintenance and change.

327 Fieldwork in Anthropology (3) (V)
Prerequisite: 9 hours of Anthropology or Sociology or consent of instructor. An introduction to anthropological fieldwork in complex societies emphasizing participant observation, interviewing and use of key-informants. Attention will be given to theoretical considerations and problems of method as well as to the application of these techniques in actual field-work. Current issues in the ethics of field research and action anthropology will be discussed.

335 Culture Change (3) (V)
Prerequisite: Anthropology 11 or consent of instructor. An intensive investigation into the elements and processes of culture change with regard to specific theories of culture change. The course examines the relationship between microchange in primitive and modern complex societies.

337 Applied Anthropology (3) (V)
Prerequisite: Anthropology 335 or 381. A description and analysis of the methods, principles and use of anthropology in solution of practical problems associated with the changing conditions of our times. The course will examine a wide variety of cross-cultural case studies.

345 Language and Culture (3) (V)
Prerequisite: Anthropology 11 or consent of the instructor. The relationship between language and culture. Works of Sapir, Whorf, Lee and others will be considered.

346 Grammatical Theory (3) (V)
Prerequisite: One course in linguistics or consent of instructor. Linguistic analysis of syntax including introduction into formal structures of symbolic, social and cultural behavior.

350 Special Study (credit arranged) (F&W)
Prerequisite: Consent of instructor. Independent study through readings, reports, or field research.

377 Culture and Personality (3) (W)
Prerequisite: Sociology 10 or Anthropology 11 or 3 hours in psychology and junior standing or consent of instructor. Analysis of behavior from the standpoint of psychological systems, sociological systems and cultural systems.

381 Theories of Anthropology (3) (F)
Prerequisite: Anthropology 11 or consent of instructor. An introduction to the various developments in theoretical anthropology through a reading of source material.

391 Current Issues in Anthropology (3) (V)
Prerequisite: Anthropology 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.

ART
Prerequisites may be waived by consent of instructor.

1 Introduction to Art I (3) (F&W)
Illustrated discussion with examples from varied historic and contemporary art fields on the nature of art, functions and methods of creative expression.

2 Introduction to Art II (3) (F&W)
Prerequisite: Art I. Study of the historical movements in art with emphasis on the major artists and monuments.

6 Introduction to the Afro-American Arts (3) (V)
A survey of the cultural contributions of African music, dance and sculpture to contemporary America.

40 Basic Drawing (3) (V)
Prerequisite: Consent of department. An introduction to drawing through the study of the figure, object and environment.

50 Basic Design (3) (V)
Prerequisite: Consent of Department. Studio problems in the creative use and integration of the elements of two dimensional design: line, form, space, texture and color.

90 Freshman Seminar (3) (V)
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.

139 Art Activities for Elementary School (3) (F&W) (Same as Education 139)
A study of art principles; provides laboratory experiences with various media and materials. Stress curriculum planning and development of the elementary school program in art.

145 Survey of Oriental Art (3) (V)
Prerequisite: Art II. The study of the architecture, sculpture and painting of India, China, Japan and Southeast Asia, emphasizing art as a universal language that further understandings of radically different cultures.

201 Art History Media Lab (2) (V)
Consent of instructor. Technical demonstration of and research into the various materials and media used by the artist.
### DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisite(s)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>205</td>
<td>Classical Art and Archaeology of Greece and Rome (3) (V)</td>
<td>Art II. A general survey of the development of material culture in Greece and Rome from the earliest times through the Hellenistic Period and the Roman Empire.</td>
<td></td>
</tr>
<tr>
<td>210</td>
<td>Medieval Art (3) (V)</td>
<td>Art II. The art and architecture of the Middle Ages from the early Christian era through the late Gothic Period.</td>
<td></td>
</tr>
<tr>
<td>213</td>
<td>History of Photography (3) (V)</td>
<td>Art I and II or consent of Department. A study of photography: its historical development, an examination of it as an art medium, and its influence on the development of modern art.</td>
<td></td>
</tr>
<tr>
<td>221</td>
<td>Italian Renaissance Art (3) (V)</td>
<td>Art II. A study of Italian Renaissance Art from its early developments in the fourteenth and fifteenth centuries to its climax and maturity in the sixteenth century.</td>
<td></td>
</tr>
<tr>
<td>222</td>
<td>Northern Renaissance Art (3) (V)</td>
<td>Art II. Fifteenth and sixteenth century art in Northern Europe with emphasis on the art of the Netherlands, France and Germany.</td>
<td></td>
</tr>
<tr>
<td>226</td>
<td>Baroque Art in Italy and France (3) (V)</td>
<td>Art II. Art and architecture in Italy and France from c. 1600-1750. A study of the Baroque, Classicist and Rococo styles with emphasis on the contributions of individual artists.</td>
<td></td>
</tr>
<tr>
<td>227</td>
<td>Baroque Art in Holland, Flanders and Spain (3) (V)</td>
<td>Art II. Seventeenth century art in Holland, Flanders and Spain with emphasis on such artists as Rembrandt, Rubens, VanDyck and Velasquez.</td>
<td></td>
</tr>
<tr>
<td>230</td>
<td>American Art (3) (V)</td>
<td>Art II. A survey of the art of the United States, both as an extension of the European tradition and for its original contributions.</td>
<td></td>
</tr>
<tr>
<td>232</td>
<td>Measurements in Astronomy (3) (W)</td>
<td>Physics 231 and Astronomy 11. A study of the physical nature of the astronomical universe. Topics include instruments, stars, sun, nebula, star clusters, galaxies, various objects that make up the solar system and their motion.</td>
<td></td>
</tr>
<tr>
<td>234</td>
<td>The Art of the Print (3) (V)</td>
<td>Art II. Dealing with the history of print forms: woodcuts, etchings, engraving, lithographs, silk-screen, monotypes and mixed media. Special emphasis will be given to the importance of prints to the art and artists of our time.</td>
<td></td>
</tr>
<tr>
<td>241</td>
<td>Nineteenth Century Art (3) (V)</td>
<td>The study of European Art from Neoclassicism and Romanticism through Post-Impressionism.</td>
<td></td>
</tr>
<tr>
<td>242</td>
<td>Twentieth Century Art (3) (V)</td>
<td>A detailed study of trends in contemporary art from Fauvism and Cubism to Abstract Expressionism and more recent developments.</td>
<td></td>
</tr>
</tbody>
</table>

### ASTRONOMY

For additional information consult the Physics Department.

*Precursiues may be waived by consent of instructor.*

1. **General Astronomy (4) (F,W,S)**
   - Prerequisite: Mathematics 02 or equivalent. Study of the solar system, stars, galaxies, galactic clusters, and cosmology. History of Astronomy from the Greeks to the present. Three lecture hours and two hours multi-media per week.

2. **Introduction to Astronomy I (4) (F)**
   - Prerequisite: Mathematics 175 and Physics 112. An introduction to modern concepts of the physical nature of the astronomical universe. Topics to include instruments, stars, sun, nebula, star clusters, galaxies, various objects that make up the solar system and their motion.

3. **Introduction to Astronomy II (4) (W)**
   - Prerequisite: Mathematics 175, Physics 112, Astronomy 11. A continuation of Astronomy 11.

4. **Introduction to Celestial Mechanics I (3) (F)**
   - Prerequisite: Mathematics 302 (or concurrent registration). Topics include vectorial mechanics, central force motion, orbit determination, introduction to the digital computer, earth satellite theory.

5. **Introduction to Celestial Mechanics II (3) (W)**
   - Prerequisite: Mathematics 302 (or concurrent registration). Introduction to Celestial Mechanics I or consent of instructor. A continuation of Astronomy 222.

### BIOLGy

Prerequisites may be waived by consent of department or instructor.

1. **General Biology (3) (F&W)**
   - 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 of 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 10 rather than Biology 1.

2. **General Biology Laboratory (2) (F&W)**
   - Prerequisite: 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.

3. **Introductory Biology (5) (F&W)**
   - Prerequisite: Chemistry 11 (May be taken concurrently). A one semester prerequisite for students intending to major in biology or take biology courses at the 200 level or above. This course offers an introduction to some of the biological properties and relationships of organisms, both plant and animal. The laboratory work emphasizes an experimental approach to biological processes. Three hours lecture and three and one-half hours laboratory per week.

### ATMOSPHERIC SCIENCE

For additional information consult the Physics Department.

*Precursiues may be waived by consent of instructor.*

1. **Elementary Meteorology (4) (F)**
   - Prerequisite: High school physics or chemistry. An elementary survey of atmospheric phenomena intended to fulfill the science requirement. Topics included are temperature, pressure and moisture distributions in the atmosphere and dynamical effects such as radiation, stability, storms, and general circulation. Application to weather forecasting. Three hours lecture and two hours laboratory per week.

2. **The Biology of Man (3) (F)**
   - Prerequisite: Biology 1 or consent of...
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

instructor. Lectures and assigned readings concerning man's characteristics as a primate and his changing relationship to the environment. Discussions of aggression, sexuality, modern medicine, human evolution, environmental exploitation, and other topics of current interest. Three hours lecture per week.

115 Human Heredity and Evolution (3) (W)
Prerequisite: Biology 1. The study of heredity and evolution with special reference to human populations. Three hours lecture per week.

116 Microbiology and Man (3) (W)
Prerequisite: Biology 1 or its equivalent. A survey of microbial structure, genetics, and physiology, with special emphasis on their interaction with man. Transmission and control of such organisms will be discussed in relation to maintenance of health. Three hours lecture per week.

118 Microbiology and Man Laboratory (2) (W)
Prerequisite: Must be taken concurrently with Biology 116. Standard techniques for identification, growth and control of microorganisms.

210 Biology - General Ecology (3) (V)
Prerequisite: Biology 1 or Biology 10. An examination of the relationships between living organisms and their environment. Three hours per week.

212 Ecology Laboratory (2) (V)
Prerequisite: Biology 210 (may be taken concurrently) and Biology 10 or consent of instructor. An analysis of factors influencing the abundance and distribution of living organisms. Three and one-half hours per week.

213 General Physiology (3) (W)
Prerequisite: Biology 10 and Chemistry 11. The basic functional aspects of organ systems in relation to the physiochemical properties of protoplasm. Three hours lecture per week.

215 General Physiology Laboratory (2) (W)
Prerequisite: Biology 213 (may be taken concurrently). Instrumental and experimental studies in physiology. Three and one-half hours laboratory per week.

216 Microbiology (3) (W)
Prerequisite: Biology 10. A study of microorganisms, their metabolism, genetics, and their interaction with other forms of life. Three hours lecture per week.

218 Microbiology Laboratory (2) (W)
Prerequisite: Biology 216 (May be taken concurrently). Experimental studies and procedures of microbiological techniques. Three and one-half hours laboratory per week.

224 Genetics (3) (F)
Prerequisite: Biology 10. The fundamental principles of inheritance, including classical genetic theory as well as recent advances in the molecular basis of heredity. Three hours lecture per week.

226 Genetics Laboratory (2) (F)
Prerequisite: Biology 224 (May be taken concurrently). Laboratory to accompany Biology 224. Three and one-half hours laboratory per week.

235 Development (3) (W)
Prerequisite: Biology 10. (Biology 224 recommended but not required). Basic principles of development from the point of view of growth, morphogenesis and differentiation. Three hours lecture per week.

237 Development Laboratory (2) (W)
Prerequisite: Biology 235 (May be taken concurrently). Three and one-half hours laboratory per week.

242 Population Biology (3) (W)
Prerequisite: Biology 224. The structure, operation and evolution of populations. Three hours lecture per week.

244 Population Biology Laboratory (2) (W)
Prerequisite: Biology 242 (May be taken concurrently). Laboratory to accompany Biology 242. Three and one-half hours laboratory per week and/or field studies to be arranged.

246 Evolution (3) (V)
Prerequisite: Biology 224. The course and mechanisms of organic evolution. Three hours lecture per week.

250 Plant Form and Function (3) (F)
Prerequisite: Biology 10. A general survey of the plant groups from algae through angiosperms. Morphology, reproduction, and central physiological concepts unique to the plant kingdom will be discussed. Three hours lecture per week.

252 Plant Form and Function Laboratory (2) (F)
Prerequisite: Biology 250 (May be taken concurrently). Examination of representatives of the plant kingdom and experimentation in plant physiology. Three and one-half hours laboratory per week.

276 Biological Chemistry (3) (W)
Prerequisite: Chemistry 261, 263 and Biology 10. The chemistry and constituents and the interactions and conversions of intracellular substances. Three hours lecture per week.

278 Biological Chemistry Laboratory (2) (W)
Prerequisite: Biology 276 (May be taken concurrently). Experiments designed to illustrate biochemical principles and modern biochemical procedures. One hour lecture and three and one-half hours laboratory per week.

280 Animal Behavior (3) (F)
Prerequisite: Biology 10, or consent of instructor. The study of invertebrate and vertebrate behavior, including developmental, genetic and ecological aspects of behavior; behavior interactions within and between populations. Three hours lecture per week.

282 Animal Behavior Laboratory (2) (F)
Prerequisite: Biology 280 (May be taken concurrently). Observational and experimental studies of animal behavior in the field and laboratory. Three and one-half hours laboratory per week.

285 Methods of Teaching Biology in Secondary Schools (3) (Same as Education 269) (W)
Prerequisite: Education 163 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. To be taken concurrently with student teaching.

289 Seminar (2) (F&W)
Prerequisite: None. Required of all biology majors during a semester of their senior year. Presentation of selected papers by students.

290 Research (Credit arranged) (F&W)

295 Field Biology Seminar (5) (V)
Prerequisite: Three courses in Biology and consent of the instructor. Intensive study of the flora and fauna of selected areas of the North American continent including a ten day field trip during spring recess and associated laboratory work. The area studied will be announced in the schedule of courses. Three hours lecture per week plus field trip and associated laboratory work to be arranged. Note: There is a specific fee charged for this course.

305 Morphology of Nonvascular Plants (3) (Alt F)
Prerequisite: Biology 250, or consent of instructor. An intensive study of algae through the mosses and liverworts, stressing relationships between the groups. Field studies and phytocology stressed. Three hours lecture per week.

306 Morphology of Vascular Plants (3) (Alt W)
Prerequisite: Biology 250, or permission of instructor. An intensive study of ferns through angiosperms, stressing...
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

323 species, the regulation of species and Advanced Genetics Laboratory (2) (V) the evolution of demographic
Prerequisite: Biology 321 (May be parameters in populations. Three taken concurrently). Instrumentation

322 Cytogenetics (3) (V) 342 Population and Community Ecology
Prerequisite: Biology 224. Chromosome structure, and function of cells. Three hours lecture per week.

317 Immunobiology (3) (F) 381 Biosystematics Laboratory (2) (Alt W)
Prerequisite: Biology 276, Chemistry 261. The fundamental principles and concepts of immunology and
immunoochemistry. Emphasis on the relation of immunological phenomena to biological phenomena and biological
problems. Three hours lecture per week.

310 Cellular Biology (3) (F) 324 Cytogenetics Laboratory (2) (V)
Prerequisite: Biology 306 (May be taken concurrently). Laboratory to accompany Biology 306. Three and one-half
hours per week.

308 Vascular Plant Laboratory (2) (Alt W) 306 Advanced Development Laboratory (2) (Alt F)
Prerequisite: Biology 278 or consent of instructor. Independent projects related to metabolic control, using
advanced analytical and synthetic procedures. Three and one-half hours laboratory per week.

307 Nonvascular Plant Laboratory (2) (Alt F) 322 Cytogenetics Laboratory (3) (Alt F)
Prerequisite: Biology 305 (May be taken concurrently). Laboratory to accompany Biology 305. Three and one-half
hours per week.

304 Electron Microscopy Laboratory (3) 304 Advanced Development Laboratory (2) (Alt F)
Prerequisite: Biology 305 (May be taken concurrently). Laboratory to accompany Biology 305. Three and one-half
hours per week.

301 Advanced Genetics Laboratory (2) (V) 301 Population and Community Ecology (3) (F)
Prerequisite: Biology 321 (May be taken concurrently). Instumentation and experimental studies in genetic
analysis. Three and one-half hours laboratory per week.

321 Advanced Genetics (3) (V) Prerequisite: Biology 324, Selected topics in genetic theory. Three hours lecture per week.

320 Advanced Development (3) (Alt F) Prerequisite: Biology 235. A discussion of experimental approaches as applied
to the analysis of development. Three hours lecture per week.

323 Cytogenetics (3) (V) Prerequisite: Biology 242, Chromosome structure, function, and behavior, and the origin and evolutionary significance of various cytological systems. Three hours lecture per week.

322 Advanced Genetics Laboratory (2) (V) Prerequisite: Biology 321 (May be taken concurrently). Instumentation

344 Population and Community Ecology Laboratory (2) (F)
Prerequisite: Biology 342 (May be taken concurrently). Laboratory and field studies of the organization of communities. Three and one-half hours laboratory per week.

360 Techniques in Electron Microscopy (2) (Alt W)
Prerequisite: Biology 10 and junior standing or consent of instructor. A general consideration of the application
electron microscopy to biological research. Discussion of transmission and scanning electron microscopy and associated techniques of specimen preparation. Designed for the professional biologists. Two lecture hours per week.

362 Electron Microscopy Laboratory (3) (Alt W)
Prerequisite: Biology 324, Selected topics in genetic theory. Three and one-half hours laboratory per week.

378 Advanced Metabolism Laboratory (2) (F)
Prerequisite: Biology 278 or consent of instructor. Independent projects related to metabolic control, using
advanced analytical and synthetic procedures. Three and one-half hours laboratory per week.

376 Advanced Metabolism (3) (F)
Prerequisite: Biology 360. Topics include control of cellular metabolism, membrane transport, mechanisms of action of enzymes and hormones, and enzyme kinetics. Three hours lecture per week.

380 Population and Community Ecology (3) (F)
Prerequisite: Biology 242. Studies of the structure and organization of natural communities stressing the abundance and distribution of species, the regulation of species and the evolution of demographic parameters in populations. Three hours lecture per week.

381 Biosystematics (3) (Alt W)
Prerequisite: Biology 10 and junior standing, or consent of instructor. Biosynthetic relationships of secondary compounds and their implications to taxonomy, phylogeny, and population biology. Three hours lecture per week.

CHEMISTRY
Prerequisites may be waived by consent of department.

1 General Chemistry (3) (F&W)
Prerequisite: Biology 324, Selected topics in genetic theory. Three hours lecture per week.

2 General Chemistry Laboratory (2) (F&W)
Prerequisite: Chemistry 1 or 10 (either may be taken concurrently). Experiments to acquaint students with chemistry in the laboratory. These will include topics such as the role of chemistry in pollution detection, pollution control, industry, and forensic science, and with emphasis on the local area.

3 General Chemistry Laboratory (2) (F&W)
Prerequisite: Chemistry 1 or 10 (either may be taken concurrently). Experiments to acquaint students with chemistry in the laboratory. These will include topics such as the role of chemistry in pollution detection, pollution control, industry, and forensic science, and with emphasis on the local area.

