

**UMSL**

University of Missouri-  
Saint Louis



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**Undergraduate Bulletin**



## Preface

**UMSL**  
University of Missouri-Saint Louis

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This bulletin includes a description of undergraduate courses and announcements of undergraduate programs for the 1975-76 academic year 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.

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.

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.

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## History

Established at Columbia, Missouri in 1839, the University of Missouri was the first state university to be chartered west of the Mississippi River. After passage by the Federal Government of the Morrill Act in 1862, the university became a land-grant institution with a public service mission in addition to its educational and research functions. The university remained a single campus institution until 1870 when a separate School of Mines and Metallurgy was established at Rolla. On July 1, 1964, the Board of Curators took action to rename the University of Missouri School of Mines and Metallurgy the University of Missouri-Rolla.

In 1963, the university underwent a major reorganization. The University of Kansas City, formerly a private institution, was absorbed as a new campus, the University of Missouri-Kansas city. Simultaneously, a new campus was created in the state's largest metropolitan area, the University of Missouri-St. Louis. The four campuses which thus came to comprise the university were established, each with a chancellor and administrative staff operating under the general direction of the president of the university and its Board of Curators. As a result of the reorganization, the university broadened extensively its educational, research, and public service functions. By 1974 university enrollment had grown to more than 50,000 students, with more than 11,000 enrolled in graduate and advanced professional programs. The university thus numbered among the fifteen largest and most comprehensive of American institutions of higher education.

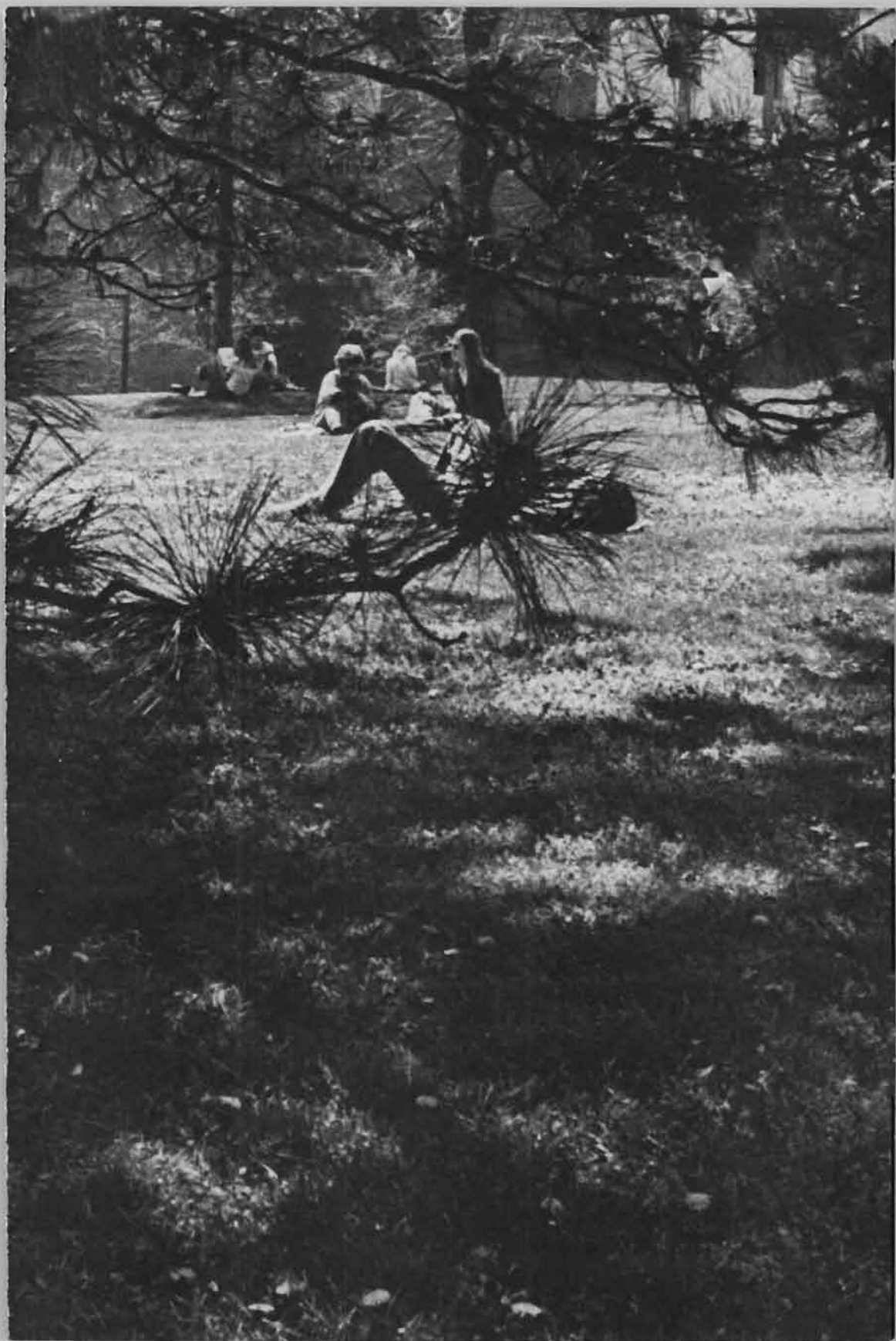
The University of Missouri-St. Louis is already the second largest campus of the University of Missouri. Located in a northwest suburb of St. Louis, the 128-acre campus opened in 1963 with more than 600 students, instructed by a faculty of 30 in a single building. Eleven years later more than 11,300 students were receiving instruction from a full time faculty of more than 400, and the single structure of 1963 had been joined by nine new buildings. Two more buildings are under construction.

Instructional and research programs of the university were originally organized within a

small number of academic divisions. The first of these divisions was created in 1965 with organization of the College of Arts and Sciences. In the following year two additional divisions were formed, the School of Education and the Evening College. In 1967 the School of Business Administration was established. Within these divisions a variety of undergraduate degree programs are currently offered.

At the graduate level, instruction was first provided in 1965 through a cooperative program in education administered jointly by the Columbia and St. Louis campuses. In 1968 independent graduate programs were established and the Graduate School was organized, assuming responsibility for graduate study offered in the various divisions of the university. By 1974, more than 1200 graduate students were enrolled in 11 programs in arts and sciences, business administration, and education. The number and scope of these graduate programs is steadily being expanded.

As part of a metropolitan area with a population greater than 2,400,000, the university has immediately available the cultural, educational, industrial, and transportation facilities of one of the country's major centers, including public and private libraries with specialized research and archival collections, the second oldest symphony orchestra in the United States, excellent museums, medical centers, theatrical companies, and athletic and recreational facilities.



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 denied the benefits of, or be subjected to discrimination under any program or activity of the university.

Racial and sexual data is important in determining the effectiveness of efforts related to the provision of equal educational opportunity. For this reason it is requested. The provision of this information is optional.

Inquiries regarding admission to all divisions of the University of Missouri-St. Louis and completed applications should be addressed to the Director of Admissions, 8001 Natural Bridge Road, St. Louis, Missouri 63121.

## Application

### **Freshmen**

The selection of a student for regular admission will be based on a combination of high school class rank and performance on a standardized college aptitude test. A student must also submit a high school transcript and, where appropriate, recommendations by persons knowledgeable of the student's potential for success in university-level education.

### **Class Rank**

For students applying for admission during their senior year in high school, a class rank as of the end of six semesters should be noted on the student's transcript. For those students in a high school where grades are not given, the principal or counselor should assign an estimated class rank.

### **Aptitude Test**

One college aptitude test score is required of all individuals applying for admission as a new freshman. Any one of the following tests will meet the test score requirement: American College Testing Program (ACT); Scholastic Aptitude Test (SAT); or the Cooperative School and College Ability Test (SCAT) Series II, form IC (College Level). The results of these tests are of benefit to both the student and adviser in planning the student's program and in considering his or her educational and professional objectives. In general, the lower the class rank, the higher the test score must be to meet the admissions requirements and vice versa. Students should request that test scores be forwarded to the admissions office. This is normally done when the student registers for the test but may be requested at a later date on forms supplied by the testing agencies.

If a student has taken two or more of these tests, or has taken one of them on more than one occasion, all resulting test scores should be made available to the admissions office. This may be advantageous to the student as the admission decision will be based on the highest score.

Entrance examinations should be taken during the senior year at the earliest possible time. All test scores should be on file at the admissions office before June 1.

**Transcript**

A high school transcript, certified by the proper school official, must be sent directly from the high school attended to the admissions office. The transcript should indicate the class rank at the time of application and all courses satisfactorily completed.

It is recommended that four units in English, two units in mathematics excluding general mathematics, one unit of laboratory science, and one unit of social science be included in the high school curriculum. For students planning to pursue a liberal arts degree, two units in one foreign language is recommended. Any remaining units should be taken from such areas as art, music, economics, a second foreign language, two additional units of the same foreign language, mathematics, and science.

**When to Apply**

Qualified applicants will be admitted and notified by letter 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. This information should be submitted before July 1 for the fall semester, December 1 for the winter semester, and May 1 for the summer session.

**Acceptance**

Upon notification of acceptance to the fall or winter semester, a student must submit a satisfactory medical history report. First time freshmen must take placement examinations in English and mathematics. Arrangements will be made with the student through the admissions office after notification of admittance.

**Advanced Standing**

The University of Missouri-St. Louis grants credit hours to entering freshmen who, on the basis of performance on the College Entrance Examination Board Advanced

Placement Tests and faculty administered tests, demonstrates proficiency in certain college level courses such as accounting, biology, chemistry, English, foreign languages, history, mathematics, political science, and physics. 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. This credit may be applied as advanced standing after the student has been admitted to the University of Missouri-St. Louis.

Individuals who are over 18 and have no previous college work may earn advanced credit through the College Level Examination Program (CLEP) general examination provided he or she scores at or above the 50th percentile. A maximum of 28 semester hours of credit may be earned through this exam. In addition, CLEP offers subject examinations to students for specific credit in one area. These exams can be completed at any time provided the student has not taken a course in the area of the test. A score at or above the 50th percentile must be earned before credit can be granted. Consultation with an adviser is recommended. The University of Missouri-St. Louis is a test center - CLEP tests are given the third week of every month. Contact the admissions office for complete information, phone 453-5451.

**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

**Application**

basis for granting such credit. In order to be counted toward a degree, the credit granted must be appropriate to the student's curriculum.

**Trial Admission**

High school graduates who do not meet the standards for regular admission from high school, but want to attend the university may be admitted on a conditional basis in the summer session. Typically, the enrollment is for six hours and if "C" grades or better are earned in these six hours, the student may submit an application after the close of the summer session. If space is available, their application will be reviewed and the student will be permitted to enroll in the regular fall semester.

**High School Nongraduate Applicants**

Individuals who have not graduated from high school, but seek admission on the basis of high school equivalency earned from performance on the United States Armed Forces Institute General Educational Development (GED) tests, may be admitted on the basis of an evaluation of the educational merits of the military and other experiences they have accrued since leaving school in combination with their GED test scores and or their performance on other aptitude tests.

**Veterans and Mature Adults**

Applicants who are veterans of the military service or are over 21 years of age, who have not previously earned college credit and have not been in school for several years, and who do not have a high school diploma or GED or do have a high school diploma, but do not meet the requirements for regular admission from high school, may be admitted on the basis of special preparation or attainment or exceptional aptitude as judged by an evaluation of their military and other experiences, test scores, and other indicators of potential success at the university. Applicants are admitted as special or irregular students although not as candidates for a degree. They can become degree candidates on the basis of their performance in the course work taken.

**Out-of-State Residents**

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. The procedure for applying for admission for an out-of-state resident is the same as the procedure for the Missouri applicant except a nonrefundable application evaluation fee of \$10 must accompany the application for admission. Checks or money orders should be made payable to University of Missouri. Upon notification of acceptance the applicant will be requested to submit a \$50 nonrefundable advance payment of the registration fee. This amount will be credited to the student's incidental fee when he or she enrolls in the university. Nonresident students are subject to the nonresident 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 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 college 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 or her 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 insofar as 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.

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, wherever earned and counted in the order earned, amount to a

total of 64 hours, including advanced standing granted on the basis of examination, 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 the dean has permitted excessive registration according to the following conditions: 17 hours if grade point average is 2.75 or better; 18 hours if grade point average is 3.0 or better; 19 hours if 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 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 or she may be allowed from junior college.

#### **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 forwarded. Application papers and official records of previous school work should be furnished the director of admissions. Upon approval of these papers the student will be notified by an official letter. No prospective student should make plans to leave his or her country without first obtaining this permission to enter the university. All students will be required to take the Test of English as a Foreign Language (TOEFL). Applicants should write to: Test of English as a Foreign Language, Educational Testing Service, Princeton, New Jersey 08540.

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

**Application**

a college level program, provided the school's letter of admission was the basis for issuance of the student's visa. To complete the student's credential file, he or she must furnish original and official transcripts from each school attended, both in this country and abroad. No student should consider admittance final until an official letter has been received stating that the student has been admitted.

**Other Applicants****Former Students**

Former students not currently enrolled should file a request for permit to reenroll with the director of admissions at least 30 days in advance of the registration period. If fall semester applicants receive an early admission decision, they may preregister during July and August. Preregistration for the winter semester and summer session is limited to students enrolled during the preceding term.

**Visiting Students**

Students who do not wish to earn a degree from the University of Missouri-St. Louis may be admitted to the summer session by certification as a visiting college student. Admission requires certification by the student's college or university that he or she 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 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 or her respective college.

**Hearer**

A hearer is registered and required to attend at least two-thirds of the session, but is not required to participate in any of the work of the course. He or she receives no academic credit. A student enrolled as a hearer may be dropped from the course when, in the judgment of his or her teacher and dean, the 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 or she is enrolled.

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

**Evening College Applicants**

The procedure for admission to the Evening College is the same as the procedure for admission to the day division. For further information see page 198.

## Registration

### **New Students**

Upon admission to the university students are advised that registration instructions will be forwarded to them by the registrar's office prior to registration. New students admitted for the fall semester are eligible for participation in advance registration procedures which are conducted during the summer months. New students admitted for the winter and summer terms participate in regular registration.

### **Former Students**

Former students who are not currently enrolled with the university must submit to the Office of Admissions requests for permits to reenroll. Former students who submit requests at least one month prior to the advanced registration for fall will be eligible for preenrollment. Those who are not admitted at an early date will be mailed regular registration instructions. All former students admitted for the summer and winter terms will receive regular registration instructions.

### **Currently Enrolled Students**

Currently enrolled students are eligible for participation in advance registration procedures for the fall, winter, and summer terms. During the mid-portion of the winter semester currently enrolled students are mailed intent to continue enrollment cards; students who return these cards to the registration office during the proper time period may preenroll for the fall semester, summer session, or both. Students who are enrolled during the fall term may preregister for the winter semester shortly prior to the close of the first semester. Currently enrolled students who wish to preenroll for the upcoming semester in a division other than that in which they are presently enrolled must submit to the admissions office a change of division card.

A student who registers after the regular registration period may, because of closed courses, find difficulty in securing the subjects desired; moreover, a student may not be permitted to carry the full amount of work but must enroll for a proportionately reduced amount of work depending upon the date of enrollment. 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 publicized in the university calendar.

### **Registration Cancellation**

Students who have enrolled and paid their fees, but do not wish to attend the university, may cancel their registrations at any time prior to the first day of the semester. Cancellation forms may be obtained at the registration office, 9 Administration Building. The registration fee will be refunded in full minus a \$10.00 processing charge. Refunds will be made by mail approximately two weeks after classes begin.



## Fees

Detailed information regarding fees and expenses is furnished in the University of Missouri-St. Louis *Undergraduate Bulletin*, the *Schedule of Courses*, and a pamphlet, *Tuition and Residence Rules*.

**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 advanced 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. Valid credit cards issued by Master Charge or BankAmericard will be accepted for payment of fees.

To comply with 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 zero 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 checks will be charged.

**Incidental Fee**

All students enrolled in the university are required to pay an incidental fee as follows:

Regular Semester  
\$270.00 for nine or more credit hours

Summer Session  
\$135.00 for five or more credit hours

For any other sessions not specified above and for partial enrollments the incidental fee shall be calculated at the rate of \$31.00 per credit hour.

**Nonresident Tuition Fee**

A nonresident 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 and/or does not meet other residency requirements. (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 pay proper tuition fees, and it is also the student's duty to raise the question if there is a possibility that he or she 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  
No fee for one to six credit hours  
\$160.00 for seven credit hours  
\$320.00 for eight credit hours  
\$420.00 for nine credit hours  
\$540.00 for ten or more credit hours

Summer Session  
No fee for one to three credit hours  
\$140.00 for four credit hours  
\$270.00 for five or more credit hours

**University Center and Student Activities Fee**

Each student registered in the university is required to pay a University Center and Activities Fee as follows:

Regular Semester  
\$24.50 for ten or more credit hours

Summer Session \$12.25 for five or more credit hours

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:

\$2.50 bond retirement on Multipurpose Building

\$10.00 bond retirement on University Center

\$7.00 Athletics

\$5.00 Student Activities

#### **Music Fee**

In addition to the incidental fee there is a fee for applied music as follows: for music majors, a single fee of \$45.00 per semester to cover all required applied music; and for nonmusic majors, a fee of \$45.00 per semester for each area in which the student enrolls for applied music, the defined areas being piano, voice, woodwinds, brass, percussion, and strings.

#### **Delinquent Indebtedness**

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

#### **Diploma Fee**

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

#### **Late Registration Fee**

Any student registering after the close of the regular registration period shall pay a late registration fee of \$25.00. A student presenting a check to the university in payment of student fees which is returned unpaid and remains unpaid after the close of the regular registration period, shall be considered a late registrant and shall pay the \$25.00 late registration fee.

#### **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**

All students desiring to operate a motor vehicle on the campus must register it and pay a fee at the time of registration. Failure to comply with traffic regulations may subject the student to disciplinary action, payment of an additional fee, and the denial of the privilege of operating a motor vehicle on campus. Copies of the *Traffic Regulations for the University of Missouri-St. Louis* may be secured from the UMSL Police Office, room 120 Administration Building.

There will be a parking fee for each motor vehicle used by a student on campus based on \$2.50 per credit hour up to a maximum of \$25.00 per semester. The daily fee charge for students who do not drive regularly is \$.50. Special parking rates are available for car pools.

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

The revenue from parking fees is used to construct and maintain roads, parking garages, and surface parking; to rent parking space off campus when necessary; to pay for the printing of parking stickers and regulations; and to pay for all other related expenses. 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 is charged for all photostatic copies of transcripts.

#### **Refund of Fees**

##### **Regular Semester**

Students withdrawing during the regular semester will be refunded the registration fee in accordance with the following schedule:

Fees

100 per cent refund less \$10.00 for the cost of handling registration if a student withdraws before the day classwork begins.

70 per cent refund if a student withdraws within two calendar weeks from and including the day classwork began.

50 per cent refund if a student withdraws between two and including six calendar weeks from the day classwork began.

No refund if a student withdraws after six calendar weeks from the day classwork began.

**Summer Session**  
100 per cent refund less \$10.00 for the cost of handling registration if a student withdraws before the day classwork begins.

70 per cent refund if a student withdraws within one calendar week from and including the day classwork began.

50 per cent refund if a student withdraws between one and including three calendar weeks from the day classwork began.

No refund if a student withdraws after three calendar weeks from the day classwork began.

**Refund of Parking Fees**

Students leaving school or canceling 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**  
75 per cent refund if a student drops parking between the first and through the fourth week from the day classwork began.

50 per cent refund if a student drops parking between the fifth and through the eighth week from the day classwork began.

25 per cent refund if a student drops parking between the ninth and through the twelfth week from the day classwork began.

No refund if a student drops parking after twelve weeks from the day classwork began.

**Summer Session**  
75 per cent refund if a student drops parking between the first and through the second week from the day classwork began.

50 per cent refund if a student drops parking between the third and through the fourth week from the day classwork began.

25 per cent refund if a student drops parking between the fifth and through the sixth week from the day classwork began.

No refund if a student drops parking after the sixth week from the day classwork began.

## Financial Aid

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. For detailed information on financial assistance programs and application deadlines, contact the Office of Student Financial Aid, Room 10 Administration Building, 8001 Natural Bridge Road, St. Louis, Missouri 63121.

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. This aid is available to qualified Missouri residents for attendance on the University of Missouri campuses at Columbia, Kansas City, Rolla, or St. Louis. The scholarships and awards are administered under separate quotas. They are not transferable from one campus to another.

### **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 10 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 or her freshman year at the university.

### **University Scholars Program**

University Scholars are selected in recognition of outstanding 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: Missouri residence; graduation from an accredited Missouri high school; rank in top 25 per cent of high school graduating class; rank in top 25 per cent on college aptitude test; and need financial assistance. The applicant is advised to discuss this matter with his or her high school 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

**Financial Aid**

of higher education will be considered on the same basis as continuing students. An upperclass student's eligibility for a waiver of the 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.

**Air Force ROTC 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 December 31. Cadets who do not receive the four-year scholarship may continue to compete annually under the program locally administered by the Aerospace Studies Program, Parks College of Aeronautical Technology, Cahokia, Illinois, telephone 436-1695, extension 58.

**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.

**UNITED-Special Services**

UNITED is an academic assistance program providing attention to the needs of the

UMSL student who has not yet reached full academic potential. Participants in the program are chosen on the basis of a variety of factors - need, former academic preparation and achievement, and sustained interest and motivation. A limited amount of financial aid is available through the program. For more information see page 00 of this bulletin or contact UNITED-Special Services, room 132 Administration Building.

A wide variety of special services at the university assist the student in one or more areas of his or her academic, personal, or social development.

**Academic Counseling**

Every student is assigned an academic adviser when he or she enrolls. Freshmen and sophomores are enrolled in the College of Arts and Sciences where advising assistance is available in the dean's office. Students are encouraged to consult with an adviser from the beginning of their career - advisers can help with determining a major and choosing the right kind of courses for a particular career objective.

**Developmental Skills Center**

The Developmental Skills Center, located in room 213 I Administration Building, offers assessment and referral services including individualized attention through the assessment counselors and basic skills services in reading, writing, math, and study skills. Workshops are scheduled each semester, usually in accordance with the student's schedule.

**Writing Lab**

Located in 301 Lucas, the Writing Lab is open to all Arts and Sciences students who want to improve their skill in preparing written assignments. Hours are posted, and students may either walk in or be referred by their instructors. Here they will receive individual help in organizing, writing, and/or proofreading *any* paper for *any* class. While assistance is primarily tutorial, a typewriter, tape recorder, slide projector, and slide-tape programs are available as well as an assortment of handbooks and programmed learning materials.

**Facilities****Bookstore**

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, notebooks, 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, caps, and gowns are ordered through the Bookstore.

**Food Service**

Extensive snack bar and cafeteria facilities are available in the University Center. The former, a fast food service offering a wide variety of cooked-to-order items, is open fourteen hours a day, five days a week, with seating for nearly 500. For more substantial fare, the lower cafeteria is open weekdays for lunch. Entre items are also available Monday through Thursday in the evening. Catered parties are available at reasonable cost.

**University Center**

The University Center includes facilities designed specifically for the nonacademic activities of the campus community. The revenues generated by food service, sundry counter, and Bookstore operations are combined with the student union fee and applied toward operation of the facilities and retirement of construction bonds. Special activities featured on weekends are open to current members of the university community and their individual guests.

The University Center houses an information and ticket desk and a sundry counter. The university Bookstore, the Central Reservations Office for the campus, and offices of the Director of Programming and the Director of Student Activities are located in this building.

Comfortable meeting rooms and work areas, a Student Activities Center, a photographic darkroom, and an informal lounge space with a seven-channel music system provide a relaxing environment for groups and individuals to work together. The center program is coordinated with that of the Extension Division so that facilities located in



**Facilities**

the J.C. Penney Building connected to the center will be available for university and community use as space availability and scheduling permit.

**Information Center**

The campus information center, located in the lobby of the University Center, is staffed by UMSL students from 7:00 am to 8:45 pm Monday through Friday in order to provide information and referral services to the UMSL community and to any other interested persons in the St. Louis area. Anyone with questions about campus activities and services is encouraged to call 453-5148 or stop by the center.

**Hotline**

Information communications services include a "Hotline" phone system which consists of three recorded phone messages describing campus activities and a direct line to the information center for personal assistance or specific questions. These numbers can be dialed from any one of the red "Hotline" phones located in each of the buildings on campus. These phones can also be used to contact any of the departments and offices on campus. The "Hotline" phone numbers are:

5865

Campus film schedules

5866

Cultural and athletic events/ticket information

5867

Daily calendar of campus events

5148

Direct line to information center

To reach any of these numbers from off-campus, dial the university exchange (453) before each extension.

**Health Center**

A friendly, young, and concerned professional staff provide out-patient medical care to students including first-aid and general health consultations. Emergency medical care is provided for all members of the university community.

A St. Louis physician is available on a part-time basis at the center. The physician is assisted by a permanent staff including a full-time registered nurse, part-time registered nurse, licensed practical nurse, and secretarial staff.

Patients are referred to health facilities in the St. Louis area when needed care is beyond the limitations of the center. The UMSL Police assist in the event of medical emergencies.

**The Student Health Center, 125**

Administration Building, is open to serve both the day and evening student population with hours from 7:30 am to 9:30 pm Monday through Thursday, and from 7:30 am to 5:30 pm on Friday.

**Housing**

There is no university owned or approved housing at UMSL. The Personnel Office maintains listings of rooms, apartments, and houses for rent, and real estate for sale for faculty, staff, and students.

## Counseling and Career Planning

### **Counseling Service**

The Counseling Service is organized to offer free professional assistance to students, faculty, and staff of the university with any concerns they may have of a personal, social, educational, or vocational nature. All contacts with counselors and psychologists on the Counseling Service staff are held in strictest confidence.

Among the services provided are individual and group psychological counseling and consultation, vocational testing, career choice guidance, and assistance with reading and study skills problems. In addition, a well-stocked library of materials pertaining to career choices and educational opportunities is housed with the service. The Miller Analogies Test, when part of a graduate student entrance requirement, is given upon request.

### **Women's Counseling**

Special assistance for mature women entering or returning to college is provided through the Extension Division's Programs for Women. Individual consultation is offered regarding educational and vocational plans, time budgeting, financial problems, credit by examination, and other concerns related to the resumption of study after prolonged absence from the classroom.

### **Career Planning and Placement Office**

As an aid to undergraduates, graduating students, and alumni, the Career Planning and Placement Office offers a variety of services and acts as a central registry for full-time and part-time job opportunities off campus.

Students undecided about career choices should utilize the career planning services available by appointment. This decision should be made as early as possible so the student may choose appropriate course work compatible with his or her career choice.

Representatives from business, government agencies, and school districts conduct on-campus interviews through the Career Planning and Placement Office each regular semester. Students interested in securing full-time employment following graduation

should register with this office at the beginning of their final year.

For those alumni seeking employment a weekly listing of full-time positions is available without cost. This computerized system is operated for those seeking an immediate full-time position giving wide geographic scope to the registrant's job search.

### **Peer Counseling**

The peer counseling service is a student group designed to render a personal counseling service to students by students on either a one-to-one or group basis. The service also acts as a referral agency to outside groups.



Specialized Services

**UNITED-Special Services**

The UNITED-Special Services Program began in 1969 as Project UNITED and served students primarily from inner-city neighborhoods and schools who were financially and educationally disadvantaged.

The scope of the program has been broadened: UNITED has developed into an academic assistance program providing attention to the needs of the UMSL student who has not yet reached full academic potential and requires some support in pursuing a higher education.

The program attempts to be comprehensive in nature, dealing not only with the academic adjustment that must be made to the university setting, but also with the personal and social adjustment. It serves students from the St. Louis Metropolitan Area.

Since students experience most difficulties during their first two years at the university, the program provides supportive services focusing on this crucial transitional period for the student. Such services include academic advisement, counseling, tutoring, and a limited amount of financial aid. During the summer prior to their freshman year, students under consideration for the program participate in a six week preparatory session conducted by the program. In order to facilitate the student's transition to the university, the summer session focuses on developmental course work in mathematics, English, reading, and study skills, as well as a general orientation to the university environment. The student receives academic advisement, and under the guidance of the staff, selects his or her courses for the fall semester.

Participants in the program are chosen on the basis of a variety of factors - need, former academic preparation and achievement, and sustained interest and motivation. Inquiries should be directed to: UNITED - Special Services Program, Room 132 Administration Building.

**Office of Veterans' Affairs**

The Office of Veterans' Affairs was established on campus to make the transition

from military life to student life as easy as possible. This office is eager to help veterans in establishing educational goals and in explaining the special benefits available to veterans because of their military service.

The office also has available seven peer counselors who are very capable and willing to help their fellow veterans. The peer counselors are composed of both black and white, male and female veterans who believe that their experience holds a common bond that unites all veterans in a common goal. The counselors deal with school problems, drug problems, housing problems, Veterans Administration benefits, jobs or any other problem that the veteran may encounter.

For more information contact the Veterans' Affairs Office, 213 Administration Building, 453-5315. This office maintains two outreach centers, one in the city and one in the county. The goals of both centers are to provide the veteran with assistance by fellow veterans who understand the problems and are willing to help the student-veteran in achieving his or her chosen goals.

**Women's Center**

The UMSL Women's Center provides information and programming designed to further the educational development of women at UMSL. The center serves to promote a sense of community among faculty, student, and staff women.

The center provides a small library of historical and current literature written about women and/or by women and free information of special interest to women.

Problem-solving counseling and a referral source for on-or off-campus medical and psychological persons is provided by the center in addition to referral information on educational and employment opportunities for women. In cooperation with the various women's studies courses, the center provides speakers on sexuality, marriage, careers, and the positive aspects of feminism. The center in 107a Benton Hall, is a visible place on campus where women can go, knowing that their concerns will be dealt with.

## Organizations

### Black Culture Room

The Black Culture Room houses a tutorial service and is equipped with a study area and lounge. Initiated by the Association on Black Collegians, now called the Minority Student Service Coalition, the room is called "Umajaa," an African word meaning brothers and sisters working together. It is located on the basement floor of the Administration Building, phone 453-5949.

### Alumni

As today's students form the present university community, UMSL's alumni help shape the future of UMSL by supporting necessary improvements. The Alumni Association and the Office of Alumni Activities work together to promote UMSL and to establish mutually beneficial relations between the campus and its alumni. Membership in the association is open to graduates and former students.

Projects sponsored by the association and the director of Alumni Activities include a renewable scholarship to a freshman, sophomore, junior, and senior student. Social activities such as Homecoming and Alumni Night provide an opportunity for alumni to meet and view the latest improvements on campus. The annual Serendipity Day provides high school seniors of the area with an opportunity to visit UMSL and meet members of the university community.

### KWMU

KWMU, 90.7 FM Stereo, presents fine arts, news, and public affairs 24 hours a day. A special student programming staff operates the facilities after midnight Fridays and Saturdays for "on-the-air" training. In association with the Extension Division, KWMU airs side-band (special frequency) instructional and credit programming simultaneously with its regular classical music and news programming.

KWMU also serves the university by broadcasting all of the official announcements of the university.

KWMU, at 97,000 watts, with antenna height of 981 feet, is the St. Louis area's largest coverage FM station.

### Student Government

The university's student government is known as the Central Council. This organization works for student participation in all aspects of university life, university affairs and policy making, and carries out the philosophy that all students are encouraged to govern themselves and be responsible for their government and education. In addition, the council works with the faculty and administration toward the objective of coordinating and maintaining an institution of increasing service to the students, alumni, metropolitan community, and state.

Representatives are elected at large from among the day students, evening students, and graduate students on the basis of one representative for every 500 students enrolled in each respective division. In addition, each student organization with full university recognition is allowed to send one representative to the council.

Aware that newly enrolled students have a role to play in student government, the council's constitution provides that no sooner than four weeks and no later than six weeks after the start of the fall semester, students enrolled for the first time (incoming freshmen, transfer students, and newly enrolled graduate students), shall be allowed to elect one representative for each 500 newly enrolled students.

### University Senate

Twenty-five students serve on the University Senate, which is composed of faculty and staff members as well as students. The Senate is responsible for recommending and implementing educational policy, particularly in the areas of academic and student affairs, reporting its actions to all members of the university faculty and to appropriate officers of the student body.

The Bylaws of the University of Missouri-St. Louis provide for standing committees to make recommendations to the Senate and to the appropriate administrative officers. Students, both members of the Senate and nonmembers, serve on such committees as Curriculum and Instruction, Admission and Student Aid, Library, Welfare and

## Organizations

Grievances, Student Affairs, Student Publications, Athletics, Fiscal Resources and Long-Range Planning, Urban Affairs, and International Studies.

### **Student Court**

A Student Court appointed by the Central Council, the student government, makes recommendations to the Dean of Student Affairs concerning traffic violations, and adjudicates matters of grievances between individual students or groups of students.

The court also conducts impeachment proceedings under provisions of the Central Council Constitution.

### **Evening College Council**

The Evening College Council serves the evening student body as a liaison between the student and the faculty and administration. It is the sounding board for the ideas and interests of the more than 2500 students who attend UMSL evening classes and a coordinator of social activities of special interest to the evening student.

The council has traditionally sponsored the "Koffee Klotch" on Monday and Tuesday evenings where students may come between classes or during a study break for a relaxing moment with friends and free refreshments. The "Koffee Klotch" is held during the fall and winter semesters only in the third floor lobby of Lucas Hall, and is supported by student activity fees.

Membership on the council is open to all students enrolled in the Evening College who are in good standing with the university. Applications are available in room 324 Lucas Hall or from any council member.

### **Student Organizations**

Whether a student's interest is on stage, writing for the "Current", checkmating a challenger, or organizing a group against lead poisoning, there is a place for him or her in one of the many student clubs and organizations.

Information concerning any of the recognized department clubs, fine art groups, fraternities and sororities, religious

organizations, and special interest groups may be obtained from the *Student Handbook* and the director of student activities. The Office of Student Activities advises and assists these organizations in every way possible to facilitate the projects the students themselves carry out.

Other services provided by the student activities office include information on group and individual travel in the United States or abroad. This information includes booklets on hotels, rail passes, student I.D. cards, air fares, and bicycle and motorcycle rentals. A car pool service matches students' class schedules by computer, and notifies students by mail of the names, addresses, and telephone numbers of other students in their areas.

## Programs

### Cultural Opportunities and Entertainment

The Director of Programming works with the University Program Board, comprised of students, in planning a variety of cultural, social, and extraeducational activities. These programs are subsidized with a portion of the students' activity fee. Program board offerings include:

#### Concerts

A series of informal concerts are held in the University Center lounge throughout the year. These are scheduled at the noon hour and have no admission charge. In addition to these performances, a number of weekend evening concerts, featuring a variety of musical forms, are held. A nominal admission is charged for these events. Performers who have appeared recently in this series include Cleo Laine & John Dankworth, and the Romeros.

About forty concerts are presented each year by the ten student music organizations and members of the Fine Arts Department faculty. The University choruses annually perform with the St. Louis Symphony, occasionally touring with the orchestra to New York and Washington, D. C.

#### Lectures

A wide range of lectures are scheduled each year. Some of the personalities who have visited the campus recently include Ralph Nader, Alex Haley, Harrison Salisbury, Sissy Farenthold, Daniel Schorr, Nikki Giovanni, Ramsey Clark, Nicholas Johnson, Raoul Berger, and William Ruckelshaus. There is no charge for admission to these programs.

#### Theatre

Each year the program board sponsors a number of performances by professional theatre companies. Recent offerings have included *The Second City Revue*, *The Fantasticks*, *Jacques Brel is Alive & Well & Living in Paris*, *The Effect of Gamma Rays on Man-In-The-Moon Marigolds*, *The Night Thoreau Spent in Jail*, and *Two Gentlemen of Verona*.

#### Films

Two series are scheduled each year. The weekend showings are of contemporary films

and are open to the University community at a charge of \$.75. A second series, scheduled during the week, features a wide variety of film classics and is open to the university community at no charge.

#### Social Events

Several informal dances and one dinner dance are scheduled each year.

The program board often works in cooperation with the Performing Arts and Cultural Events Committee (PACE) of the University Senate to present programs complementing the many other cultural opportunities available in St. Louis. The poster collection which is displayed in the public areas of campus buildings is the result of one such cooperative effort.

Professional and amateur art is presented in Gallery 210, sponsored by the PACE Committee. Forms ranging from African sculpture to the Americana of George Caleb Bingham have been subjects of exhibits at the gallery.

### Athletics

#### Intramurals

The intramural program is geared toward the interests and demands of the entire university community, including students, faculty, and staff. Competition is offered at the individual and team level, with some exclusive programs for both men and women.

The intramural staff encourages students and other UMSL personnel to take active roles in the creation of new intramural programs. Recreation activities which are offered each school year include: touch football, basketball, volleyball, street and field hockey, swimming, racquetball, handball, golf, tennis, bowling, soccer, softball, and hoc soc.

#### Intercollegiate

Intercollegiate athletics are available for both men and women at UMSL. Women's athletics is in its second official year of intercollegiate competition and has already proven itself to be one of the area's best in all aspects. Headed by Judy Whitney,

**Programs**

women's athletics has added a new and highly respectable dimension to intercollegiate play. Currently, women compete in basketball, field hockey, tennis, and volleyball.

UMSL's men varsity teams have earned winning tradition and brought national visibility to the university. Of the eight Riverman intercollegiate teams, four have reached national championships in recent years. UMSL's soccer team won the 1973 NCAA Division II national title and hosted the nationals in 1974. The Riverman baseball team earned consecutive trips to the NCAA Division II world series in 1972 and 1973.

The Riverman basketball team won berths in national finals in 1969 and 1971. Golf is the fourth UMSL team to gain prominence on a national scale, reaching the NCAA championship tournament three of the last five years. Wrestling, swimming, cross country, and tennis complete UMSL's intercollegiate athletic program.

Intramurals and intercollegiate athletics are supported in part by student activity fees. All UMSL students with validated ID's are admitted free to all UMSL home athletic events and may also have use of the multi-purpose building facilities during regularly set hours.

**Recreation**

The athletic and exercise areas in the Multi-purpose Building and adjacent fields are available for use by the university community. During regular semester hours, the building is open seven days a week and on specified evenings.

Facilities in the building and the surrounding outdoor areas include five basketball courts, four volleyball courts, four badminton courts, two handball courts, a wrestling room, a conditioning room, an olympic-sized swimming pool, a soccer field, baseball field, three intramural fields, and eight tennis courts. In addition, the building contains locker and shower facilities for all individuals wishing to take part in any intercollegiate, intramural, or recreational program.

Hard-surfaced courts for volleyball and

basketball are available for student use behind the Administration Building. The courts are not lighted for play after dark. In addition, there are two tennis courts located adjacent to the Administration Building which are available for student use on a first come, first served basis when the intramural or intercollegiate departments are not using them for practice or competition. The tennis courts are not lighted.

An outdoor, olympic-sized swimming pool located directly behind the Administration Building is open for faculty, staff, and students during the summer. Enrolled students may use the pool free of charge Sunday through Friday, while faculty, staff, and their families may use the pool daily on either a membership or daily fee basis.

The Fun Palace, located near the Administration Building, offers an amusement arcade. A snack bar, open weekends and nights, television lounge, and card room complete the variety of facilities.

## Specialized Facilities

### Library

The Thomas Jefferson Library has approximately 400,000 volumes and seats approximately 1,000 students. Some 17,868 reels of microfilm, 776,710 microfiche and microcards, and 89,380 government documents augment the basis reference and research collection.

Forty 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 7:00 a.m. to 11:00 p.m. Monday through Thursday; 7:00 a.m. to 5:00 p.m. on Friday; 9:00 a.m. to 5:00 p.m. on Saturday and 2:00 p.m. to 10:00 p.m. on Sunday. The circulation desk offers services up to 15 minutes before closing. Special hours are posted for holidays, vacation periods, and exam periods.

### Archives

The Archives and Manuscripts Division serves the faculty and students of UMSL and other educational institutions.

All manner of documentary materials concerning the heritage of St. Louis, the ongoing history of the region, and the social, political, cultural, and economic movements of American history are collected. The acquisitions are grouped into three sections: the University Archives, the Urban and Industrial Manuscripts, and the Oral History Program.

The division acts as a resource center for the teaching of social studies at all levels by duplicating for use, in either graphic or tape-recorded form, many of its holdings. A particular period in history could thus be illustrated by background research, photographs, and portions of tape recordings. Labor history, political activities, social history, and early aviation in St. Louis are some of the subjects which are emphasized in the photograph collections.

Copies of photographs in the collections are made available to patrons on loan.

The staff can assist researchers in a wide variety of subjects. Recent projects have included studies on the role of St. Louis in the beginnings of organized labor; the occupational history of minority groups in the area; political studies of surrounding communities; family histories; students examining the evolution of the English language in St. Louis and its modification by immigrant groups; and the sociology of sports in St. Louis.



## Specialized Centers

**Community and Metropolitan Studies**

The Center of Community and Metropolitan Studies was created by the University Board of Curators in the spring of 1965, to perform a three fold function of research, community service, and teaching. In order to promote a more comprehensive approach to the study and solution of urban problems, the center attempts to achieve as wide a degree of interdisciplinary cooperation as possible. The seven staff members who currently hold appointments in the center reflect a variety of disciplines, including sociology, economics, business administration, and political science.

Since education is viewed as one of the center's primary functions, an ongoing effort is made to involve students in urban research. As part of this effort, the center employs a limited number of graduate research assistants. In addition, a program is being developed to place qualified students in staff positions in area agencies, giving them a chance to acquire valuable knowledge and skills, and at the same time, to make significant contributions to the agencies in which they work.

Most of the center's research focuses on the immediate problems of St. Louis and the metropolitan area. Recent projects have concentrated primarily in the areas of housing, mass transit, employment, public finance, crime, and drug addiction. Frequently, the center cooperates directly with other university departments and with various government and private agencies, in order to facilitate the communication of information and reports to local citizens and policy makers.

In addition to its basic and applied research efforts, the center is concerned with developing new methods of information collection, storage, retrieval and analysis, and with developing and refining new problem-solving techniques, all as part of its ultimate goal of becoming a more effective tool to study and hopefully improve the conditions of the St. Louis area.

**Community Education Development**

Sponsored by the Extension Division and the School of Education, the Midwest Communi-

ty Education Development Center serves Missouri, Kansas, and Oklahoma. The purpose of the center is to foster the development of community schools in this tri-state area. Specific services include: consultation with educators and interested groups of laymen; specialized community education courses, training, and continuing education programs; public information services; and modest financial support on a competitive basis through philanthropic foundation funds for communities wanting to start community schools.

**Computer Center**

Computer Center facilities on the four campuses of the University of Missouri provide excellent modern computing services, available to faculty, staff, and students for educational, research, and administrative computing needs.

Computing hardware facilities on the St. Louis campus include a General Automation SPC-16/65 computing system, which is linked to an IBM 370/168 in Columbia. The SPC-16 serves as a remote job entry station to the four megabyte 370, where all processing is done. Peripheral equipment at UMSL includes a CalComp plotter, an OpScan 100 optical scanner for test scoring and data collection, and a digitizer. There are also a wide variety of interactive terminals connected to the 370.

Support services such as consulting, programming, keypunching, library, and operations are provided by the local staff. Users have access to a large software inventory, which includes a data base of urban information.

Access to the computer is available to all faculty, staff, and students. Assistance or an account may be obtained in 103 SSBE. Jobs are submitted and picked up in 111 SSBE. Computer Center hours are 8-10 Monday through Friday, 9-5 on Saturday, and 1-5 on Sunday. Additional information about services can be obtained by calling 453-5131.

**Engineering Center**

A Graduate Engineering Center was established in St. Louis in 1964 as part of the

continuing education program of the Extension Division of the Rolla campus of the University of Missouri. The center offers St. Louis area residents an opportunity to pursue graduate work in degree programs in engineering offered by the University of Missouri-Rolla. In 1968 the center moved to the UMSL campus. Master of science degrees in ten fields are currently offered through the center: aerospace, civil, electrical, chemical, environmental, mechanical, and metallurgical engineering; engineering management; engineering mechanics; nuclear engineering; and computer science.

Information concerning these programs may be obtained from the Director, UMR Graduate Engineering Center, University of Missouri-St. Louis.

#### **International Studies**

Organized in the fall of 1968, the Center for International Studies supports research activities, seminars, and conferences directed at: expanding understanding of international interactions; investigating domestic sources of externally directed national policies; improving methods and techniques of research in international affairs; and improving methods and techniques for communicating information and research findings in nonacademic settings.

The center staff consists of a director, research associates, students assistants, and secretarial and clerical personnel. Research associates hold annually renewable appointments in the center, typically with joint appointments in academic departments.

The center sponsors interdisciplinary and multidisciplinary courses and assists in staffing courses within individual departments. *Ad hoc* seminars may be arranged to meet specific needs or interests of faculty or of graduate or undergraduate students. The center similarly sponsors conferences and seminars, including an interdisciplinary Faculty Seminar in International Studies and the Monday Colloquium in the Social Sciences which meet frequently to discuss research methods, projects, and findings.

The center issues two types of publications: a Monograph Series and an Occasional Paper Series. Included in the Monograph Series are the proceedings of center conferences and special studies reporting the results of completed research projects. Included in the Occasional Paper Series are reports of preliminary findings of uncompleted research projects. The series reduces normal publication delays and allows an investigator to obtain early reactions to his research while it is still in progress.

#### **The Urban Journalism Center**

The Urban Journalism Center is a joint venture of the School of Journalism, University of Missouri-Columbia, and UMSL. Graduate students enrolled at Columbia may spend a semester at the UMSL center in a concentrated program of research and reporting on St. Louis urban area problems.

The program includes a wide-ranging seminar in which students explore urban journalism through readings, discussions, and talks with area leaders and authorities.

Selected seniors in the Journalism School at Columbia may also attend the center for one semester.

The Urban Journalism Center is under the supervision of a resident School of Journalism faculty member.







## Degrees

The academic structure of the university consists of the College of Arts and Sciences, the School of Business Administration, the School of Education, the Graduate School, the Evening College, and the Extension Division.

Information on undergraduate degrees offered by the university can be found on the pages indicated:

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

anthropology 140  
art history 79  
biology 49  
chemistry 55  
economics 62  
English 70  
French 101  
German 101  
history 87  
mathematics 94  
music 79  
philosophy 114  
physics 120  
political science 129  
psychology 135  
sociology 140  
Spanish 101

**Bachelor of General Studies (B.G.S.) 198****Bachelor of Science (B.S.)**

administration of justice 44  
business administration 162  
chemistry 55  
economics 62  
education 172  
physics 120

**Bachelor of Music (B.M.) 79**

Graduate degrees offered include the master of arts in economics, English, history, mathematics, political science and sociology. A master of science degree is offered in biology, chemistry, and physics. A master of business administration and a master of education degree are also offered. In most instances master's degree programs can be completed in the evening. The doctor of philosophy degree is awarded in chemistry and psychology.

Detailed information on graduate programs is contained in the *Graduate Bulletin* available at the admissions office.

## General Education Requirements

Each student must successfully complete the general requirements of the university, the school, or college to which he or she has been admitted, and the specific requirements of the student's area of specialization. The following are general education requirements for all degrees.

**Credit Hours**

All candidates for a baccalaureate degree must complete 120 semester hours. At least 45 of the 120 hours must be above the introductory level (courses numbered 100 or above, or comparable courses transferred). Each student must maintain a minimum 2.0 overall grade point average, and a minimum 2.0 grade point average in his or her area of specialization. Two degrees shall not be granted to a student until he or she has completed at least the equivalent of two semesters' work with at least 24 credit hours in addition to the requirements for one of the degrees.

**Basic Skills**

During the first year, every student shall demonstrate from his or her high school or college transcript, by examination, or by appropriate courses, competency in basic communicative and mathematical skills.

**Communicative Skills**

Proficiency may be shown by one of the following:

- 1 A satisfactory score on the English placement test. Dates this test is administered are available from the Admissions Office.
- 2 A grade of "C" or better in a college level English composition course. At UMMSL, this course is English 10, English Composition.

**Mathematical Skills**

Proficiency may be shown by one of the following:

- 1 Completing two years of high school mathematics exclusive of general mathematics with grades of "C" or better.
- 2 Receiving a satisfactory score on the mathematics placement test. Dates this test is administered are available from the Admissions Office.
- 3 Passing a college level mathematics course.
- 4 Passing Mathematics 02, Fundamentals of Algebra.

**Breadth of Study**

Each student must complete at least 42 hours chosen from the following three areas, with a minimum of at least three courses from each area.

**1 Humanities**

Literature; music history, literature, theory or appreciation; art history or appreciation (applied art and music courses will not count toward the humanities requirement); philosophy and logic.

**2 Natural sciences and mathematics****3 Social sciences**

Administration of justice, geography, political science, history, economics, sociology, anthropology and psychology.

**American History and Government**

Each student who expects to complete an undergraduate degree in the University of Missouri must present as a requirement for graduation a course or courses in American history or government taken at the University of Missouri or at other colleges or universities within the state of Missouri.

This requirement will be satisfied by credit in one of the following courses:

**History**

- 3 American Civilization
- 4 American Civilization
- 5 American Civilization
- 120 Black History in the U.S.
- 301 United States History: Colonial America to 1763
- 302 United States History: Revolution and the New Nation, 1763-1815
- 303 United States History: Nationalism and Sectionalism, 1815-1860
- 304 United States History: 1860-1900
- 305 United States History: 1900-1940
- 306 United States History: 1940 to the Present
- 311a Constitutional History of the U.S. to 1865
- 311b Constitutional History of the U.S. since 1865
- 314 Growth of the American Economy
- 315a American Intellectual History
- 315b American Intellectual History

**322a Black History in the U.S.: Slavery and Emancipation****Political Science**

- 11 Government in Modern Society: American Politics
- 170 State and Local Government
- 176 Community Politics
- 235 Political Parties
- 320 Introduction to American Constitutional Law

The transfer student should inquire at the Office of the Dean of the appropriate division to determine whether he or she has satisfied this requirement.

**Area of Specialization**

Each student seeking a degree must be accepted into an area of specialization within the College of Arts and Sciences, the School of Business Administration, the School of Education, or into any comparable area in the Evening College. To be accepted, a student must formally petition either a department within the College of Arts and Sciences, the School of Business Administration, the School of Education, or a comparable area in the Evening College, and must meet the entrance requirements specified by the school or department of his or her choice. It is recommended that the student should complete the petitioning process during the sophomore year. To facilitate meeting these requirements the student should consult with the department or school of his or her choice at the earliest possible date following admission into the university.