5 Problems in Chemistry (0) (F&W)
Prerequisite: None. Enrollment determined by score on the placement exam given in Chemistry 11. Application of mathematical principles to chemistry problems. Course meets one hour weekly. No credit toward a degree.
### DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>310</td>
<td>History of Chemistry (3) (F&amp;W)</td>
<td>None. A survey of chemistry and its relevance to contemporary problems, including an introduction to important chemical principles as applied to air and water pollution, the chemistry of living systems, population, energy production, and other topics. Chemistry 10 may be applied toward fulfillment of the general education requirement in science but it does not satisfy the prerequisites of any course except Chemistry 3. No student may take both Chemistry 1 and Chemistry 10 for credit. Chemistry majors may not include both Chemistry 10 and Chemistry 11 in the 120 hrs. required for graduation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>202</td>
<td>Introduction to Chemical Literature (1) (W)</td>
<td>Prerequisite: Junior standing (or consent of instructor). The course will familiarize the student with the literature of chemistry and its use. One hour lecture per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>231</td>
<td>Physical Chemistry I (3) (F&amp;W)</td>
<td>Prerequisite: Chemistry 122 and Mathematics 201 (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 lecture per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>232</td>
<td>Physical Chemistry II (2) (F&amp;W)</td>
<td>Prerequisite: Chemistry 231. Continuation of Chemistry 231. Three hours lecture per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>233</td>
<td>Laboratory in Physical Chemistry I (2) (F&amp;W)</td>
<td>Prerequisite: Chemistry 231 (may be taken concurrently). Experiments designed to illustrate principles introduced in Chemistry 231. One hour lecture and four and one-half hours laboratory per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>234</td>
<td>Laboratory in Physical Chemistry II (2) (F&amp;W)</td>
<td>Prerequisite: Chemistry 232 (may be taken concurrently). Experiments designed to illustrate principles introduced in Chemistry 232. One hour lecture and four and one-half hours laboratory per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>235</td>
<td>Qualitative Organic Analysis (3) (V)</td>
<td>Prerequisite: Consent of instructor. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours lecture per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>262</td>
<td>Organic Reactions (3) (F&amp;W)</td>
<td>Prerequisite: Chemistry 261. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours lecture per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>263</td>
<td>Techniques of Organic Chemistry (2) (F&amp;W)</td>
<td>Prerequisite: Chemistry 261 (may be taken concurrently). An introduction to laboratory techniques and procedures of synthetic organic chemistry. One hour lecture and four and one-half hours laboratory per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>264</td>
<td>Synthetic and Analytical Methods of Organic Chemistry (2) (F&amp;W)</td>
<td>Prerequisite: Chemistry 262 (may be taken concurrently). Committee 263. Advanced techniques; synthesis, separation and identification of organic compounds by classical and instrumental techniques. One hour lecture and four and one-half hours laboratory per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>280</td>
<td>Methods of Teaching Chemistry in Secondary Schools (3) (F&amp;W) (Same as Education 268)</td>
<td>Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. To be taken concurrently with student teaching.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>289</td>
<td>Seminar (1) (F&amp;W)</td>
<td>Prerequisite: Chemistry 202 (may be taken concurrently). Presentation of papers by students, faculty and invited speakers. All majors must enroll for credit during both semesters of their senior year.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>290</td>
<td>Chemical Research (Credit arranged) (F&amp;W)</td>
<td>Prerequisite: Consent of instructor. Independent laboratory and library study, in conjunction with faculty member, of fundamental problems in chemistry.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>301</td>
<td>History of Chemistry (3) (F)</td>
<td>Prerequisite: Chemistry 12 or consent of instructor. The development of chemistry, including early theories of matter, alchemy, iatrochemistry, the period of Lavoisier and selected topics from the 19th and 20th centuries. Three hours lecture per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>324</td>
<td>Instrumental Analysis (3) (W)</td>
<td>Prerequisite: Chemistry 234. Modern instrumental methods, including nuclear magnetic resonance, electron spin resonance, mass spectrometry, X-ray diffraction and others. Two hours lecture and three and one-half hours laboratory per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>325</td>
<td>Qualitative Organic Analysis (3) (V)</td>
<td>Prerequisite: Chemistry 264. Laboratory and instrumental methods for the systematic identification of organic compounds. One hour lecture and seven hours laboratory per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>333</td>
<td>Thermodynamics (3) (F)</td>
<td>Prerequisite: Chemistry 232. Selected advanced topics including solid-state, non-equilibrium and statistical thermodynamics. Three hours lecture per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>336</td>
<td>Introduction to Quantum Chemistry (3) (W)</td>
<td>Prerequisite: Chemistry 231 or consent of instructor. A brief but quantitative introduction to the application of quantum mechanics to problems in chemistry, covering the uncertainty principle, operators, solution of Schrodinger's equation for simple systems, perturbation theory, variation method, interaction of radiation with matter, atomic and molecular structure, and theory of collisions. Three hours lecture per week.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>341</td>
<td>Inorganic Chemistry I (3) (F)</td>
<td>Prerequisite: Chemistry 232 (may be taken concurrently). A systematic study of the structure and properties of the elements and their compounds, with emphasis on the correlation of chemical properties with theoretical concepts. Three hours lecture per week.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

342 Inorganic Chemistry II (3) (W)
Prerequisite: Chemistry 341.
Continuation of Chemistry 341 with emphasis on such topics as metals, non-aqueous solvents, chemical kinetics, organometallic chemistry, chemistry of the less common elements and certain frontier areas. Three hours lecture per week.

343 Inorganic Reactions (2) (F)
Prerequisite: Chemistry 341 (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 lecture and four and one-half hours laboratory per week.

352 Nuclear Chemistry (3) (V)
Prerequisite: Chemistry 232.
Properties of radioactive nuclei, nature of radioactivity, nuclear reactions and applications of radioisotopes to chemistry. Three hours lecture per week.

361 Advanced Organic Chemistry (3) (W)
Prerequisite: Chemistry 262.
Contemporary developments in the study of the structure of carbon compounds and the mechanisms of their reactions. Selected topics such as natural products, heterocyclic compounds, stereochemistry, reactivity, reaction intermediates and photochemistry will be included. Three hours lecture per week.

363 Advanced Organic Synthesis (2) (V)
Prerequisite: Chemistry 264. Advanced synthetic methods of organic chemistry. One hour lecture and seven hours laboratory per week.

366 Physical Organic Chemistry (3) (F)
Prerequisite: Chemistry 262 and Chemistry 232 (may be taken concurrently). Advanced topics in the theory of organic chemistry, including conformations, reaction kinetics and mechanisms, and transition state theory. Three hours lecture per week.

371 Biochemistry (3) (F)
Prerequisite: Chemistry 263. The isolation, chemical characterization and function of the structural and catalytic components of living cells and subcellular particles. Three hours lecture per week.

372 Advanced Biochemistry (3) (W)
Prerequisite: Chemistry 371. Selected advanced topics in the chemistry of life processes. Three hours lecture per week.

373 Biochemical Techniques (2) (F)
Prerequisite: Chemistry 371 (may be taken concurrently). Laboratory study of biochemical processes in cellular and subcellular systems with emphasis on the isolation and purification of enzymes and the characterization of catalytic properties. One hour lecture and three and one-half hours laboratory per week.

374 Advanced Biochemistry Laboratory (2) (W)
Prerequisite: Chemistry 372 and 373 (latter may be taken concurrently). Continuation of Chemistry 373. Laboratory to accompany Chemistry 372. One hour lecture and three and one-half hours laboratory per week.

380 The Teaching of Chemistry in Colleges & Universities (1)
Prerequisite: Consent of instructor. A study of the history of the teaching of chemistry and the methods of instruction and evaluation used in the discipline.

381 Special Topics (3) (F&W)
Prerequisite: Consent of instructor. A reading and seminar course in selected advanced topics. Three hours lecture per week.

40 Introduction to the American Economy (3) (V)
No credit for students majoring in Economics. 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.

50 Principles of Macroeconomics (3) (F&W)
Introduction to the subject of economics with emphasis on the operation of the national economy, money and banking, and international economic relations.

51 Principles of Microeconomics (3) (F&W)
Introduction to the subject of economics with emphasis on the theory of the firm, price determination and resource allocation.

90 Freshman Seminar (3) (V)
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.

99 The City (3) (F&W) (Same as Administration of Justice 99, History 99, Political Science 99, Psychology 99 and Sociology 99)
Prerequisite: 12 hours of college credit. 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. Does not count toward a major in economics.

160 The Measurement of Economic Activity (3) (V)
Prerequisite: Mathematics 40 or Mathematics 15 or one and one-half high school units in algebra. The kinds and purposes of economic measurements, sources of data, and techniques of arrangement. Emphasis on enterprise and social accounting, index numbers, input-output, flow-of-funds and cost-benefit studies.

200 Macroeconomics for the School Curriculum (3) (V)
Prerequisite: Upperclass or graduate standing in School of Education. 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.

201 Microeconomics for the School Curriculum (3) (V)
Prerequisite: Upperclass or graduate standing in School of Education. 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.

210 Urban Geography (3) (V)
Prerequisite: Sophomore standing. An in depth examination of urban growth, the location and basis of cities, and the internal spatial structure of cities provide the main topics of consideration. In addition, contemporary urban problems including zoning, urban renewal, blight, the journey to work and shop, pollution, etc., are discussed with a spatial emphasis. Consideration is confined almost exclusively to North American cities.

216 Public Finance: Federal (3) (F)
Prerequisite: Economics 40 or 50. The nature and scope of public finance. Analysis of expenditures, revenue and financial administration of the Federal government, with emphasis on current problems.

220 Money and Banking (3) (F&W)
Prerequisite: Sophomore standing. Topics presented in a spatial (geographic) framework include the diffision of innovations, population (distribution, problems, and solutions), settlement patterns, migration, poverty, and urban-social problems (e.g., race and residential choice).
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

230 International Economic Analysis (3) (V)
Prerequisite: Economics 40, 50 or 51. Elementary trade and payments analysis; balance of payments, international economic problems; concentration on fundamentals of analysis and problems.

238 Comparative Economic Systems (3) (W)
Prerequisite: Economics 40, 50 or 51. Comparative study of economic organization, growth and welfare in different national economies such as the United States, the Soviet Union and France.

239 The Soviet Economy (3) (V)
Prerequisite: Economics 40, 50 or 51. Intensive analysis of the Soviet economy as a case study in central planning. Growth and development of the Soviet economy in historical perspective, and prospects for future evolution and structural change.

240 Economic Development (3) (V)
Prerequisite: Economics 40, 50 or 51. Survey of economic growth as applied to underdeveloped countries. Analysis of development policies with emphasis on specific case studies.

241 American Economic Development (3) (V)
Prerequisite: Economics 40 or 50 or consent of instructor. Economic analysis and interpretation of the evolution of the principal developments, institutions and structural characteristics of the economic system of the United States.

242 European Economic Development (3) (V)
Prerequisite: Economics 40 or 50 or consent of instructor. Economic analysis and interpretation of the evolution of the principal developments, institutions and structural characteristics of the economic systems of Europe.

243 Latin American Economic Development (3) (V)
Prerequisite: Economics 40 or 50 or consent of instructor. Economic analysis and interpretation of the evolution of the principal developments, institutions and structural characteristics of the economic systems of Latin America.

250 Intermediate Economic Theory: Macroeconomics (3) (F)
Prerequisite: Economics 50 and Economics 51. 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.

251 Intermediate Economic Theory: Microeconomics (3) (W)
Prerequisite: Economics 50 and Economics 51. Analysis of prices in terms of equilibrium of the business firm and consumer demand in markets of varying degrees of competition.

253 Managerial Economics (3) (V) (Same as Business Administration 253)
Prerequisite: Economics 50 and Economics 51. Application of microeconomic theory to the decision-making process in the business firm. Discussion of cost behavior, price and output determination under various competitive conditions, as well as factors affecting wages, interest and profits.

260 Labor Economics (3) (F)
Prerequisite: Economics 40, 50 or 51. Forms of labor organization, state and federal labor legislation and policies of labor unions. Emphasis on an application of economic theory to the relations of labor and business.

270 Urban and Regional Economics (3) (V)
Prerequisite: Economics 40, 50 or 51. 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.

301 The Urban Environment and Planning (3) (V)
Prerequisite: Junior standing or 12 hours in social sciences. A survey of the development of urban America and the associated crises and of the origins and early practice of planning, role of the profession in modern society. Federal and State programs that affect urban development through the planning profession, and current changes in the practice of planning.

302 Systems Analysis for Urban Planning Problems (3) (V)
Prerequisite: Junior standing and Economics 50 and 51 or consent of instructor. Applications of systems analysis to the planning program. Emphasis on Planning Programming and Budgeting (PPB), costing, cost-benefit, cost effectiveness studies and information systems for urban planning and decision-making; covers review and evaluation techniques.

317 Public Finance: State and Local (3) (V)
Prerequisite: Economics 50 and Economics 51. 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.

321 Money (3) (V)
Prerequisite: Economics 220. Demand for money; determination of interest rates, prices and income; decision-making under conditions of uncertainty; term structure and interest rates. Other topics of mutual interest.

331 International Economic Analysis (3) (V)
Prerequisite: Economics 50 and 51. Theory of international trade and payments, foreign exchange and balance of payments analysis; integration of commercial policy, international monetary and liquidity analysis.

345 Population Economics (3) (V)
Prerequisite: Economics 40 or 50. A systematic study of the forces influencing the attributes, character, distribution and growth of population; emphasis on economic considerations.

350 Special Readings (Credit arranged) (F&W)
Prerequisite: Consent of instructor. Unscheduled, independently directed readings on topics mutually acceptable to student and instructor.

351 Mathematical Economics (3) (F)
Prerequisite: Economics 251 and Mathematics 101. Introduction to the development and use of mathematical models in economics. Decision and game theory. Selected topics in mathematical economics.

355 Business and Government (3) (F)
(Same as Political Science 345)
Prerequisite: Economics 51. Relations between business firms and government at all levels. Questions of regulation, public ownership, guidelines and competition considered.

356 Industrial Organization (3) (W)
Prerequisite: Economics 51. Analysis of the economic factors influencing industrial structure and the conduct and performance associated with various market structures.

364 Manpower Policies (3) (V)
Prerequisite: Economics 51. Analysis of the allocation of human resources with emphasis on the economic theory of labor markets in both the short and the long run. Discussion of the operation of the labor market in specific occupations.

365 Economic Statistics and Econometrics (3) (W)
Prerequisite: Economics 50 and 51 and Statistics 31. Mathematics 80 or 101 recommended. Application of statistical techniques to economic research problems.

366 Econometrics (3) (V)
Prerequisite: Economics 365. Continuation of Economics 365.
368 Analysis of Business Conditions (3) 
(Same as Business 368) 

370 Economics of Location (3) (V) 
Prerequisite: Economics 51. An analysis of the location of economic activity and the relationships that exist between regional economies.

371 Issues in Urban Economics (3) (V) 
Prerequisite: Economics 50. Problems of public policy in the city as they relate to education, housing, transportation, recreation and their financing. Recent government policies concerning the city and its surrounding areas will be emphasized.

380 History of Economic Thought (3) (V) 
Prerequisite: Economics 50 and Economics 51. The evolution of economic thought from the ancients through post-Keynesian theory.

**ENGLISH**

Prerequisites may be waived by consent of department.

**COMPOSITION**

09 English Composition (0) (F&W) 
A review of elementary principles of writing expository prose. Special attention is given to sentence clarity, organization, the clear and orderly development of ideas, and good diction. The course does not fulfill the University requirement in communicative skills. No credit toward any degree. The course meets three hours a week.

10 Composition (3) (F&W) 
Theory and practice of writing expository prose. This course fulfills the general education requirement in basic communicative skills. Does not count toward the major in English.

50 Short Story Writing (3) (F&W) 
Prerequisite: English 10 or equivalent. Theory and practice of writing the short story.

51 Poetry Writing (3) (V) 
Theory and practice of writing poetry.

65 Honors Exposition (3) (V) 
Prerequisite: Honors qualification on placement examination or essay proficiency test. May not be taken in addition to English 10. Practice in expository writing, with readings in literature and related fields on topics to be announced each semester. Does not count toward the major in English.

115 Commercial Writing (3) (F&W) 
Prerequisite: English 10 or equivalent. Emphasis upon news writing, newspaper feature writing, magazine article writing and book reviewing.

130 Writing Literary Criticism (3) (W) 
Intensive training in the writing of literary criticism, with some attention to bibliography and to methods of research in literature. Recommended for all English majors.

160 Advanced Expository Writing (3) (F&W) 
Prerequisite: English 10 or equivalent. Emphasis upon developing the critical and analytical capabilities of the writer. Course offers an introduction to research methods. For English majors this course is a prerequisite or corequisite to 200-level English courses.

**LANGUAGE**

220 Development of the English Language (3) (F&W) 
A historical survey of the English language with primary emphasis on the development of Modern English from earlier periods of the language.
### Description of Courses: College of Arts and Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>171</td>
<td>American Literature I (3) (F&amp;W)</td>
<td>Representative selections from American authors from the middle of the seventeenth century to the middle of the nineteenth century.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>172</td>
<td>American Literature II (3) (F&amp;W)</td>
<td>Representative selections from American authors from the middle of the nineteenth century to the present.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>210</td>
<td>Themes and Forms in Literature (3) (V)</td>
<td>The study of particular literary ideas, modes, and genres, and their significance. Topics announced in advance by the department.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>315</td>
<td>Literary Criticism (3) (V)</td>
<td>Historical survey of the principles of literary criticism from Plato to the present.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>324</td>
<td>Chaucer (3) (F)</td>
<td>The course concentrates on the poetry of Geoffrey Chaucer, including the Canterbury Tales, early poetic works, and the Troilus and Cressida. All readings are in the original Middle English.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>325</td>
<td>Medieval English Literature (3) (W)</td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>326</td>
<td>The Medieval Drama (3) (V)</td>
<td>The development of medieval drama from its liturgical origins to the English mystery cycles and morality plays, ending with the early pre-Elizabethan interludes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>332</td>
<td>Tudor Poetry (3) (W)</td>
<td>Spenser, Sidney, the sonneteers, and other non-dramatic poets of the sixteenth century. The development of poetic theory.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>337</td>
<td>Shakespeare: Tragedies and Romances (3) (F&amp;W)</td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>338</td>
<td>Shakespeare: Comedies and Histories (3) (F&amp;W)</td>
<td>Shakespeare's early work for the theatre with some attention to the sonnets and longer poems. A historical background for a study of all the plays, including discussions of Elizabethan society, the world of the stage and Shakespeare's biography.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>339</td>
<td>Tudor and Stuart Drama (3) (Alt. F)</td>
<td>A survey of the dramatic writing of the period from the interludes of John Heywood to the closing of the theatres 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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>341</td>
<td>English Renaissance Prose (3) (V)</td>
<td>The full variety of sixteenth and seventeenth-century prose. Prose fiction, the essay, the diary and philosophical and religious writing. Analysis of both thematic and stylistic developments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>342</td>
<td>Early Seventeenth-Century Poetry (3) (F)</td>
<td>Non-dramatic poetry from the accession of James I to the Restoration, exclusive of Milton.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>345</td>
<td>Milton (3) (W)</td>
<td>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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>346</td>
<td>Restoration and Eighteenth Century Drama (3) (W)</td>
<td>The principal tragedies and comedies from Dryden to Sheridan, including the plays of Congreve, Farquhar, Rowe, Gay, Fielding, Goldsmith, among others.</td>
<td></td>
<td>World War. Hardy, Hopkins, Conrad, Shaw, Wilde, Yeats and others.</td>
</tr>
<tr>
<td>352</td>
<td>Age of Dryden and Pope (3) (F)</td>
<td>The beginning of English neo-classic literature in the Restoration and its development through the first half of the eighteenth century, focusing on Dryden, Swift and Pope.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>353</td>
<td>Age of Johnson (3) (W)</td>
<td>The breakdown of the neo-classic spirit and the introduction of the &quot;new&quot; poetry and novel. Consideration of Fielding, Johnson, Thompson, Young, Goldsmith, Sheridan and others.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>364</td>
<td>The Eighteenth-Century English Novel (3) (F)</td>
<td>The origins and early development of the English novel, from Defoe to Jane Austen.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>365</td>
<td>The Nineteenth-Century English Novel (3) (W)</td>
<td>The later development of the English novel, from Scott to Conrad.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>368</td>
<td>Early Romantic Poetry and Prose (3) (F)</td>
<td>The English Romantic Movement with special emphasis on the early writers—Blake, Wordsworth and Coleridge. Additional readings in Lamb, Hazlitt, Scott and selected minor writers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>369</td>
<td>Later Romantic Poetry and Prose (3) (W)</td>
<td>The English Romantic Movement with special emphasis on the later writers—Byron, Shelley and Keats. Additional readings in DeQuincey, Hunt, Jane Austen and selected minor writers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>371</td>
<td>Prose and Poetry of the Victorian Period (3) (F&amp;W)</td>
<td>Critical readings of selections from Tennyson, Browning, Arnold and others, in addition to selections from the major prose writers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>372</td>
<td>The Later Nineteenth Century (3) (F)</td>
<td>Poetry, drama and fiction of the period between 1870 and the First World War. Hardy, Hopkins, Conrad, Shaw, Wilde, Yeats and others.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>373</td>
<td>The American Renaissance (3) (F&amp;W)</td>
<td>Prerequisite: English 171. American literature of the nineteenth century. Emerson, Thoreau, Hawthorne, Melville, Whitman, and others.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>374</td>
<td>American Realism and Naturalism (3) (F&amp;W)</td>
<td>American literature of the late nineteenth and early twentieth centuries. James, Twain, Stephen Crane, Dreiser, and others.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>375</td>
<td>American Fiction to World War I (3) (F)</td>
<td>Development of the novel and short story in America.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>376</td>
<td>Modern American Fiction (3) (F&amp;W)</td>
<td>The novel and short story in America since World War I. There may be some attention to British and Continental influences.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>383</td>
<td>Modern British Fiction (3) (F)</td>
<td>Critical reading and analysis of British fiction of the twentieth century. There may be some attention to American and Continental influences.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>384</td>
<td>Modern Poetry (3) (F&amp;W)</td>
<td>Critical reading and analysis of poetry of the late nineteenth and early twentieth centuries. Yeats, Eliot, Frost, Williams, and others.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>385</td>
<td>Modern Drama (3) (F&amp;W)</td>
<td>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, theatres of the absurd.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>386</td>
<td>Poetry Since World War II (3) (V)</td>
<td>Reading and analysis of contemporary poetry.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td>Freshman Seminar (3) (V)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to twelve students.

250 Special Studies (1-3) (F&W)
Prerequisite: A course in area of proposed work and consent of instructor. Individual work, with conferences adjusted to needs of the student. May not be used to meet specific English department distribution and language requirements.

262 The Curriculum and Methods of Teaching English (3) (F&W) (Same as Education 262)
Prerequisite: Education 163 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. Attention is also directed toward learning the techniques and research tools of the scholar in the field of English. To be taken concurrently with student teaching.

290 Seminar (3) (F&W)
Prerequisite: Consent of instructor. Intensive reading, critical discussion and writing on topics to be announced each semester. Enrollment limited to twelve students.

FRENCH
Prerequisites may be waived by consent of department.

1 Elementary French (5) (F&W)
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 required.

2 Elementary French (5) (F&W)
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 required.

10 French for Music Majors (3) (V)
Prerequisite: None. A one semester course designed primarily for music majors. Emphasis will be placed upon pronunciation, diction, and reading. This course may not be used to fulfill the language requirement of the College of Arts and Sciences. (This course may not be taken for credit by language majors).

101 Intermediate French (3) (F&W)
Prerequisite: French 2 or equivalent. Grammar review and cultivation of language skills through the study of moderately difficult prose selections.

103 Intermediate French (3) (V)
Prerequisite: French 2 or equivalent. Grammar review and cultivation of language skills through the study of moderately difficult prose selections. Designed primarily for those students intending to major in French. (Credit is not granted for both 101 and 103.)

110 Modern French Literature in Translation (3) (Alt. F incl 72)
Prerequisite: Sophomore standing. Reading and discussion of selected works in French literature from the modern period. May be taken to fulfill the humanities requirement. Not open to French majors.

150 European Literature in Translation: Special Topics (3) (V)
Major figures, works, or movements in the literature of France and their relevance to our own age. Topic announced in advance by the department. Does not count toward major in French. May be taken to fulfill the humanities requirement.

160 Phonetics (3) (F&W)
Prerequisite: French 101 or equivalent. An analytic and practical study of contemporary French sound structure.

171 French Conversation and Pronunciation (3) (F)
Prerequisite: 101 or equivalent. Emphasis will be placed upon development of oral skills in French and upon the problems of French pronunciation.

172 Composition French (3) (W)
Prerequisite: 101 or equivalent. Designed to develop writing skills in French.

180 Advanced French (3) (F&W)
Prerequisite: 160, 171, 172 or equivalent. Development of language skills through reading and discussion of literary texts, may be taken concurrently with either French 171 or 172 after consultation with instructor.

200 Advanced Grammar (3) (W)
Prerequisite: 160, 171, 172 or equivalent. Problems in grammatical analysis.

210 French Civilization (3) (F)
Prerequisite: French 180 or equivalent. The culture and civilization of France up to World War I. All reading and classwork in French.

211 French Civilization (3) (W)
Prerequisite: French 180 or equivalent. The culture and civilization of France from World War I to the present. All reading and classwork in French.

220 Introduction to Linguistics (3) (F&W) (Same as Education 220)
Prerequisite: French 1 and 2 or equivalent and sophomore standing. The historical development of language, their description and classification, with emphasis on the practical application of contrastive linguistics in foreign language teaching.

264 Curriculum and Methods of Teaching Foreign Languages (3) (F&W) (Same as Education 264)
Prerequisite: Education 163, French 200, 280, and 281. 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 the techniques and research tools of the scholar in the field of foreign languages.

280 French Literature I: Middle Ages to the 18th Century (3) (F)
Prerequisite: French 180 or equivalent. Designed to acquaint the student with the development of French literature from the Middle Ages to the 18th century. Critical reading of representative texts.

281 French Literature II: 19th and 20th Centuries (3) (W)
Prerequisite: French 180 or equivalent. Designed to acquaint the student with the development of French literature from the 19th century to the present. Critical reading of representative texts.

300 Syntax and Stylistics (3) (V)
Prerequisite: French 200 or equivalent. Advanced theoretical and practical study of Modern French syntax. Analysis of French prose style.

320 Advanced Oral Composition (3) (V)
Prerequisite: French 171. Emphasis will be placed upon the development and refinement of skills in spoken French.

331 Medieval and Renaissance Literature (3) (W not 74)
Prerequisite: French 280 or 281. Critical reading and analysis of representative works of the period in modernized French versions.

341 Seventeenth Century French Theatre (3) (W not 74)
Prerequisite: French 280 or 281. Critical reading of selected plays by Corneille, Moliere, Racine and other dramatists of the seventeenth century.

342 Seventeenth Century French Prose and Poetry (3) (W incl 74)
Prerequisite: French 280 or 281. A
critical study of representative poets and pose writers including novelists and philosophers.

353 Eighteenth Century French Literature (3) (Alt F not 73)
Prerequisite: French 280 or 281.
The philosophic movement. Selected works from Montesquieu, Voltaire, Diderot and Rousseau.

354 Eighteenth Century French Theatre and Novel (3) (Alt F)
Prerequisite: French 280 or 281.
Critical reading and discussion of representative novels and plays of the eighteenth century.

362 Nineteenth Century French Novel (3) (Alt F not 73)
Prerequisite: French 280 or 281.
A study of French poetry in the 19th and 20th centuries through critical readings of selected works by major poets.

365 Modern French Poetry (3) (Alt F not 73)
Prerequisite: French 280 or 281.
A study of French poetry in the 19th and 20th centuries through critical readings of selected works by major authors.

210 Urban Geography (3) (V)
Prerequisite: Sophomore Standing. An in-depth examination of urban growth, the location and basis of cities, and the internal spatial structure of cities provide the main topics of consideration. In addition contemporary urban problems including zoning, urban renewal, blight, the journey to work and shop, pollution, etc. are discussed with a spatial emphasis. Consideration is confined almost exclusively to North American cities.

220 Social Geography (3) (V)
Prerequisite: Sophomore Standing. Topics presented in a spatial (geographic) framework include the diffusion of innovations, population (distribution, problems, and solutions), settlement patterns, migration, poverty, and urban-social problems (e.g., race and residential choice).

GEOLOGY
For additional information, consult the Physics Department.

1 General Geology (4) (F&W)
Prerequisite: None. Earth materials, geologic processes, and earth history, and the application of geology to problems in urban development and conservation.

101 Introduction to Geography (3) (F)
Introductory survey of the physical, social, cultural and economic attributes of place, and the interrelationships among these factors which define the similarities and differences among places.

102 World Regions (3) (V)
Prerequisite: None (Geography 101 is recommended). Survey of the major regions of the world. Designed to give the student an understanding of the character of each of these major regions through the interrelationships of the various attributes of place.

108 Composition and Conversation (3) (F&W)
Prerequisite: German 101 or equivalent. Emphasis will be placed on speaking and writing German. May be taken concurrently with German 102.

110 Masterpieces of German Literature in Translation (3) (V)
Prerequisite: Sophomore standing. Representative readings in German literature from the beginnings to the present. Emphasis to be placed upon German literature in the general context of European culture. May be taken to fulfill humanities requirement. Not open to German majors.

150 European Literature in Translation: Special Topics (3) (V)
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. May be taken to fulfill the humanities requirement.

201 Masterpieces of German Literature (3) (F)
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 Novel and Drama (3) (W)
Prerequisite: German 201 or equivalent. Reading and critical analysis of selected German Novellen and dramas.

208 Intermediate Composition and Conversation (3) (W)
Prerequisite: German 108 or equivalent. Continuation of German 108. Emphasis on speaking and writing German.
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

200 Introduction to Linguistics (3) (F&W) (Same as French 220 and Spanish 220)
Prerequisite: German 1 and 2 or equivalent and sophomore standing. The historical development of languages, their description and classification, with emphasis on the practical application of contrastive linguistics in foreign language teaching.

264 Curriculum and Methods of Teaching Foreign Languages (3) (F&W) (Same as Education 264)
Prerequisite: Education 163, German 201, and 202. 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 the techniques and research tools of the scholar in the field of foreign languages.

299 German Seminar (3) (W)
Prerequisite: Senior standing and two 300 level courses. Required of all German majors. Topic to be selected by instructor.

308 Advanced Composition and Conversation (3) (V)
Prerequisite: German 208 or equivalent. Continuation of German 208. Designed to develop accuracy and fluency of expression in German.

315 German Classicism and Romanticism (3) (V)
Prerequisite: 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) (V)
Prerequisite: 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) (V)
Prerequisite: German 201 and one other 200 level course in German. Representative works from modern German literature.

397 Survey of German Literature Part I (3) (V)
Prerequisite: One other German literature course on the 300 level. 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) (V)
Prerequisite: One other German literature course on the 300 level. 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.

GREEK

Prerequisites may be waived by consent of department.

1 Elementary Greek (4) (V)
Fundamentals of grammar and syntax, for students with no previous acquaintance with the language.

2 Elementary Greek (4) (V)
Prerequisite: Greek 1 or equivalent. A continuation of Greek 1. Completion of the survey of grammar and syntax, accompanied by the reading of a short major text, usually a dialogue by Plato or a book of the New Testament.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

HISTORY

3 American Civilization (3) (F&W)
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) (F&W)
Continuation of History 3 to the present. Course fulfills the state requirement. Either 3 or 4 may be taken separately.

5 American Civilization (3) (F&W)
Dominant themes in American Civilization from the sixteenth century to the present. Course fulfills the state requirement and may be taken as an alternative to History 3 and 4 by history majors.

31 Topics in European Civilization: The Emergence of Western Europe to 1715 (3) (F&W)
Prerequisite: None. Lectures and discussions on the development of Western European society and tradition from approximately 1000 to 1715.

32 Topics in European Civilization: 1715 to the Present (3) (F&W)
Prerequisite: None. Lectures and discussions on the development of Western European society and tradition from 1715 to the present.

45 Race (3) (V) (Same as Anthropology 45, Psychology 45 and Sociology 45)
Prerequisite: 12 hours of college credit. 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.

101 Confusion to Chaos: The American Experience (3) (F&W) (same as English 101)
Prerequisite: None. Selected topics in American history and literature from the colonial period to the present.

110 Ancient Civilization (3) (V)
Prerequisite: None. Selected topics in the history of the Ancient Near East, Greece and Rome.

120 Black History in the United States (3) (F&W)
Prerequisite: None. The experiences of Black people in America from the period of the slave trade to the twentieth century, beginning with the areas and cultures of West Africa. The development and importance of slave trade, the institutionalization of
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

slavery; Black resistance to bondage; the role of Blacks during the Civil War and Reconstruction Period; the rise of segregation and disfranchisement of Blacks; the testing of laws and the protest and revolutionary movements of today.

265 Curriculum and Methods of Teaching History and Social Studies (3) (F&W)
(Same as Education 265)
Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the 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 also directed toward learning the techniques and research tools of the scholar in the field of history and social studies. May not be counted toward a major in history. To be taken concurrently with student teaching.

292 Historiography (3) (F&W)
Prerequisite: Consent of department. The development of the historical profession, the nature of history and the problems of historical writing.

293 Senior Seminar (3) (F&W)
Prerequisite: Consent of department. Required for all senior history majors who are candidates for graduation with honors. Recommended for all history majors planning to attend graduate school. Directed readings, research, and writing.

301 United States History: Colonial America to 1763 (3) (F)
Prerequisite: Junior standing or consent of the 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, 1763-1815 (3) (W)
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.

303 United States History: Nationalism and Sectionalism, 1815-1860 (3) (W)
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) (W)
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) (F)
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) (W)
Prerequisite: Junior standing or consent of the instructor. The economic, political and social developments and crises of post-industrial United States. The role of foreign affairs in American life.

311a Constitutional History of the U.S. Since 1865 (3) (V)
Prerequisite: Junior standing or consent of the instructor. The Constitutional issues of the Reconstruction Era, how they were resolved, and the implications for the future, with special emphasis upon the Fourteenth Amendment and the evolution of the due process concept and their relations with individual liberties and civil rights; the impact of industrialization and urbanization upon American constitutional thought and development; the evolving impact of the Supreme Court; historical background to current Constitutional issues.

311b Constitutional History of the U.S. Since 1865 (3) (V)
Prerequisite: Junior standing or consent of the instructor. The Constitutional issues of the Reconstruction Era, how they were resolved, and the implications for the future, with special emphasis upon the Fourteenth Amendment and the evolution of the due process concept and their relations with individual liberties and civil rights; the impact of industrialization and urbanization upon American constitutional thought and development; the evolving impact of the Supreme Court; historical background to current Constitutional issues.

312 United States Diplomatic History (3) (V)
Prerequisite: Junior standing or consent of the instructor. An analysis of the development, formulation, and implementation of United States foreign policy, including the role of the President, Congress, Department of State, and other agencies. Reference will be made to the interdependence of domestic and foreign problems and policies.

313 American Military History (3) (V)
Prerequisite: Junior standing or consent of the instructor. A study of American military institutions from colonial times to the present. The impact of the military upon American social, political and economic life, as well as civilian attitudes toward the services.

314 Growth of the American Economy (3) (V)
Prerequisite: Junior standing or consent of the instructor. Economic factors in the development of American institutions, from the colonial period to the present. Emphasis is on banking, transportation, agriculture and international trade.

315a American Intellectual History (3) (F)
Prerequisite: Junior standing or consent of the instructor. Early American intellectual development.

315b American Intellectual History (3) (W)
Prerequisite: Junior standing or consent of the instructor. Modern American intellectual development.

316 History of Science in the United States (3) (V)
Prerequisite: Junior standing or consent of the instructor. Science as a method, as a body of knowledge, and as a social institution in the American context; relationships between scientific, social, economic, and political ideas and institutions. None-science majors welcome.

321 Women in United States History (3) (F)
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.

322a Black History in the United States: Slavery and Emancipation (3) (F)
Prerequisite: Junior standing or consent of the instructor. The origin, institution, and operation of American slavery; the Black response to slavery and the movement for emancipation.

322b Black History in the United States: Slavery and Emancipation (3) (W)
Prerequisite: Junior standing or consent of the instructor. The origin, institution, and operation of American slavery; the Black response to slavery and the movement for emancipation.

323 Immigration in United States History (3) (F)
Prerequisite: Junior standing or consent of the instructor. An intensive examination of immigration patterns, the role of the Supreme Court and protest organizations from the NAACP to the Black Panthers.

324 Immigration in United States History (3) (W)
Prerequisite: Junior standing or consent of the instructor. An intensive examination of immigration patterns, the role of the Supreme Court and protest organizations from the NAACP to the Black Panthers.
331b The Ancient World: The Hellenistic Period (3) (V)
Prerequisite: Junior standing or consent of the instructor. Survey of the political history of the major and minor dynasties subsequent to the death of Alexander, with more detailed consideration of literature and the visual arts, philosophy and religion.

331c The Ancient World: Rome (3) (V)
Prerequisite: Junior standing or consent of the instructor. Survey of Roman history from the beginnings to 565 A.D.

332a Europe in the Early Middle Ages (3) (F)
Prerequisite: Junior standing or consent of the instructor. The rise of the city, and the transformation of ideas and institutions in the American city from colonial times to the present.

332b Europe in the High and Late Middle Ages (3) (W)
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 Crusades; the revival of education and learning in the twelfth century.

332c Europe in the Eighteenth Century, 1715-1789 (3) (W)
Prerequisite: Junior standing or consent of the instructor. The major political, social, economic, and diplomatic developments in Europe from the end of the Napoleonic Wars to the beginning of World War I.

333 The Age of the Renaissance (3) (F)
Prerequisite: Junior standing or consent of the instructor. The Italian and Northern Renaissance as a distinct age; political, socio-economic, intellectual, religious and artistic movements extending the decline of medieval society and the transition to the early modern period.

334 The Age of Reformation (3) (W)
Prerequisite: Junior standing or consent of the instructor. Religious, intellectual, political and socio-economic developments of the sixteenth century.

335 The Age of Absolutism, 1598-1715 (3) (F)
Prerequisite: Junior standing or consent of the instructor. The impact of the Decline of Absolutism and the political, religious, and social developments during the decline of Spanish hegemony and the period of French domination. Special attention will be paid to different responses to the rise of the absolute monarchy.

336 Europe in the Eighteenth Century, 1715-1789 (3) (W)
Prerequisite: Junior standing or consent of the instructor. The Old Regime and the Enlightenment.

337 History of the American South (3) (W)
Prerequisite: Junior standing or consent of the instructor. History of American business, industry, and labor.

338 History of the American South (3) (W)
Prerequisite: Junior standing or consent of the instructor. History of American business, industry, and labor.

339 Europe in the Twentieth Century (3) (F)
Prerequisite: Junior standing or consent of the instructor. Brief introduction to the history of the United States and the assimilation and acculturation of immigrants into American life.

340 American Frontier History (3) (V)
Prerequisite: Junior standing or consent of the instructor. The frontier considered as a factor in the development of American institutions. Frederick Jackson Turner and his critics. The westward course on settlement; the passing of the frontier.

341a European Intellectual History: From Locke to Hegel (3) (V)
Prerequisite: Junior standing or consent of the instructor. Main currents of European intellectual thought from the late seventeenth through the mid-nineteenth century. From Locke to Hegel.