**Academic Residence**

Each student must have been in residence for at least 24 of the last 30 hours of graded credit (exclusive of pass-fail grades), except under unusual circumstances to be decided by the dean.

**Graduation**

Each student is required to file a degree application form in the office of the dean of the school or college from which he or she intends to graduate at least two semesters before the expected graduation date. The office of the dean will conduct a final

## General Education Requirements

graduation check to determine if all requirements for graduation have been met.

In addition to campus-wide general education requirements, the individual schools and colleges may set up specified requisites as well. The student should check with the office of the divisional dean or with an adviser to be sure his or her program will fulfill all the requirements of the department and division, as well as the university general requirements.

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

## Academic Policy

**Course Descriptions**

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 bulletin includes only those courses given on the campus of the University of Missouri-St. Louis. Separate bulletins 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 *Undergraduate Bulletin*, 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 Numbering**

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 nondegree 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 undergraduate, 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*).

#### Semester Guide

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.

F fall

W winter

S summer (absence of this letter does not necessarily mean that the course is never offered in summer)

Alt. F alternate fall

Alt. W alternate winter

V variable

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.

#### Credit Hours

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 periods 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. Thus a course valued at two credit hours will meet two periods per week for a semester; a five-hour course will meet five periods per week for a semester. The lecture or recitation period is normally 50 minutes in length and the usual laboratory period one hour and 50 minutes. Following the title of the course, the number 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).

#### Grading System

A four-point grading system (A = 4, B = 3, C = 2, D = 1, F = 0) is used for all undergraduate students; A, B+, B, C, and F grading system is used for graduate students.

At the close of each semester and summer session the director of admissions shall provide the student with grades. A copy of the student's grades will be mailed to the parents at the student's request.

Grade point average is computed by dividing the total quality points (number of credit hours for a course multiplied by value of grade received) by the total number of hours attempted.

#### Examinations/Delayed Grades

Examinations may be held only at regular class meeting times or as designated by the Committee on Curriculum and Instruction. A student whose work is incomplete at the end of any semester and has, in the judgment of the instructor, sufficient reasons for failure to complete work, may, with the approval of the instructor and the department chairman, be assigned a grade of "delayed." Such work must be made up no later than one semester after the delayed grade is given for undergraduate students, and no later than one year for graduate students, or the grade automatically becomes "F." However, the dean may, in unusual circumstances, extend this time limit.

A summer session cannot be counted as a semester within the meaning of the regulation. Notice of a change in a delayed grade shall be furnished the director of admissions on a special form.

When, in the judgment of the instructor, there is no basis for evaluating the work of a student who does not officially drop a course or officially withdraw from the university, the student shall be assigned a mark of "Y"



## Academic Policy

(unauthorized withdrawal-no basis for evaluation). If no grade is assigned by the instructor the grade of "Y" will be assigned. A "Y" grade may be changed to "Excused" only by petition to the Committee on Admissions.

### Pass-Fail Option

Undergraduate 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. 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 regular term or the first two weeks of the summer term. Instructors are not informed which students are taking courses on the pass-fail system.

"Pass" grades ("A" through "D") have no numerical value in computing a student's overall academic average, but will satisfy hourly graduation requirements. 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.

### Repeating Courses

No student who has passed a course shall be given credit for repeating the course except in those courses which require a minimum grade of "C" as a prerequisite for other courses in the same department. In such cases, a student receiving a "D" or "F" grade does not receive double credit hours toward graduation, but the points of the grade assigned him or her and the hours of the repeated course are used in computing his or her grade point average.

### 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; students should ascertain the requirements for their particular division.

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

### Course Load

Fifteen hours is considered a normal full-time work load during the fall and winter semesters. Six hours is a normal load for summer session students. The minimum full-time enrollment is 12 hours, excluding any physical education or military science. Students who have demonstrated ability to carry successfully more than 16 hours may, with the approval of their adviser and dean, enroll for additional hours. Under no circumstances may the student's enrollment exceed 20 hours in a regular semester or 10 hours in a summer session.

### Attendance

Students are expected to attend class regularly, and in accordance with the UMSL Bylaws, the faculty may set up penalties for excessive absences. Any student who is absent from class for more than three successive days shall be reported by the instructor to the dean.

Students should report an extended absence to the office of their divisional dean. An absence realized in advance should be reported to the instructors of courses the student will miss. Make up of examinations or work missed is allowed at the discretion of the instructor.

However, any student who is excused from class for valid reasons by the dean of his division shall be allowed, if possible, to make up work missed, provided the instructor is notified in writing by the dean.

**Dropping/Adding Courses**

To change his or her original enrollment a student must secure the approval of his or her adviser and the Office of the Dean. Students may drop/add courses to their daily schedules by use of the petition form which may be obtained at the divisional deans' offices. As many as five courses may be dropped/added on one petition form. For each petition form there is a \$5.00 fee. No student may enter a course after the first two weeks of the semester or the first week of a summer session. A student may withdraw from a course without a grade until the end of the first four weeks of the semester or the first two weeks of the summer session.

After the end of the first four weeks of the semester and until the end of twelve weeks (or from the end of the first two weeks of the summer session and until the end of six weeks), a student may withdraw from a course with a grade of "excused" providing the student is passing the course at the time of his or her withdrawal and receives the signatures of his or her instructor, adviser, and a representative of the dean's office. Otherwise, he or she will receive a grade of "F". Any student who ceases to attend classes but fails to drop officially shall receive a grade of "F" or "Y".

Following the twelfth week of a regular semester and the sixth week of a summer session "Excused" grades are issued only in exceptional instances where instructors' and deans' approvals are given. These grades will be recorded on the students' official records at the close of the semester or session; if a grade of "F" is recorded, it will be counted as hours attempted in computing the grade point average. No partial credit shall be granted any student who withdraws from a course during any semester, or otherwise fails to complete the work required for full credit in the course.

**Section Changing**

At any time during a semester or session students may change sections of courses (changes in class time) in which they are enrolled. Forms for doing this may be obtained, completed and submitted at the

departmental office for day courses and at the Evening College office for evening courses. Course cards should be obtained for the sections being added and submitted with the forms. There is no fee for section changing.

**Change of Major**

To change an academic major, the student should consult with his or her adviser and the office of the dean of the division in which he or she is enrolled.

A student admitted to any division may pursue work in other divisions, but only under conditions laid down by the faculty of the other division. The chairman of the major department in which the student is working toward a degree shall determine which courses from other divisions, or other institutions, shall apply as credit toward the degree.

**Withdrawal After Classes Have Begun**

After classes begin students may withdraw from the university by completion of the withdrawal form, which may be obtained at the office of the divisional deans. During the first four weeks of a regular semester (fall or winter) and the first two weeks of a summer session students may withdraw from the university without receiving grades. Following this period grades of "F" or "Excused" must be issued in accordance with faculty regulations. If the students are passing, grades of "Excused" are issued; if the students are failing, grades of "F" are issued. Following the twelfth week of a regular semester and the sixth week of a summer session "Excused" grades are issued only in exceptional instances where instructors' and deans' approvals are given.

These grades will be recorded on the students' official records at the close of the semester or session; if a grade of "F" is recorded, it will be counted as hours attempted in computing the grade point average. No partial credit shall be granted any student who withdraws from school during any semester, or otherwise fails to complete the work required for full credit in the course. Students who cease attending classes without officially withdrawing from



## Academic Policy

the university will be issued a grade of "F" or "Y". "F" grades will be counted as hours attempted in computing grade point averages; "Y" grades will not be counted.

### Academic Probation, Suspension, and Dismissal

Generally, a beginning student (with less than 12 hours completed) is placed on probation if his or her grade point average is less than 1.5. An advanced student (with 12 or more hours completed) is placed on academic probation if his or her grade point average is less than 1.75.

The dean may place a student on probation for miscellaneous other reasons such as excessive absences or neglect of academic duties. To be removed from probationary status, a student must make a semester average of 2.0 and have a cumulative average of 1.75.

A beginning student will be subject to suspension if the student passes less than half his or her work or the student's grade point average drops below 1.0. An advanced student may be suspended if the student passes less than two-thirds of his or her work, the student's semester average is less than 1.5 or his or her cumulative grade point average is below 1.75.

Any student may be suspended if he or she has been on scholastic probation for two or more semesters, not necessarily consecutive, and again becomes subject to probation. The dean may retain any student on probation rather than suspend him or her if circumstances justify such action.

A student who has been suspended may be dismissed if he or she again becomes subject to suspension. A student placed on probation because of a poor scholastic record in another institution shall be regarded as having been once suspended under these rules.

Normally, a student who has been dismissed shall not be considered for readmission. However, in certain unusual cases, a student may be readmitted on probationary status after one year.

A student admitted on probation to a summer session shall enroll for a minimum of six academic hours. If the student receives any grade below "C", his or her work will be reviewed by the dean of the division or the appropriate committee to determine eligibility to reenroll. Any student enrolled in the summer session whose grade point average is below 1.5, may have his or her work reviewed. A student suspended or dismissed from one division shall not be admitted to any other division until he or she would be eligible for readmission to the original division, without the consent of the divisional dean or appropriate committee. In such an event, the dean or committee shall file a written statement for the student's official record stating the reasons governing the decision.

### Academic Dishonesty

Academic dishonesty is considered one of the most serious offenses an UMSL student can commit, for it defies the academic integrity of the university and indicates that the student may not be worthy of further association with the university. Those guilty of a dishonesty may be dismissed from the university.

Plagiarism is considered a dishonest act. Plagiarism consists of using other people's ideas, statements, or approaches without giving these people full credit in a citation. Plagiarism also includes writing a paper made up solely of others' statements and ideas without any original thought of one's own, even if full citation is given to the original authors.

### Degrees

Degrees shall be conferred at commencement with candidates present for the awarding of the diploma. Only in unusual circumstances may a degree be conferred *in absentia*.

### Honors

#### Dean's List

After the close of each semester, the College of Arts and Sciences, the School of Business Administration and the School of Education send out letters of commendation. These letters go to those undergraduate

students completing at least nine hours of graded courses with a grade point average 3.2 or above for the semester.

#### Who's Who Among Students In American Universities and Colleges

Forms are available in the offices of the various academic deans, dean of student affairs office and the student activities office for nominating students to *Who's Who Among Students in American Universities and Colleges*.

Eligible students may be nominated by any student (whether for himself or for another student), by any member of the faculty or by any member of the administration. Criteria guiding the selection of nominees are scholastic ability (a cumulative grade point average of 2.5 or higher), participation and leadership in academic and extracurricular activities, and service to the school and promise of future usefulness. For further information on eligibility requirements and nomination deadlines, contact one of the offices mentioned above.

#### Latin Honors

Graduation with Latin honors is determined as follows: cum laude--3.2 to 3.49 grade point average and must have attended UMSL for 48 graded hours; magna cum laude--3.5 to 3.79 grade point average and must have attended UMSL for 48 graded hours; summa cum laude--3.8 to 4.0 grade point average and must have attended UMSL for 72 graded hours. All honors must be recommended by the major department.

#### Transcripts

The director of admissions will furnish a transcript of credits to the student upon written request and payment of a fee by the student. A transcript will be furnished to the student's parent or guardian upon payment of a fee only if the student has filed written consent with the admissions office. The fee for an official transcript is \$1.00. A photostatic copy is \$.50.

A student transferring to another campus of the University of Missouri may request the UMSL director of admissions to furnish a transcript to the director of admissions of the

other campus. There is no cost for this service.

Requests for transcripts from organizations supporting a student or with fee compensation programs will not be honored unless the student has filed a consent form in the Office of Admission and Records authorizing the release of such information.

No transcript is issued to or for any student who has a financial obligation to the university until the obligation has been paid in full.

#### Transfer Within The University of Missouri System

UMSL will allow the transfer of undergraduate students to another campus of the university with a minimum of difficulty, provided such transfers are not made for the purpose of avoiding disciplinary or academic requirements.

A student within the last 30 hours of graduation may take a limited number of courses at another campus of the university, provided the last 15 hours are taken on this campus, and provided further that the work has been approved previously by both the dean of the division in which the student is enrolled and his or her major department.

Acceptable credits earned on other campuses of the university shall be transferred at the letter earned. All grades shall transfer including the grades "D" and "F" and shall be computed in the grade point average except where the student has earned 12 or more acceptable credit hours at another institution outside the University of Missouri system prior to acceptance at UMSL. In such case, grades from the University of Missouri system will be treated as other transfer credits. Students whose grade point average is less than 2.0 normally will not be allowed to transfer to this campus.





## Program

The College of Arts and Sciences consists of over 250 full-time faculty in the following 14 academic departments: administration of justice, biology, chemistry, economics, English, fine arts, history, mathematical sciences, modern foreign languages and literatures, philosophy, physics, political science, psychology, and sociology and anthropology.

The college has a twofold commitment to liberal education. On the one hand it provides through its general education offerings an opportunity for the student to acquire a breadth of knowledge and understanding and a grounding in the basic tools and skills of intellectual inquiry. On the other hand, it provides through its departmental degree programs an opportunity for the student to acquire depth in a specific field of study.

Such an educational experience is also intended to provide a basic preparation for the student's vocational life. The sharp distinction sometimes made between liberal and career education is no longer a useful way to distinguish a college education from that of a trade school. Preparation for careers is one of the primary goals of students at UMSL, and rightly so. The responsibility of the college in this regard is to provide the kind of learning experience which encourages responsible vocational choice, enriches the meaning of vocation with the substance of humane reflection, and provides a setting in which the vocational preparation itself may go on without being narrowly defined in its meaning and scope.

### Evening College and Extension

There is a growing recognition that the four-year college experience is but one part of an extended learning process which is life-long. This awareness has tended to ease the pressures on the student to complete a degree within four years and has fostered a variety of continuing education opportunities which permit the student to continue learning beyond high school at his or her own pace. This awareness, coupled with the high enrollment of working students at UMSL, has led to increasing cooperation of

the College of Arts and Sciences with the Evening College and the Extension Division of the university. Arts and Sciences faculty teach regularly in the Evening College with an increasing number of arts and sciences degree programs being available to students entirely through evening study. The Arts and Sciences Extension extends the talents of the faculty into the larger community through numerous off-campus courses, conferences, and programs. Some undergraduate and postgraduate internships have been created through extension for students in local governmental and social agencies.

All of this is in keeping with the commitment of this university to serve as directly as possible the needs of its urban environment.

### Academic Advising

All undergraduate students entering UMSL at the freshman or sophomore level are enrolled in the College of Arts and Sciences and receive academic advising from the Office of the Dean, Lucas Hall, Room 303, until such time as they declare a departmental major. Students are normally expected to declare the major or academic objective no later than the beginning of their junior year. Whenever a student decides on a major he or she should contact the dean's office to be assigned a faculty adviser in the appropriate discipline. Students are encouraged to consult with their academic adviser early in the development of their major program of study.

Advising assistance for all arts and sciences students with or without a major is readily available in the Office of the Dean. Students with questions or problems of any nature should feel free to contact the advising staff for direct assistance or referral. All of the following matters may be handled in the dean's office: making a change in course schedule, evaluating transfer credit, withdrawing from school, placing a course on pass-fail, and filing for degree candidacy.

Students transferring into the College of Arts and Sciences from other institutions may seek assistance from the dean's office to effect as smooth a transition as possible. Arts and sciences advisers will evaluate all

## Requirements

transfer credit to determine its applicability to the specialized degree requirements of the college. Students transferring from a junior college with associate degrees will have their credits evaluated according to the same criteria applied to all other transfer credit. Having the associate degree does not exempt the student from meeting the specialized lower division degree requirements of the university and the specialized requirements of departments or divisions of the university.

### **Degree Candidacy**

Every student in the college should file a degree application with the dean's office at least two full semesters before his or her expected graduation date. This form is available in the dean's office.

### **Transfers to the School of Education or Business Administration**

Students planning to take a degree in the School of Education or the School of Business Administration are enrolled in the College of Arts and Sciences until they obtain 60 college credit hours with a cumulative grade point average of 2.0, and, in the case of the School of Business Administration, have satisfied the general education requirements specified by that school. These students need not meet graduation requirements of the college, as they are responsible for meeting the requirements set by the school into which they wish to be admitted.

### **Teacher Certification**

Students wishing to obtain teacher certification may choose either of the following alternatives:

- 1 Work toward the A.B. degree in the College of Arts and Sciences by meeting the requirements of a departmental major and taking the necessary courses for teacher certification in the School of Education.
- 2 Transfer to the School of Education (after completion of 60 credit hours of course work) to obtain the B.S. degree in Education with a concentration in an approved area offered within the College of Arts and Sciences.

### **College Requirements**

All students enrolled in a degree program within the College of Arts and Sciences must meet the following requirements:

1 The university general education requirements listed on page 30.

2 The non-Euro-American studies requirement of the college.

3 The requirements of the specific baccalaureate degree program (B.A., B.S., or B.M.) in which the student is enrolled in the college.

4 The departmental requirements set by the department in which the student chooses to major. In some circumstances an interdisciplinary program involving two or more departments may be devised. These requirements are described in the departmental listings which follow.

### **Non-Euro-American Studies Requirement**

In order to expose all students to a culture radically different from their own the college requires that every student take a three-hour course which focuses primarily and substantially upon aspects of culture arising from the natives of that culture and not upon the interactions of the culture with Euro-American cultures.

The college requirement in non-Euro-American studies may be met by taking any one of the following courses:

Anthropology  
 201 Cultures of Middle America  
 203 Cultures of South Asia  
 205 Cultures of Southeast Asia  
 207 Cultures of Native North America

Art  
 145 Survey of Oriental Art  
 207 Primitive Art  
 208 American Indian Art

Music  
 5 Introduction to Non-Western Music



## Requirements

## History

- 61 Asian Civilization
- 62 Asian Civilization
- 71 Latin American Civilization
- 361 Modern Japan: 1850 to Present
- 362 Modern China: 1800 to Present

## Philosophy

- 170 Asian Philosophy

## Political Science

- 253 Political Systems of South America
- 254 Political Systems of Mexico, Central America and the Caribbean
- 255 Asian Comparative Politics
- 352 The Politics of Modernization

**Courses Not Approved for Degree****Credit:**

The following courses do not carry credit for a degree from the College of Arts and Sciences:

- English
- 09 English Composition

## Mathematical Sciences

- 02 Fundamentals of Algebra

## Education

- 2 Effective Reading and Study Skills
- 30,31 Shorthand Theory
- 32,33 Business and Professional Typewriting

**Degree Requirements****Bachelor of Arts (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 the individual departments vary within these limits.

A.B. degree candidates must complete 13 college credit hours or the equivalent in proficiency in one foreign language.

Satisfactory completion of a foreign language course numbered 100 or 101 meets 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 or she may enroll in Language 1.

A student with four high school units in one foreign language is exempt from the language requirement. If the student using that language for proficiency elects to take language I or II in the **same** language he or she must then finish the sequence through 101 or 100, in order to receive credit for the courses he or she has completed.

Any student who wishes to be exempt and who has excelled in his or her 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.

Students in German, Russian, and French may substitute Scientific Languages 100 for Language 101 whenever a course is offered.

Students not majoring in music or art may take a maximum of 8 credit hours of applied music and/or studio art courses, including credit transferred.

**Bachelor of Science (B.S.) Degree**

The College offers the B.S. degree in the administration of justice, chemistry, economics, physics, and applied physics (with a concentration in astrophysics possible). 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 major.

**Bachelor of Music (B.M.) Degree**

The requirements for the B.M. degree are the same as the A.B. degree with the addition of courses in music and education leading to teacher certification. The college does not require a foreign language proficiency for this degree; however, foreign language study is required for applied voice students.

## Administration of Justice

### Administration of Justice Program

The Administration of Justice (AOJ) Department offers work leading to the bachelor of science degree in administration of justice and master of science degree in political science with an emphasis in administration of justice.

Academic work and participation in various extension and research projects take place within the context of the following broad departmental objectives:

The administration of justice faculty shares in the general education mission of the College of Arts and Sciences.

Education in the justice process is most effective when it takes place in a setting which encourages relationships with operating agencies. This is in keeping with the professional orientation of the department.

Administration of Justice programs should be truly interdisciplinary. Therefore, the education of both the faculty and the students should be broad and systematic.

The administration of justice faculty is representative of a diverse range of interests and backgrounds of academic training. Most of the full-time faculty members have served as criminal justice practitioners, as well as consultants with operating criminal justice agencies. In addition, the AOJ faculty includes many distinguished practitioners who instruct on a part-time basis. The program is also strengthened by the regular appointment of distinguished visiting faculty members.

The phrase, "criminal justice studies" is subject to a variety of definitions and frames of references. The one adopted by the UMSL Administration of Justice program is that developed by Dean Richard A. Myren of the State University of New York (S.U.N.Y.) at Albany.

"Criminal justice studies are integrated, interdisciplinary sequences of scholarly teaching and research in the behavioral and social sciences (including law and public

administration) focused on the social problems of crime."

Criminal justice studies are certainly a major focal point of interest for both faculty and students. However, the collective interest of the program is broader than this, and includes, as well, interest in the fields of administrative and social justice. For this and other reasons, many students consider administration of justice to be an appropriate "prelegal" major.

The interdisciplinary character of the program is designed to provide students with methods of approaching and understanding the assumptions, the values, and the processes of the justice enterprise. Within the career orientation of the program, students are given innumerable concrete situations by which to analyze their own values as they relate to particular social problems.

### General Education Requirements

Each administration of justice major must satisfy the general education requirements of the University listed on page 30, the general education requirements of the College of Arts and Sciences as they apply to the B.S. degree, and the requirements of the administration of justice program.

The 13 hours of foreign language required for the A.B. degree is optional for the B.S. candidate. Students may, and are encouraged to, take a foreign language. For those not wishing to take a foreign language, 13 hours in social sciences above those in the general education requirements are required. The three-hour non-Euro-American requirement may be met by taking any approved non-Euro-American course.

The department endorses the general concept of the pass-fail option. Nearly all AOJ courses may be taken on a pass-fail option by nonmajors. Majors, on the other hand, may not take any AOJ course on a pass-fail basis, nor may they take either Sociology 30, Interpretation of Sociological Data, or Sociology 130, Research Methods, on a pass-fail basis.

### Degree Requirements

#### Core Curriculum

Majors in Administration of Justice must complete both the requirements of the core curriculum and one of the four separate career options. The core curriculum consists of the following courses:

#### Sociology

- 10 Introduction to Sociology
- 30 Interpretation of Sociological Data
- 214 Juvenile Delinquency and Youth Crimes
- 326 Criminology

#### AOJ

- 40 Introduction to Administration of Justice
- 70 Criminal Law and Procedure
- 99 The City
- 200 American System of Justice-Institutional
- 201 The Criminal Justice System: Conflicting Perspectives I
- 202 The Criminal Justice System: Conflicting Perspectives II
- 380 Seminar in Administration of Justice
- 399 Independent Study and Research

Completion of the core curriculum is designed to provide all AOJ majors with a common educational foundation, irrespective of career goals or options. Completion of the core curriculum should assure a grounding and familiarization with the following substantive areas: survey of selected social and urban problems; introduction to the analysis of social data and statistical methods; introduction to criminal law and procedure; introduction to and survey analysis of the criminal justice process; introduction to theories of crime and delinquency causation and control, and application of selected social research methods to particular administration of justice problems.

As many as 18 units of administration of justice or police science courses may be transferred, as part of the major, from Missouri junior colleges. Students transferring from other institutions are encouraged to check with the admissions office relative to transfer of credit for specific courses.

#### Career Options

In addition to the core curriculum, students must complete the requirements of one of the career options. Broadly speaking, these options are designed to increase the student's familiarization and to provide educative skills in one of the following career fields: policing, rehabilitation and treatment of adult and juvenile offenders, juvenile delinquency or crime prevention, or criminal justice planning.

The requirements of the four separate options are as follows:

#### American Policing System

- Economics
- 51 Principles of Microeconomics

#### AOJ

- 71 Evidence
- 250 Police Administration
- 260 Police-Community Relations
- 325 Criminal Law in Action

#### Political Science

- 140 Public Administration

Plus nine (9) additional units, above the introductory level, of courses selected from the social sciences or philosophy.

#### Treatment of Offenders

- Psychology
- 3 General Psychology
- 145 Abnormal Psychology
- 155 Community Psychology

#### Sociology

- 130 Research Methods

#### AOJ

- 310 Community Approaches to Prevention and Control of Crime and Delinquency
- 340 Probation and Parole

and six (6) units from the following:

#### Psychology

- 171 Adolescent Psychology
- 225 Behavior Modification
- 246 Introduction to Clinical Psychology
- 248 Psychological Research and Theory in Juvenile Delinquency

## Administration of Justice

265 Psychological Tests and Measurements

and six (6) units from the following:

## AOJ

- 205 The Juvenile Justice System
- 225 The Juvenile and the Law
- 227 Urban Law: Poverty and the Justice System
- 325 Criminal Law in Action
- 330 Correctional Institutions

## Etiology and Prevention

## Psychology

- 3 General Psychology

and three (3) units selected from:

## Psychology

- 145 Abnormal Psychology
- 170 Child Psychology
- 171 Adolescent Psychology

## Sociology

- 130 Research Methods

## AOJ

- 205 The Juvenile Justice System
- 225 The Juvenile and the Law, or
- 227 Urban Law: Poverty and the Justice System
- 310 Community Approaches to Prevention and Control of Crime and Delinquency
- 330 Correctional Institutions
- 340 Probation and Parole

**Criminal Justice Planning**

## Business

- 104 Fundamentals of Digital Computer Programming

## Mathematics

- 40 Pre-Calculus Mathematics
- 101 Survey Calculus

## Business

- 224 Introduction to Systems Programming
- 375 Operations Research

## Economics

- 301 The Urban Environment and Planning

and six (6) units from the following:

## AOJ

- 205 The Juvenile Justice System
- 225 The Juvenile and the Law
- 227 Urban Law: Poverty and the Justice System
- 310 Community Approaches to Prevention and Control of Crime and Delinquency

In addition to these specific educational development patterns, the Administration of Justice Department permits selected students to work out special curricular patterns to meet special needs. With the approval of a departmental adviser, students may merge two or more options; in addition, it is possible to work out a special major in cooperation with another instructional department.