341b European Intellectual History: From Bentham to Freud (3) (V)
Prerequisite: Junior standing or consent of the instructor. Study of main currents of ideas in the eighteenth century. Europe in conjunction with social, economic and political events of the time. Topics considered are the Enlightenment, Socialism, Socialism, and Psychoanalytic. Thinkers considered are Bentham, St. Simon, J. S. Mill, Coleridge, Marx, Ruskin, R. Wagner, Schopenhauer, Nietzsche and Freud.

342a Diplomatic History of Europe: Renaissance to 1815 (3) (V)
Prerequisite: Junior standing or consent of the instructor. A survey of European international relations beginning with the development of the techniques of modern diplomacy by the Italian city-states, and the emphasis on the way in which international relations changed with the break down of the unifying force of the Church and how diplomacy was used to counter the hegemony of the Spanish and French monarchies in the sixteenth and seventeenth centuries, respectively.

342b Diplomatic History of Europe: Since 1815 (3) (V)
Prerequisite: Junior standing or consent of the instructor. A survey of European international relations between the end of the Napoleonic Wars and the beginning of World War II, with emphasis on the rivalries of the great powers and the origins of their foreign policies.

343a Economic History: Pre-Industrial Europe (3) (F)
Prerequisite: Junior standing or consent of the instructor. A topological study of economic institutions and their development in Europe from Antiquity to the mid-eighteenth century, with emphasis on the agrarian economy; methods of artisan production; the role of currency, pre-industrial urbanism; the development of contracts, finance, and banking; the expansion of trade, and the emergence of international marketing areas. Considerable attention will be given to the social and economic context of economic institutions and events.

344a The Age of Absolutism, 1598-1715 (3) (F)
Prerequisite: Junior standing or consent of the instructor. A comparative study of the American response to selected revolutionary movements in Asia, Latin America and Africa.

344b The Ancient World: Israel (3) (V)
Prerequisite: Junior standing or consent of the instructor. Survey of Israel's history from the formation of the people to the final revolt under Simon Bar Kochba (132-135 C. E.).
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

antecedents, Christian beginnings, and the emergence of Christian traditions, to the Council of Nicaea (325 A.D.).

344b History of the Church: The Middle Ages (3) (W)
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.

345 History of Technology in the West (3) (V)
Prerequisite: Junior standing or consent of the instructor. Technology as a characteristic of Western Culture; relationships between technology and economic and social development; emphasis upon material artifacts as historical sources.

351a Medieval England (3) (F)
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.

351b Yorkist and Tudor England (3) (F)
Prerequisite: Junior standing or consent of the instructor. The turmoil over the monarchy and the consolidation of the Tudor dynasty. A study of the English Reformation and the political and economic changes of the sixteenth century.

351c Stuart England (3) (W)
Prerequisite: Junior standing or consent of the 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.

351d Hanoverian England (3) (W)
Prerequisite: Junior standing or consent of the instructor. A study of English politics, economics and culture during the Hanoverian period (1714-1837).

351e Victorian England (3) (F)
Prerequisite: Junior standing or consent of the instructor. A political, social and economic study of Great Britain during the reign of Queen Victoria (1837-1901).

351f Modern Britain (3) (V)
Prerequisite: Junior standing or consent of the instructor. An economic, political and social study of Great Britain during the twentieth century.

351g France: The Nineteenth Century, 1815-1914 (3) (V)
Prerequisite: Junior standing or consent of the instructor. The history of France between the end of the Napoleonic wars and the beginnings of World War One, with emphasis on the political and social struggles to establish a stable form of government.

352a France: The Twentieth Century, 1914-1969 (3) (V)
Prerequisite: Junior standing or consent of the instructor. The history of France between the beginning of World War One and the fall of de Gaulle, with emphasis on the political and social struggles to establish a stable form of government, and on the diplomatic and economic struggles to remain a great power in the contemporary world.

353a Modern Germany: To 1917 (3) (F)
Prerequisite: Junior standing or consent of the instructor. The development of modern Germany. Attention will focus on nationalism, unification, industrialization and the coming of the Great War.

353b Modern Germany: Since 1917 (3) (W)
Prerequisite: Junior standing or consent of the instructor. Weimar Republic, Nazi Reich and the postwar division. Attention will focus on the failure of democracy, totalitarianism and its results.

354 History of Spain (3) (V)
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.

355a History of Russia to Peter I (1725) (3) (F)
Prerequisite: Junior standing or consent of the instructor. The social-economic, political and cultural development of Russia from pre-Kievan times to 1725. Includes treatment of the rise, fall and importance of the Kievan Russia state. The rise and development of Muscovite Russia and the reforms of Peter the Great.

355b History of Russia, 1700-1918 (3) (W)
Prerequisite: Junior standing or consent of the instructor. The emergence of Russia as a great power, the peak of its development under Catherine II and Alexander I (1796-1825), the reform and revolutionary movements of the 19th century and the revolutions of 1905 and 1917.

355c History of the U.S.S.R. (3) (W)
Prerequisite: Junior standing or consent of the instructor. Political, social and cultural development in Russia from 1917 to the present. Major topics will include: the Revolution of 1917, stabilization of Communist power under Lenin, Stalin's "Great Change," and the organization and testing of the Communist state, post-Stalinist developments.

355d Intellectual History of Russia, 1790-1920 (3) (V)
Prerequisite: Junior standing or consent of the instructor. Philosophical, religious, social and political thought in nineteenth century Russia; development of radical intelligentsia up to and including Lenin.

361 Modern Japan: 1850 to Present (3) (W)
Prerequisite: Junior standing or consent of the instructor. The economic, social and political development of modern Japan.

362 Modern China: 1800 to Present (3) (F&W)
Prerequisite: Junior standing or consent of the instructor. The economic, social and political development of modern China.

371a Latin America to the 1750's (3) (F)
Prerequisite: Junior standing or consent of the instructor. An examination of pre-Columbian civilizations, the Spanish Conquest, and the development of social, economic, cultural and administrative institutions of the Iberian empires in America.

371b Latin America from the 1750's to the 1850's (3) (W)
Prerequisite: Junior standing or consent of the instructor. An examination of Bourbon efforts at reform, the Wars of Independence, and the problems faced by the new sovereign states.

371c Latin America from the 1850's to the Present (3) (V)
Prerequisite: Junior standing or consent of the instructor. An examination of the continuing struggle for independence with emphasis upon developments in Mexico, Argentina and Brazil.

390 Special Readings (credit arranged) (F&W)
Prerequisite: Consent of the instructor. Independent study through readings, reports and conferences.

399 Quantitative Methods in Historical Research (3) (F)
Prerequisite: Junior standing or consent of the instructor. This course deals primarily with how one can use quantitative analysis to improve the validity of generalizations and inferences one may draw from various types of historical data. We
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

will explore a number of basic methods for analyzing social and political data, as well as the rationale for using such quantitative methods in historical research.

INTERDISCIPLINARY COURSES

For additional information, consult the College of Arts and Sciences. Prerequisites may be waived by consent of instructor.

45 Race (3) (V) (See Anthropology 45, History 45, Psychology 45 or Sociology 45.)

50 Women (3) (Social Science Credit)
Prerequisite: None. An interdisciplinary study of the role of women in the family and in society. Areas of coverage will include the biological, psychological, anthropological, economical, social, political-legal and historical.

65 The University (3) (V) (Social Science credit)
Prerequisite: None. An interdisciplinary course on the principles, development, and organizational structure of the University. Special emphasis will be placed on the role of the University of 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 UMSL.

70 Issues in Contemporary Religious Thought (3) (W) (Humanities credit)
An examination of selected current social, moral and ethical problems as viewed by representatives of major schools of religious thought.

99 The City (3) (F&W) (See Administration of Justice 99, Economics 99, History 99, Political Science 99, Psychology 99 or Sociology 99.)
This course primarily for freshman and sophomores. It is open to juniors and seniors only with the instructor's permission.

101 Confusion to Chaos in the American Experience (3) (FW) (Same as History 101 and English 101.)
Prerequisite: None. Selected topics in American History and literature from the colonial period to the present.

101 The Marxist Heritage (3) (W) (See Philosophy 269, Political Science 269.)

ITALIAN

Prerequisites may be waived by consent of department.

1 Elementary Italian (5) (F)
Fundamentals of Italian grammar, pronunciation and diction for students with no previous acquaintance with the language. One hour laboratory required.

2 Elementary Italian (5) (W)
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 required.

10 Italian for music majors (3) (V)
Prerequisites: None. A one semester course designed primarily for music majors. Emphasis will be placed on pronunciation, diction, and reading. This course may not be used to fulfill the language requirement of the College of Arts and Sciences. (This course may not be taken for credit by language majors).

100 Medieval Latin and Paleography (3) (V)
Prerequisite: An elementary knowledge of classical Latin. Medieval Latin grammar, acquired through the study of medieval tracts in manuscript.

LATIN

Prerequisites may be waived by consent of department.

1 Elementary Latin (4) (V)
Prerequisite: Latin 1 or equivalent. A continuation of Latin 1. Completion of the survey of grammar and syntax, accompanied by the reading of a short major text or texts.

100 Medieval Latin and Paleography (3) (V)
Prerequisite: An elementary knowledge of classical Latin. Medieval Latin grammar, acquired through the study of medieval tracts in manuscript.

LITERATURE IN TRANSLATION

For additional information, consult the department mentioned in individual description. Prerequisites may be waived by consent of department.

The following courses offered in the Department of English and in the Department of Modern Foreign Languages and Literatures do not require a reading knowledge of any foreign language. All may count toward fulfillment of the humanities requirement.

110 Masterpieces of French Literature in Translation (3) (See French 110)

110 Masterpieces of German Literature in Translation (See German 110)

110 Russian Literature in Translation (See Russian 110)

110 Masterpieces of Spanish Literature in Translation (See Spanish 110)

111 Masterpieces of Spanish American Literature in Translation (See Spanish 111)

112 Twentieth Century Russian Soviet Literature in Translation (See Russian 112)

120 Classical Literature in Translation (See English 120)

125 Literature of the Old Testament (See English 125)
**DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES**

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>126</td>
<td>Continental Medieval Masterpieces (See English 126)</td>
<td></td>
</tr>
<tr>
<td>128</td>
<td>The Contemporary World in Literature (See English 128)</td>
<td></td>
</tr>
<tr>
<td>150</td>
<td>European Literature in Translation: Special Topics (See French, German and Spanish 150)</td>
<td></td>
</tr>
</tbody>
</table>

**MATHEMATICS**

A minimum grade of "C" shall be required to meet the prerequisite requirement for any course except with permission of the department. Prerequisites may be waived by consent of department.

<table>
<thead>
<tr>
<th>Code</th>
<th>Course Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>Fundamentals of Algebra (4) (F&amp;W)</td>
<td>Prerequisite: One year of high school algebra. A review of ninth grade algebra and an introduction to other topics of elementary algebra, including exponents and radicals, linear and quadratic functions and their graphs, systems of equations. No credit toward any degree.</td>
</tr>
<tr>
<td>03</td>
<td>Trigonometry (2) (F&amp;W)</td>
<td>Prerequisite: One and one-half units of high school algebra or Mathematics 02. This is a remedial course in trigonometry designed for the student who intends to study the calculus and has not had high school trigonometry. It is recommended that this course be taken concurrently with Mathematics 30. No credit toward any degree.</td>
</tr>
<tr>
<td>15</td>
<td>Mathematics Ideas and Structures (3) (F&amp;W)</td>
<td>Prerequisite: Mathematics 02; or a satisfactory score on the mathematics placement examination. An introduction to the spirit of mathematics and to modern mathematical thought. Course is designed for the student who does not intend to major in mathematics or science.</td>
</tr>
<tr>
<td>30</td>
<td>College Algebra (4) (F&amp;W)</td>
<td>Prerequisite: Mathematics 02; or 3 units of high school mathematics and a satisfactory score on the mathematics placement examination. Topics in algebra and probability, polynomial functions, the binomial theorem, logarithms, exponentials, solutions to systems of equations. Credit not granted for both Mathematics 30 and 40. Mathematics 40 is recommended for science majors.</td>
</tr>
<tr>
<td>40</td>
<td>Pre-Calculus Mathematics (4) (F&amp;W)</td>
<td>Prerequisite: Mathematics 02 or three units of high school mathematics including one and one-half units of algebra and a satisfactory score on the mathematics placement exam. Topics from algebra and trigonometry for the student who plans to take further work in mathematics. Polynomial functions, the binomial theorem, mathematical induction, the logarithmic, exponential, trigonometric and inverse trigonometric functions.</td>
</tr>
<tr>
<td>50</td>
<td>Structure of Mathematical Systems I (3) (F&amp;W)</td>
<td>Prerequisite: 45 hours of college credit and either Mathematics 02 or a satisfactory score on the mathematics placement examination. A study of mathematical systems, elementary logic, natural numbers, sets, construction of the integers. Credit not granted for both Mathematics 15 and 50. Recommended for elementary education students.</td>
</tr>
<tr>
<td>80</td>
<td>Analytic Geometry and Calculus I (5) (F&amp;W)</td>
<td>Prerequisite: Mathematics 40; or a knowledge of trigonometry and either Mathematics 30 or a satisfactory score on the mathematics placement examination. Introduction to analytic geometry, differential calculus and integral calculus. Course 80, 175 and 210 form a sequence of courses.</td>
</tr>
<tr>
<td>101</td>
<td>Survey Calculus (4) (F&amp;W)</td>
<td>Prerequisite: Mathematics 40 or Mathematics 30 or a satisfactory score on the mathematics placement examination. Introduction to plane analytic geometry and study of the basic techniques of the differential and integral calculus with application to various areas. No credit for mathematics majors. Credit not granted for both Mathematics 80 and 101.</td>
</tr>
<tr>
<td>102</td>
<td>Finite Mathematics (4) (F&amp;W)</td>
<td>Prerequisite: Same as for Mathematics 101. Introductory logic and set theory, partitions and counting problems, elementary probability theory, stochastic processes, Markov chains, vectors and matrices, linear programming, and game theory.</td>
</tr>
<tr>
<td>151</td>
<td>Structure of Mathematical Systems II (3) (F&amp;W)</td>
<td>Prerequisite: Mathematics 50. A continuation of Mathematics 50 to include a study of the rational and real number systems. An intuitive study of elementary geometry. Introduction to the deductive theory of geometry. Recommended for elementary education students.</td>
</tr>
<tr>
<td>175</td>
<td>Analytic Geometry and Calculus II (5) (F&amp;W)</td>
<td>Prerequisite: Mathematics 80. Selected topics from plane analytic geometry and calculus. Mathematics 80, 175 and 201 form a sequence of courses.</td>
</tr>
<tr>
<td>201</td>
<td>Analytic Geometry and Calculus III (5) (F&amp;W)</td>
<td>Prerequisite: Mathematics 175. Solid analytic geometry and selected topics in calculus. Mathematics 80, 175 and 201 form a sequence of courses.</td>
</tr>
<tr>
<td>250</td>
<td>Introduction to Modern Mathematics (3)</td>
<td>Prerequisite: Mathematics 201. Set algebra, equivalence relations, partitions, functions, development of algebraic and topological properties of the real numbers.</td>
</tr>
<tr>
<td>302</td>
<td>Applied Mathematics I (3) (F&amp;W)</td>
<td>Prerequisite: Mathematics 201. A course designed for the student who will use differential equations. Emphasis is upon methods of solution. Linear differential equations with constant coefficients, systems of differential equations, power series. Credit not granted for both Mathematics 301 and Mathematics 302.</td>
</tr>
<tr>
<td>303</td>
<td>Applied Mathematics II (3) (F)</td>
<td>Prerequisite: Mathematics 301 or Mathematics 302. Topics chosen from Fourier series, special functions, partial differential equations, boundary value problems.</td>
</tr>
<tr>
<td>304</td>
<td>Applied Mathematics III (3) (W)</td>
<td>Prerequisite: Mathematics 250 or Mathematics 302. Matrices and characteristic values; vector analysis; analytic functions of a complex variable, Taylor and Laurent series, residues, conformal mapping.</td>
</tr>
<tr>
<td>310</td>
<td>Advanced Calculus (3) (F)</td>
<td>Prerequisite: Mathematics 250 or consent of the department. Limits, continuity and differentiability of functions of one and several variables, sequences and series, the Riemann-Stietjes integral.</td>
</tr>
<tr>
<td>311</td>
<td>Advanced Calculus II (3) (W)</td>
<td>Prerequisite: Mathematics 310. Continuation of Mathematics 310.</td>
</tr>
<tr>
<td>316</td>
<td>Functions of a Complex Variable (3) (W)</td>
<td>Prerequisite: Math 250 or 302. Complex numbers and their geometrical representation, point sets, analytic functions of a complex variable, complex integration, Taylor and Laurent series, residue theorem, conformal mapping.</td>
</tr>
<tr>
<td>320</td>
<td>Mathematical Statistics I (3) (F)</td>
<td>Prerequisite: Mathematics 201. Introduction to theory of probability and statistics using concepts and methods of the calculus.</td>
</tr>
<tr>
<td>321</td>
<td>Mathematical Statistics II (3) (V)</td>
<td>Prerequisite: Mathematics 320.</td>
</tr>
</tbody>
</table>
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

323 Numerical Analysis I (3) (F&W)
Prerequisite: Mathematics 201 and knowledge of Fortran. 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) (W)
Prerequisite: Mathematics 323. The solution of linear systems by direct and iterative methods, matrix inversion, the evaluation of determinants, and the calculation of eigenvalues and eigenvectors of matrices. Application to boundary value problems in ordinary differential equations. Introduction to the solution of partial differential equations. Selected algorithms will be programmed for solution on computers.

327 The Calculus of Variations (3) (V)

335 Theory of Numbers (3) (W)
Prerequisite: Mathematics 250 or consent of the department. Properties of the integers, multiplicative functions, congruences, primitive roots, quadratic residues.

340 Introduction to Abstract Algebra I (3) (F)
Prerequisite: Mathematics 250 or consent of the department. Introduction to groups, rings, fields and vector spaces with emphasis on fields.

341 Introduction to Abstract Algebra II (3) (W)
Prerequisite: Mathematics 340 or consent of the department. Continuation of Mathematics 340 with emphasis on linear algebra.

359 Special Readings (credit arranged) (F&W)
Prerequisite: Mathematics 250 and consent of instructor.

362 Projective Geometry (3) (Alt. W)
Prerequisite: Mathematics 250 or consent of the department. Analytic approach to the study of projective spaces. Theorems of Desargues, Pascal and Brianchon. Projective properties of conics.

364 Introduction to Differential Geometry (3) (V)
Prerequisite: Mathematics 310. Geometry of curves and surfaces in Euclidean 3-space. Calculus on a surface. Intrinsic geometry of surfaces.

366 Foundations of Geometry (3) (F)
Prerequisite: Mathematics 250 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) (Alt. W)
Prerequisite: Mathematics 250 or consent of the department. A summary of the history of the non-Euclidean geometries and a study of hyperbolic plane geometry.

370 Introduction to Topology (3) (F)
Prerequisite: Mathematics 250 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.

COMPUTER SCIENCE

122 Computers and Programming (3) (F&W)
Prerequisite: Mathematics 30 or 40 or consent of instructor. Introduction to machine hardware and software, fundamentals of Fortran, algorithms, matrices and matrix arithmetic, matrix algorithms. Does not count toward a major in mathematics. Credit not granted for both Business 104 and Math 122.

222 Data Structures (3) (W)
Prerequisites: Mathematics 122 or Business 104 and consent of instructor. Algebraic structures including semigroups and groups. Elements of graph theory. Boolean algebra and propositional logic. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Storage systems and structures. Searching and sorting techniques. Data structures in programming languages.