All students have an opportunity to engage in the extracurricular and professional activities of the AOJ Students Association.

## Administration of Justice Faculty

Gordon E. Misner Chairman, Professor  
D. Crim., University of California

Henry Burns, Jr. Visiting Associate Professor  
Ph.D., Southern Illinois University, Carbondale  
Associate Professor, Indiana University

Raymond T. Galvin Visiting Associate Professor  
M.A.

Isaac Gurman Associate Professor  
M.A.

Richard B. Hoffman Visiting Associate Professor  
MBA, University of California at Los Angeles

Thomas A. Johnson Visiting Associate Professor  
D. Crim., University of California  
Associate Professor, University of Arizona

Hon. Theodore McMillian Associate Professor  
J.D., St. Louis University

Richard H. Ward Visiting Associate Professor  
D. Crim., University of California  
Dean of Students, Associate Professor  
John Jay College of Criminal Justice (CUNY)

Richard D. Baron Assistant Professor  
J.D., University of Michigan

Stanley E. Goldstein Assistant Professor  
J.D., Washington University

David L. Smith Assistant Professor and  
Extension Coordinator  
J.D., University of Minnesota

Alphonso Jackson Assistant Professor  
J.D., Washington University

Ben Brashears Instructor  
M.A.

J. Noel Criscuola Instructor  
M.A.; M. Crim.

David O. Fischer Instructor  
LL.B.

Charles Mann Instructor  
M.S.

Herman V. Wood Instructor  
M.S.

Harry Mellman Lecturer  
Ph.D., University of Illinois

Eugene P. Schwartz Lecturer, Program Coordinator, AOJ  
Extension  
M.S.W.

Walter B. Lewis Program Coordinator,  
Extension AOJ

## Administration of Justice Description of Courses

Prerequisites may be waived by consent of instructor.

### **40 Introduction to Administration of Justice (3) (F&W)**

A survey of the problem areas in the administration of justice system delineated by recent national commission studies. Formerly AOJ 100.

### **70 Criminal Law and Procedure (3) (F&W)**

An analysis of substantive criminal law and its procedural aspects. Formerly AOJ 220.

### **71 Evidence (3) (F)**

Fundamental questions of evidence and theory of proof, including hearsay, documentary proof, self-incrimination, relevance, and presumptions. Formerly AOJ 221.

### **75 Crime and Punishment (3) (V)**

(Same as Psychology 75, Sociology 75, and Anthropology 75) An interdisciplinary course. An introduction to sociological and psychological explanations of crime and punishment. An examination of private and governmental responses to the threats of crime and delinquent behavior.

### **90 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.

### **99 The City (3) (F&W)**

(Same as History 99, Political Science 99, Psychology 99, Sociology 99, and Economics 99)  
Prerequisite: None. 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.

### **200 American System of Justice—Institutional (3) (F&W)**

Prerequisite: Junior standing or consent of instructor. The institutions through which the criminal law is administered: police, courts, correctional institutions; objectives (prevention of crime, punishment, rehabilitation, etc.) of the institutions, organization of each; processes through which each function; decision making (to arrest or not, sentencing, probation, paroling).

### **201 The Criminal Justice System: Conflicting Perspectives I (3) (F)**

Prerequisite: AOJ 200. 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, activities, and skills of the citizen, criminal justice professional, and social scientist will be identified and analyzed.

### **202 The Criminal Justice System: Conflicting Perspectives II (3) (W)**

Prerequisite: AOJ 201 or consent of instructor. An examination of competing social interests served by the criminal justice system, past and present. Attention will focus on the need for and the nature of



## Administration of Justice Description of Courses

a criminal law that serves the public interest and not private interests.

### **203 Regional Organization of Criminal Justice Resources (3)**

Prerequisite: AOJ 40 and 70. Crime and criminal justice resources in relation to the development of metropolitan regions. Congruent and incongruent patterns of criminal and delinquent activity and criminal justice organization. Policy and planning considerations.

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

Prerequisite: AOJ 40 or consent of instructor. Intensive analysis of the social administration of juvenile justice within the U.S. Particular emphasis will be placed on the decision-making process of police, court and probation officials regarding apprehension and processing of juveniles. Recent Supreme Court decisions and citizen efforts to revise the Juvenile Code will also be examined.

### **215 Criminal Justice Data (3)**

An analysis of data needs in criminal justice agencies. Emphasis will be placed upon data as it relates to administrative, policy planning, and program evaluation requirements, as well as the ethical criteria for its release.

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

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.

### **227 Urban Law: Poverty and the Justice System (3) (F&W)**

Prerequisite: AOJ 70 or equivalent, or consent of the instructor. Examination of administrative regulations and the civil law process as it affects the life of the urban and the rural and the poor.

### **250 Police Administration (3) (F)**

Prerequisite: AOJ 40 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 institutions in cooperation with the Extension Division.

### **260 Police-Community Relations (3) (W)**

Prerequisite: AOJ 40 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.

### **310 Community Approaches to Prevention and Control of Crime and Delinquency (3) (F&W)**

Prerequisite: AOJ 40 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 70 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 of the exercise of police power.

### **330 Correctional Institutions (3) (F&W)**

Prerequisite: AOJ 40 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: AOJ 40 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.

### **351 Special Seminar on Problems in the Criminal Justice Process (1-6) (V)**

Prerequisite: Consent of instructor. Advanced seminar dealing with selected subjects, approved by the faculty, to fill special agency educational needs. Offered only in specially designed educational formats in cooperation with the Extension Division.

### **360 Comparative Justice System (3) (V)**

Prerequisite: AOJ 70 and 200 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. 130, AOJ 70 and 200, Senior standing, or consent of instructor. Study of selected special problems in the administration of justice (May be repeated once for credit.)

### **395 Field Placement (3) (F&W)**

Prerequisite: Soc. 30, AOJ 40, 70, 200 or consent of instructor. Field placement under faculty supervision, in administration of justice agencies. (May be repeated once for credit.)

### **399 Independent Study and Research (3) (F&W)**

Prerequisite: Soc. 120, AOJ 70 and 200, 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.)

## Biology

### Program

The biology department offers work at the undergraduate level leading to the bachelor of arts in biology, bachelor of arts in biology with teacher certification in cooperation with the School of Education, and bachelor of science in education with a major in biology in cooperation with the School of Education. The department also offers the master of science degree.

In general, the program for biology majors is designed to prepare the student for further graduate training in research, as well as further professional training in areas such as medicine, dentistry, veterinary medicine, and optometry. Biology majors also enter a wide variety of related fields such as medical technology, public health, bioengineering, and high school biology teaching.

Biology staff members are currently engaged in teaching and research in areas ranging from bacteriology to behavior, biochemistry, immunobiology, and population studies. Because knowledge of these areas is fundamental to many aspects of modern biology, majors have the opportunity of taking courses which can help them to develop both theoretical and experimental backgrounds necessary for further work in some of the most rapidly expanding fields of biological science. The department also offers undergraduate majors the opportunity for indepth studies in specific areas of interest through advanced courses, seminars, and individualized research programs. Majors are also 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.

The biology department presently occupies approximately one-half of Stadler Hall, and contains research laboratories, teaching laboratories, environmental chambers, greenhouse, animal care rooms, and a large array of supporting equipment such as an ultracentrifuge, electron microscope, amino acid analyzer, etc. Also available to the department are wildlife facilities at Weldon Springs experimental farm (8000 acres of cultivated and natural habitats) and Tyson

Tract (3,500 acres of natural habitat) both within 30-45 minutes of the UMSL campus.

The department also participates in a cooperative consortium program in botany with Washington University, St. Louis University, S.I.U., Edwardsville, and Missouri Botanical Gardens (Shaw's Garden).

### General Education Requirements

Each biology major must satisfy the general education requirements of the University listed on page 30, and the general education requirements of the College of Arts and Sciences listed on page 41. Courses in biology may be used to meet the university's science and mathematics area requirement. Since many graduate schools require proficiency in French, German, or Russian, it is recommended that students satisfy the college's foreign language requirement with one of these languages. Biology majors who wish to substitute other languages for those listed may do so in consultation with their adviser.

In accord with the policy of the College of Arts and Sciences, biology majors may take up to 24 credit hours of course work on a pass-fail basis. However, the pass-fail option cannot be used by biology majors for biology courses other than Biology 289, Seminar, and Biology 290, Research, nor for required courses that must be taken in the chemistry, mathematics, and physics departments.

### Degree Requirements

The minimum course requirements for biology majors total 33 credit hours in biology, of which 13 hours must include:

- 10 Introductory Biology
- 224 Genetics
- 276 Biological Chemistry
- 289 Senior Seminar

Considerable flexibility is available to the student in choosing the remaining 20 hours of biology courses, but a minimum of one course is to be taken from each of the following three major biological areas:

## Biology

## Cellular and Molecular Area

- 216 Microbiology
- 235 Development
- 310 Cellular Biology
- 314 Virology
- 317 Immunobiology
- 334 Plant Physiology and Development

## Organismal Area

- 213 General Physiology
- 235 Development
- 250 Plant Form and Function
- 280 Animal Behavior
- 313 Comparative Animal Physiology
- 334 Plant Physiology and Development
- 381 Biosystematics

## Population and Ecology Area

- 220 General Ecology
- 242 Population Biology
- 246 Evolution
- 280 Animal Behavior
- 342 Population and Community Ecology
- 381 Biosystematics

Courses taken to fulfill a requirement in one of the above areas may not be counted for that purpose in another area. Biology majors must also choose and complete three biology laboratory courses, and five hours of electives in biology at the 200 level or above which are in addition to those used to fulfill the other requirements.

**Related Area Requirements**

Each biology major must complete the following related area requirements:

## Chemistry

- 15 hours of chemistry including:
- 11 Introductory Chemistry I
- 12 Introductory Chemistry II
- 261 Structural Organic Chemistry

One of the following courses:

- 122 Quantitative Analysis
- 262 Organic Reactions
- 263 Techniques of Organic Chemistry

Many dental and medical schools require an additional semester of organic chemistry. The student should inquire whether this additional requirement can be filled by the biological chemistry course.

## Mathematics

- 31 Elementary Statistical Methods
- 101 Survey Calculus, or its equivalent

## Physics

One year's course work in introductory physics, Basic Physics 11 and 12.

Additional work in chemistry, mathematics, and physics is recommended.

A tentative schedule assigning courses to specific semesters and specific calendar years is available in the biology department.

## Biology Faculty

Gary T. Heberlein Chairman, Associate Professor  
Ph.D., Northwestern University

Robert S. Bader Dean, College of Arts & Sciences  
Professor  
Ph.D., University of Chicago

Arnold B. Grobman Chancellor, Professor  
Ph.D., University of Rochester

Frank H. Moyer Professor  
Ph.D., The Johns Hopkins University

Peter H. Raven Professor (Non-Regular)  
Ph.D., University of California-Los Angeles

Monroe W. Strickberger Professor  
Ph.D., Columbia University

Jacques Delente Associate Professor (Non-Regular)  
Docteur Ingenieur, Gaen

Theodore H. Fleming Associate Professor  
Ph.D., University of Michigan

Harvey P. Friedman Associate Professor  
Ph.D., University of Kansas

Lawrence D. Friedman Associate Professor  
Ph.D., University of Wisconsin

Donald E. Grogan Associate Professor  
Ph.D., University of Missouri-Columbia

Martin Sage Associate Professor  
Ph.D., Nottingham University, England

John E. Averett Assistant Professor  
Ph.D., University of Texas-Austin

Thomas B. Croat Assistant Professor (Non-Regular)  
Ph.D., University of Kansas

William G. D'Arcy Assistant Professor (Non-Regular)  
Ph.D., Washington University

Albert Derby Assistant Professor  
Ph.D., City University of New York

Peter Goldblatt Assistant Professor (Non-Regular)  
Ph.D., University of Cape Town, South Africa

Charles R. Granger Assistant Professor  
Ph.D., University of Iowa

Johnathan E. Harrington Visiting Assistant Professor  
Ph.D., Duke University

James H. Hunt Assistant Professor  
Ph.D., University of California-Berkeley

John E. Ridgway Assistant Professor  
Ph.D., University of Texas-Austin

Lon A. Wilkens Assistant Professor  
Ph.D., Florida State University

Ann A. Wilke Instructor  
M.S.

Dimple J. Jud Assistant Instructor  
A.B.

## Biology Description of Courses

Prerequisites may be waived by consent of department or instructor.

### 1 General Biology (3)

Emphasis on fundamental principles of biology. Biology 1 can be applied toward fulfillment of the general education requirement in science. Biology 1 does not satisfy the prerequisite requirements 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. Three hours lecture per week.

### 3 General Biology Laboratory (2)

Prerequisite: Biology 1 (May be taken concurrently). Laboratory course to accompany Biology 1. Biology 3 can be used to fulfill the general education requirements in a laboratory science. Biology 3 does not meet the prerequisite requirements for other courses in biology. Three and one-half hours of laboratory per week.

### 10 Introductory Biology (5)

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.

### 90 Freshman Seminar (3)

Prerequisite: Freshman standing and high school biology. Topics to be announced for each section. Weekly seminars and individual conferences. Sections limited to 12-15 students.

### 110 The Biology of Man (3)

Prerequisite: Biology 1 or consent of 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)

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)

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)

Prerequisite: Must be taken concurrently with Biology 116. Standard techniques for identification, growth and control of microorganisms. Three and one-half hours laboratory per week.

### 120 Environmental Biology (3)

Prerequisite: Biology 1. An examination of the

## Biology

### Description of Courses

biological basis of current and environmental problems, with emphasis upon landscapes and populations. Three hours lecture per week.

#### 213 General Physiology (3)

Prerequisite: Biology 10 and Chemistry 11. The basic functional aspects of organ systems in relation to the physicochemical properties of protoplasm. Three hours lecture per week.

#### 215 General Physiology Laboratory (2)

Prerequisite: Biology 213 (May be taken concurrently). Instrumental and experimental studies in Physiology. Three and one-half hours laboratory per week.

#### 216 Microbiology (3)

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)

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

#### 220 General Ecology (3)

Prerequisite: Biology 10. An examination of the relationships between living organisms and their environment. Three hours lecture per week.

#### 222 General Ecology Laboratory (2)

Prerequisite: Biology 220; (May be taken concurrently). An analysis of factors influencing the abundance and distribution of living organisms. Three and one-half hours laboratory per week.

#### 224 Genetics (3)

Prerequisite: Biology 10. The fundamentals 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)

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

#### 235 Development (3)

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)

Prerequisite: Biology 235 (May be taken concurrently). Laboratory to accompany Biology 235. Three and one-half hours laboratory per week.

#### 242 Population Biology (3)

Prerequisite: Biology 224. The structure, operation and evolution of populations. Three hours lecture per week.

#### 244 Population Biology Laboratory (2)

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.

#### 250 Plant Form and Function (3)

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)

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.

#### 264 Invertebrate Biology (3)

Prerequisite: Biology 10 or consent of instructor. Development, structure, function and interrelationship of invertebrate animals with particular attention to phylogenetic aspects. Three hours lecture per week.

#### 266 Invertebrate Biology Laboratory (2)

Prerequisite: Biology 264 (May be taken concurrently). Laboratory to accompany Biology 264. Dissection and analysis of invertebrates with an emphasis on structure and function. Three and one-half hours laboratory per week.

#### 276 Biological Chemistry (3)

Prerequisite: Chemistry 261, 263 and Biology 10. The chemistry and function of the living cell and its constituents, and the interactions and conversions of intracellular substances. Three hours lecture per week.

#### 278 Biological Chemistry Laboratory (2)

Prerequisite: Biology 276 (May be taken concurrently). Experiments designed to illustrate biochemical principles and modern biochemical procedures. Three and one-half hours laboratory per week.

#### 280 Animal Behavior (3)

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)

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 285)

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)

Prerequisite: None. Required of all biology majors during a semester of their senior year. Presentation of selected papers by students.

**290 Research (1-10)**

Prerequisite: Consent of instructor. Research in area selected by student in consultation with faculty member. Credit arranged.

**305 Morphology of Nonvascular Plants (3)**

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 phytoecology stressed. Three hours lecture per week.

**306 Morphology of Vascular Plants (3)**

Prerequisite: Biology 250, or permission of instructor. An intensive study of ferns through angiosperms, stressing relationships between the groups. Field studies and phytoecology stressed. Three hours lecture per week.

**307 Nonvascular Plant Laboratory (2)**

Prerequisite: Biology 305 (May be taken concurrently). Laboratory to accompany Biology 305. Three and one-half hours laboratory per week.

**308 Vascular Plant Laboratory (2)**

Prerequisite: Biology 306 (May be taken concurrently). Laboratory to accompany Biology 306. Three and one-half hours laboratory per week.

**310 Cellular Biology (3)**

Prerequisite: Biology 224 and 276. (Biology 276 may be taken concurrently). Chemistry, structure, and function of cells. Three hours lecture per week.

**313 Comparative Animal Physiology (3)**

Prerequisite: Biology 213 and junior standing or permission of the instructor. The unity and diversity of physiological mechanisms found throughout the animal kingdom. Three hours lecture per week.

**314 Virology (3)**

Prerequisite: Biology 216. A comparative study of plant, animal and bacterial viruses, including their physical and chemical structures, reproduction, genetics, and biological importance. Three hours lecture per week.

**315 Comparative Animal Physiology Laboratory (2)**

Prerequisite: Biology 313 (may be taken concurrently). Experiments designed to accompany Biology 313 and to introduce students to research techniques in Physiology. Three and one-half hours of laboratory per week.

**316 Virology Laboratory (2)**

Prerequisite: Biology 218 or equivalent and Biology 314 (May be taken concurrently). Laboratory to accompany Biology 314. Three and one-half hours laboratory per week.

**317 Immunobiology (3)**

Prerequisite: Biology 276, Chemistry 261. The fundamental principles and concepts of immunology and immunochemistry. Emphasis on the relation of immunological phenomena to biological phenomena and biological problems. Three hours lecture per week.

**319 Immunobiology Laboratory (2)**

Prerequisite: Biology 317 (May be taken concurrently). Basic experimental procedures in immunology. Introduction to experimental evidence underlying concepts of immunology. Three and one-half hours laboratory per week.

**321 Advanced Genetics (3)**

Prerequisite: Biology 224. Selected topics in genetic theory. May be taken more than once for credit. Three hours lecture per week.

**323 Advanced Genetics Laboratory (2)**

Prerequisite: Biology 321 (May be taken concurrently). Instrumentation and experimental studies in genetic analysis. Three and one-half hours laboratory per week.

**326 Microbial Genetics (3)**

Prerequisites: Biology 216 and 224 or equivalent. An analysis of the mechanisms of variation in bacteria and viruses including: mutation adaptation, sexual recombination, transduction, and transformation.

**328 Microbial Genetics Laboratory (2)**

Prerequisites: Biology 218 or equivalent and Biology 326 (May be taken concurrently). Laboratory to accompany Biology 326. Three and one-half hours laboratory per week.

**330 Advanced Development (3)**

Prerequisite: Biology 235. A discussion of experimental approaches as applied to the analysis of development. Three hours lecture per week.

**332 Advanced Development Laboratory (2)**

Prerequisite: Biology 330 (May be taken concurrently). Instruction and practice in the application of experimental techniques to the study of development. Three and one-half hours laboratory per week to be arranged.

**334 Plant Physiology and Development (3)**

Prerequisites: Biology 250, 276 or Chemistry 261 or permission of instructor. An examination of the physiological processes associated with plant growth and development. Three hours lecture per week.

**336 Plant Physiology and Development Laboratory (2)**

Prerequisite: Biology 334 (May be taken concurrently). Laboratory to accompany Biology 334. Three and one-half hours laboratory per week.

**342 Population and Community Ecology (3)**

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.

**344 Population and Community Ecology Laboratory (2)**

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



Biology  
Description of Courses**346 Evolution (3)**

Prerequisite: Biology 224 and Chemistry 261. The course and mechanisms of organic evolution, covering topics ranging from biochemical evolution to comparative anatomy and population genetics.

**360 Techniques in Electron Microscopy (2)**

Prerequisite: Biology 10 and Junior standing or consent of instructor. A general consideration of the application of electron microscopy to biological research. Discussion of transmission and scanning electron microscopy and associated techniques of specimen preparation. Designed for the professional biologist. Two lecture hours per week.

**362 Electron Microscopy Laboratory (3)**

Prerequisite: Must be taken concurrently with Biology 360. (Permission of instructor required). Students will develop skill in techniques associated with transmission and scanning electron microscopy and learn instrument operation and minor servicing individual research problems. Seven hours laboratory per week.

**364 Adaptive Radiation of the Vertebrates (3)**

Prerequisite: 10 hours of biology and upper-division standing. An examination of the adaptive radiation and consequent physiology, behavior and ecology of the vertebrates. Three hours lecture per week.

**366 Adaptive Radiation of the Vertebrates Laboratory (2)**

Prerequisites: Biology 364 (May be taken concurrently). A study of the biological characteristics of vertebrate animals conducted in the laboratory and the field. Three and one-half hours of laboratory of fields studies per week.

**370 General and Comparative Endocrinology (3)**

Prerequisite: Biology 213 and 313 and junior or higher standing or consent of instructor. A survey of chemical coordinating mechanisms with special emphases on the evolutions of hormonal control systems. Three hours of lecture per week.

**372 General and Comparative Endocrinology Laboratory (2)**

Prerequisite: Biology 370 (May be taken concurrently). An introduction of techniques and procedures used in endocrine research. Three and one-half hours of laboratory per week.

**376 Advanced Biological Chemistry (3)**

Prerequisite: Biology 276. Topics include control of cellular metabolism, membrane transport mechanisms of action of enzymes and hormones, and enzyme kinetics. Three lecture hours per week.

**378 Advanced Biological Chemistry Laboratory (2)**

Prerequisites: Biology 278 or consent of instructor. Independent projects related to analytical and synthetic procedures. Three and one-half hours laboratory per week.

**380 Advanced Animal Behavior (3)**

Prerequisite: Biology 280. Selected topics in animal behavior theory. May be taken more than once for credit. Three hours lecture per week.

**381 Biosystematics (3)**

Prerequisites: 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.

**382 Advanced Animal Behavior Laboratory (2)**

Prerequisite: Biology 380 (May be taken concurrently). Advanced observational and experimental studies of animal behavior in the field and laboratory.

**383 Biosystematics Laboratory (2)**

Prerequisite: Biology 381 (Must be taken concurrently). Techniques and instrumentation necessary for the isolation and identification of various types of secondary compounds considered. Three and one-half hours laboratory per week.

**384 Behavioral Genetics (3)**

Prerequisites: Biology 224 and 280 or equivalent. The genetic analysis of behavioral characteristics. Three hours lecture per week.

**392 Selected Topics (1-10)**

Prerequisite: Junior standing and consent of instructor. Selected topics in Biology. The topics will vary each semester. Topics offered for the following semester will be available in the departmental office. Credit arranged. May be taken more than once for credit.

**395 Field Biology (5)**

Prerequisite: Three courses in Biology and consent of 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. Note: There is a specific fee charged for this course.

**396 Marine Biology (3)**

Prerequisites: Eight hours of Biology and consent of instructor. A survey of the major groups of marine plants and animals and their interactions in the various North American marine communities. Three hours lecture per week.

**398 Marine Biology Laboratory (2)**

Prerequisite: Biology 396. Intensive laboratory and field study of selected North American marine communities. Consult the instructor for the area to be visited. Students must pay their own travel and living expenses.

## Chemistry

### Program

The Department of Chemistry offers courses for five undergraduate degrees programs, the master of science degree, and a Ph.D. program. Information on the master of science degree and the Ph.D. program is available in the *UMSL Graduate Bulletin*. The undergraduate degree programs offered are the bachelor of arts in chemistry, the bachelor of science in chemistry, the bachelor of science in education with an emphasis in chemistry in cooperation with School of Education, the bachelor of arts in chemistry with teacher certification in cooperation with School of Education and the bachelor of arts in chemistry with a business option in cooperation with the School of Business.

A major in chemistry provides excellent pre-professional education for those interested in the health sciences (medicine, dentistry, etc.), and a double major in chemistry and biology is often chosen by premedical and pre dental students, as well as those interested in graduate work in biochemistry and biology.

The Department of Chemistry has been accredited by the American Chemical Society. Students who complete the requirements for the bachelor of science degree (B.S.) in chemistry are certified to the American Chemical Society and prepared for graduate study in chemistry.

The chemistry faculty is currently engaged in research in organic, inorganic, and physical chemistry.