322 Programming Languages (3) (F)
Prerequisite: Mathematics 222. Formal definition of programming languages including specification of syntax and semantics. Global properties of algorithmic languages including scope of declarations, storage allocation, grouping of statements, subroutines, and coroutines. List processing, string manipulation and simulation languages.

332 Artificial Intelligence (3) (V)
Prerequisite: Mathematics 250, Mathematics 322. Definition of heuristic versus algorithmic methods. Uses of heuristic methods in such areas as game playing, theorem proving, symbolic differentiation, pattern recognition and question answering. Class and individual projects to illustrate basic concepts.

MUSIC

Prerequisites may be waived by consent of department. For the non-music major no more than four hours in any applied music course will be accepted toward graduation.

APPLIED MUSIC

44, 45, 115, 135, 155, 255 (2) (F&W)
Registration by audition and permission of the department. Courses may be repeated for credit. Courses are offered in the following areas: bassoon, clarinet, classical guitar, euphonium, flute, french horn, oboe, harp, organ, percussion, piano, saxophone, string bass, trombone, trumpet, tuba, viola, violin, violoncello and voice.

14, 15, Piano Proficiency (2) (F&W)
Prerequisite: Permission of department. Group instruction for music majors who do not meet beginning keyboard requirements.

17 Beginning Instrumental Techniques (1) (F&W)
Prerequisite: Permission of department. Performance, teaching techniques and materials for the various media.

a. Bassoon  i. String Bass
b. Clarinet  j. Trumpet
c. Flute  k. Trombone
d. French Horn  l. Tuba
e. Oboe  m. Viola
f. Percussion  n. Violin
h. Saxophone  o. Violoncello
p. Voice

40 University Chorus (1) (F&W)
Prerequisite: Consent of instructor. Preparation and performance of choral literature.
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

41 The Missouri Singers (1) (F&W)
Prerequisite: Consent of instructor. The study and performance of music for vocal chamber ensemble.

50 University Orchestra (1) (F&W)
Prerequisite: Consent of instructor. Study, preparation and performance of orchestral repertory.

52 University Band (1) (F&W)
Prerequisite: Consent of instructor. Study, preparation and performance of music for the wind ensemble and band.

54 Chamber Ensemble (1) (F&W)
Prerequisite: Permission of department. Study, preparation and performance of music for small ensembles.

a. Brass  
b. Strings  
c. Percussion  
d. Strings  
e. Voice  
f. Woodwinds

56 Opera Workshop (1) (F&W)
Prerequisite: Consent of instructor. Opera from its inception to the present day through lectures, recordings, demonstrations, readings and participation in performance and production.

60 Collegium Musicum (1) (V)
Prerequisite: Consent of instructor. Performance of music for chamber ensemble with particular emphasis on the Renaissance and Baroque Periods.

116, 118, 119, 120 Intermediate Piano Proficiency (1) (F&W)
Prerequisite: Music 15 or permission of department. Continuation of piano proficiency study.

123, 124, 125 Intermediate Vocal Techniques (1) (V)
Prerequisite: Permission of department. Instruction for non-voice majors in the choral option of the music education curriculum.

MUSIC EDUCATION, HISTORY, LITERATURE, THEORY

1 Introduction to Music (3) (F,W,S)
A 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.

2 Introduction to Symphonic Music (3) (V)
Orchestral music from the Baroque era to the present time; concerto grosso and suite; program music; the symphony. This course will not apply toward requirements for a music major.

3 Theory of Music (3) (F)
The basic materials and their use in analyzing and writing music.
Systematic instruction in ear training and sight-singing. Primarily for music majors.

4 Theory of Music (3) (W)
Prerequisite: Music 3 or consent of department. Continuation of Music 3.

5 Introduction to Non-Western Music (3) (W)
A survey of the music of the Asia, Oceania and Africa, with emphasis upon the function of music in the various cultures. This course will not apply toward requirements for a music major.

6 Introduction to the Afro-American Arts (3) (V)
A survey of the cultural contributions of African music, dance and sculpture to contemporary America. This course will not apply toward requirements for a music major.

7 Introduction to Jazz (3) (V)
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.

90 Freshman Seminar (3) (V)
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.

101 History of Western Music (3) (F)
Prerequisite: Music 3 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 (3) (W)
Prerequisite: Music 3 or consent of department. Continuation of Music 101.

111 Theory of Music (3) (F)
Prerequisite: Music 4 or consent of department. Altered chords and modulation. Application of vocabulary and techniques to music of the eighteenth and nineteenth centuries. Composition in simple form.

112 Theory of Music (3) (W)
Prerequisite: Music 111 or consent of department. Continuation of Music 111.

121 Form and Analysis (2) (V)
Prerequisite: Music 112. Study of basic musical forms and structural elements.

122 Form and Analysis (2) (V)
Prerequisite: Music 121. Study of the function of music in the larger musical forms. Introduction of contemporary structural elements.

134 Music Fundamentals for the Elementary School Teacher (2)
Prerequisite: None. An introductory course in the rudiments of music for the elementary classroom teacher.
Prerequisite for Music 137. This course will not apply toward requirements for a music major.

137 Elementary School Music (Same as Education 137) (2) (F,W,S)
Prerequisite: Music 134 or 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, study of resources. This course will not apply toward requirements for a music major.

141 Orchestration (2) (W)
Prerequisite: Music 112. Study of the instruments of the orchestra; scoring for various instrumental ensembles and orchestra.

151 Conducting (2) (F)
Prerequisite: Music 112 or consent of department. Techniques and problems in conducting. Discussion and study of musical terminology. Rehearsal procedures for vocal and instrumental organizations.

192 Senior Readings (2) (F&W)
Prerequisite: Consent of department. Required of all senior music majors. Directed readings and research in an area mutually acceptable to the student and instructor.

251 Advanced Conducting (2) (W)
Prerequisite: Music 151 or consent of department. Advanced study of conducting and rehearsal techniques, score reading and interpretation.

a. Instrumental  
b. Choral

257 Curriculum and Methods of Teaching Elementary School Music (3) (F)
Prerequisite: Music 112 and Education 101. For the Music Education major. A study of the elementary school music curriculum, emphasizing the objectives, correct approaches and methods of teaching and staffing music classes, analysis of instructional materials and resources. The class is divided when appropriate according to the vocal or instrumental programs of the students.

267 Curriculum and Methods of Teaching Secondary School Music (3) (W)
Prerequisite: Music 112 and Education 101. For the Music Education major. The secondary school music curriculum including choral and instrumental performance organizations, non-performance classes, related arts courses, administrative procedures, evaluation of literature. The class is divided when appropriate according to the choral or instrumental programs of the students.
PHILOSOPHY

Prerequisites may be waived by consent of department.

50 Major Questions in Philosophy (3) (F&W)
A study and discussion of representative topics in philosophy such as free will and determinism, concepts of mind and body, the basis of value judgments, knowledge and belief, and the possibility of constructing a world view.

60 Logic and Language (3) (F&W)
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.

101 Approaches to Ethics (3) (F&W)
Freshmen admitted by consent of department. 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.

102 Philosophy of Religion (3) (F&W)
Freshmen admitted by consent of department. 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.

105 Philosophy and Literature (3) (F or W)
Freshmen admitted by consent of department. Critical reading and discussion of selected literary works in terms of the philosophical problems they present.

321 Music of the Middle Ages (3) (V)
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 Arts Antiqua and the Ars Nova.

322 Music of the Renaissance (3) (V)
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) (V)
Prerequisite: Music 101 or consent of department. A detailed study of musical style 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) (V)
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) (V)
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) (V)
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.

160 Formal Logic (3) (F&W)
Freshmen admitted by consent of department. An introductory study of logical truth and deductive inference, with emphasis on the development and mastery of a formal system.

170 Asian Philosophy (3) (F&W)
Freshmen admitted by consent of department. Critical study of selected philosophical classics of India and China.

201 Ancient Philosophy (3) (V)
Freshmen admitted by consent of department. The principal philosophical doctrines of the ancient world, with special emphasis on the philosophies of Plato and Aristotle.

202 Medieval Philosophy (3) (Alt. W)
A critical study of the important philosophies of the period from Augustine to the Renaissance.

203 Early Modern Philosophy (3) (Alt. F)
Principal figures in the development of rationalism, empiricism and skepticism in early modern Europe, from Descartes to Kant.

204 Nineteenth Century Philosophy (3) (Alt. F)
A study of such major figures of the period as Hegel and Nietzsche, Mill and Pierce.

205 Twentieth Century Philosophy (3) (Alt. W)
Representative topics in contemporary philosophy, with readings selected from pragmatism, logical positivism, linguistic analysis and existentialism.

207 The British Tradition (3) (V)
An examination of major trends in the development of contemporary British philosophy, including the philosophies of Russell and Moore, logical positivism, Oxford philosophy and the later Wittgenstein.

225 Philosophy of Art (3) (Alt. F)
A study of issues concerning the definition of art, meaning and truth in the arts, aesthetic experience and criticism.

230 Social and Political Philosophy (3) (Alt. F)
An analysis of some fundamental concepts and assumptions involved in the theory and practice of social and political organizations.

235 Classical Ethical Theories (3) (Alt. F)
Significant contributions to moral philosophy, from Plato and Aristotle to Bentham and Mill.

240 Philosophy of History (3) (V)
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.

250 Philosophy of Science (3) (F)
An examination of logical and methodological problems related to the sciences, including the structure of scientific explanations and theories; methods of concept formation; and confirmation and the problem of induction.

260 Methods of Logic (3) (V)
Prerequisite: Philosophy 160. A variable content course in which techniques of modern logic are used to explore one or more topics. This course may be repeated for credit on approval by the department.

265 Philosophy of Law (3) (Alt. W)
An examination of typical problems in education, including the distinctive features of education as an activity and achievement, concepts of teaching and learning, relations between education and values and the functions of a university.
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

307 Kant (Alt. W)
Prerequisite: Nine hours of philosophy or consent of instructor. A systematic study of the Critique of Pure Reason.

291 Senior Thesis (3-6) (V)
Prerequisite: Consent of department. Directed individual research for qualified senior majors. At least six hours are required for departmental honors in philosophy. May be repeated, but no more than nine hours may be credited toward a degree.

301 Plato (3) (W)
Prerequisite: Nine hours of philosophy or consent of instructor. A study of selected Platonic dialogues.

302 Aristotle (Alt. W)
Prerequisite: Nine hours of philosophy or consent of instructor. A selective study of Aristotle's major works.

304 Medieval Philosophers (3) (V)
Prerequisite: Nine hours of philosophy or consent of instructor. An examination of the philosophies of such major figures as Descartes, Spinoza and Leibniz.

305 The Rationalists (Alt. F)
Prerequisite: Nine hours of philosophy or consent of instructor. An examination of the philosophies of such major figures as Locke, Berkeley and Hume.

306 The British Empiricists (Alt. W)
Prerequisite: Nine hours of philosophy or consent of instructor. An examination of the philosophies of such major figures as Locke, Berkeley and Hume.

308 Hegel (3) (V)
Prerequisite: Nine hours of philosophy or consent of instructor. A critical study of the writing and influence of Hegel.

310 American Philosophy (3) (V)
Prerequisite: Nine hours of philosophy or consent of instructor. A study of selected American philosophers.

315 Existentialism and Phenomenology (3) (V)
A study of some major representatives of these schools from Kierkegaard to the present.

318 Philosophy of Mind (3) (Alt. F)
Prerequisite: Nine hours of philosophy or consent of instructor. A study of concepts and problems in the philosophy of mind such as the identity theory, minds and machines, thinking, will, emotion, action, and intention.

320 Theories of Knowledge (Alt. F)
Prerequisite: Nine hours of philosophy 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.

321 Metaphysics (3) (Alt. W)
Prerequisite: Nine hours of philosophy or consent of instructor. An examination of selected metaphysical topics such as substance, universals, causality, necessity, space and time, free will, being and identity.

323 Problems in Philosophical Theology (3) (V)
Prerequisite: Nine hours of philosophy or consent of instructor. An intensive study of problems arising out of traditional and contemporary philosophical theologies.

325 Recent Ethical Theory (3) (V)
Prerequisite: Nine 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.

330 Philosophy of Language (3) (V)
A study of the nature and structure of language and its relationship to selected philosophical problems. Included will be such topics as ordinary language philosophy, significant developments in twentieth century linguistics, prospects for semantic theory, and a discussion of traditional problems of meaning, reference and synonymy.

335 Philosophical Issues in the Social Sciences (3) (V)
A detailed analysis of issues raised by the social sciences, including the logical characterization of explanations, predictions, laws and theories; types of reductionism; objectivity, values; and the empirical basis of the social sciences.

340 Special Topics in the Philosophy of Science (3) (V)
Prerequisite: Consent of instructor. An examination of a selected area or topic within the philosophy of science. Topics to be considered will be announced prior to registration and may vary from year to year. This course may be repeated for credit on approval by the department.

350 Special Readings (credit arranged) (V)
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.

360 Advanced Formal Logic (3) (V)
Prerequisite: Philosophy 160 or consent of instructor. Rigorous study of advanced developments in contemporary logic. Emphasis is given to theoretical problems and some attention devoted to philosophical issues arising from logic.

370 Significant Figures in Philosophy (3) (V)
Prerequisite: Nine hours of philosophy study of the work of an important philosopher. The philosopher to be considered will be announced prior to registration. This course may be repeated for credit on approval by the department.

PHYSICS
Prerequisites may be waived by consent of department.

1 Foundations of Modern Physical Theory I (4) (F, W, S)
Prerequisite: Mathematics 02 or equivalent. An introduction to some of the major ideas, principles, and basic laws directing the development of contemporary physics. The course work consists of two general lectures each week in which the material is introduced, one discussion session, and one two-hour multi-media laboratory.

2 Foundations of Modern Physical Theory II (4) (W)
Prerequisite: Physics 1. A continuation of Physics 1. This course, together with Physics 1, meets medical school requirements. No credit for students majoring in physics or chemistry. Two hour lectures, one hour discussion, and two hours multi-media laboratory.

3 Demonstration Experiments in Physical Theory (2) (F, W, S)
Prerequisite: Physics 1 may be taken concurrently. Laboratory course designed to acquaint the non-science student with the experimental methods and classic experiments of physics. No credit for students majoring in physics or chemistry. Four hours laboratory.
10 Experimentation in Physics (2) (F,W,S)
Prerequisite: Mathematics 40 (may be taken concurrently) or equivalent. A laboratory course designed to introduce the student to electrical circuits and elementary electronics. No prior knowledge of circuits or electronics will be assumed. Four hours laboratory per week.

111 Physics: Mechanics and Heat (3) (F)
Prerequisite: Mathematics 80 or 101. Physics 1 or Chemistry 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 lecture plus one hour discussion per week.

112 Physics: Electricity, Magnetism, and Optics (3) (F)
Prerequisite: Physics 111 and Mathematics 175 or 101. 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 lecture plus one hour discussion per week.

113 Physics: The Structure of Matter (3) (F)
Prerequisite: Physics 112. A phenomenological introduction to selected concepts and laws of physics as they are applied to the structure of matter. Elements of atomic, nuclear, and molecular physics will be discussed. Three hours lecture plus one hour discussion per week.

170 Physics of Music (3) (F)
Prerequisite: Mathematics 02 or equivalent and Music 4 or permission of department. Primarily for students majoring in music. A study of physical concepts as they relate to light, sound, heat, electricity, magnetic fields, and photographic processes. Three hours lecture plus one hour discussion per week.

171 Applications of the Physics of Music (2) (F)
Prerequisite: Mathematics 2 or equivalent and Music 4 or permission of department. Primarily for students majoring in music. Demonstrations and experiments leading to a physical understanding of the production, transmission, reflection, interference and detection of musical sounds. Three hours lecture plus one hour discussion per week.

172 Light and Color (3) (V)
Prerequisite: Math 02. A study of the physical concepts as they relate to light, color, and visual phenomena. Models of light applied to reflection, refraction, diffraction, and interference. Optical devices such as the eye and the camera will be studied. Visual and color perception. Three hours lecture plus one hour discussion per week.

173 Applications of Light and Color (2) (V)
Prerequisite: Math 02. Demonstrations and experiments leading to a physical understanding of the behavior of light from source to detector whether that be the eye or a camera. Phenomena such as reflection, refraction, interference, and interference will be demonstrated. Color analysis and synthesis. Three hours lecture plus one hour discussion per week.

200 Survey of Theoretical Physics (3) (W)
Prerequisite: Physics 111 and Mathematics 201. Mathematical techniques specifically used in the study of mechanics, electricity and magnetism, and atomic physics, are developed in the context of various physical problems. The major areas covered are vector analysis, solutions of Laplace's equation, coordinate systems and numerical techniques. Three hours lecture plus one hour discussion per week.

201 Elementary Electronics I (3) (F,W,S)
Prerequisite: Physics 112. A laboratory study of characteristics of standard circuit elements, amplifier circuits, power supplies, operational amplifiers, digital and switching circuits, servo systems, shielding and noise problem, transistors and oscilloscopes. Six hours of laboratory per week.

202 Elementary Electronics II (3) (F,W,S)
Prerequisite: Physics 201. A continuation of Physics 201. Six hours laboratory per week.

211 Mechanics (3) (F)
Corequisite: Physics 200 and Mathematics 302 (Mathematics 302 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 lecture and one hour discussion per week.

221 Mechanics (3) (F)
Prerequisite: Physics 221. Introduction to statistical mechanics, laws of thermodynamics, kinetic theory. Three hours lecture and one hour discussion per week.

223 Electricity and Magnetism (3) (F)
Prerequisite: Physics 200 and Mathematics 302 (Mathematics 302 may be taken concurrently). Electromagnetic fields, including electrostatics, dielectric materials, solution to Laplace's equation, currents and magnetic fields, motion to charged particles, introduction to electromagnetic waves. Three hours lecture and one hour discussion per week.

225 Physical Optics (3) (W)
Prerequisite: Physics 223. A basic study of light; interference, diffraction, crystal optics, reflection, scattering and light quanta. Three hours lecture and one hour discussion per week.

241 Thermal and Statistical Physics (3) (W)
Prerequisite: Physics 221. Introduction to statistical mechanics, laws of thermodynamics, kinetic theory. Three hours lecture and one hour discussion per week.

280 Methods of Teaching Physics in Secondary Schools (3) (W)
Prerequisite: Education 280. A study of the scope and sequence of the 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.

281 Directed Readings in Physics (Credit Arranged) (F,W,S)
Prerequisite: Consent of instructor. A study of the literature of physics. A paper is required on an approved topic. Hours arranged.

282 History of Physics (3) (F)
Prerequisite: Physics 1 or Astronomy 1. A study of the historical evolution of physics. Three hours lecture per week.

289 Seminar (1) (F,W)
Presentation of selected papers by students and faculty members at weekly meetings. May be taken twice for credit.

290 Research (Credit Arranged) (F,W,S)
Prerequisite: Consent of department. Independent physics research projects arranged between student and instructor. Hours arranged.

295 Selected Topics in Physics for the Secondary School Teacher I (2) (F)
A basis for understanding the current developments in science is provided for the secondary school science teacher. The content of the course will be generally directed towards macroscopic phenomena.

296 Selected Topics in Physics for the Secondary School Teacher II (2) (W)
Prerequisite: Physics 295. A basis for understanding the current developments in science is provided for the secondary school science teacher. The content of the course will be generally directed toward macroscopic phenomena.

297 Selected Topics in Physics for the Secondary School Teacher III (2) (F)
A basis for understanding the current developments in science is provided for the secondary school science teacher. The content of the course will be generally directed toward macroscopic phenomena.

298 Selected Topics in Physics for the Secondary School Teacher IV (2) (W)
Prerequisite: Physics 297. A basis for understanding the current developments in science is provided for the secondary school science teacher.
teacher. The content of the course will be generally directed toward microscopic phenomena.

301 Introduction to Mathematical Physics (3) (F)
Prerequisite: 16 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, integral equations. Three hours lecture and one hour discussion per week.

305 Physical Application of Group Theory (3) (W)
Prerequisite: Physics 113. Elements of group theory and group representations. Point symmetry groups and applications to the physics of crystals. The rotation group in two and three dimensions with application to atomic and nuclear spectroscopy. Three hours lecture and one hour discussion per week.

311 Advanced Physics Laboratory I (2) (F)
Prerequisite: Physics 113, 201, 221 and Mathematics 122. Physics majors are introduced to the experimental techniques used in research. A student will choose and do several special problems during the semester. Six hours laboratory per week.

312 Advanced Physics Laboratory II (2) (W)
Prerequisite: Physics 113, 201, 221 and Mathematics 122. Continuation of Physics 311. Six hours laboratory per week.

325 Linear Analysis of Physical Systems (3) (V)
Prerequisite: Physics 201, Math 302. Signals and Systems, Fourier and Laplace analysis, transform methods, amplitude phase and delay, transfer functions and filters. Three hours lecture and one hour discussion per week.

331 Introduction to Quantum Mechanics (3) (F)
Prerequisite: Physics 113, 221, 223, 241. Elementary treatment of quantized mechanical systems, methods of Schrodinger's wave mechanics, operator techniques, and perturbation theory. Three hours lecture and one hour discussion per week.

333 Astrophysics I (3) (F)
Prerequisite: Physics 113, 221, 223. Application of principles to investigation of sun, planetary systems, stars, galaxies and interstellar matter. Three hours lecture and one hour discussion per week.

334 Astrophysics II (3) (W)
Prerequisite: Physics 333. Continuation of Physics 333. Three hours lecture and one hour discussion per week.

335 Atomic and Nuclear Physics (3) (W)
Prerequisite: Physics 331. Application of Schrodinger's equation to hydrogen-like atoms; atomic structure and spectra; nuclear masses, energy levels; alpha, beta, and gamma radiation, nuclear reactions, models of the nucleus. Three hours lecture and one hour discussion per week.

343 Selected Topics in Physics I (3) (F)
Prerequisite: Physics 113, 221, 223, 225, 241 and Mathematics 304. (Mathematics 304 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 lecture and one hour discussion per week.

344 Selected Topics in Physics II (3) (W)
Prerequisite: Physics 343. Continuation of Physics 343. Three hours lecture and one hour discussion per week.

351 Elementary Solid State Physics (3) (W)
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 lecture and one hour discussion per week.

353 Physics of Fluids (3) (V)
Prerequisite: Physics 221, 223, and 241, 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) (V)
Prerequisite: Physics 241. Topics from dynamic and physical meteorology including the ionosphere. Application of thermodynamics, optics, radiation, and mechanics to atmospheric phenomena.

355 Topics in Space Physics (3) (V)
Prerequisite: Physics 221, Corequisite: Physics 223. The two body central force problem, satellite orbits, comets and asteroids, Lagrangian points and the Anti Earth, the Trojans of Jupiter, artificial satellites, transfer orbits and missions, rocket dynamics. The solar environment, trapping of charged particles in magnetic fields, Earth's radiation belts, the solar wind aurorae and whistlers, sailing on the solar wind, the cosmic ray problem. Introduction to magnetohydrodynamics, MHD waves, sun spot movement, applications of MHD: generation of electric power, the ion rocket engine.

356 Quantum Optics (3) (V)
Prerequisite: Physics 113 and 200. Math 302. Review of atomic theory and spectroscoopy. Selected applications to modern optical phenomena such as optical pumping, lasers, masers, Mössbauer effect, and holography.

357 Applied Solid State Physics (3) (V)
Prerequisite: Physics 113 and 241. Quantum theory needed for solids. Survey of solid state topics such as conductors, semiconductors, insulators with applications to transistors, solid state lasers, and other contemporary devices.

POLITICAL SCIENCE

Prerequisites may be waived by consent of department.

UNGROUNDED COURSES

11 Government in Modern Society: American Politics (3) (F&W)
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 Government in Modern Society: Comparative Politics (3) (F&W)
An introduction to basic political structures and processes with an emphasis on foreign political systems and comparative political analysis. The course will deal with democratic and non-democratic political systems in developed and underdeveloped nations.

90 Freshman Seminar (3) (V)
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.

99 The City (3) (F&W) (Same as Administration of Justice 99, Economics 99, History 99, Psychology 99 and Sociology 99)
Prerequisite: 12 hours of college credit. 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 primarily for freshman and sophomores.

190 Political Science Readings (credit arranged) (V)
Prerequisite: Political Science 11 or 12, consent of instructor and junior standing. Readings on topics mutually acceptable to student and instructor. May be repeated.
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

295 Internship (1-6) (F&W)  
Prerequisite: Junior standing and consent of instructor. Independent study involving work with an appropriate public or private agency. A maximum of six credit hours may be earned.

329 Studies in Public Law (3) (V)  
Prerequisite: Political Science 11. Selected topics in Constitutional law, administrative law, legal philosophy, history of the Supreme Court and judicial process. May be repeated.

GROUP II: POLITICAL PROCESS

215 The Black American in United States Politics (3) (V)  
The position and political behavior of Black Americans in both rural and urban environments, with emphasis on styles of leadership, organization, strategy and ideology.

234 Political Sociology (3) (Same as Sociology 234)  
Prerequisite: Political Science 11, Sociology 10 or 20. The analysis of power as a social phenomenon. The processes of legitimizing power and instituting authoritative structures. Stabilizing of social control and social integration at various levels of social and political organization.

GROUP III: PUBLIC ADMINISTRATION

340 Public Administration (3) (F)  
Prerequisite: Political Science 11. Survey of public administration, with reference to organization, financial administration, personnel management, judicial control of the administrative process.

341 Comparative Public Administration (3) (V) (See Group IV)

349 Studies in Public Administration (3) (V)  
Prerequisite: Political Science 11 or 12. Selected topics such as electoral behavior, political opinion, political socialization, political leadership, political violence and others. May be repeated.

GROUP IV: COMPARATIVE POLITICS

253 Political Systems of South America (3) (V)  
The political systems, international problems, and socioeconomic-cultural environments of the governmental process of South America. Course fulfills the non-Euro-American requirement.

254 Political Systems of Mexico, Central America and the Caribbean (3) (V)  
The political systems, international problems and socioeconomic-cultural environments of the governmental process in Mexico, Central America, and the Caribbean. Course fulfills the non-Euro-American requirement.

255 Asian Comparative Politics (3) (F&W)  
Study of the political systems of Asia including China, Japan, India and Southeast Asia. Course fulfills the non-Euro-American requirement.

333 Studies in Policy Formation (3) (V)  
Prerequisite: Political Science 11 or 12. Selected topics such as science and public policy, environmental policy, and other domestic policy domains. May be repeated.

335 Political Parties (3) (F)  
Prerequisite: Political Science 11. Development, organization, functions, activities of major and minor political parties, pressure groups, elections administration, especially in the United States. Course fulfills the state requirement.

336 Studies in Comparative Politics (3) (V)  
Prerequisite: Political Science 11 or 12. Studies of political processes in specific geographic areas and related concepts in comparative analysis. May be repeated.

352 The Politics of Modernization (3) (V)  
Prerequisite: Political Science 11 or 12. Analysis of the dimensions and problems of modernization and the role of political systems, with primary emphasis on African nations. Course fulfills the non-Euro-American requirement.

353 Soviet Political Systems (3) (F)  
Prerequisite: Political Science 11 or 12. Examination of government and politics in the Soviet Union dealing with themes such as the role of the party, recruitment and socialization of elites, the role of ideology and interest groups, the formulation of policy, bureaucratization of social, economic and cultural life.

359 Studies in Comparative Politics (3) (V)  
Prerequisite: Political Science 11 or 12. Studies of political processes in specific geographic areas and related concepts in comparative analysis. May be repeated.
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

GROUP V: THEORY AND METHODOLOGY

100 Research Methods in Political Science (3) (V) Prerequisite: Political Science 11 or 12. Methods of testing causal statements about politics, including research design and data measurement, collection and analysis.

160 Contemporary Political Ideologies (3) (V) An introduction to the major political ideologies of the world today. Emphasis on communism, democracy, and nationalism.

261 History of Political Thought (3) (V) Study of political philosophy from Plato to Machiavelli.

262 History of Political Thought (3) (V) Study of political philosophy from Machiavelli to the present.

269 The Marxist Heritage (3) (W) (Same as Philosophy 269) An interdisciplinary study of Marx and leading Marxists, designed to evaluate their influence on recent political, economic and social thought and institutions.

300 Empirical Political Theory (3) (V) Prerequisite: Political Science 11 or 12. Consideration of the elements of scientific method; scientific method and social phenomena; critics of the scientific approach in political science, nature and logic of explanatory theories, such as systems theory, structural-functional analysis and deductive theories.

301 Positive Models and Theories of Strategy (3) (V) Prerequisite: Political Science 11. An introduction to utility theory, model building, game theory and political man as a rational decision-maker. Special emphasis is given to the consideration of work dealing with strategies of bargaining and voting procedures.

365 Normative Political Philosophy (3) (V) Prerequisite: Political Science 11 or 12. Analysis of the concepts of justice, liberty, equality, power and authority in political philosophy. Theories of revolution. General consideration of problems in normative political philosophy.

368 Studies in Political Theory (3) (V) Prerequisite: Political Science 11 or 12. Selected topics such as American political thought, utopian political thought and theories of revolution. May be repeated.

GROUP VI: URBAN AND REGIONAL POLITICS

170 State and Local Government (3) (V) Prerequisite: Political Science 11 or consent of instructor. Origin, development and problems of state and local government in the American Federal system, including the role of the United States Constitution as the framework for the Federal system. Survey of the organization, functions and operation of state and local governments in the United States. Course fulfills the state requirement.

176 Community Politics (3) (V) Examination of the structure and process of politics in the urban community, with emphasis on their relationships to community power structures. Course fulfills the state requirement.

175 Urban Planning and Politics (3) (V) Prerequisite: Political Science 11. Examination of the political processes of urban areas as they relate to the planning of services and facilities.

178 Studies in Urban Politics (3) (V) Prerequisite: Political Science 11. Selected topics in urban politics, such as ethnic politics, theories of urban violence and suburban politics. May be repeated.

375 The Socio-Political Nature of Urban Regions (3) (V) (Same as Sociology 379) Prerequisite: Political Science 170 or Sociology 302. An interdisciplinary seminar providing the student with an opportunity to develop an understanding of the modern metropolis through the perspectives of sociology and political science.

386 International Politics: Theory and Process I (3) Prerequisite: Political Science 385. Continuation of Political Science 386, with emphasis on student participation in the formation and testing of various theories.

GROUP VII: INTERNATIONAL RELATIONS

180 World Politics (3) (V) Analysis of politics among nations, including such topics as: nationalism, imperialism and colonialism; revolution and war; arms control and disarmament; and peace and the regulation of conflict.

282 United States Foreign Policy (3) (V) Prerequisite: Political Science 11 or 12. Examination of the factors influencing the formation and the execution of United States foreign policy and of specific contemporary foreign policies and problems.

285 International Organization (3) (V) Prerequisite: Political Science 11 or 12. Forms and functions of international organizations, with special reference to the United Nations, regional organizations and problems of international integration.

381 Foreign Policy Decision-Making (3) (V) Prerequisite: Political Science 11 or 12. Empirical and experimental studies of foreign policy decision-making processes.

383 International Integration (3) (V) Prerequisite: Political Science 11 or 12. The processes by which new political entities are formed in the international system replacing previously discrete national units.

386 International Politics: Theory and Process II (3) Prerequisite: Political Science 385. Continuation of Political Science 386, with emphasis on student participation in the formation and testing of various theories.

PSYCHOLOGY

Prerequisites may be waived by consent of instructor.

1 General Psychology (3) (F&W) A survey of the facts, principles and methods in the study of human behavior.

2 General Psychology (3) (F&W) Continuation of Psychology 1.

45 Race (3) (V) (Same as History 45 and Sociology 45) Prerequisite: 12 hours of college course credit. Origins and functions of conceptions of race. Biological and social definitions of race; the function of racial ideologies for societies; social, historical and psychological bases of racism in the U.S.; the consequences of racism for the individual and societies.

99 The City (3) (F&W) (Same as History 99, Political Science 99, Sociology 99 and Economics 99) Prerequisite: 12 hours of college course credit. Study of urban communities and their complexity in the United States. An interdisciplinary course emphasizing an understanding of the history, sociology and political economy of cities.
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

101 Psychological Statistics (4) (F&W) (with laboratory)
Prerequisite: Psychology 2, Mathematics 30 (may be taken concurrently) or equivalent. Statistical methods in psychological measurement, analysis of psychological data. Frequency distribution analysis, sampling, tests of significance, correlational methods.

105 Group Prejudice and Minority Identity (3) (V) (Same as Sociology 105)
Prerequisite: Psychology 1 and 2 or Sociology 10 and 20. The psychological study of determinants of identity formation and transformation among minority groups.

111 Human Motivation (3) (V)
Prerequisite: 6 hours of psychology. A survey and comparison of current types of human motivation theory and research, with some consideration of future trends in motivation theory and of implications of motivation theory and research to other areas in psychology.

112 Principles of Learning (3) (V)
Prerequisite: Psychology 2. A consideration of critical findings in learning.

114 Physiological Psychology (3) (V)
Prerequisite: Psychology 1 & 2 and Biology 1. A survey of the major areas of physiological psychology with an emphasis on their historical development.

145 Abnormal Psychology (3) (F&W)
Prerequisite: Psychology 2. Introduction to major symptom complexes, theories of etiology and treatment of behavior disorders. Credit not granted for both Psychology 145 and Psychology 245.

150 The Psychology of Individual Differences (3) (F)
Prerequisite: Psychology 2. Analysis of major dimensions of individual differences in behavior and the roles of genetic, constitutional and experiential factors in the development of psychological differences. While emphasis is placed on human behavior, relevant information from infra-human species will be considered.

155 Community Psychology (3) (W)
Prerequisite: Psychology 1 and 2. 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; utilization of non-professional manpower.

156 Environmental Psychology (3) (F)
Prerequisite: Psychology 2 and 1 quantitative or methods course. Analysis of environmental influences on behavior and man’s influence, in turn, on the environment. Projects relating to these problems will be required.

160 Social Psychology (3) (F&W) (Same as Sociology 160)
Prerequisite: Psychology 2 or Sociology 10 or 20. Study of the interaction between the individual and his social environment. Examination of basic principles, concepts, methods.

170 Child Psychology (3) (F&W)
Prerequisite: Psychology 2. Principles of biological, behavioral, and personality development from conception to puberty.

171 Adolescent Psychology (3) (F&W)
Prerequisite: Psychology 2. Principles of biological, behavioral, and personality development from puberty to maturity.

267 Analysis of the Learning Process (3) (V)
Prerequisite: Psychology 1 and the consent of the instructor. Discussion and analysis of the major phenomena and theories of learning (especially organization and growth theories) that are of significance for an understanding of human learning. Primary emphasis will be on non-rote processes in learning including imitation, incidental memory, and their relation to the creative process.

290 Psychology Readings (3) (V)
Prerequisite: Psychology 2 and consent of instructor. Readings on a topic mutually acceptable to student and instructor.

301 Advanced Statistics and Experimental Design (3) (W)
Prerequisite: 12 hours of psychology, including Psychology 101. Statistical methods particularly useful in psychological research and the design of experiments appropriate to these methods.

350 Special Readings (credit arranged)
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.

366 Mathematical Psychology (3) (V)
Prerequisite: Psychology 219. The use of mathematical models in psychology.

RUSSIAN

Prerequisites may be waived by consent of department.

1 Elementary Russian (5) (F&W)
Emphasis will be placed upon the speaking and understanding of Russian and upon the acquisition of the fundamentals of grammar and syntax. Five hours of class and one hour laboratory.

2 Elementary Russian (5) (F&W)
Prerequisite: Russian 1 or equivalent. Emphasis will be placed upon the speaking and understanding of Russian and upon the acquisition of the fundamentals of grammar and syntax. Five hours of class and one hour laboratory.

200 Syntax of the Russian Language (3) (V)
Prerequisite: Russian 108 or equivalent. Synchronic analysis of
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

the phonemic, morphological, syntactic and semantic system of present-day Russian; dialectic variations.

SOCIOLOGY
Prerequisites may be waived by consent of instructor.

10 Introduction to Sociology (3) (F&W)
Prerequisite: None. Sociology as an approach to social phenomena. Lecture and laboratory discussion format used for presentation of classic and contemporary models of social structure and processes.

45 Race (3) (Same as Psychology 45 and History 45 and Anthropology 45) (V)
Prerequisite: 12 hours of college course credit. Origins and functions of conceptions of race. Biological and social definitions of race; the function of racial ideologies for societies; social, historical and psychological bases of racism in the U.S.; the consequences of racism for the individual and societies.

65 The University (3) (V)
(See Interdisciplinary Course 65.)

90 Freshman Seminar (3) (V)
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.

99 The City (3) (Same as Administration of Justice 99, History 99, Political Science 99, and Economics 99) (V)
Prerequisite: 12 hours of college credit. An interdisciplinary course. Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburb and the metropolitan area, ethnic groups, stratification and psychological implications of urban living.

105 Group Prejudice and Minority Identity (3) (Same as Psychology 105) (V)
Prerequisite: Psychology 1 and 2 or Sociology 10. The psychological and sociological study of determinants of identity formation and transformation among minority groups.

106 Development of Social Thought (3) (V)
Prerequisite: Sociology 10. The antecedents of sociological theory, as traced through social thought traditions until the time of Comte.

110 Sociological Theory (3) (F&W)
Prerequisite: Sociology 10. The nature of sociological theory. An investigation of theory from Comte through contemporary developments. Contributions made by theorists in related disciplines.

120 Quantitative Techniques in Sociology (with Laboratory) (4) (F&W)
Prerequisite: Sociology 10 and satisfaction of math proficiency requirement. Issues and techniques of statistical analyses, e.g., probability theory, measurements of central tendency and dispersion, techniques of statistical inference, hypothesis testing, chi square test, F-ratio, correlation and multiple regression analyses, non-parametric statistics.

130 Research Methods (4) (F&W)
Prerequisite: Sociology 10. Research planning; the collection, analysis and presentation of data. Course includes practical experience in the conduct of a research project.

160 Social Psychology (3) (Same as Psychology 160) (F&W)
Prerequisite: Sociology 10 or Psychology 2. Study of the interaction between the individual and his social environment. Examination of basic principles, concepts, methods.

NOTE: Any 200 level course taken for major elective credit requires prior completion of a 100 level course. If the 100 level course is 110, 120 or 130 it may be taken concurrently with a 200 level course.

200 Sociology of Deviant Behavior (3) (F&W)
Prerequisite: Three hours of Sociology or Anthropology. Theories of the nature, causes and control of deviance as a generic phenomenon. Application of theories to specific types, such as mental disorder, delinquency, drug abuse, suicide and unconventional sexual behavior.

202 Urban Sociology (3) (F&W)
Prerequisite: Sociology 10 or consent of instructor. Urbanization as a world phenomenon; ecological, demographic and social structural approaches to the urban community.

214 Juvenile Delinquency and Youth Crime (3) (F&W)
Prerequisite: Sociology 10. The psychological and sociological study of determinants of delinquency and youth crime, including types, trends, causation, correction and prevention.