### General Education Requirements

Each chemistry major must satisfy the general education requirements of the university listed on page 30 and the general education requirements of the College of Arts and Sciences listed on page 41. Courses in chemistry may be used to meet the university's science and mathematics area requirement. For A.B. degree candidates, fulfilling the foreign language requirement of the College of Arts and Sciences meets the foreign language requirement of the chemistry department. For B.S. degree candidates, the foreign language requirement

should be met in German or Russian. Chemistry majors will normally include Language 100 in their foreign language sequence.

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, Introductory Chemistry I, and Chemistry 12, Introductory Chemistry II, may not be taken on pass-fail basis by any freshman student.

### Degree Requirements

#### Bachelor of Arts in Chemistry

This degree is intended primarily for pre-professional students in the health sciences and related areas, as well as prelaw students interested in patent law. The candidate for the A.B. degree with a major in chemistry must complete 32 hours of chemistry including:

- 11 Introductory Chemistry I
- 12 Introductory Chemistry II
- 122 Quantitative Analysis
- 202 Introduction to Chemical Literature
- 231 Physical Chemistry I
- 232 Physical Chemistry II
- 233 Laboratory in Physical Chemistry I
- 261 Structural Organic Chemistry
- 262 Organic Reactions
- 263 Techniques of Organic Chemistry
- 289 Seminar (2 credit hours)

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 or her senior year.

#### Bachelor of Science in Chemistry

This is the first professional degree in chemistry. It may be taken as a terminal degree by students intending to become professional chemists. It also provides excellent preparation for students planning on graduate work in chemistry or biochemistry. The candidate for the B.S. in

## Chemistry

chemistry degree must complete the 32 hours of chemistry required for the A.B. and an additional 12 hours in chemistry including:

- 234 Laboratory in Physical Chemistry II
- 264 Synthetic and Analytical Methods of Organic Chemistry
- 324 Instrumental Analysis
- 341 Inorganic Chemistry I
- 343 Inorganic Reactions

The B.S. candidate must also select six elective 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. 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.

**Related Area Requirements**

Candidates for the A.B. or B.S. degree with a major in chemistry must complete 15 hours of mathematics including:

- Mathematics
- 80 Analytic Geometry and Calculus I
- 175 Analytic Geometry and Calculus II
- 201 Analytic Geometry and Calculus III

## Physics

- 111 Physics: Mechanics and Heat
  - 112 Physics: Electricity, Magnetism, and Optics
- one physics laboratory course, preferably 201, Elementary Electronics I

**Bachelor of Science in Secondary Education with an Emphasis in Chemistry**

The general requirements for the B.S. degree in secondary education are given on page 177. Candidates for this degree with an emphasis 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 Foundations of Modern Physical Theory I
  - 111 Physics: Mechanics and Heat
  - 112 Physics: Electricity, Magnetism, and Optics
- One physics laboratory course

Chemistry 280, Methods of Teaching Chemistry in Secondary Schools, is required instead of Chemistry 202, Introduction to Chemical Literature, and Chemistry 289, Seminar.

**Bachelor of Arts in Chemistry with Teacher Certification**

Candidates in this program must complete all of the requirements for the bachelor of arts in chemistry. In addition the following courses must be taken:

## Education

- 101 The School in Contemporary Society
- 163 Techniques of Secondary School Teaching
- 271 Secondary School Student Teaching
- 302 The Psychology of Teaching & Learning

## Chemistry

- 280 Methods of Teaching Chemistry in Secondary Schools

## Psychology

- 3 General Psychology
- 171 Adolescent Psychology

**Bachelor of Arts in Chemistry with a Business Option**

The following suggested program has been prepared in cooperation with the School of Business for those students who contemplate a career in chemical sales, market research, etc. Candidates in this program must complete all of the requirements for the bachelor of arts in chemistry. The following core program is suggested:

## Economics

- 51 Principles of Microeconomics

## Business Administration

- 31 Elementary Statistics
- 140 Fundamentals of Financial Accounting

Following completion of this course curriculum the student may wish to choose from one of the following further options:

Quantitative Management  
Business Administration  
109 COBOL/Business Systems  
202 Fundamentals of Production  
308 Production and Operations Management  
375 Operations Research

Marketing Management  
Business Administration  
106 Basic Marketing  
275 Marketing Intelligence, and/or  
301 Buyer Behavior

Financial Management  
Business Administration  
204 Financial Management  
334 Investments  
350 Financial Policies

Accounting  
Business Administration  
145 Fundamentals of Managerial Accounting  
340 Intermediate Accounting Theory, and/or  
345 Cost Accounting

Chemistry  
Faculty

Robert W. Murray Chairman, Professor  
Ph.D., Yale University

Alan F. Berndt Professor  
Ph.D., California Institute of Technology

M. Thomas Jones Professor  
Ph.D., Washington University

Charles W. Armbruster Associate Professor  
Ph.D., Washington University

Lawrence Barton Associate Professor  
Ph.D., University of Liverpool

Eric Block Associate Professor  
Ph.D., Harvard University

Eugene R. Corey Associate Professor  
Ph.D., University of Wisconsin

Joyce Y. Corey Associate Professor  
Ph.D., University of Wisconsin

Joseph Feder Visiting Associate Professor  
Ph.D., Illinois Institute of Technology

David L. Garin Associate Professor  
Ph.D., Iowa State University

David W. Larsen Associate Professor  
Ph.D., Northwestern University

Robert I. Stearns Visiting Associate Professor  
Ph.D., Tulane University

Rudolph E. K. Winter Associate Professor  
Ph.D., The Johns Hopkins University

Kenneth W. Barnett Assistant Professor  
Ph.D., University of Wisconsin

James S. Chickos Assistant Professor  
Ph.D., Cornell University

John L. Gutweiler Visiting Assistant Professor  
Ph.D., St. Louis University

Harold H. Harris Assistant Professor  
Ph.D., Michigan State University

Barry L. Kalman Visiting Assistant Professor  
Ph.D., Purdue University

Jane A. Miller Assistant Professor  
Ph.D., Tulane University

Robert E. Penn Assistant Professor  
Ph.D., Rice University

John I. Reynolds Visiting Assistant Professor  
Ph.D., University of Washington

Robert A. Rouse Assistant Professor  
Ph.D., Northwestern University

Luis Echegoyen Research Associate  
Ph.D., University of Puerto Rico

David P. Higley Research Associate  
Ph.D., University of Texas-Austin

George Semeniuk Research Associate  
Ph.D., Duke University

Frank E. Stary Research Associate  
Ph.D., University of Cincinnati

**Staff**

Robert Cabaniss Glassblower

Jack L. Coombs Laboratory Stores Manager  
B.A.

William Garrison Electronics Technician

Norman Windsor Electronics Technician

## Chemistry

### Description of Courses

Prerequisites may be waived by consent of department.

#### 1 General Chemistry (3) (F&W)

Presents a broad introductory survey of chemical principles. Chemistry 1 may be applied toward the fulfillment of the general education requirements in science. However, 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 1 and Chemistry 11 in the 120 hours required for graduation. 3 hours lecture per week.

#### 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.

#### 10 Chemistry in Society (3) (F&W)

Prerequisite: 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 hours required for graduation.

#### 11 Introductory Chemistry I (5) (F&W)

Prerequisite: Mathematics through college algebra and trigonometry (may be taken concurrently). Presents an introduction to the fundamental laws and theories of chemistry. Laboratory experiments are designed to demonstrate some aspects of qualitative and quantitative analysis and to develop skills in laboratory procedures. Chemistry majors may not include both Chemistry 1 and 11 nor both Chemistry 10 and 11, in the 120 hours required for graduation. Three hours lecture and 1 hour discussion per week; three and one-half hours lab per week.

#### 12 Introductory Chemistry II (5) (F&W)

Prerequisite: Chemistry 11 or advanced placement. Lecture and laboratory are a continuation of Chemistry 11. Three hours lecture and one hour discussion per week; three and one-half hours laboratory weekly.

#### 13 Special Topics in Introductory Chemistry (Credit Arranged)

Prerequisite: Consent of instructor. A lecture or laboratory course to assist transfer students in meeting the requirements of Chemistry 11 and 12.

#### 122 Quantitative Analysis (3) (F&W)

Prerequisite: Chemistry 12. Principles and practice of elementary quantitative analytical chemistry. Laboratory work will emphasize instrumental techniques, electrochemistry and some spectrophotometry. One one and one-half hour lecture and four and one-half hours laboratory weekly.

#### 202 Introduction to Chemical Literature (1) (W)

Prerequisite: Chemistry 262 (may be taken concurrently). The course will familiarize the student with the literature of chemistry and its use. One hour lecture per week.

#### 231 Physical Chemistry I (3) (F&W)

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.

#### 232 Physical Chemistry II (3) (F&W)

Prerequisite: Chemistry 231. Continuation of Chemistry 231. Three hours lecture per week.

#### 233 Laboratory in Physical Chemistry I (2) (F&W)

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.

#### 234 Laboratory in Physical Chemistry II (2) (F&W)

Prerequisite: Chemistry 232 (may be taken concurrently), Chemistry 233. Experiments designed to illustrate principles introduced in Chemistry 232. One hour lecture and four and one-half hours laboratory per week.

#### 261 Structural Organic Chemistry (3) (F&W)

Prerequisite: Chemistry 12. An introduction to the structure, properties, synthesis and reactions of aliphatic and aromatic carbon compounds. Three hours lecture per week.

#### 262 Organic Reactions (3) (F&W)

Prerequisite: Chemistry 261. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours lecture per week.

#### 263 Techniques of Organic Chemistry (2) (F&W)

Prerequisite: Chemistry 261 or consent of instructor. An introduction to laboratory techniques and procedures of synthetic organic chemistry. One hour lecture and four and one-half hours laboratory per week.

#### 264 Synthetic and Analytical Methods of Organic Chemistry (2) (F&W)

Prerequisite: Chemistry 262 (may be taken concurrently), Chemistry 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.

#### 280 Methods of Teaching Chemistry in Secondary Schools (3) (F&W)

(Same as Education 268) 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.



Chemistry  
Description of Courses**289 Seminar (1 or 2) (F&W)**

Prerequisite: Chemistry 202 (may be taken concurrently). Presentation of papers by students, faculty and invited speakers. All majors must enroll for credit during their senior year. If taken during the day, the student must enroll for two semesters, one credit per semester. If taken in the evening, the student must enroll for one semester, and will receive two credits.

**290 Chemical Research (Credit arranged) (F&W)**

Prerequisite: Consent of instructor. Independent laboratory and library study, in conjunction with faculty member, of fundamental problems in chemistry.

**310 History of Chemistry (3) (V)**

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.

**324 Instrumental Analysis (3) (F&W)**

Prerequisite: Chemistry 234. Modern instrumental methods, including nuclear magnetic resonance, electron spin resonance, mass spectrometry, spectrophotometry, X-ray diffraction and others. Two hours lecture and three and one-half hours laboratory per week.

**325 Qualitative Organic Analysis (3) (V)**

Prerequisite: Chemistry 264. Laboratory and instrumental methods for the systematic identification of organic compounds. One hour lecture and seven hours laboratory per week.

**333 Thermodynamics (3) (F)**

Prerequisite: Chemistry 232. Selected advanced topics including solid-state, non-equilibrium and statistical thermodynamics. Three hours lecture per week.

**336 Introduction to Quantum Chemistry (3) (W)**

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.

**341 Inorganic Chemistry I (3) (W)**

Prerequisite: Chemistry 232 and 262 (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.

**342 Inorganic Chemistry II (3) (F)**

Prerequisite: Chemistry 341. Continuation of Chemistry 341 with emphasis on such topics as metals, non-aqueous solvents, chemical dynamics, organometallic chemistry, chemistry of the less common elements and certain frontier areas. Three hours lecture per week.

**343 Inorganic Reactions (2) (F)**

Prerequisites: 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 nucleonics 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 mechanism of their reactions. Selected topics such as natural products, heterocyclic compounds, stereochemistry, aromaticity, 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 conformational analysis, 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 proteins (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) (V)**

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 (1-5) (F&W)**  
Prerequisite: Consent of instructor. A reading and seminar course in selected advanced topics. Three hours lecture per week.

## Economics

**Program**

The economics department offers courses in applied and theoretical economics for students in any program who wish to fulfill their social science general education requirements by obtaining an understanding of the background and causes of economic problems today and in the future, and to learn and evaluate alternative policy strategies to attack these questions. This background is particularly important for students whose career goals are business or government. Students in either prelaw or premedicine programs will also find this area of social science important background.

These economics courses are combined into several alternative degree programs. The bachelor of arts with a major in economics is perhaps the most flexible of the degrees offered. With this degree, the faculty hope to provide for those students with a career goal in general business or government a flexible and useful undergraduate education with more liberal arts breadth than might be obtained in special business degree work. However, the requirements are so established that if a student wishes to prepare for graduate professional training as an economist, he or she may do so by incorporating mathematics and other specialized courses.

The department also offers the bachelor of science with a major in economics. This program places more emphasis on the statistical and quantitative aspects of economics in order to prepare a student for employment upon graduation in a wide variety of business research and forecasting roles. However, the student is cautioned that these opportunities may be limited with only an undergraduate preparation.

Thus, to provide the student interested in a career in planning, real estate research, investment research, government forecasting and planning, or junior college teaching, the department offers the master of arts degree in economics. Work toward this degree may also be a start toward a doctoral degree which is essential if the student has college teaching as a career goal. The master's degree is an entree to applied economic

work and really should not be considered sufficient training for anyone desiring to become a professional economist either at the college teaching or government level.

For those students interested in high school teaching of social studies, the School of Education offers a bachelor of science degree with an emphasis in social studies (see School of Education for details). The economics department offers courses in economics for the student wishing to be able to interpret the economic aspects of social questions to high school students.

The faculty in economics considers research an integral part of good teaching. To undertake research, however, requires useful feedback from students and colleagues. Therefore, the department has decided not to try to staff every potential field in economics, but to concentrate in two particular areas to increase faculty interaction. Since the university is located in a major urban complex, one of the fields of special interest to the faculty is urban affairs. Members of the staff have undertaken, and are undertaking, research in housing, transportation, employment, taxation, and zoning. Nearly half the staff have a research interest in some aspect of urban economics. Furthermore, several staff members hold joint appointments in the Center for Community and Metropolitan Studies. The center association enables economists to obtain ideas and feedback from faculty and students in the other social science disciplines.

The other area in which the staff has a major research interest is international economics and comparative economic systems. Research on Latin America, the Soviet Union, and international trade flows are all being undertaken by staff at this time. Furthermore, two members of the faculty are associated with the Center for International Studies. This enables economists to obtain ideas and feedback on international issues with faculty from the other social science disciplines. The thrust of this research, as can be seen from the above description, is an emphasis in understanding policy. The department has an emphasis in applied,

rather than theoretical, research which strengthens undergraduate instruction and allows undergraduates to help in that research.

#### **Geography**

The department also offers courses in geography. There are two purposes in this academic work. The introductory course is offered for students needing a distribution requirement in geography for teaching certification. Upper division work in urban and human geography is offered to complement the course work offered by economics, sociology, and political science for students with an interest in urban affairs.

#### **General Education Requirements**

Each candidate for either the bachelor of arts in economics or the bachelor of science in economics must satisfy the general education requirements of the university listed on page 30, and the general education requirements of the College of Arts and Sciences listed on page 41. The candidate for the B.S. degree, however, is not required to fulfill the foreign language requirement of the college. 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-Euro-American requirement may be met by taking any non-Euro-American course.

Students not majoring in economics may take any economics course on a pass-fail basis. Candidates for the A.B. or the B.S. degree may take any course outside the major field as well as Economics 50, Principles of Macroeconomics, and Economics 51, Principles of Microeconomics, on a pass-fail basis.

#### **Degree Programs**

##### **Bachelor of Arts in Economics**

Candidates for the A.B. degree in economics are required to take at least 30 hours in economics. No more than 45 hours in economics may be accepted toward the degree. The department encourages students to complete the minimum of 30 hours in

economics and then develop as much breadth as possible in related areas.

The department requires the candidate to take four courses which are considered essential to an understanding of economic issues and problems. These are as follows:

- 50 Principles of Macroeconomics
- 51 Principles of Microeconomics
- 250 Intermediate Macroeconomic Theory
- 251 Intermediate Microeconomic Theory

No matter what aspect of economics the student finds most interesting, he or she will always be using the tools of these four courses.

In addition to requiring these four core courses, the department requires each major to learn quantitative skills which are used in conjunction with the theory. Since much of the data used by economists is generated through business records, it is important for the student of economics to understand accounting. Therefore, each major must take Business 140, Fundamentals of Financial Accounting. Cost of living indexes, consumption information, prices, and income are available to the student of economics in large collections of data. Therefore, the department also requires each student to acquire some ability in statistical analysis. To obtain this skill, the student must complete either Mathematics 31, Elementary Statistics, or Business 131, Elementary Statistics. Business 131 requires the student to take Mathematics 102, Finite Mathematics, as a prerequisite. The statistics and accounting course should be completed before the end of the sophomore year so the skills may be applied in upper division economics courses.

Since many of the theories in economics make use of calculus, it is recommended that the student take Mathematics 80, Analytic Geometry and Calculus I. However, this is not required of the average student in the economics program since calculus is not used in teaching the undergraduate courses.

The bachelor of arts degree is meant to be a very flexible program. The minimum 30 hour economics requirement is designed to allow

## Economics

the student to add electives in related fields, depending upon career goals. A student interested in general business or investment might select courses in business administration, especially finance. Those students interested in some aspect of public administration should choose courses from such related fields as history, philosophy, and political science.

A student interested in training to become a professional economist should review the requirements for entrance in the graduate schools that he or she would like to attend. The choice of the A.B. degree or the B.S. degree is not relevant except if the graduate school being considered requires a foreign language. It would then be necessary to take the A.B. route. Almost all graduate schools, however, would want students to take the following mathematics courses:

- 80 Analytic Geometry and Calculus I
- 175 Analytic Geometry and Calculus II
- 201 Analytic Geometry and Calculus III
- 245 Matrix Algebra
- 320 Mathematical Statistics

Much of the course work in graduate school economics requires some facility at calculus and matrix algebra, so that it is essential for a student considering graduate study to acquire these skills at the undergraduate level. Any student wanting to become a professional economist should not concentrate heavily in economics as an undergraduate.

**Bachelor of Science in Economics**

This degree is intended for those students more interested in quantitative aspects of economics and who have career goals in some aspect of business research or statistical analysis. Candidates for the B.S. degree in economics, therefore, are required to take at least 36, but no more than 45, hours in economics. The candidate must take the four core courses:

- 50 Principles of Macroeconomics
- 51 Principles of Microeconomics
- 250 Intermediate Macroeconomic Theory
- 251 Intermediate Microeconomic Theory

For the same reason that A.B. students must develop skills in accounting and statistics, candidates for the B.S. degree are required to complete Business 140, Fundamentals of Financial Accounting, and either Mathematics 31, Elementary Statistics, or Business 131, Elementary Statistics. These two related area courses should be completed before the end of the sophomore year in order that the skills learned may be used in the upper division courses.

To develop facility in mathematics and programming techniques, candidates for the B.S. degree are also required to take the following quantitative courses:

- 1 Either Business 104, Fundamentals of Digital Computer Programming, or Mathematics 122, Computers and Programming.
- 2 Mathematics 80, Analytic Geometry and Calculus I
- 3 Mathematics 175, Analytic Geometry and Calculus II
- 4 Mathematics 201, Analytic Geometry and Calculus III

Students who had officially declared a major in economics under the B.S. degree program prior to September 1975 may fulfill the requirements either from the *1974 Undergraduate Bulletin* or they may fulfill the new requirements. All students deciding on their B.S. degree program in economics after September 1975 must fulfill the new requirements.

The department suggestions for electives for the B.S. degree are the same as for those in the A.B. program. It is especially recommended, however, that students in the B.S. program consider the following courses for electives:

- Mathematics 245, Matrix Algebra
- Mathematics 320, Mathematical Statistics
- Economics 304, Survey Research Practicum
- Economics 365, Economic Statistics and Econometrics

Economics 366, Econometrics  
Business 375, Operations Research

**Geography Courses**

Courses in geography do not carry credit toward the major for the A.B. or B.S. in economics. They may, however, be used to satisfy the university's social science area requirement. Each of these courses also satisfies the state certification requirements for elementary school teachers and for secondary school social studies teachers. Geography courses may be taken on a pass-fail basis.



Economics  
Faculty

Elizabeth M. Clayton Chairperson, Associate Professor  
Ph.D., University of Washington

Robert Loring Allen Professor  
Ph.D., Harvard University

Joseph P. McKenna Professor  
Ph.D., Harvard University

Hugh O. Nourse Professor  
Ph.D., University of Chicago

Thomas R. Ireland Associate Professor  
Ph.D., University of Virginia

William E. Mitchell Associate Professor  
Ph.D., Duke University

Donald Phares Associate Professor  
Ph.D., Syracuse University

Herbert D. Werner Associate Professor  
Ph.D., University of California, Berkeley

John Clark Archer Assistant Professor  
Ph.D., University of Iowa

Peter J. Grandstaff Assistant Professor  
Ph.D., Duke University

Sharon Levin Assistant Professor  
Ph.D., University of Michigan

Emilio Pagoulatos Assistant Professor  
Ph.D., Iowa State University

Patricia M. Quick Assistant Professor  
Ph.D., Harvard University

Robert L. Sorensen Assistant Professor  
Ph.D., Virginia Polytechnic Institute

James F. Veatch Assistant Professor  
Ph.D., University of Illinois

Katherine Walker Assistant Professor  
Ph.D., University of California-Davis

Economics  
Description of Courses

Prerequisites may be waived by consent of department.

**40 Introduction to the American Economy (3) (V)**  
No credit for students majoring in Economics or Business. 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: None. 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.

**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.

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

**218 Social Choice in Political-Economic Systems (3) (F)**  
Prerequisite: Economics 51. A study of the mechanisms of social choice from the standpoint of individual and political party maximization of personal objectives. This area draws on work done by sociologists, political scientists and economists.

**220 Money and Banking (3) (F&W)**

Prerequisite: Economics 40, 50 or 51. Factors influencing bank reserves and the money supply. Ability of the Federal Reserve System and the Treasury to control these factors. Introduction to monetary theory: integration of monetary phenomena with national income theory. Analysis of current policy issues.

**230 International Economic Analysis (3) (W)**

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) (F)**

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) (W)**

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 51 and either Mathematics 80 or Mathematics 101. 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.

**256 The Consumer and the Economy (3) (F&W)**

Prerequisite: Economics 51. This course will present a brief sketch of the historical development of consumption patterns in the United States and their interaction with methods of market competition. Theories of consumer behavior, including economic behavioral and cultural approaches to consumption decisions, will be evaluated. The course will examine problems of consumer choice and the management of personal finances in today's economy. Topics to be considered include budgeting, the use of credit, improving buying practices, savings, insurance, and personal investment planning. The course will analyze ways in which the consumer function can be performed more efficiently, including the development of consumer education and the role of government in consumer protection.

**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) (F)**

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 science. 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 upon 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.

**304 Survey Research Practicum (3) (V)**

(Same as Political Science 304 and Sociology 304). Prerequisite: Junior standing and consent of instructor. The execution of a sample survey, including establishing study objectives, sampling, questionnaire construction, interviewing, coding, data analysis, and presentation of results.

## Economics Description of Courses

**317 Public Finance: State and Local (3) (W)**

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) (F)**

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) (F)**

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 (1-10)**

Prerequisite: Consent of instructor. Unscheduled, independently directed readings on topics mutually acceptable to student and instructor.

**351 Mathematical Economics (3) (V)**

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) (W)**

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) (F)**

Prerequisite: Economics 50 and 51 and either Mathematics 31 or Business 131. Mathematics 80 or 101 recommended. Application of statistical techniques to economic research problems.

**366 Econometrics (3) (W)**

Prerequisite: Economics 365. Continuation of Economics 365.

**368 Analysis of Business Conditions (3)**

(Same as Business 368) Prerequisite: Economics 220. Discussion of factors affecting economic conditions, short-term fluctuations in business activity and plans and policies for economic stabilization. Emphasis on problems and techniques of forecasting aggregate and industry demand.

**371 Urban Transportation (3) (V)**

Prerequisite: Economics 51. Role of transportation in the past, present, and future development of urban areas will be treated with particular emphasis on urban passenger transportation and its present and future role and importance in urban areas. However, non-urban and non-passenger transportation questions and problems will also be considered. Urban transportation planning procedures and techniques will be discussed and criticized. The policy aspects of the course will concentrate on possible and appropriate investment and pricing policies for federal, state, and local governments in dealing with various urban transportation problems.

**380 History of Economic Thought (3) (F)**

Prerequisite: Economics 50 and Economics 51. The evolution of economic thought from the ancients through post-Keynesian theory.

**Geography****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 awareness of the character of each of these major regions through the interrelationships of the various attributes of place.

**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.

**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).

## English

**Program**

The Department of English offers an undergraduate degree program in English and course work in speech communication. For information on the master of arts in English, see the *Graduate Bulletin*.

An undergraduate English major has three degree options available: bachelor of arts, bachelor of arts with certification for secondary teaching, and bachelor of science in secondary education with a major in English. Electing either of the last two options will qualify the English major for a career in the teaching of literature and the English language at the secondary level.