224 Sociology of the Family (3) (F&W)
Prerequisite: Sociology 10. A theoretical and research-oriented approach to delinquency and youth crime, including types, trends, causation, correction and prevention.

256 Sociology of Education (3) (F&W)
Prerequisite: Sociology 10. 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.

264 The Sociology of Religion (3) (V)
Prerequisite: Sociology 10. Religion as a universal phenomenon. The effect of religion upon the individual and society. The organization of religious enterprises.

270 Sociology of Socialization (3) (V)
Prerequisite: Sociology 10. Analysis of the structural and social psychological aspects of roles and the self as a product of social interaction.

278 Sociology of Law (3) (V)
Prerequisite: Sociology 10. 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
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

290b Undergraduate Seminar in Sociological Ideologies as expressed in movements (3)
Prerequisite: 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 credit, provided the subject matter is different each time the seminar is taken.

296 Practicum in Supervised Field Experience and Operational Research (3) (F&W)
Prerequisite: Sociology 142 or 242 and junior standing. Observation and participation in the social service programs at hospitals, community centers and social agencies. May be taken twice for credit.

298 Practicum in Field and Laboratory Research (1-3) (V)
Prerequisite: Sociology 130. Intensive field or laboratory research to be taken subsequent to or concurrent with a specific substantive course. May be taken twice for credit.

NOTE: Any 300 level course taken for major elective credit requires prior completion of two of the following: Sociology 110, 120 or 130.

312 Social Stratification (3) (F)
Prerequisite: Sociology 10; junior standing or consent of instructor. Theories of social stratification and an examination of current research. Changes in the occupational and hierarchical structure of contemporary society.

314 Social Change (3) (F)
Prerequisite: Sociology 10; junior standing or consent of instructor. The relationship between structural changes and alterations in culture. The individual, the group and the collectivity as agents of change.

316 Ideology and Social Movements (3) (V)
Prerequisite: Either Sociology 146, 234 or 314. 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.

322 Advanced Quantitative Techniques (3) (F)
Prerequisite: Sociology 120 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.

326 Criminology (3) (F&W)
Prerequisite: Sociology 200, 214 or 6 hours of Sociology/Anthropology. Crime as a social phenomenon. Theory and research concerning the causes of crime.

327 Fieldwork in Anthropology (3) (Same as Anthropology 327 and Sociology 327) (V)
Prerequisite: 9 hours of Anthropology or Sociology or consent of instructor. An introduction to anthropological fieldwork in complex societies emphasizing participant observation, interviewing and use of key-informants. Attention will be given to theoretical considerations and problems of method as well as to the application of these techniques in actual fieldwork. Current issues in the ethics of field research and action anthropology will be discussed.

328 Institutions and the Control of Crime & Delinquency (3) (W)
Prerequisite: Sociology 214 or 326. Institutional response to crime and delinquency. Theories and programs of rehabilitation and punishment. Organizational conditions affecting behavior of correctional personnel.

332 Advanced Methodology (3) (W)
Prerequisite: Sociology 130 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.

336 Complex Organizations (3) (V)
Prerequisite: Sociology 10; junior standing or consent of instructor. The structural characteristics of complex organizations and the informal substructures that evolve within. Rational and natural-system models. Pressures toward equilibrium and change.

342 Demography (3) (V)
Prerequisite: Sociology 10; junior standing or consent of instructor. The applicability of different modes of demographic analysis to the study of social change. The individual, the group and the organization.

344 Problems of Urban Community (3) (V)
Prerequisite: Sociology 10; 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.

350 Special Study (credit arranged) (F&W)
Prerequisite: Consent of the instructor. Independent study through readings, reports or field research.

352 Advanced Principles of Sociology (3) (V)
Prerequisite: Sociology 10; junior standing or consent of instructor. Analysis of the main concepts and principles of sociology and survey of sociology as a social science.

360 Sociology of Minority Groups (3) (W)
Prerequisite: Sociology 10; junior standing or consent of instructor. The study of dominant-subordinate group relations. Religion, ethnicity and race as factors affecting conflict, competition, accommodation and assimilation.

377 Personality and Culture (3) (V)
Prerequisite: Sociology 10; junior standing or consent of instructor. Analysis of behavior from the standpoint of interaction between psychological systems, sociological systems and cultural systems.

378a Selected Topics in Social Psychology (3) (V)
Prerequisite: Sociology 160 or Psychology 160 and consent of instructor. Focused examination of selected issues, concepts and methods in the study of social interaction. May be taken twice for credit.

379 The Socio-Political Nature of Urban Regions (3) (Same as Political Science 379) (V)
Prerequisite: Sociology 302 or Political Science 170 or 376. An interdisciplinary seminar providing the student with an opportunity to develop an understanding of the modern metropolis from the perspectives of sociology and political science.

392 Advanced Sociological Theory (3) (F)
Prerequisite: Sociology 110 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.

394 Methods in Theory Construction (3) (V)
Prerequisite: Sociology 110 or consent of instructor. An in-depth comparison of selected techniques of theory building and testing. Verbal and/or mathematical formalization of selected sociological examples of theory will be the central activity.
### DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

**SPANISH**

**Prerequisites may be waived by consent of department.**

1. **Elementary Spanish (5) (F&W)**
   - 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 required.

2. **Elementary Spanish (5) (F&W)**
   - 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 required.

101. **Intermediate Spanish (3) (F&W)**
   - Prerequisite: Spanish 2 or equivalent. Grammar review and cultivation of language skills through the study of selected modern works.

102. **Intermediate Spanish (3) (F&W)**
   - Prerequisite: Spanish 101 or equivalent. Further development of language skills through reading and discussion of literary texts. May be taken concurrently with Spanish 108 after consultation with instructor.

108. **Oral and Written Composition (3) (F&W)**
   - Prerequisite: Spanish 102 or equivalent. Emphasis will be placed upon the development of oral and writing skills. May be taken concurrently with Spanish 102 after consultation with instructor.

110. **Spanish Literature in Translation (3) (V)**
   - 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, Calderón, Galdós, Unamuno, García Lorca, Buero Vallejo and others. May be taken to fulfill humanities requirement. Not open to Spanish majors.

111. **Spanish American Literature in Translation (3) (V)**
   - Prerequisite: Sophomore standing. Lectures on the literature and culture of Spanish America. Reading and discussion of works of representative poets, novelists and essayists of the contemporary period. May be taken to fulfill humanities requirement. Not open to Spanish majors.

150. **European Literature in Translation: Special Topics (3) (V)**
   - 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. May be taken to fulfill the humanities requirement.

200. **Syntax of the Spanish Language (3) (W)**
   - Prerequisite: Spanish 108. Study of the syntactical and morphological characteristics of the Spanish language as seen in representative selections from Hispanic literature. Designed primarily for students majoring in Spanish. May be taken concurrently with any 200 level course.

210. **Hispanic Culture and Civilization: Spain (3) (F)**
   - Prerequisite: Spanish 102 or equivalent. The development of Spanish peninsula civilization from its Romanic beginnings to the present.

211. **Hispanic Culture and Civilization: Spanish America (3) (W)**
   - Prerequisite: Spanish 102 or equivalent. The development of the cultures and civilization of the Spanish-speaking nations of the Western hemisphere.

220. **Introduction to Linguistics (3) (F&W)**
   - Prerequisite: Spanish 1 and 2 or equivalent and sophomore standing. The historical development of languages, their description and classification, with emphasis on the practical application of contrastive linguisitics in foreign language teaching.

264. **Curriculum and Methods of Teaching Foreign Languages (3) (F&W) (Same as Education 264)**
   - Prerequisite: Education 163, Spanish 200, 201, 202. 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 the techniques and research tools of the scholar in the field of foreign languages.

280. **Introduction to Hispanic Literature: Spain (3) (F)**
   - Prerequisite: Spanish 102. Study of selected texts of Spanish writers from the Middle Ages to the present and the historical, cultural and political factors which influenced their writings. Required for Spanish majors.

281. **Introduction to Hispanic Literature: Spanish America (3) (W)**
   - Prerequisite: Spanish 102. 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 for Spanish majors.

299. **Seminar on Hispanic Literature (3) (W)**
   - Required of major students in the senior year. Subject to be announced every year by the instructor in charge of the seminar. Senior standing required.

330. **Cervantes (3) (V)**
   - Prerequisite: Spanish 280. A study of Don Quixote in relation withauthor's life and with the cultural background of the Spanish Golden Age. Independent reading of other works of Cervantes.

335. **Masterpieces of Spanish Medieval & Renaissance Literature (3) (Alt F incl 71)**
   - 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 Romance; La Celestina; the picaroseque novel, and Don Quixote.

340. **Spanish American Literature of the Nineteenth Century (3) (Alt W)**
   - Prerequisite: Spanish 281. A study of the culture and literature of Spanish America in the nineteenth century with emphasis on the leading figures of Modernismo and representative novelists and essayists of this period.

345. **Spanish American Literature of the Twentieth Century (3) (V)**
   - 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 "pathos" and "ethos" of their culture.
DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

351 Spanish American Fiction of the 20th Century (3) (V)
  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) (V)
  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.

SPEECH

Prerequisites may be waived by consent of instructor. For further information, consult the Speech Office.

10 Basic Communication (3) (F&W)
  Prerequisite: Interview with and consent of instructor before enrolling in course. Development of basic communication skills. Includes small group interaction, non-verbal communication, role playing, audience awareness and theatre improvisation.

101 Effective Speaking (3) (F&W)
  Prerequisite: Sophomore standing. Emphasis on effective oral communication, formal and informal. Theories and techniques of argument and persuasion, organization, evidence, delivery.

110 Introduction to Radio and Television Broadcasting (3) (F)
  An introduction to broadcasting, including the areas of history, government regulations, station operation and program development.

120 Introduction to the Theatre (3) (F)
  A study of theatre as an art form, emphasizing the audience's appreciation of the art of the playwright, actor, director and designer. Study of major periods, genres and plays from classical to modern times.

121 Theory and Practice in the Fundamentals of Acting (3) (F&W)

140 Introduction to Argumentation and Debate (3) (F&W)

199 Special Projects in Communication (1) (F&W) (repeatable to a maximum of four hours)
  Prerequisite: Consent of instructor. Work on special projects in the students field of interest, with conferences adjusted to needs of the student.

203 Introduction to Communication Theory and Research (3) (F&W)
  A survey of communication theories and research techniques. Use of several research techniques and application of one or more in a communication research project.

205 Communication in American Politics (3) (Alt. F)
  Analysis of audience response and media preferences in political campaigns, campaign communications strategy, campaign speeches, candidate's uses of television and other mass media and measuring effectiveness of campaign communications.

211 The Broadcast Audience (3) (W)
  A survey of techniques of audience analysis, including practical application to program development, with emphasis on the role of the audience in the communication process.

212 Writing for Radio and Television (3) (W)
  Prerequisite: Speech 110 or permission of Instructor. Fundamentals of writing for the broadcast media. Includes format development and writing of news, public affairs, drama and commercials.

230 Small Group Communication (3) (W)
  Development of communication skills needed in small group decision-making. Application of these skills to contemporary problems, with special emphasis on urban problems.

240 Persuasive Communication (3) (F&W)
  A study of persuasive communication including theories, techniques, forms, functions, applications, potential and limitations for individuals and organizations. Insights from both classical rhetoric and contemporary communications theory.

250 Mass Media and Society (3) (F&W)
  Nature and functions of mass communication with appraisal of the performance of the mass media in society.

BUSINESS ADMINISTRATION

Prerequisites may be waived by consent of department.
*Starred prerequisites may be taken concurrently with listed offering.

31 Elementary Statistics (3)**
  Prerequisite: Sophomore standing. An introduction to statistical methods and concepts used in the decision processes of business problems.

104 Fundamentals of Digital Computer Programming (3)
  A study of the principles of programming digital computers with emphasis on a specific algebraic-oriented language.

106 Basic Marketing (3)
  Prerequisite: Fundamentals of Accounting 140, Economics 51, and *Elementary Statistics 31. 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, promotion) which underlie the multifarious activities of marketing institutions and the managerial, economic, societal implications of such policies.

109 COBOL/Business Systems (3)
  Fundamentals of computer programming for business use with the COBOL language. Presentation, analysis, and discussion of common business applications of data processing, to include administrative and accounting practices.

131 Elementary Statistics (3)**
  Prerequisite: Mathematics 102 and sophomore standing. An introduction to statistical methods and concepts used in the decision processes of business problems. Statistical measures and estimators are examined in relation to the estimation and testing problems of statistical inference.

**Business Administration 31 will be offered only through the Summer Session, 1974. Beginning with the Fall Semester, 1974, Business Administration 131 will be offered.

140 Fundamentals of Financial Accounting (3)
  Prerequisite: Sophomore standing. Fundamental accounting principles and procedures; their application and
145 Fundamentals of Managerial Accounting (3)
Prerequisite: Fundamentals of Financial Accounting 140. Development, interpretation and uses of accounting reports and supplementary information for management decision-making. Topics include: operational and capital budgeting, analysis of financial statements, and the application of relevant cost behavior, control, and traceability concepts in the preparation of internal accounting reports.

156 Legal Environment of Business (3)
Prerequisite: Economics 51, Fundamentals of Financial Accounting 140. 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.

202 Fundamentals of Production (3)
Prerequisite: Economics 51, Elementary Statistics 31 and Fundamentals of Managerial Accounting 145. An examination of the concepts, processes, and institutions which are fundamental to an understanding of the production function in business enterprise. Emphasis is on the management and organization of production operations, and upon the application of scientific and quantitative methods to the solution of production problems.

204 Financial Management (3)
Prerequisite: Fundamentals of Managerial Accounting 145, Economics 51 and "Elementary Statistics 31. The study of a firm's need for funds; the institutions, instruments and markets concerned with raising such funds; and the techniques of analysis used to determine how effectively these funds, once raised, are invested within the firm.

224 Introduction to Systems Programming (3)
Prerequisite: Grade of "A" or "B" in Fundamentals of Digital Computer Programming 104 or consent of instructor. Development and interpretation of machine languages, addressing techniques, symbolic coding and assembly systems. A particular computer and programming system will be used extensively to illustrate concepts and to give students actual experience in programming.

231 Intermediate Statistics (3)
Prerequisite: Elementary Statistics 31, Mathematics 101 and Mathematics 102. A study of advanced statistical concepts as applied to the methods of statistical designs and models.

253 Managerial Economics (3)
Prerequisite: Economics 51 and Mathematics 101. Applications of microeconomic theory to the decision-making process in the business firm. Discussion of cost behavior, price and output determination under various competitive conditions, as well as factors affecting wages, interest and profits.

256 Business Law (3)
Prerequisite: Fundamentals of Financial Accounting 140 and "Elementary Statistics 51. Introduction to legal instruments and statutes centering on such things as contracts, agencies, partnerships, unincorporated organizations, corporations, negotiable instruments, bailment, personal and real property, bankruptcy and receivership. Includes a survey of Federal regulatory legislation to motivate and preserve competition and to protect the public.

270 Management of Promotion (3)
Prerequisite: Basic Marketing 106. 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 promotions, packaging, selling strategy and their relationships in the promotion process.

275 Marketing Intelligence (3) (Formerly Business Administration 275–Marketing Research)
Prerequisite: Basic Marketing 106. 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.

295 Business Administration Problems (variable credit)
Prerequisites: To be determined each time the course is offered. Study of selected special problems in business and administration. May be repeated for credit.

296 Independent Study (variable credit)
Prerequisites: Permission of the professor and the Dean. Occasional special-individual study topics under the guidance of a specific professor.

301 Buyer Behavior (3)
Prerequisite: Business Administration 106 and three hours of psychology or sociology, or consent of instructor. A study of consumer functions and concepts in economics, marketing and related subjects such as decision-making, attitude formation, cognition, perception and learning as related to marketing phenomena-product image, brand loyalty, shopping preference, diffusion of innovations. These are considered in context with political, social, market and legal influences on buyer behavior.

302 Quantitative Marketing Methods (3)
Prerequisite: Basic Marketing 106, Finite Mathematics 102 or permission of instructor. 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.

308 Production and Operations Management (3)
Prerequisite: Fundamentals of Production 202, Mathematics 101 and Mathematics 102. 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.

310 Management as a Behavioral Science I (3)
DESCRIPTION OF COURSES: SCHOOL OF BUSINESS ADMINISTRATION

311 Management as a Behavioral Science II (3)
Prerequisite: Business Administration 310. The organization as a social system. Interpersonal relations and social exchange. Modification of human behavior. Methods of change and their dysfunctional consequences in the organization. Technology as a determinant of work behavior. Labor relations and human relations. Major organizational concepts and theories.

312 Industrial and Labor Relations (3)
Prerequisite: Business Administration 310. Emphasis on labor unions and their relationship with management. Labor laws, trade union structure and government, collective bargaining, arbitration and grievance procedures are studied.

315 Marketing Management (3)
Prerequisite: Senior standing and nine (9) hours in marketing, including Business Administration 106 or consent of instructor. 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.

318 Industrial Psychology (3) (Same as Psychology 218)
Prerequisite: Psychology 201 or Management as a Behavioral Science 310. Activities of the applied psychologist. Selection and placement, testing and interviewing, personnel research. Morale, motivation and job satisfaction. Leadership skills and styles, creative management, industrial mental health. Psychology in advertising and marketing.

331 Multivariate Analysis (3)
Prerequisite: Elementary Statistics 31, Mathematics 101 and Mathematics 102. A study of statistical techniques applicable to multi-variable relationships.

334 Investments (3)
Prerequisite: Financial Management 204. Financial analysis of debt and equity instruments available on organized exchanges and in less tangible "over the counter markets." Techniques of such analysis being presented in context with economic and management circumstances within the company, industry and economy.

340 Intermediate Accounting Theory (3)
Prerequisite: Fundamentals of Financial Accounting 140 and Fundamentals of Managerial Accounting 145 with a minimum grade of "C" in each (or consent of department) and *Elementary Statistics 31. The development of a structure of financial accounting theory and an analysis of asset valuation methods emphasizing their effect on income determination.

341 Advanced Accounting (3)
(Includes a continuation of the intermediate text, and topics from the advanced text.) Prerequisite: Intermediate Accounting Theory 340, minimum grade of "C" (or consent of department). Application of accounting theory to equity valuation and the related effects on income determination. Other topics include accounting for price level changes, partnerships and fiduciaries.

342 Consolidation and Specialized Accounting Problems (3)
Prerequisite: Advanced Accounting 341, minimum grade of "C" (or consent of department). Accounting theory and practice relating to: consolidated financial statements, business combinations, foreign subsidiaries, corporate liquidation and reorganization and non-profit organizations.

345 Cost Accounting (3)
Prerequisite: Fundamentals of Managerial Accounting 145, minimum grade of "C" (or consent of department). Basic principles of cost determination and control of manufacturing and distribution activities; emphasizes the accumulation and tracing of cost to products, processes and responsibility centers for purposes of financial accounting and management control. Topics include: job-order and process costing and the development and use of standard costs within a system of absorption costing.

347 Income Taxes (3)
Prerequisites: Fundamentals of Financial Accounting 140 and Fundamentals of Managerial Accounting 145, minimum grade of "C" in each (or consent of department). Fundamentals of Federal income tax accounting with emphasis on individuals and corporations. Topics covered include: determination of income, exclusions, exemptions, personal and business deductions and tax credits.

348 Auditing (3)
Prerequisite: Advanced Accounting 341, minimum grade of "C" (or consent of department). Examination of fundamental audit objectives and techniques employed in the verification, analysis and interpretation of accounting records and financial statements. The work of the independent public accountant is emphasized to include the standards of professional performance.

349 Managerial Aspects of Taxation (3)
Prerequisite: Income Taxes 347. A study of taxation and tax issues, including the planning, in the managerial decision making process. Research directed to the solution of business tax problems.

350 Financial Policies (3)
Prerequisite: Financial Management 204. The intensification and application of the concepts developed in Finance 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.

368 Business Fluctuations and Forecasting (3) (Same as Economics 368)

375 Operations Research (3)
Prerequisite: Elementary Statistics 31, Mathematics 101 and Mathematics 102. Application of the theories and techniques of operations and research to problems of business, government and industry; with emphasis on the construction and utilization of quantitative decision models.
### DESCRIPTION OF COURSES: SCHOOL OF EDUCATION

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>380</td>
<td>International Business (3)</td>
<td>Prerequisite: Economics 51. U.S. in the world economy; emerging nations; foreign exchange market; foreign investment; commercial documents; world trade; management of enterprises abroad.</td>
</tr>
<tr>
<td>391</td>
<td>Business Policy and Administration (3)</td>
<td>Prerequisite: Senior standing, Basic Marketing 106, Financial Management 204 and Management as a Behavioral Science 310. Comprehensive cases are used to examine the dynamics of business management. The role of high echelon management in the administrative process is integrated with the diverse functions of business to develop an operational system. Particular attention is given to formulation of a policy framework, planning and implementing executive action. Both team and individual analyses and reports are utilized with class evaluation and recommendation. (It is preferred that this course be taken in the student's final semester).</td>
</tr>
<tr>
<td>385</td>
<td>Mathematical Programming (3)</td>
<td>Prerequisite: Elementary Statistics 31, Mathematics 101 and Mathematics 102. A study of mathematical programming theory and algorithmic developments. Consideration is given to linear programming, integer programming, quadratic programming, dynamic programming and other related techniques.</td>
</tr>
<tr>
<td>395</td>
<td>Business Administration Seminar (Variable credit)</td>
<td>Prerequisite: To be determined each time the course is offered. May be repeated for credit.</td>
</tr>
</tbody>
</table>

### EDUCATION

#### ELEMENTARY EDUCATION

**Early Childhood Education**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>315</td>
<td>Principles of Early Childhood Education (3) (F,W,S)</td>
<td>Prerequisite: Education 101 and Education 302. A study of values and basic principles underlying good schools for young children. Intensive examination of planning daily programs, organizing the learning environment, developing the curriculum and units of work. An investigation of good learning situations for pre-school and primary children.</td>
</tr>
</tbody>
</table>

**General Elementary Education**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Effective Reading and Study Skills (2) (F&amp;W)</td>
<td>Prerequisite: Education 101 and Education 302. A study of values and basic principles underlying good schools for young children. Intensive examination of planning daily programs, organizing the learning environment, developing the curriculum and units of work. An investigation of good learning situations for pre-school and primary children.</td>
</tr>
<tr>
<td>137</td>
<td>Elementary School Music (2) (F&amp;W) (Same as Music 137)</td>
<td>Prerequisite: Music 134 or consent of department. The role of the classroom teacher in the development of the elementary school music program; selection of music; demonstration and practice of methods, study of resources. This course will not apply toward requirements for a music major.</td>
</tr>
<tr>
<td>139</td>
<td>Art Activities for Elementary Schools (3) (F&amp;W) (Same as Art 139)</td>
<td>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.</td>
</tr>
<tr>
<td>140</td>
<td>Elementary School Organization, Management and Techniques of Teaching (3) (F,W,S)</td>
<td>Prerequisite: Education 101 and admission to student teaching. The role of the classroom teacher in the development of the elementary school music program.</td>
</tr>
<tr>
<td>150</td>
<td>Children's Literature and Language Arts (3) (F,W,S)</td>
<td>Prerequisite: Education 101 and admission to the School of Education. A course designed to provide a knowledge of the various types of children's literature; criteria for selecting and evaluating reading material. An introduction to the teaching of the language arts in the elementary schools.</td>
</tr>
<tr>
<td>152</td>
<td>Teaching Social Studies in the Elementary School (3) (F,W,S)</td>
<td>Prerequisite: Education 140 and completion of social science requirements in general education. A 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.</td>
</tr>
<tr>
<td>153</td>
<td>Teaching Mathematics in the Elementary School (3) (F,W,S)</td>
<td>Prerequisite: Education 140 and completion of mathematics requirements in general education. Organization and implementation of a modern elementary school mathematics program.</td>
</tr>
<tr>
<td>251</td>
<td>Elementary School Student Teaching (6) (F&amp;W)</td>
<td>Prerequisite: Education 151, 152, 153, 325 and admission to student teaching. Clinical teaching experience in elementary school classrooms under university and school supervision. Seminar accompanies classroom teaching experience.</td>
</tr>
<tr>
<td>257</td>
<td>Teaching Music in the Elementary School (3) (F) (Same as Music 257)</td>
<td>Prerequisite: Music 112 and Education 101. For the Music Education major. A study of the elementary school music curriculum, emphasizing the objectives of school music instruction, correct approaches and methods of teaching and staffing music classes, analysis of instructional materials and resources. The class is divided when appropriate according to the vocal or instrumental programs of the students.</td>
</tr>
</tbody>
</table>
| 325         | Teaching Reading in the Elementary School (3) (F,W,S) | Prerequisite: Education 140. Educational Psychology and junior standing. Methods and materials of improving word perception, vocabulary,
DESCRIPTION OF COURSES: SCHOOL OF EDUCATION

comprehension and interests in independent reading.

327 Teaching Reading in the Inner City (3) (F&S)
Prerequisite: Education 140 and senior standing. A systematic study of the problems of teaching reading and related language arts in ghetto schools. Attention is given to the ways in which the selection of materials and methodology of teaching reading to inner city children is influenced by their physical and psychological needs, their experience backgrounds, their spoken language patterns, their cultural heritage, and the sociology of their environment.

340 Selection and Utilization of Educational Media (3) (F,W,S)
Introduction to the selection, use, and evaluation of audio visual materials and equipment including films, slides, transparencies, projectors, globes, charts, maps, bulletin boards, plus programmed materials, information retrieval systems, and instructional television.

350 Elementary School Curriculum (3) (V)
Prerequisite: Education 140. Study of modern education with regard to objectives, content, methods, and evaluation in elementary school curriculum.

369 The Analysis and Correction of Reading Problems in the Classroom (3) (F,W,S)
Prerequisite: Education 326, 365 or equivalent. A study of causes of reading difficulties and procedures that may be used to analyze and correct them in the group setting.

Special Education

240 Education of the Mentally Retarded (3) (F,W,S)
Prerequisite: Psychology 170, Education 101 and admission to the School of Education. Methods and techniques of use in the education of children with mental retardation. Required of all who are preparing for certification in special education for mentally retarded.

252 Elementary Student Teaching in Special Education (6) (F&W)
Prerequisite: Education 240, Education 313 and admission to student teaching. Clinical experience in teaching special education classes in the elementary school under university and school supervision. Seminar accompanies classroom teaching experience.

272 Secondary Student Teaching in Special Education (6) (V)
Prerequisite: Education 240 and Education 313 and admission to student teaching. Clinical experience in teaching special education classes in the secondary school under university and school supervision. Seminar accompanies classroom teaching experience.

311 Introduction to Mental Retardation (3) (F)
Prerequisite: Education 101, Education 313, and admission to the School of Education. An introductory course dealing with the characteristics, classification and causes of the mentally retarded.

312 Speech and Language Problems of the Mentally Retarded (3) (F)
Prerequisite: Education 101, Education 313, and admission to the School 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.

ADMINISTRATION, PHILOSOPHY AND SECONDARY EDUCATION

Prerequisites may be waived by consent of department.

Secondary Education

102 Analysis and Teaching of Aquatic Sports (3) (F)
Prerequisite: Consent of Instructor. Study and Performance of aquatic skills. Particular emphasis on safety and instructional techniques leading to the Water Safety Instructor's Certificate.

103 Analysis and Teaching of Social Dance (3) (F)
Prerequisite: Consent of Instructor. The study and performance of social dance forms. Particular emphasis will be given to contemporary American square dance, international folk dance, and American and Latin ballroom dances.

104 Analysis and Teaching of Gymnastics (3) (W)
Prerequisite: Consent of Instructor. The study and performance of selected gymnastic movement. Emphasis will be given to teaching skills and techniques.

105 Analysis and Teaching of Team Sports (3) (W)
Prerequisite: Consent of Instructor. The study and performance of selected team sports. Particular emphasis will be given to skill analysis, strategy and teaching of basketball, soccer, volleyball, field hockey, baseball-softball, and flag football.

106 Analysis and Teaching of Lifesports (3) (F)
Prerequisite: Consent of Instructor. Study and performance of selected lifetime sports. Particular emphasis will be given to skill analysis, strategy and teaching of badminton, tennis, golf, bowling and archery.

108 Clinical Experience-Elementary School Physical Education (3) (W)
Prerequisite: Education 135. Early professional preparation in elementary school physical education process and practice. Seminar precedes and accompanies clinical experience.

109 Clinical Experience-Secondary School Physical Education (3) (W)
Prerequisite: Consent of Instructor. Supervised experience in junior or senior physical education programs. Seminar precedes and accompanies clinical experience.

110 Elements of Health Education (3) (F,W,S)
Prerequisite: Education 101 and admission to the School of Education. Basic school health for teachers.

155 Physical Education Activities in the Elementary School (3) (F,W,S)
Objectives of physical education for the elementary school child with applications of choice of activities, organization of program, theory, practices.

159 Clinical Experience in Youth Sport Programs (3) (F)
Prerequisite: Consent of Instructor. Supervised clinical experience in youth sport programs. Seminar precedes and accompanies clinical experience.

163 Techniques of Secondary School Teaching (3) (F,W,S)
Prerequisite: Education 101 and admission to the School of Education. Activities and interaction of teachers and pupils in development of conditions for learning in secondary schools. Analysis of teaching-learning process and examination of studies of teaching.

200 Human Anatomy and Physiology (4) (F)
Prerequisite: Biology 1 & 3, Chemistry 1. Study of the basic aspects of human anatomy and physiology and their relationship to concepts in sport and physical activity. Two hours laboratory per week.

202 Sports Medicine (3) (F)
Prerequisite: Ed. 200. A study of the medical supervision of sports participants, training, prevention and care of injuries. Course grants Red Cross First Aid Certification.

203 Kinesiology (3) (W)
Prerequisite: Ed. 200. A study of the biomechanics of human motion with particular application to performance in sport activities.

204 Physiology of Human Exercise (3) (W)
Prerequisite: Ed. 200. A study of the physiological effects of human exercise and sport activities upon the human body; exercise metabolism, work and fatigue; development of...
DESCRIPTION OF COURSES: SCHOOL OF EDUCATION

and technical papers, duplicating in the preparation of various business and technical papers, duplicating equipment, etc. Laboratory required.

Methods of Teaching Typewriting II (3) (W)
Prerequisite: Education 231. Instruction in the preparation of business and technical papers, duplicating equipment, etc. Laboratory required.

Methods of Teaching Shorthand I (3) (F)
Prerequisite: Intermediate shorthand and transcription or equivalent. Instruction in the methods and techniques used to teach Gregg shorthand, with emphasis on how to build speed and accuracy to meet job-level competency. Laboratory required.

Methods of Teaching Shorthand II (3) (W)
Prerequisite: Education 232 and Education 235. Instruction in the methods and techniques used to teach transcription. Laboratory required.

The Curriculum and Methods of Teaching Business Subjects (3) (F)
Prerequisite: Education 163, 232 and near-major in the subject matter. Study of the scope and sequence of business education 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 business education. To be taken concurrently with student teaching.

The Curriculum and Methods of Teaching Business Subjects (3) (F)
Prerequisite: Education 163, 232 and near-major in the subject matter. Study of the scope and sequence of business education 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 business education. To be taken concurrently with student teaching.

The Curriculum and Methods of Teaching English (3) (F&W)
Prerequisite: Education 163 and 232. A study of the scope and sequence of the English course 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 English. To be taken concurrently with student teaching.

The Curriculum and Methods of Teaching Mathematics (3) (W)
Prerequisite: Education 163 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 concurrently with student teaching.

The Curriculum and Methods of Teaching Physical Education (3) (W)
Prerequisite: Education 163 or 140. A study of the scope and sequence of the physical education 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 physical education. To be taken concurrently with student teaching.

Secondary School Student Teaching (6) (F&W)
Prerequisite: Education 163 and admission to student teaching. Clinical teaching experience in secondary school classrooms under university and school supervision. To be taken concurrently with appropriate curriculum and methods course.

The Curriculum and Methods of Teaching Physical Sciences (3) (W)
Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the physical sciences courses in the school curriculum with emphasis on...
DESCRIPTION OF COURSES: SCHOOL OF EDUCATION

371 Preparation of Materials for Audio-Visual Education (3) (V)
For classroom teachers. Evaluation of audio-visual education procedures and classroom instruction, including the preparation of audio-visual education materials.

376 Instructional Television and Other Audio-Visual Media (3) (V)
Prerequisite: Consent of instructor. A consideration of the planning, writing, producing, and directing of educational programs for television. Study of fundamentals of lighting, camera operation, and audio and video recording. Each student is expected to produce and direct educational television programs.

OTHER OFFERINGS

3 Beginning Shorthand (3) (F)
Prerequisite: Typewriting. Study of Gregg shorthand theory with emphasis on reading, writing and taking dictation at moderate rates. No credit toward a degree.

4 Intermediate Shorthand (3) (W)
Prerequisite: Beginning Shorthand and Typewriting. Development of speed and accuracy in taking dictation; emphasis on transcribing techniques. No credit toward a degree.

65 The University (3) (V)
Prerequisite: None. An 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 UMSL.

101 The School in Contemporary Society (3) (F,W,S)
Prerequisite: Sophomore standing. The introductory course in teacher preparation. An examination of the structure and function of the school in

THE BOARD OF CURATORS

Term Expires January 1, 1973
G. Fred Kling, Jr.
Albany, Missouri

Terms Expire January 1, 1975
William C. Myers, Jr.
Webb City, Missouri
Mrs. William C. Tucker
Warrensburg, Missouri
John Sam Williamson
Columbia, Missouri

Terms Expire January 1, 1977
William H. Billings
Kennett, Missouri
Irvin Fane
Kansas City, Missouri
Pleasant R. Smith
Mexico, Missouri

Terms Expire January 1, 1979
William S. Thompson, Jr.
St. Louis, Missouri
Howard B. Woods
St. Louis, Missouri

Dr. C. Brice Ratchford
President

Dr. Elmer Ellis
President Emeritus

Dr. A. G. Unkelsbay
Vice President for Administration
Mr. R. H. Bezoni
Vice President for Finance and Comptroller
Mr. Dale O. Bowling
Vice President for Business Management
Dr. Ardath Emmons
Vice President for Research
Mr. G. H. Entsminger
Vice President for Development and Alumni Activities
Dr. Carl N. Scheneman
Vice President for Extension

The Administration
**THE ADMINISTRATION**

Dr. Paul Nagel  
Vice President for Academic Affairs

Mr. A. Lee Belcher  
Assistant to the President

Mr. Phil E. Connell  
Assistant to the President

Dr. Stirling Kyd  
Assistant to the President

Dr. Guy Horton  
Acting Director of University Information Services

Dr. Joe Saupe  
Director of Institutional Research

Mr. William D. Poore  
Director of Personnel Services

Mr. Thomas H. Lloyd  
Director of University Press

Mr. Ralph Havener  
Director of University Archives

Mr. Allan W. Purdy  
Director of University Student Financial Aid Services

Chancellors
Dr. Merl Baker  
University of Missouri-Rolla

Dr. Everett Walters  
Interim Chancellor  
University of Missouri-St. Louis

Dr. James C. Olson  
University of Missouri-Kansas City

Dr. Herbert W. Schooling  
University of Missouri-Columbia

Dr. Donald A. Murry, Ph.D.  
Associate Dean of Faculties

Administrative Staff
Richard E. Dunlap, M.A.  
Assistant to the Chancellor

Mark M. Gormley, M.S.L.S.  
Director of Libraries

William P. Heinbecker, M.S.  
Acting Director of Computer Center

Samuel J. Marwit, Ph.D.  
Director of Counseling

Hilbert E. Mueller, Ed.D.  
Director of Admissions and Registrar

John P. Perry, M.S.  
Business Officer

Charles G. Smith, M.A.  
Athletic Director

Robert E. Smith, B.J.  
Assistant to the Chancellor and Director of Public Information

Robert W. Thomas, M.A.  
General Manager, KWMU Radio

College of Arts and Sciences
Robert S. Bader, Ph.D.  
Dean

Herbert D. Werner, Ph.D.  
Associate Dean

Goble Jessup, B.S.  
Assistant to the Dean

Mark Nugent, M.S.  
Acting Assistant Dean

School of Business Administration
Emery C. Turner, D.B.A.  
Dean

Donald H. Driemeier, D.B.A.  
Associate Dean

School of Education
William L. Franzen, Ph.D.  
Dean

Arthur E. Smith, Ph.D.  
Associate Dean

Hans C. Olsen, Ed.D.  
Assistant Dean

Evening College
Joy E. Whitener, Ed.D.  
Dean

Harry Gaffney, Ph.D.  
Assistant Dean

Donald G. Bowling, M.A.  
Assistant Dean

Graduate School
Robert S. Sullivant, Ph.D.  
Dean and Director of Research

Extension Division
Virgil N. Sapp, B.S.  
Dean

Clive Veri, Ph.D.  
Associate Dean

Student Affairs
Todd Dudley, M.Ed.  
Acting Dean

Wilmer Grant, M.S.  
Assistant Dean

**UNIVERSITY OF MISSOURI-ST. LOUIS**

Administrative Officers

Everett Walters, Ph.D.  
Interim Chancellor
Calendar 73-74

1973 First Semester
August 23, 24  Thursday, Friday, Regular Registration, Day Students
August 27, 28  Monday, Tuesday, Evening College and Graduate Registration,
              4:00 p.m. - 9:00 p.m.
August 30  Thursday, Classwork begins 7:40 a.m.
September 3  Labor Day Holiday
November 21  Wednesday, Thanksgiving Recess begins, 5:30 p.m.
November 26  Monday, Classwork resumes 7:40 a.m.
December 10  Monday, Classwork ends 10:30 p.m.
December 11, 12  Tuesday, Wednesday, Intensive study days (No classes scheduled)
December 13  Thursday, Final Examinations begin
December 21  Friday, First semester closes, 5:00 p.m.

1974 Second Semester
January 10  Thursday, Registration, Day Students
January 14, 15  Monday, Tuesday, Evening College and Graduate Registration,
                4:00 p.m. - 9:00 p.m.
January 21  Monday, Classwork begins 7:40 a.m.
March 15  Friday, Spring Recess begins 5:30 p.m.
March 25  Monday, Classwork resumes 7:40 a.m.
April 12  University Holiday
May 6  Monday, Classwork ends 5:30 p.m.
May 7, 8  Tuesday, Wednesday, Intensive Study Days (no classes scheduled)
May 9  Thursday, Final Examinations begin
May 17  Friday, Second Semester closes, 5:00 p.m.
May 21  Tuesday, Annual Commencement

Summer Sessions
(8 weeks)
June 10, 11  Monday, Tuesday, Evening College and Graduate Registration,
             4:00 p.m. - 8:30 p.m. (8 week session and 6 week session)
June 13  Thursday, Regular Registration
June 14  Friday, Classwork begins 7:40 a.m.
July 4  Thursday, Independence Day Holiday
August 1, 2  Thursday, Friday Final Examinations
August 2  Friday, Summer Session closes, end of day