Conscious of its responsibilities in the training of prospective secondary school teachers, the English department is no less sensitive to the needs of its other majors who have chosen to pursue the A.B. in English preparatory to entering graduate school in English, law, or other professional schools, or a career in publishing, journalism, commercial writing, or the many areas of business in which literary and linguistic knowledge and skills are assets for professional achievement. Students seeking specific information about the variety of career opportunities for English majors may obtain from the department the publication *English: The Pre-Professional Major*, prepared by the Modern Language Association of America.

The faculty of the English department approach the study and teaching of their intellectual discipline from a variety of academic viewpoints, thus insuring a diverse exposure for the major to the artistic, ethical, and factual issues raised in any literature or language course.

**General Education Requirements**

Each English major must satisfy the general education requirements of the university listed on page 30, and the general education requirements of the school or college from which he or she expects to receive a 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-Euro-American area requirement may be met by any non-Euro-American course. Any English course except English 9, 10, 65, 160, and 262 may be taken on pass-fail. The university communicative skills requirement is a prerequisite for all English courses numbered 130 or above.

**Degree Requirements****Bachelor of Arts in English**

Each English major must complete a minimum of 36 hours but no more than 45 hours in English exclusive of English 9, 10, and 65. These courses must include:

- 1 Any two courses from the sequence:
  - 131 English Literature I
  - 132 English Literature II
  - 133 Introduction to Poetry
  - 134 Introduction to Drama
  - 135 Introduction to Fiction
- 2 English 160 Advanced Expository Writing. For English majors this course is a prerequisite or corequisite for 300-level courses in English.
- 3 One of the following American literature courses:
  - 171 American Literature I
  - 172 American Literature II
  - 270 Afro-American Literature
  - 373 The American Renaissance
  - 374 American Realism and Naturalism
  - 375 American Fiction to World War I
  - 376 Modern American Fiction
- 4 Four courses, one each from any four of the following areas in English literature:
  - Medieval
    - 324 Chaucer
    - 325 Medieval English Literature
  - 16th Century
    - 332 Tudor Poetry
    - 337 Shakespeare: Tragedies and Romances
    - 338 Shakespeare: Comedies and Histories
    - 339 Tudor and Stuart Drama\*
    - 341 English Renaissance Prose\*

## 17th Century

- 339 Tudor and Stuart Drama\*
- 341 English Renaissance Prose\*
- 342 Early Seventeenth-Century Poetry
- 345 Milton
- 346 Restoration and Eighteenth-Century Drama\*\*

## 18th Century

- 346 Restoration and Eighteenth-Century Drama\*\*
- 352 Age of Dryden and Pope
- 353 Age of Johnson
- 364 The Eighteenth-Century English Novel

## 19th Century

- 365 The Nineteenth-Century Novel
- 368 Early Romantic Poetry and Prose
- 369 Later Romantic Poetry and Prose
- 371 Prose and Poetry of the Victorian Period
- 372 The Later Nineteenth Century

## 20th Century

- 383 Modern British Fiction
- 384 Modern Poetry
- 385 Modern Drama
- 386 Poetry Since World War II

\*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.

No more than six hours of English taken on a pass-fail basis may be counted toward the 36 hour minimum requirement for a major in English. A student majoring in English must complete a minimum of 18 graded (i.e., not pass-fail) hours in English courses at the 200 level or above with an average of 2.0 or better in these courses. Transfer students majoring in English must complete at UMSL a minimum of 12 graded hours in English courses at the 200 level or above with an average of 2.0 or better in these courses.

An English major's work in courses at the 100 level will provide a background in literary history and forms, and the means for discussing literary issues, on paper and orally. The department recommends that the student complete the requirement in the 131-135 sequence by the end of the sophomore year.

Advanced courses at the 200 and 300 level offer the possibility for some intensive work in specific portions of the general areas defined by the 100-level courses. Requirements for the major in these upper-level courses are designed to provide for contact with important literature from a number of historical periods. The question of which alternative upper-level courses most satisfactorily fulfill an individual major's needs and interests can usually best be resolved by consultation with a faculty adviser in the English department.

#### **Bachelor of Arts in English with Certification for Secondary Teaching**

In addition to the requirements for the bachelor of arts in English, a student must complete the following to qualify for secondary certification:

1 An additional course in American literature from the group listed under 3, above.

2 English 262, The Curriculum and Methods of Teaching English, (taken concurrently with student teaching).

3 A minimum of 12 hours in composition, rhetoric, grammar, and linguistics. English 10, Composition; English 65, Honors Exposition; and English 160, Advanced Expository Writing, may count toward this total. These 12 hours must include a course in advanced composition, English 160. Of these 12 hours, six hours must be taken from the following courses in the English language:

- 220 Development of the English Language
- 221 Introduction to Modern Linguistics
- 321 English Phonology and Dialectology
- 322 Modern English Grammar

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

#### **Bachelor of Science in Secondary Education with a major in English**

The required courses in English and professional education are the same as those indicated for the A.B. with certification for



## English

secondary teaching. However, the student fulfills the general education requirements of the School of Education for the B.S. degree rather than those of the College of Arts and Sciences for the A.B. degree.

### **Speech Communication**

The Department of English offers course work in speech communication. These courses provide opportunities for study in theatre; public address; small group, interpersonal, and mass communication. The course offerings create a framework for viewing communication from the perspectives of theory, performance, and research, and they examine communication as a process influenced by elements and characteristics of the situation, the channel or medium, the individual participants, and the message.

## English Faculty

B. Bernard Cohen Chairman, Professor  
Ph.D., Indiana University

Charles T. Dougherty Professor  
Ph.D., University of Toronto

William C. Hamlin Professor  
Ph.D., University of Missouri-Columbia

Spencer M. Allen Associate Professor of Journalism  
Director Urban Journalism Center  
B.J.

Marcia A. Dalbey Associate Professor  
Ph.D., University of Illinois

Bruce L. Liles Associate Professor  
Ph.D., Stanford University

Eugene B. Murray Associate Professor  
Ph.D., Columbia University

John T. Onuska, Jr. Associate Professor  
Ph.D., Harvard University

James E. Tierney Associate Professor  
Ph.D., New York University

Jane Williamson Associate Professor  
Ph.D., Bryn Mawr College

Peter Wolfe Associate Professor  
Ph.D., University of Wisconsin

Denny Bettisworth Director of Theatre, Assistant  
Professor of Speech Communication  
Ph.D., University of Georgia

Mary W. Burger Assistant Professor  
Ph.D., Washington University

David Carkeet Assistant Professor  
Ph.D., Indiana University

Richard Cook Assistant Professor  
Ph.D., University of Michigan

James Fay Technical Director of Theatre,  
Assistant Professor of Speech Communication  
M.F.A.

Jerome Grollman Visiting Assistant Professor  
M.H.L.

Curt H. Hartog Assistant Professor  
Ph.D., University of Illinois

Charles Larson Assistant Professor  
Ph.D., Indiana University

Josephine M. Rodes Assistant Professor  
Ph.D., University of California-Los Angeles

Winslow S. Rogers Assistant Professor  
Ph.D., Harvard University

Christine M. Roman Assistant Professor  
Ph.D., University of Minnesota

Donald Shields Director of Forensics, Assistant  
Professor of Speech Communication  
Ph.D., University of Minnesota

George von Glahn Assistant Professor  
Ph.D., University of North Carolina

Adam Casmier Visiting Instructor  
M.A.

Michael Castro Instructor  
M.A.

Ellie Chapman Instructor  
M.A.

Don Crinklaw Instructor  
M.A.

Janet Cuenca Instructor  
M.A.

Sharon Dashiell Instructor of Speech Communication  
M.A.

Dorothy Doyle Instructor  
M.A.

Larry Duncan Instructor  
M.A.

James Flynn Instructor of Speech Communication  
M.A.

Gene Graham Instructor  
M.A.

Sally Jackoway Instructor  
M.A.

Diane Kurtz Instructor  
M.A.

William Lyons Instructor of Speech Communication  
M.A.

Jane Parks Instructor  
M.A.

Judith Pearson Instructor  
M.A.

Barbara Relyea Instructor  
M.A.

Jacqueline Resnikoff Instructor  
M.A.

Kathleen Sala Instructor of Speech Communication  
M.A.

Howard Schwartz Instructor  
M.A.

English  
Faculty

Jeanne Sherrill Instructor  
M.A.

Kim Sindel Instructor  
M.A.

Marion Steefel Instructor  
M.A.

English  
Description of Courses

The university Communicative Skills requirement is a general prerequisite for all English courses numbered 130 or above. This, and other specific prerequisites, may be waived by consent of the 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) (V)**

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 300-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.

#### **321 English Phonology and Dialectology (3) (F&W)**

An introduction to the sound system of English and a study of English dialects, including methods of investigating dialectal differences, the concept of a standard dialect, geographical dialects in the United States, and Black English.

#### **322 Modern English Grammar (3) (F&W)**

A detailed study of Modern English sentence structure in terms of current theories of linguistic description, with special emphasis on transformational grammar.

### Literature

#### **12 Literary Types (3) (F&W)**

The student is introduced to the various literary types, including poetry, drama, fiction, and the essay.

#### **13 Topics in Literature (3) (F&W)**

This course will introduce the student to selected literary topics and/or genres. Each semester the department will announce topics and course content. Topics such as alienation, justice, and the absurd, and genres such as science fiction and contemporary drama are typical possibilities.

#### **101 Confusion and Chaos in the American Experience (3) (V)**

(Same as History 101 and Interdisciplinary 101)  
Selected topics in American history and literature from the colonial period to the present.

#### **102 Ethnic Cultures in America: Their History and Literature (3) (V)**

(Same as History 102 and Interdisciplinary 102) The course traces the history of the settlement of European, Jewish, German, Italian, Irish, and Negro groups in America. It will emphasize the problems of assimilation as they are reflected for each group in appropriate literary forms.

#### **120 Classical Literature in Translation (3) (F&W)**

A study of classical literature from Homer through Quintilian, including such major figures as Sophocles, Plato, Aristotle, Cicero and Vergil.

#### **125 Literature of the Old Testament (3) (F&W)**

Prerequisite: Sophomore standing or consent of instructor. A comprehensive understanding of the Old Testament, its literary background and significance for Western civilization.

#### **126 Continental Medieval Masterpieces in Translation (3) (V)**

A survey of masterworks of the early and later Middle Ages, to include the *Divine Comedy*, *Nibelungenlied*, *Song of Roland*, *El Mio Cid*, selections from Chretien de Troyes, Boccaccio's *Decameron*, and Machiavelli's *The Prince*.

#### **128 The Contemporary World in Literature (3) (V)**

Selected American, British and Continental literature since the Second World War.

#### **129 Topics in Literature and Society (3) (V)**

Issues and ideas relating to literature and its cultural context. Topics to be announced each semester by the Department. Since the topics of English 129 may change each semester, the course may be repeated for credit if the topic is substantially different.

#### **131 English Literature I (3) (F&W)**

The development of English literature from the Middle Ages through the eighteenth century. Reading and analysis of representative works of selected major writers.

#### **132 English Literature II (3) (F&W)**

The development of English literature during the nineteenth and twentieth centuries. Reading and analysis of representative works of selected major writers.

English  
Description of Courses

**133 Introduction to Poetry (3) (F&W)**

A close study of poems, with special emphasis on the varieties of poetic form, and the means of interpretation and evaluation. The works studied will be primarily English and American, and from at least three different centuries.

**134 Introduction to Drama (3) (F&W)**

A close study of major dramatic works in various modes, to introduce the student to the forms and techniques of dramatic literature. The works studied will be primarily English and American, and from at least three different centuries.

**135 Introduction to Fiction (3) (F&W)**

A close study of major prose fiction, with particular attention to the varieties of fictional forms and techniques. The works studied will be primarily English and American, and from at least three different centuries.

**171 American Literature I (3) (F&W)**

Representative selections from American authors from the middle of the seventeenth century to the middle of the nineteenth century.

**172 American Literature II (3) (F&W)**

Representative selections from American authors from the middle of the nineteenth century to the present.

**210 Themes and Forms in Literature (3) (V)**

The study of particular literary ideas, modes, and genres, and their significance. Topics announced in advance by the department. Since the topics of English 210 may change each semester, the course may be repeated for credit if the topic is substantially different.

**270 Afro-American Literature (3) (F&W)**

A survey of prose, poetry, and drama by Black Americans from the period of enslavement, through the Negro Renaissance to the present.

**280 Topics in Women and Literature (3) (F&W)**

An examination of the role of women in literature, either as figures in literary works or as writers. Specific topics to vary from semester to semester. Since the topics of English 280 may change each semester, the course may be repeated for credit if the topic is substantially different.

**315 Literary Criticism (3) (V)**

Historical survey of the principles of literary criticism from Plato to the present.

**324 Chaucer (3) (F)**

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.

**325 Medieval English Literature (3) (W)**

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.

**332 Tudor Poetry (3) (W)**

Spenser, Sidney, the sonneteers, and other

non-dramatic poets of the sixteenth century. The development of poetic theory.

**337 Shakespeare: Tragedies and Romances (3) (F&W)**

The development of Shakespeare's concept of tragedy and tragicomedy from *Titus Andronicus* to *The Tempest*. The plays will be related to the social and literary milieu of the period.

**338 Shakespeare: Comedies and Histories (3) (F&W)**

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.

**339 Tudor and Stuart Drama (3) (Alt. F)**

A survey of the dramatic writings 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.

**341 English Renaissance Prose (3) (V)**

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.

**342 Early Seventeenth-Century Poetry (3) (F)**

Non-dramatic poetry from the accession of James I to the Restoration, exclusive of Milton.

**345 Milton (3) (W)**

All the minor poems and the three longer poems with some attention to the major prose. Milton and his relation to the politics, theology and literature of the seventeenth century.

**346 Restoration and Eighteenth-Century Drama (3) (W)**

The principal tragedies and comedies from Dryden to Sheridan, including the plays of Congreve, Farquhar, Rowe, Gay, Fielding, Goldsmith, among others.

**352 Age of Dryden and Pope (3) (F)**

The beginnings 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.

**353 Age of Johnson (3) (W)**

The breakdown of the neo-classic spirit and the introduction of the "new" poetry and novel. Consideration of Fielding, Johnson, Thompson, Young, Goldsmith, Sheridan and others.

**364 The Eighteenth-Century English Novel (3) (F)**

The origins and early development of the English novel, from Defoe to Jane Austen.

**365 The Nineteenth-Century English Novel (3) (W)**

The later development of the English novel, from Scott to Conrad.

**368 Early Romantic Poetry and Prose (3) (F)**

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.

**369 Later Romantic Poetry and Prose (3) (W)**

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.

**371 Prose and Poetry of the Victorian Period (3) (F&W)**

Critical readings of selections from Tennyson, Browning, Arnold and others, in addition to selections from the major prose writers.

**372 The Later Nineteenth Century (3) (F)**

Poetry, drama and fiction of the period between 1870 and the First World War. Hardy, Hopkins, Conrad, Shaw, Wilde, Yeats and others.

**373 The American Renaissance (3) (F&W)**

American literature of the nineteenth century: Emerson, Thoreau, Hawthorne, Melville, Whitman and others.

**374 American Realism and Naturalism (3) (F&W)**

American literature of the late nineteenth and early twentieth centuries. James, Twain, Stephen Crane, Dreiser and others.

**375 American Fiction to World War I (3) (F)**

Development of the novel and short story in America.

**376 Modern American Fiction (3) (F&W)**

The novel and short story in America since World War I. There may be some attention to British and Continental influences.

**383 Modern British Fiction (3) (F)**

Critical reading and analysis of British fiction of the twentieth century. There may be some attention to American and Continental influences.

**384 Modern Poetry (3) (F&W)**

Critical reading and analysis of poetry of the late nineteenth and early twentieth centuries. Yeats, Eliot, Frost, Williams and others.

**385 Modern Drama (3) (F&W)**

British, American and European drama of the last one hundred years: the well-made play, the problem play, verse drama, new definitions of tragedy, the angry theater, theater of the absurd.

**386 Poetry Since World War II (3) (V)**

Reading and analysis of contemporary poetry.

**Special Offerings****90 Freshman Seminar (3) (V)**

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. May be repeated for a maximum total of four hours credit.

**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. Since the topics of English 290 may change each semester, the course may be repeated for credit if the topic is substantially different. Enrollment limited to twelve students.



English  
Description of Courses

**Speech Communication**

**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&W)**

An introduction to broadcasting, including the areas of history, government regulations, station operation and program development.

**120 Introduction to the Theatre (3) (F&W)**

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)**

An introduction to the fundamental techniques of play production, including theatre organization, play selection, interpretation, casting, rehearsal procedure, directorial techniques, technical elements, etc. The course is terminal for those students who do not desire to pursue formal study in play production and is introductory for those students who desire to continue a more detailed study of the elements of play production.

**125 Stagecraft (4) (W)**

A survey of the theory and practice of stage scenery methods and stage lighting principles. Practical experience in construction, rigging, and stage lighting techniques, as well as supervised work in all other phases of theatrical production will be emphasized. Two hours lecture and four hours laboratory.

**140 Introduction to Argumentation and Debate (3) (F)**

Fundamentals of argumentation and debate. Application of logic and audience analysis. Preparing briefs. Some debating.

**199 Special Projects in Communication (1-4) (F&W)**

(Variable credit, repeatable to a maximum of four hours) Prerequisite: Consent of instructor. Work on special projects in the student's field of interest, with conferences adjusted to needs of the student.

**203 Introduction to Communication Theory and Research (3) (Alt. 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 Communications 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) (Alt. 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.

**214 Creative Processes in Radio (3) (W)**

Prerequisite: Speech 110 or consent of instructor. Review of theories and practices in creating radio programs. Laboratory experience will be included.

**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&Alt.W)**

A study of persuasive communication including theories, techniques, forms, functions, applications, potential and limitations for individual and organizations. Insights from both classical rhetoric and contemporary 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.

**299 Internship in Communication (3) (F&W)**

Prerequisite: Consent of instructor. Supervised practicum in one of the following areas of communication: (1) Rhetoric and Public Address, (2) Communication Theory and Research, (3) Theatre, (4) Radio-TV-Film.

## Fine Arts

### Fine Arts

The department includes art and music. For the student who wishes to concentrate in the department, four degree programs are offered. The bachelor of arts (A.B.) may be earned in art history, music, or music history and literature. The professional degree of bachelor of music (B.M.) is offered in music education, which leads to teacher certification in grades one through twelve (most music majors select this as a career program). It is not possible to earn a degree in art or music in the Evening College.

All students, majors and non-majors, may enjoy the esthetic and intellectual stimulation which a first-hand study and practice of the fine arts brings. In addition to certain academic courses which anyone may elect, there are opportunities to apply the arts.

Gallery 210 in Lucas Hall houses a variety of public exhibitions during the school year under the direction of the art faculty. Students assist in preparing each show. The St. Louis Art Museum and private galleries offer first-hand opportunity to observe representative works. In addition, the department has a slide collection of art works which numbers about 50,000 titles.

Ten musical organizations are open to all by audition, with credit optional: Concert Band, Chamber Band, Orchestra, Jazz Ensemble, University Chorus, University Singers, Opera Workshop, and Chamber String, Woodwind and Brass Ensembles. In addition to campus concerts, some ensembles make short tours and the university choruses sing annually with the St. Louis Symphony. Twenty-five members of the St. Louis Symphony teach applied music lessons and appear occasionally in solo recital on campus.

Music facilities include large rehearsal rooms, an electronic piano laboratory, an ear training laboratory, and a limited number of soundproof practice rooms equipped with pianos. The department owns over 100 band and orchestra instruments for instruction in the music education program. There is an ample library of records and study scores, and a large slide collection which illustrates music history and instruments. For the

course in non-Western music, an instrument collection has been gathered from around the world.

The St. Louis County Chapter of Mu Phi Epsilon, International Music Sorority, awards annually a cash prize to a junior woman music major recommended by the faculty. The St. Louis Chapter of Mu Phi Epsilon gives a partial scholarship, usually to a woman student already enrolled in the department.

### General Education Requirements

General education requirements apply to all programs, with the exception of the bachelor of music program in which foreign language study is required for applied voice students only. Majors may not take required courses in their degree programs on the pass-fail basis.

For nonmajors a maximum of eight credit hours in applied music or studio art is allowed toward graduation (for example, band, chorus, studio art) including credit transferred. Department courses which meet the college requirement for non-Euro-American study are Art 145, Survey of Oriental Art; Art 207, Primitive Art; Art 208, American Indian Art; and Music 5, Introduction to Non-Western Music. For the elementary education major in the School of Education the fine arts faculty teaches three courses in the content and techniques of art and music for children (Art 139, Art Activities for Elementary School; Music 136, Music Fundamentals for the Elementary School Teacher; and Music 137, Elementary School Music).

### Degree Requirements

#### Bachelor of Arts in Art History

The major in this field studies the visual arts from prehistory to the present from the standpoints of style and symbol. The techniques, materials, and tools of the artist are investigated in a media course. Less conventional learning experience is gained in creating multimedia projects as assignments in selected courses.

The major must complete a minimum of 35

## Fine Arts

credit hours of art history courses, but no more than 45 hours. Required courses are:

- 1 Introduction to Art 1
- 3 Art History Media Lab
- 205 Classical Art and Archaeology of Greece and Rome or  
210 Medieval Art
- 221 Italian Renaissance Art or  
222 Northern Renaissance Art
- 226 Baroque Art in Italy and France or  
227 Baroque Art in Holland, Flanders and Spain
- 241 Nineteenth Century Art or  
242 Twentieth Century Art
- 293 Senior Seminar

Nine hours in studio art may be added. French or German is recommended for the foreign language requirement. Each student is assigned an adviser to assist in the selection of specific courses.

**Degree Programs in Music**

Admission to all degree programs in music is by audition and interview to demonstrate musical aptitude and potential, moderate technical proficiency, and seriousness in selecting music as a four-year course of study. Auditions are scheduled from January to May for the fall semester. A limited number are held in December for the winter semester. Applicants must have received admission to the university before requesting an audition. A short senior recital is required for graduation as evidence of sound musicianship, a close acquaintance with a portion of musical literature, and the ability to bring it to actual performance. The department's position is that if the future teacher, performer, or composer does not reach such a technical and artistic level in the undergraduate program, he or she may fail to acquire it later, regardless of one's professional position.

Every music major will be required to participate in an approved ensemble (concert band, chorus or orchestra) and to study one applied area progressively each semester of the degree program. Standards of achievement in applied music are on file in the department office. Majors are required to appear in performances at the discretion of

the department. Non-keyboard players will be required to pass an examination in piano proficiency (Music 118 or equivalent for instrumentalists, Music 120 for vocalists).

Degree programs consist of the following course requirements. An adviser is assigned each student to assist in the selection of specific courses.

**Bachelor of Arts in Music**

- Music Theory
- 3 Theory of Music
- 4 Theory of Music
- 111 Theory of Music
- 112 Theory of Music
- 141 Orchestration
- 151 Conducting

Music History and Literature  
101 History of Western Music  
102 History of Western Music  
and one 300-level course.

Applied Area  
private lessons 16 credit hours

Ensemble  
Four hours maximum credit

Senior Readings 192

**Bachelor of Arts in Music History and Literature**

- Music Theory
- 3 Theory of Music
- 4 Theory of Music
- 111 Theory of Music
- 112 Theory of Music
- 141 Orchestration
- 151 Conducting

Music History and Literature  
101 History of Western Music  
102 History of Western Music  
and three 300-level courses.

Applied Area  
Private lessons 12 credit hours

Ensemble  
Four hours maximum credit

Senior Readings 192

**Bachelor of Music in Music Education**

## Music Theory

3 Theory of Music  
4 Theory of Music  
111 Theory of Music  
112 Theory of Music  
141 Orchestration

## Music History and Literature

101 History of Western Music  
102 History of Western Music  
and one 300-level course.

## Applied Area

Private lessons 16 credit hours

## Beginning Instrumental Techniques

8-13 hours Instrumental certification  
Conducting 151 and Advanced Conducting  
251.

## Ensemble

Four hours maximum credit

## Curriculum and Methods of Teaching

Elementary and Secondary School Music  
Six hours

## Professional Education and Student

Teaching  
Eighteen hours

Senior Readings 192

Fine Arts  
Faculty

Arnold Perris Chairman, Associate  
Professor of Music  
Ph.D., Northwestern University

**Art**

Marie Larkin Professor  
Ed.D., Columbia University

Sylvia Walters Associate Professor  
M.F.A., University of Wisconsin-Madison

Carole Kaufmann Assistant Professor  
Ph.D., University of California-Los Angeles

Michael Taylor Assistant Professor  
Ph.D., Princeton University

Mary Wilson Assistant Professor  
Ph.D., Northwestern University

Nancy Pate Instructor  
M.A.

Jean Tucker Lecturer  
M.A.

**Music**

Kenneth E. Miller Professor  
Ph.D., Northwestern University

Ronald Arnatt Associate Professor  
D.M., Westminster Choir College

Warren T. Bellis Associate Professor  
D.M.A., University of Michigan

Evelyn Mitchell Associate Professor

Gertrude Ribla Associate Professor

Martin Behnke Assistant Professor  
M.A., University of Colorado

Kenneth Billups Assistant Professor  
M.M.

Darrell Berg Assistant Professor  
Ph.D., State University of New York-Buffalo

Leonard Ott Assistant Professor  
Ph.D., Michigan State University

Fred Willman Assistant Professor  
Ph.D., University of North Dakota

Darwyn Apple\* Instructor (Violin)  
M.M.

Jacob Berg\* Instructor (Flute)

Robert Ceccarini Instructor (Trumpet)

Aleksander Ciechanski\* Instructor (Cello)

Hubert Drury Instructor (Piano)  
M.M.

Gerald Fleminger\* Instructor (Viola)

Kaid Friedel\* Instructor (Horn)

Jan Gippo\* Instructor (Flute)

Carolyn Hadfield Instructor  
M.M.

Richard Holmes\* Instructor  
B.S.

John Kasica\* Instructor (Percussion)  
B.M.

Henry Loew\* Instructor (String Bass)

John MacEnulty\* Instructor (Tuba)

Malcolm McDuffee\* Instructor (Trumpet)  
M.M.

James Meyer\* Instructor (Saxophone)  
B.S.

Robert Mottl\* Instructor (Bassoon)

Richard O'Donnell\* Instructor (Percussion)

Sara Pandolfi Instructor  
B.M.

Roland Pandolfi\* Instructor (Horn)

Delores Riley Instructor  
M.A.

Max Rabinovitsj\* Instructor (Violin)

Alan Rosenkoetter Instructor (Guitar)  
B.S.

Bernard Schneider\* Instructor (Trombone)  
B.M.

George Silfies\* Instructor (Clarinet)

Gary Smith\* Instructor (Trumpet)  
M.M.

Janis Smith\* Instructor (Flute)  
B.M.E.

Mary Kay Stamper Instructor  
M.A.

Larry Strieby\* Instructor (Horn)

Thomas Stubbs\* Instructor (Percussion)  
B.S.

Yuan Tung\* Instructor (Cello)

Christine Ward\* Instructor (Clarinet)  
M.A.

Richard Woodhams\* Instructor (Oboe)

\*Member, Saint Louis Symphony Orchestra

## Fine Arts

### Description of Courses

#### Art

Prerequisites may be waived by consent of instructor. For the nonmajor no more than eight hours in studio art will be accepted toward graduation.

#### 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) (V)

Prerequisite: Art I. Study of the historical movements in art with emphasis on the major artists and monuments.

#### 3 Art History Media Lab (1) (V)

Consent of instructor. Technical demonstration of and research into the various materials and media used by the artist. (Formerly 201.)

#### 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 for 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.

#### 139 Art Activities for Elementary School (3) (F&W)

(Same as Education 139) A study of art principles and laboratory experiences with various media and materials. Stresses curriculum planning and development of the elementary school program in art.

#### 145 Survey of Oriental Art (3) (V)

Prerequisite: Art 1. The study of the architecture, sculpture and painting of India, China, Japan and Southeast Asia, emphasizing art as a universal language that furthers our understanding of radically different cultures.

#### 205 Classical Art and Archaeology of Greece and Rome (3) (V)

Prerequisite: Art 1. 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.

#### 206 Early Christian Art and Archaeology (3) (V)

Prerequisite: Art 1. The origins and development of Christian imagery prior to the fourth century, the Constantinian epoch, and Byzantine developments to the death of Justinian. Attention will be paid to works of art and to the entire material culture of early Christianity.

#### 207 Primitive Art (3) (V)

Prerequisite: None. A survey of the art of preliterate peoples of North America, Oceania and Africa dating from prehistoric times through the present. This course will be approached from both aesthetic and sociological standpoints. Special attention will be paid to culture contact and the effects of acculturation.

#### 208 American Indian Art (3) (V)

Prerequisite: None. An investigation of the artifacts of the aboriginal peoples of North America. Culture areas to be covered are: Moundbuilder, Northeast, Plains, Navaho, Southwest, Northwest Coast and Eskimo. The art will be studied with reference to style as a manifestation of underlying cultural dynamics. This course fulfills the requirement for a non-Euro-American study.

#### 210 Medieval Art (3) (V)

Prerequisite: Art 1. The art and architecture of the Middle Ages from the Early Christian era through the late Gothic Period.

#### 213 History of Photography (3) (V)

Prerequisite: Art 1 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.

#### 221 Italian Renaissance Art (3) (V)

Prerequisite: Art 1. 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.

#### 222 Northern Renaissance Art (3) (V)

Prerequisite: Art 1. Fifteenth and sixteenth century art in Northern Europe with emphasis on the art of the Netherlands, France and Germany.

#### 226 Baroque Art in Italy and France (3) (V)

Prerequisite: Art 1. 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.

#### 227 Baroque Art in Holland, Flanders and Spain (3) (V)

Prerequisite: Art 1. Seventeenth century art in Holland, Flanders and Spain with emphasis on such artists as Rembrandt, Rubens, VanDyck and Velasquez.

#### 230 American Art (3) (V)

Prerequisite: Art 1. A survey of the art of the United States, both as an extension of the European tradition and for its original contributions.

#### 241 Nineteenth Century Art (3) (V)

Prerequisite: Art 1. The study of European Art from Neoclassicism and Romanticism through Post-Impressionism.

#### 242 Twentieth Century Art (3) (V)

Prerequisite: Art 1. A detailed study of trends in contemporary art from Fauvism and Cubism to Abstract Expressionism and more recent developments.



## Fine Arts Description of Courses

### 243 20th Century Architecture (3) (V)

Prerequisite: Art 1. A brief history and analysis of modern architecture. Investigations of technological process, urban planning, and the dominating social attitudes which govern architectural development.

### 245 The Art of the Print (3) (V)

Prerequisite: Art 1. 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.

### 290 Special Study (1-10) (F&W)

Prerequisite: Junior or Senior standing and consent of department and instructor. Independent study through readings, reports or field research.

### 293 Senior Seminar (3) (V)

Prerequisite: Senior standing in Art History. Intensive reading, discussion and writing on topics to be announced.

### 300 Contemporary Art Education: Craft and Theory (1-2) (V)

Prerequisite: Upper division standing or permission of the Department. Intensive study for advanced students and art teachers, emphasizing specialized techniques and innovative concepts. Topics to be announced. May be repeated for credit.

## Music

Prerequisites may be waived by consent of department. For the nonmajor no more than eight hours in applied music courses will be accepted toward graduation.

### 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 I (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 II (3) (W)

Prerequisite: Music 3 or consent of department. Continuation of Music 3.

### 5 Introduction to Non-Western Music (3) (F)

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. (same as Art 6.)

### 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.

### 14, 15 Piano Proficiency (2) (14F, 15W)

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

**40 University Chorus (1) (F&W)**

Prerequisite: Consent of instructor. Preparation and performance of choral literature.

**41 University Singers (1) (F&W)**

Prerequisite: Consent of instructor. The study and performance of music for vocal chamber ensemble.

**44, 45, 114, 115, 134, 135, 154, 155, 244, 245****Applied Music (2 or 4) (F&W)**

Registration by audition and permission of the department. Courses are offered in the following areas: bassoon, clarinet, classical guitar, euphonium, flute, French horn, oboe, harp, organ, percussion, piano, saxophone, trombone, trumpet, tuba, violin, viola, violoncello, string bass and voice.

**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. Jazz
- c. Percussion
- d. Strings
- e. Voice
- f. Woodwinds
- g. Accompanying

**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.

**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 I (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 II (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 forms.

**112 Theory of Music (3) (W)**

Prerequisite: Music 111 or consent of department. Continuation of Music 111.

**116, 118, 119, 120 Intermediate Piano Proficiency (1) (F&W)**

Prerequisite: Music 15 or permission of department. Continuation of piano proficiency study.

**121 Theory of Music (2) (F 1976)**

Prerequisite: Music 112 or consent of department. Study of techniques and styles used in tonal and atonal music of the twentieth century

**122 Theory of Music (2) (W 1977)**

Prerequisite: Music 121 or consent of the department. Continuation of Music 121.

**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.

**136 Music Fundamentals for the Elementary School Teacher (2) (F,W,S)**

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 (2) (F,W,S)**

(Same as Education 137) Prerequisite: Music 136 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 or concurrent. 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 112 or consent of department. Advanced study of conducting and rehearsal techniques, score reading and interpretation.

- a. Instrumental
- b. Choral

Fine Arts  
Description of Courses

**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, methods of teaching and staffing music classes, analysis of instructional materials and resources.

**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 art courses, administrative procedures. The class is divided when appropriate according to the vocal or instrumental programs of the students.

**290 Independent Study (1-3) (V)**

Prerequisite: Junior or Senior standing and consent of department and instructor. Independent study through reading, reports or field research.

**300 Advanced Techniques in Music Education****(1-2) (V)**

Prerequisite: A 200-level music education course or permission of the department. Intensive study for advanced music education students and music teachers, emphasizing specialized techniques and innovative concepts. Topics to be announced. May be repeated for credit.

**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 Ars 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.

## History

### Program

History is an essential part of a liberal arts education, and its study in a program of quality is a useful preparation for careers in law, teaching, business, government service, and the profession of historical research and teaching. The history department stresses student contact with working historians at all levels of instruction, and the program in history is organized to serve as an introduction to the historical discipline in general.

The Department of History offers work leading to the bachelor of arts in history, bachelor of arts in history with teacher certification (in cooperation with the School of Education), bachelor of science in the school of education with an emphasis on social studies (see School of Education page 177 for details), and the master of arts in history.

### General Education Requirements

Each history major must satisfy the general education requirements of the university listed on page 30 and the general education requirements of the College of Arts and Sciences listed on page 41. 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-Euro-American requirement may also be met by any of the courses listed on page 41. History courses meeting the non-Euro-American requirement are:

- 61 Asian Civilization
- 62 Asian Civilization
- 71 Latin American Civilization
- 361 Modern Japan: 1850 to Present
- 362 Modern China: 1800 to Present

Any history course may be taken on a pass-fail basis, but majors may not apply such courses to the B.A. and B.S. degrees.

### Degree Requirements

#### Bachelor of Arts in History

The student is encouraged to take a program which combines breadth of coverage with intensity. For this reason, a student is

required to take two introductory courses in Western Civilization (History 31 and 32), and two courses from the American Civilization sequence (any two of History 3, 4, 5, 71, or 120). The student must take either History 292, Historiography, or History 293, Senior Seminar usually in the senior year. A minimum of 18 hours at the 300-level must be taken, distributed among the following areas: 1) two 300-level courses in European history, 2) two 300-level United States history courses, and 3) one 300-level history course drawn from a general group including Asian history (361 and 362), Latin American history (371 a, b, c), U.S. and Wars of National Liberation (329), Asian-American Relations (328), Quantitative Methods (399), and History of Science (316). One other 300-level course and one further elective in history at any level (except History 265) fulfills the minimal program of 36 hours. No more than 15 hours at the 300-level may be taken in any one of the three divisions described above. No more than 45 hours may be taken in history for a bachelor program of 120 hours, and the student must complete a minimum of 36 hours of "C" work or better.

### Related Areas

Since history is a discipline of breadth, it can be combined with serious work in any other discipline. A student could suitably take courses in the humanities, social sciences, languages, and the natural sciences as a compliment to a history program. Such choices should be made on the basis of a student's individual interests after consultation with a faculty adviser.

### Bachelor of Arts with Teacher Certification

For information on teacher certification with an emphasis in history, see School of Education, page 174.

### Bachelor of Science in Education with an Emphasis on Social Studies

The departmental requirements for this degree are identical to those for the bachelor of arts, but the student is expected to comply with the general education requirements of the School of Education rather than with those of the College of Arts and Sciences.

History  
Faculty

Arthur H. Shaffer Chairman, Associate Professor  
Ph.D., University of California, Los Angeles

James D. Norris Professor  
Ph.D., University of Missouri-Columbia

James Neal Primm Professor  
Ph.D., University of Missouri-Columbia

Everett Walters Dean of Faculties, Professor  
Ph.D., Columbia University

Roy Gene Burns, Jr. Associate Professor  
Ph.D., University of Missouri-Columbia

Walter Ehrlich Associate Professor  
Ph.D., Washington University

Louis S. Gerteis Associate Professor  
Ph.D., University of Wisconsin

Susan M. Hartmann Associate Professor  
Ph.D., University of Missouri-Columbia

Winston Hsieh Associate Professor  
Ph.D., Harvard University

William S. Maltby Associate Professor  
Ph.D., Duke University

Charles P. Korr Associate Professor  
Ph.D., University of California, Los Angeles

Howard S. Miller Associate Professor  
Ph.D., University of Wisconsin

Richard H. Mitchell Associate Professor  
Ph.D., University of Wisconsin

George F. Putnam Associate Professor  
Ph.D., Harvard University

Richard W. Resh Associate Professor  
Ph.D., University of Wisconsin

Blanche M. Touhill Associate Dean of Faculties,  
Associate Professor  
Ph.D., St. Louis University

Mark A. Burkholder Assistant Professor  
Ph.D., Duke University

Jerry Cooper Assistant Professor  
Ph.D., University of Wisconsin

P. Corby Finney Assistant Professor  
Ph.D. Harvard University

John Gillingham Assistant Professor  
Ph.D., University of California, Berkeley

Steven Hause Assistant Professor  
Ph.D., Washington University

Ann B. Lever Assistant Professor  
Ph.D., University of North Carolina

Edward Paynter Assistant Professor  
Ph.D., University of California, Berkeley

James L. Roark Assistant Professor  
Ph.D., Stanford University

Steven W. Rowan Assistant Professor  
Ph.D., Harvard University

Margaret L. Sullivan Assistant Professor  
Ph.D., St. Louis University

Martin G. Towey Assistant Professor  
Ph.D., St. Louis University

## History

### Description of Courses

#### **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 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 basis of racism in the U.S.; the consequences of racism for the individual and societies.

#### **61 Asian Civilization (3) (F)**

Prerequisite: None. The development of Asian Civilization from earliest times to the Manchu conquest.

#### **62 Asian Civilization (3) (W)**

Prerequisite: None. Either 61 or 62 may be taken separately. Continuation of History 61 with emphasis on the Asian response to the Western incursion.

#### **71 Latin American Civilization (3) (F)**

Prerequisite: None. A survey of selected topics important in the development of Latin America from pre-Columbian times to the twentieth century.

#### **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) (V)**

(Same as Administration of Justice 99, Economics 99, Political Science 99, Psychology 99 and Sociology 99) Prerequisite: None. 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 and Chaos in 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.

#### **102 Ethnic Cultures in America: Their History and Literature (3) (V)**

(Same as English 102 and Interdisciplinary 102) The course traces the history of the settlement of European, Jewish, German, Italian, Irish, and Negro groups in America. It will emphasize the problems of assimilation as they are reflected for each group in appropriate literary forms.

#### **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 experience 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 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.

#### **207 The History of Missouri (3) (V)**

Prerequisite: None. Lecture and readings. Seventeenth Century Spanish and French explorations and interaction with the Indians; settlement and organization of the Louisiana territory; lead mining and the fur trade; the Louisiana Purchase - the Missouri territory; the struggle for statehood and slavery; ante-bellum politics; banking and internal improvements; westward expansion; Civil War and Reconstruction; postwar agrarian politics; industrialization; Irish, German and southern European immigration; the Progressive reforms - political and economic changes; 20th century social changes and political developments.

#### **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.



## History

### Description of Courses

#### **301 United States History: Colonial America to 1763 (3) (F)**

Prerequisite: Junior standing or consent of instructor. English background of colonization; rise of distinctive New England and Southern societies; English colonial policy to the Peace of Paris.

#### **302 United States History: Revolution and the New Nation, 1763-1815 (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 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. to 1865 (3) (V)**

Prerequisite: Junior standing or consent of instructor. Origins and historical development of the principal institutions and ideas of the American Constitutional system, the role of the Constitution in the establishment and early growth of the nation; Constitutional issues of Hamiltonianism, Jeffersonianism, and Jacksonianism, including the role of the Supreme Court, the Constitutional conflict over federalism and the nature of the Union; Constitutional issues in the Civil War.

#### **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 the 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 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. Non-science majors welcome.

#### **321 History of Women in the United States (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: 1890 to Present (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.

#### **323 Immigration in United States History (3) (F)**

Prerequisite: Junior standing or consent of the instructor. This course explores the background of immigration, general immigration trends and distribution patterns, ethnic communities in America,



some comparisons of different immigrant groups, the immigrant's influence on the United States and the assimilation and acculturation of immigrants into American life.

**324 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.

**325 Rise of Industrial America (3) (V)**

Prerequisite: Junior standing or consent of the instructor. History of American business, industry, and labor.

**326 American Urban History (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.

**327 History of the American South (3) (W)**

Prerequisite: Junior standing or consent of the instructor. Southern society and culture and the South's relationship with the nation.

**328 Asian-American Relations (3) (F)**

Prerequisite: Junior standing or consent of the instructor. A study of relations between American and Asian peoples from the early years of the China traders to the present.

**329 U.S. and Wars of National Liberation (3) (W)**

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.

**331a 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.).

**331b The Ancient World: The History of Greece to 336 B.C. (3) (V)**

Prerequisite: Junior standing or consent of the instructor. Prehistory, Minoan and Mycenaean antecedents, the invasions and the establishment of a mainland culture, Hellenic civilization during the seventh through the fifth centuries, the period of transition, 404-336 B.C., with selected readings from the Greek historians and from other written sources.

**331c 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.

**331d 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 end of the Roman Empire as a universal entity; the successor states of the Mediterranean and Northern Europe; the emergence of a Western Christendom under the Franks; the development of feudal states; the Gregorian reforms; the Crusades; the revival of education and learning in the twelfth century.

**332b Europe in the High and Late Middle Ages (3) (W)**

Prerequisite: Junior standing or consent of the instructor. Medieval society at its political, economic, and intellectual zenith; the crisis of the later Middle Ages; the papal schism and the development of national particular Churches within Catholicism; the rise of estate institutions.

**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 attending 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. Political, religious, intellectual and socio-economic 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 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.

**338 Europe in the Nineteenth Century, 1815-1914 (3) (V)**

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.

**339 Europe in the Twentieth Century (3) (F)**

Prerequisite: Junior standing or consent of the instructor. The impact of World Wars I and II; the search for equilibrium.

**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

## History

### Description of Courses

nineteenth century Europe in conjunction with social, economic and political events of the time. Topics considered are Liberalism, Socialism, Irrationalism and Psychoanalysis. 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, with 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 topical study of economic institutions and their development in Europe from Antiquity through the mid-eighteenth century, with emphasis on the agrarian economy; methods of artisan production; the role of currency, pre-industrial urbanization; 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 context of economic institutions and events.

#### **344a History of the Church: Early Christianity (3) (F)**

Prerequisite: Junior standing or consent of the instructor. Brief introduction to Jewish, Greek, and Roman antecedents, Christian beginnings, and the emergence of Christian traditions, to the Council of Nicea (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 on 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.

#### **352b France: The Nineteenth Century, 1815-1914 (3) (V)**

Prerequisite: Junior standing or consent of 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.

#### **352c France: The Twentieth Century, 1914-1969 (3) (V)**

Prerequisite: Junior standing or consent of 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.

**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.

**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 Kiev 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.

**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. Attention centers on 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 (1-10) (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 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.

## Mathematical Sciences

### Program

The Department of Mathematical Sciences offers work at the undergraduate level leading to the bachelor of arts with a major in mathematics and the bachelor of science in secondary education with a major in mathematics (See School of Education for details concerning nonmathematics requirements). The master of arts in mathematics is also offered.

The Department of Mathematical Sciences is subdivided into four sections: mathematics, probability and statistics, computer science, and mathematics education. Any student desiring additional information should consult the head of the appropriate section.

The specific degrees offered by the department serve a variety of students wishing to major in mathematics. The major in mathematics for the bachelor of arts degree is a flexible program providing a broad introduction to the important branches of mathematics, but enabling the pregraduate student to acquire the needed depth in mathematics to successfully pursue graduate study. The bachelor of science in education degree introduces the student to those branches of mathematics which are most relevant to the teaching of secondary school mathematics. A sufficient selection of courses is offered in the evening hours to enable the Evening College student to complete a baccalaureate degree in mathematics, or to meet the mathematics requirement for other baccalaureate degrees.

The Department of Mathematical Sciences offers a wide variety of courses designed to provide a liberal arts education for persons planning to enter professional schools such as medicine or law, and to provide for the university community as a whole those courses which might enrich the liberal arts education of the general student, or meet specific mathematical needs of students working in other areas such as physics, chemistry, the biological sciences, business, or the social sciences.

### General Education Requirements

Each mathematics major must satisfy the

general education requirements of the University listed on page 30, and the general education requirements of the College of Arts and Sciences listed on page 41, or the requirements of the School of Education, on page 172. The college's foreign language requirement must be met in German, French, or Russian.

The department's standard analytic geometry and calculus sequence, Mathematics 80, 175, and 201, is required of all mathematics majors, as well as students majoring in a physical science or engineering. Students needing a course in the methods of the calculus for application to business, or the social or biological sciences may take Mathematics 101, Survey Calculus. Students lacking the prerequisites to these courses will find precalculus courses available: Mathematics 40, Pre-Calculus Mathematics, for those who plan to take the standard calculus sequence, and Mathematics 30, College Algebra, for those planning to enroll in Mathematics 101 or Mathematics 102. The department also offers two remedial high school level courses, Mathematics 02, Fundamentals of Algebra, and Mathematics 03, Trigonometry, for the convenience of the student who arrives on campus with a high school background deficient in mathematics. Mathematics 02 and 03 carry no credit toward any degree.

Other courses or sequences provide options for other groups of students. For example, Math 50, Structure of Mathematical Systems I, and Math 151, Structure of Mathematical Systems II, are designed to meet the mathematical needs of the prospective elementary school teacher; Math 15, Mathematics: Ideas and Structures, is a terminal course designed to introduce the general liberal arts student to mathematical ideas; while more specialized sequences such as Mathematics 302, Linear Algebra and Differential Equations; 303, Applied Mathematics II; and 304, Applied Mathematics III, meet the needs of students in physics and in some engineering curricula.

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 30).

All terminal courses, i.e., those which are not prerequisites for other courses, may be taken by nonmathematics majors on a pass-fail basis. Also, Math 175, Analytic Geometry and Calculus II, and Math 201, Analytic Geometry and Calculus III, may be taken on a pass-fail basis. The following courses may not be taken on a pass-fail basis:

- 02 Fundamentals of Algebra
- 03 Trigonometry
- 30 College Algebra
- 40 Pre-Calculus Mathematics
- 50 Structure of Mathematical Systems I
- 80 Analytic Geometry and Calculus I

The mathematics major may not take mathematics courses on a pass-fail basis, but may elect to take courses from the related-area requirement on pass-fail. Any student who is considering attending graduate school following completion of work on the bachelor's degree should consult with his or her adviser concerning the advisability of taking work on a pass-fail basis.

#### Degree Requirements

Each mathematics major must complete ten mathematics courses with a grade of C or better. The courses shall include:

- 80 Analytic Geometry and Calculus I
- 175 Analytic Geometry and Calculus II
- 201 Analytic Geometry and Calculus III
- 250 Introduction to Modern Mathematics
- 302 Applied Mathematics I

or their equivalent. In some instances a student may be prepared 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 Department of Mathematical Sciences before planning a program. Credit for Mathematics 80 will be granted to the student who successfully completes Mathematics 175.

Five additional courses must be chosen as follows: one each from any four of the five blocks listed below, and two courses from

any one of the four chosen blocks.

#### A

- 335 Theory of Numbers
- 340 Introduction to Abstract Algebra I
- 341 Introduction to Abstract Algebra II

#### B

- 310 Advanced Calculus
- 311 Advanced Calculus II
- 316 Functions of a Complex Variable

#### C

- 364 Introduction to Differential Geometry
- 380 Introduction to Topology

#### D

- 303 Applied Mathematics II
- 320 Mathematical Statistics I
- 321 Mathematical Statistics II
- 323 Numerical Analysis I
- 324 Numerical Analysis II
- 327 The Calculus of Variations

#### E

- 345 Linear Algebra
- 358 Mathematical Logic
- 362 Projective Geometry
- 366 Foundations of Geometry
- 367 Introduction to Non-Euclidean Geometry

A minimum of 12 hours of mathematics courses numbered 250 or above must be completed at UMSL 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 or she receives a grade.

#### Related Area 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. Specifically, each major must complete all the courses listed in any two groups (a) through (j) below:

#### (a)

- Biology
- 224 Genetics
- 226 Genetics Laboratory

## Mathematical Sciences

**(b)**

Two courses 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, Advanced Genetics; or Biology 242, Population Biology, and Biology 244, Population Biology Laboratory (counted as one course).

**(c)**

Chemistry

- 11 Introduction Chemistry I
- 12 Introductory Chemistry II

**(d)**

231 Physical Chemistry I, and one other 200 level course (or above).

**(e)**

Two of: Mathematics 222, Algorithms and Languages; Mathematics 322, Data Structures; or Business 224, Introduction to Systems Programming.

**(f)**

365 Economic Statistics and Econometrics  
366 Econometrics

**(g)**

Philosophy

- 160 Formal Logic
- 250 Philosophy of Science
- 360 Advanced Formal Logic

**(h)**

Physics

- 111 Physics: Mechanics and Heat
- 112 Physics: Electricity, Magnetism, and Optics

**(i)**

221 Mechanics  
and one other 200 level course (or above)

**(j)**

Psychology 301, Advanced Statistics and Experimental Design (for B.S. in Secondary Education majors only)

The student should choose two of the groupings above according to his or her own interests, or professional-career objectives. It should be noted that some of the courses listed have prerequisites; the course-offerings section of the discipline in which the courses

listed above are taught should be consulted in order to determine precisely how many courses are actually required. The student's adviser will assist the student in the selection of related area courses.

The student who is preparing for graduate study should plan on taking eight or nine courses at the junior-senior level. The department especially recommends that such majors complete the following mathematics courses as part of their program:

- 310 Advanced Calculus
- 311 Advanced Calculus II
- 316 Functions of a Complex Variable
- 340 Introduction to Abstract Algebra I
- 341 Introduction to Abstract Algebra II
- 380 Introduction to Topology

A member of the mathematics faculty is assigned to each student majoring in mathematics to aid in the selection of an individualized program, and a general undergraduate adviser in the department is available to assist students who are not majoring in mathematics or who have not yet declared a major with their programs. All mathematics majors are urged to consult with their faculty adviser early in planning this program.



## Mathematical Sciences Faculty

Deborah Tepper Haimo Chairperson, Professor  
Head, Mathematics Section  
Ph.D., Harvard University

Edward Z. Andalafte Associate Professor  
Ph.D., University of Missouri-Columbia

Raymond Balbes Associate Professor  
Ph.D., University of California, Los Angeles

Wayne L. McDaniel Associate Professor  
Ph.D., St. Louis University

Gerald Peterson Associate Professor,  
Head, Computer Science Section  
Ph.D., University of Utah

Alan L. Schwartz Associate Professor  
Ph.D., University of Wisconsin

Jerrold Siegel Associate Professor  
Ph.D., Cornell University

Grant V. Welland Associate Professor,  
Head, Probability and Statistics  
Ph.D., Purdue University

Frederick Wilke Associate Chairman,  
Associate Professor, Head, Mathematics  
Education Section  
Ph.D., University of Missouri-Columbia

John Ballard Visiting Assistant Professor  
Ph.D., University of Wisconsin-Madison

William Connett Assistant Professor  
Ph.D., University of Chicago

Richard Friedlander Assistant Professor  
Ph.D., University of California, Los Angeles

Jan Gronski Visiting Assistant Professor  
Ph.D., University of Illinois-Urbana, Champaign

Rangachary Kannan Assistant Professor  
Ph.D., Purdue University

Jerome M. Katz Assistant Professor  
Ph.D., Yale University

Kenneth Lueder Visiting Assistant Professor  
Ph.D., Washington State University

Lewis Shilane Visiting Assistant Professor  
Princeton University

Shirley Adams Instructor  
M.A.

Michael Avitahl Instructor  
M.S.

Thelma Balbes Instructor  
M.A.

Earl Balliet Instructor  
M.S.

Sara Crews Instructor  
M.A.

Elena Eftimiu Instructor  
M.S.

Toni Garrett Instructor  
M.A.

Yin-hsin Ho Instructor

Sr. Patricia Kennedy Instructor  
M.S.

Jean Kuntz Instructor  
M.A.

Mary Kay Levaro Instructor  
M.S.

Barbara Matthei Instructor  
M.A.

Richard Matthei Instructor  
M.A.

Richard Matthei Instructor  
M.A.

Eric Moll Instructor  
M.S.

Mark Nugent Instructor  
M.S.

Richard Parsons Instructor  
M.S.

Cynthia Siegel Instructor  
M.S.

David Stevens Instructor  
M.A.

Patricia Stevens Instructor  
M.A.

James C. Thorpe Instructor  
M.A.

James Trefzger Instructor  
M.S.



## Mathematical Sciences Description of Courses

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 *Schedule of Courses*.

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.

### Mathematics

#### 02 Fundamentals of Algebra (4) (F&W)

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.

#### 03 Trigonometry (2) (F&W)

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.

#### 15 Mathematics: Ideas and Structures (3) (V)

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.

#### 30 College Algebra (4) (F&W)

Prerequisite: Mathematics 02; or three 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 mathematics and science majors.

#### 40 Pre-Calculus Mathematics (4) (F&W)

Prerequisite: Mathematics 02; or three units of high school mathematics including one and one-half units of algebra and a satisfactory score on mathematics placement examination. 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.

#### 50 Structure of Mathematical Systems I (3) (F&W)

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. Recommended for elementary education students.

#### 80 Analytic Geometry and Calculus I (5) (F&W)

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. Courses 80, 175 and 201 form a sequence of courses.

#### 101 Survey Calculus (4) (F&W)

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.

#### 102 Finite Mathematics I (4) (F&W)

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.

#### 151 Structure of Mathematical Systems II (3) (F&W)

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.

#### 175 Analytic Geometry and Calculus II (5) (F&W)

Prerequisite: Mathematics 80. Selected topics from plane analytic geometry and calculus. Mathematics 80, 175 and 201 form a sequence of courses.

#### 201 Analytic Geometry and Calculus III (5) (F&W)

Prerequisite: Mathematics 175. Solid analytic geometry and selected topics in calculus. Mathematics 80, 175, and 201 form a sequence of courses.

#### 203 Finite Mathematics II (3) (V)

Prerequisite: Math 102. A continuation of Math 102. Linear programming and game theory, application of combinatorial mathematics. A student cannot receive credit for both Math 203 and Business 375.

#### 245 Matrix Algebra with Applications (3) (V)

Prerequisite: Math 30 or Math 40. An introduction to matrices and linear algebra with applications. Topics will include operations with matrices, inversion of matrices, solutions of systems of equations, determinants, and eigenvalues.

#### 250 Introduction to Modern Mathematics (3) (F&W)

Prerequisite: Mathematics 201. Set algebra, equivalence relations, partitions, functions, development of algebraic and topological properties of the real numbers.

#### 301 Differential Equations (3) (V)

Prerequisite: Mathematics 250. A theoretical approach to ordinary differential equations intended for the student majoring in mathematics. Existence of solutions of linear differential equations and systems of differential equations.

**302 Linear Algebra and Differential Equations (3) (F&W)**

Prerequisite: Mathematics 201. Linear algebra of finite dimensional vector spaces, linear maps, matrices, determinants, linear differential equations of first order, linear differential equations with constant coefficients, variation of parameters, Wronskian.

**303 Applied Mathematics II (3) (F)**

Prerequisite: Mathematics 301 or Mathematics 302. Topics chosen from Fourier series, special functions, partial differential equations, boundary value problems.

**304 Applied Mathematics III (3) (V)**

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.

**306 Applied Differential Equations (3) (V)**

Prerequisite: Mathematics 302. Series solutions to ordinary differential equations, numerical methods, Laplace transforms, differential systems, stability, applications to physics, engineering and biology.

**310 Advanced Calculus (3) (F)**

Prerequisite: Mathematics 250 or consent of the department. Limits, continuity and differentiability of functions of one and several variables, sequences and series, the Riemann Stieltjes integral.

**311 Advanced Calculus II (3) (W)**

Prerequisite: Mathematics 310. Continuation of Mathematics 310.

**316 Functions of a Complex Variable (3) (W)**

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.

**323 Numerical Analysis I (3) (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) (V)**

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)**

Prerequisite: Mathematics 311. Methods for optimizing functionals and their applications. The Euler-Lagrange condition. Hamilton's principle, two dimensional variational problems and isoperimetric problems. Approximate methods for the solution of variational problems.

**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.

**345 Linear Algebra (3) (V)**

Prerequisite: Mathematics 250 and 302. Topics selected from vector spaces, bases, linear transformations, matrices, canonical forms, eigenvalues, hermitian and unitary matrices, inner product spaces, quadratic forms.

**350 Special Reading (1-10) (F&W)**

Prerequisite: Mathematics 250 and consent of instructor.

**358 Mathematical Logic (3) (V)**

Prerequisite: Mathematics 250 or Philosophy 360 or consent of the department. A study of the logic of mathematics by the axiomatic method, with a development of the propositional calculus and restricted predicate calculus emphasizing its application to the foundations of mathematics.

**362 Projective Geometry (3) (alt. W)**

Prerequisite: Mathematics 250 or consent of the department. Analytic approach to the study of projective spaces. Theorems of Desargues, Pascal and Brianchon. Project properties of conics.

**364 Introduction to Differential Geometry (3) (V)**

Prerequisite: Mathematics 250. 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.

**380 Introduction to Topology (3) (V)**

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.

Mathematical Sciences  
Description of Courses

## Computer Science

**122 Computers and Programming (3) (F&W)**  
Prerequisite: Mathematics 30 or 40 or equivalent.  
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 Algorithms and Languages (3) (V)**  
Prerequisite: Computer Science 122 or consent of instructor. Algorithms for text editing, string manipulation, sorting, searching, information storage and retrieval, game playing, problem solving, etc. Programming in assembly language and contemporary higher level languages such as PL/1, APL and SNOBOL.

**312 Analysis of Algorithms (3) (V)**  
Prerequisite: Mathematics 201. Efficiency of the basic algorithms of computer science. Sorting, searching, multiplication of matrices and integers. Emphasis will be placed on comparison of alternate methods.

**322 Data Structures (3) (V)**  
Prerequisite: Computer Science 222 or consent of instructor. Stacks, linked lists, trees and multilinked structures. Applications in algorithms.

**325 Theory of Computation (3) (V)**  
Prerequisite: Upper division standing or consent of the instructor. Finite automata, turing machines, recursive function theory, Church's thesis, decision problems.

**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, formula manipulation, symbolic differentiation pattern recognition and question answering. Class and individual projects to illustrate basic concepts.

## Probability and Statistics

**31 Elementary Statistical Methods (3) (V)**  
Prerequisite: Math 30 or Math 40. An introduction to the basic tools and elementary methods of statistics, such as testing of hypotheses, analysis of variance, method of least squares, and time series. Does not satisfy the School of Business Administration requirement ordinarily met by Business 131. A student cannot receive credit for both Math 31 and Business 131.

**320 Mathematical Statistics I (3) (F)**  
Prerequisite: Mathematics 201. Introduction to theory of probability and statistics using concepts and methods of the calculus.

**321 Mathematical Statistics II (3) (V)**  
Prerequisite: Mathematics 320. Continuation of Mathematics 320. Continuous sample spaces, stochastic processes, statistical inference and statistical models.

## Modern Foreign Languages

### Program

The Department of Modern Foreign Languages and Literatures offers course work in French, German, and Spanish leading to the bachelor of arts degree, and a field of concentration in each of these languages for those students seeking the Bachelor of Science degree in Education. In addition, the department offers lower level courses in Italian and Russian and also participates in a cooperative arrangement whereby UMSL students who wish to fulfill the language requirement in Greek, Latin, Hebrew, Chinese, Japanese, and Portuguese may take these courses at neighboring institutions.

Graduates with a foreign language degree may elect to enter the fields of teaching, business, journalism and communication, or government or to continue their work on the graduate level. Majors are urged to take substantial work in other departments and, if possible, to complete a double major. A combination of skills greatly increases the career opportunities of language graduates.

The Department of Modern Foreign Languages and Literatures is proud of the quality of its faculty, foreign language instruction, and the performance of its graduates. To achieve and maintain this quality, the department has a faculty whose members have either native or near-native ability in the foreign languages taught. Each year the department arranges to provide the services of native speaking assistants to enrich the students' language experience on an informal basis. Each of the languages offering a major has an active foreign language club which provides the students the opportunity to meet with each other and their instructors and to practice the language in a casual setting. A library is maintained where books, journals, magazines, records and other foreign language resources are available to students.

Language students who have been at UMSL at least one semester and have studied the language at least one year, may receive three to six credits in each of the languages offered at UMSL for formal study abroad during the summer. Prior consent of the

department must be obtained for summer courses abroad and the student must present a transcript for evaluation.

### General Education Requirements

Each language major must satisfy the general education requirements of the university listed on page 30 and the general education requirements of the College of Arts and Sciences listed on page 41. Any literature or civilization course offered by the department may be used to meet the humanities requirement. Courses offered by the department may be taken on a pass-fail basis by nonmajors. Courses taken as a part of the major may not be taken for pass-fail.

### Departmental Requirements

Students electing to major in the Department of Modern Foreign Languages and Literatures must have completed course 2 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. A student may not take a course in his or her major on a pass-fail basis. All students seeking the A.B. in a foreign language, and who desire a teaching certificate, must meet the departmental requirement of a minimum of 33 hours (excluding language 1 and 2). The maximum number of hours that may be taken in the major is 45, including language 1 and 2. In addition, they must take course 264, Curriculum and Methods and fulfill the Professional Secondary Education 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 work (excluding credit for language 1 and 2), 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 may reduce the number of hours required for the major. Native speakers of a foreign language should consult the department concerning appropriate placement.

## Modern Foreign Languages

**French**

Each major in French must complete the following courses:

- 101 or 103 Intermediate French
- 171 French Conversation and Pronunciation
- or
- 172 French Composition
- 180 Advanced French
- 200 Advanced Grammar
- 280 French Literature I: Middle Ages to the 18th Century
- 281 French Literature II: 19th and 20th Centuries
- and four courses on the 300 level.

The following courses in other departments are strongly recommended: sociology and anthropology (Language and Culture, Grammatical Theory), English (English Literature Survey), German and Spanish (Literature in Translation), history (Modern France), fine arts (Nineteenth and Twentieth Century Art, History of Western Music).

**German**

Each major in German must complete the following courses:

- 101 Intermediate German
- 102 Readings in German
- 108 Composition and Conversation
- 201 Masterpieces of German Literature
- 202 The German Novelle and Drama
- 208 Intermediate Composition and Conversation
- 210 German Culture and Civilization
- and four courses on the 300 level including
- 308 Advanced Composition and Conversation, and 399 (seminar).

The following courses in other departments are recommended: anthropology (Grammatical Theory), English (Shakespeare: Tragedies and Comedies, Classical Literature in Translation), French and Spanish (Literature in Translation), history (Modern Germany), philosophy (Philosophy and Literature).

**Spanish**

Each major in Spanish must complete the following courses:

- 101 or 103 Intermediate Spanish
- 171 Spanish Conversation and Pronunciation
- or

- 172 Spanish Composition
- 200 Syntax of the Spanish Language
- 210 Hispanic Culture and Civilization: Spain
- or
- 211 Hispanic Culture and Civilization: Latin America
- 280 Introduction to Hispanic Literature: Spain
- 281 Introduction to Hispanic Literature: Spanish America
- and four courses on the 300 level, one of which must be 399 (seminar).

The following courses in other departments are strongly recommended: Sociology and Anthropology (Language and Culture, Grammatical Theory); English: (English Literature 1, 2; American Literature 1, 2), French and German (Literature in Translation), History (History of Spain, Latin America from the 1750's to the 1850's, Latin America from the 1850's to the Present) Political Science (Political Systems of South America; Political Systems of Mexico, Central America and the Caribbean); Philosophy (Philosophy and Literature, Twentieth Century Philosophy, Philosophy of Language), Fine Arts (Baroque Art in Holland, Flanders and Spain; Nineteenth and Twentieth Century Art), Music (History of Western Music).

## Modern Foreign Languages Faculty

### French

Marcus Allen Associate Professor  
Ph.D., University of Pittsburg

Roland A. Champagne Assistant Professor  
Ph.D., Ohio State University

Sonja G. Stary Assistant Professor  
Ph.D., University of Cincinnati

Ruth Antosh Instructor  
M.A.

Andrew Campagna Instructor  
M.A.

Roger Noel Instructor  
M.A.

Dolores Richardson Instructor  
M.A.

Barbara L. Sandmel Instructor  
M.A.

Gail D. Stark Instructor  
M.A.

Alain Diana Assistant  
D.U.E.L.

### German

Alfred F. Goessl Associate Professor  
Ph.D., Tulane University

Ingeborg M. Goessl Chairman, Assistant Professor  
Ph.D., University of Kansas

Rolf Mueller Assistant Professor  
Ph.D., University of Kansas

Paul Hoffman Assistant Professor  
M.A.

John Antosh Instructor  
M.A.

Albert Camigliano Instructor  
Ph.D., University of Wisconsin

Albert Kalmar Assistant Professor  
Ph.D., Washington University

Brigitte Almhofer Assistant

### Russian

Lydia Svast Instructor  
M.A.

### Spanish

Enrique Noble Professor  
Ph.D., University of Havana

Anna Ashhurst Associate Professor  
Ph.D., University of Pittsburgh

Francisco Carenas Associate Professor  
Ph.D., University of Valencia

Henry Eliot Chenaux Instructor  
M.A.

Luis F. Clay Instructor  
M.A.

Nancy Ferrario Instructor  
M.A.

Martha Heard Instructor  
M.A.

Zayda M. Jung Instructor  
M.A.

Michael J. Mahler Director, Language Laboratories  
M.A.

Modern Foreign Languages  
Description of Courses**Chinese**

Courses in Chinese are available at Washington University for UMSL students. Consult the Modern Foreign Languages Department for details and obtain the necessary forms in the Registration Office, Room 9, Administration Building.

**1 Elementary Chinese (4) (V)**

**2 Elementary Chinese (4) (V)**

**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.

**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) (F&W)**

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 continue in French. (Credit is not granted for both 101 and 103.)

**110 Modern French Literature in Translation (3) (F)**

Prerequisite: Sophomore standing. Reading and discussion of selected works in French literature from the modern period. May be taken to fulfill the humanities requirement. May not count toward the French major.

**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 French. May be taken to fulfill the humanities requirement.

**160 Phonetics (3) (F&W)**

Prerequisite: French 101 or 103 or consent of instructor. An analytic and practical study of contemporary French sound structure.

**171 French Conversation and Pronunciation (3) (F)**

Prerequisite: 101 or 103 or equivalent. Emphasis will be placed upon the development of oral skills in French and upon the problems of French pronunciation.

**172 French Composition (3) (W)**

Prerequisite: 101 or 103 or equivalent. Designed to develop writing skills in French.

**180 Advanced French (3) (F)**

Prerequisite: 160 or 171 or 172 or equivalent. Development of language skills through reading and discussion of literary texts.

**190 Special Readings (1-3) (V)**

Prerequisite: French 101 and the consent of the



department. Independent study on mutually acceptable topics through readings, reports, and conferences.

**200 Advanced Grammar (3) (W)**

Prerequisite: 171 or 172 or equivalent. Problems in grammatical analysis.

**210 French Civilization (3) (V)**

Prerequisite: French 171 or 172 or equivalent. The culture and civilization of France up to World War I. All reading and classwork in French.

**211 French Civilization (3) (V)**

Prerequisite: French 171 or 172 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 German 220 and Spanish 220) Prerequisite: French 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 Language (3) (F&W)**

(Same as Education 264) Prerequisite: Education 163 and junior standing. 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.

**295 Advanced Language Workshop in France (3) (S)**

Prerequisite: Consent of the department. Workshop to provide the advanced student of French with a living exposure to the spoken and written language. Classroom instruction will be reinforced through daily contact with the local population. Emphasis is placed on pronunciation, intonation, systematic development of vocabulary and increased communication skills.

**296 Advanced Workshop in Culture and Civilization in France (3) (S)**

Prerequisite: Consent of department. French culture and civilization will be explored through lectures, discussions, visits and excursions.

**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) (V)**

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) (V)**

Prerequisite: French 280 or 281. Critical readings of selected plays by Corneille, Moliere, Racine and other dramatists of the seventeenth century.

**342 Seventeenth Century French Prose and Poetry (3) (V)**

Prerequisite: French 280 or 281. A critical study of representative poets and prose writers including novelists and philosophers.

**353 Eighteenth Century French Literature (3) (Alt. F)**

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)**

Prerequisite: French 280 or 281. Critical reading of selected works by the major novelists of the period. Discussion of realism and naturalism.

**365 Modern French Poetry (3) (Alt. F)**

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.

**371 Twentieth Century French Novel (3) (Alt. W)**

Prerequisite: French 280 or 281. A study of selected works by the principal novelists of the modern period.

**375 Modern French Theatre (3) (Alt. W)**

Prerequisite: French 280 or 281. A study of French drama in the 19th and 20th centuries through critical study of selected works by major dramatists.

**390 Special Readings (1-10) (V)**

Prerequisite: Consent of the instructor. Independent study through readings, reports and conferences.

**395 Advanced Language Workshop in France (3)(S)**

Prerequisite: Consent of the department. Workshop to provide the advanced student or teacher of French with a living exposure to the spoken and written language. Classroom instruction will be reinforced through daily contact with the local population. Emphasis is placed on pronunciation, intonation, systematic development of vocabulary and increased communication skills. Special project agreeable to instructor and student is required.

Modern Foreign Languages  
Description of Courses

**396 Advanced Workshop in Culture and Civilization in France (3) (S)**

Prerequisite: Consent of the department. French culture and civilization will be explored through lectures, discussions, visits and excursions. Special project agreeable to instructor and student is required.

**399 French Seminar (3) (V)**

Prerequisite: French 280 or 281 or equivalent. Specialized topic in French literature. Subject to be announced by instructor in charge of seminar.

**German**

**1 Elementary German (5) (F&W)**

Emphasis will be placed upon the speaking and understanding of German and upon the acquisition of the fundamentals of grammar and syntax. One hour language laboratory required.

**2 Elementary German (5) (F&W)**

Prerequisite: German 1 or equivalent. Emphasis will be placed upon the speaking and understanding of German and upon the acquisition of the fundamentals of grammar and syntax. One hour language laboratory required.

**100 Scientific German (3) (F&W)**

Prerequisite: German 2 or equivalent. Reading of selected German texts in the natural and social sciences. Designed primarily for majors in these areas.

**101 Intermediate German (3) (F&W)**

Prerequisite: German 2 or equivalent. Grammar review and cultivation of language skills through the study of moderately difficult prose selections.

**102 Readings in German (3) (F&W)**

Prerequisite: German 101 or equivalent. Further development of language skills through readings and discussion of literary texts. Designed primarily for majors. May be taken concurrently with German 108.

**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. May not count toward the German major.

**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.

**190 Special Readings (1-3) (V)**

Prerequisite: German 101 and consent of the department. Independent study on mutually acceptable topics through readings, reports and conferences.

**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 Novelle 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.

**210 German Culture and Civilization (3) (F)**

Prerequisite: German 102 or equivalent. A survey of the development of German culture and civilization. All reading and classwork in German.

**220 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, Junior standing. 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.

**295 Advanced Language Workshop in Germany (3) (S)**

Prerequisite: Consent of department. Workshop to provide the advanced student of German with a living exposure to the spoken and written language. Classroom instruction will be reinforced through daily contact with the local population. Emphasis is placed on pronunciation, intonation, systematic development of vocabulary and increased communication skills.

**296 Advanced Workshop in Culture and Civilization (3) (S)**

Prerequisite: Consent of the department. German culture and civilization will be explored through lectures, discussions, visits and excursions.

**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.

**390 Special Readings (1-10) (V)**

Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.

**395 Advanced Language Workshop in Germany (3) (S)**

Prerequisite: Consent of the department. Workshop to provide the advanced student or teacher of German with a living exposure to the spoken and written language. Classroom instruction will be reinforced through daily contact with the local population. Emphasis is placed on pronunciation, intonation, systematic development of vocabulary and increased communication skills. Special project agreeable to instructor and student is required.

**396 Advanced Workshop in Culture and Civilization in Germany (3) (S)**

Prerequisite: Consent of the department. German culture and civilization will be explored through lectures, discussions, visits and excursions. Special project agreeable to instructor and student is required.

**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.

**399 German Seminar (3) (W)**

Prerequisite: Senior standing and two 300 level courses. Required of all German majors. Topic to be selected by instructor.

Modern Foreign Languages  
Description of Courses

**Greek**

Courses in Greek are available at Washington University for UMSL students. Consult the Modern Foreign Languages Department for details and obtain the necessary forms from the Registration office, Room 9, Administration Building.

**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.

**Hebrew**

Courses in Hebrew are available at Washington University for UMSL students. Consult the Modern Foreign Languages Department for details and obtain the necessary forms from the Registration Office, Room 9, Administration Building.

**1 Elementary Hebrew (4) (V)**

**2 Elementary Hebrew (4) (V)**

**Italian**

Prerequisite 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.

**101 Intermediate Italian (3) (F&W)**

Prerequisite: Italian 2 or equivalent. Grammar review and cultivation of language skills through the study of moderately difficult prose selections.

**190 Special Readings (1-10)**

Prerequisites: Italian 101 or equivalent. Readings on literary topics mutually acceptable to student and instructor.

**Japanese**

Courses in Japanese are available at Washington University for UMSL students. Consult the Modern Foreign Languages Department for details and obtain the necessary forms in the Registration Office, Room 9, Administration Building.

**1 Elementary Japanese (4) (V)****2 Elementary Japanese (4) (V)**

Modern Foreign Languages  
Description of Courses

**Latin**

Courses in Latin are available at Washington University for UMSL students. Consult the Modern Foreign Languages Department for details and obtain the necessary forms in the Registration Office, Room 9, Administration Building.

**1 Elementary Latin (4) (V)**

Fundamentals of grammar and syntax, for students with no previous acquaintance with the language.

**2 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.

**Portuguese**

Courses in Portuguese are available at Saint Louis University for UMSL students. Consult the Modern Foreign Languages Department for details and obtain the necessary forms in the Registration Office, Room 9, Administration Building.

**1 Elementary Portuguese (4) (V)**

**2 Elementary Portuguese (4) (V)**

### 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 language 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 language laboratory required.

#### 100 Scientific Russian (3) (V)

Prerequisite: Russian 2 or equivalent. Introduction to reading of selected Russian texts in the natural and social sciences. Designed primarily for majors in these areas.

#### 101 Intermediate Russian (3) (F&W)

Prerequisite: Russian 2 or equivalent. Further presentation of the structure of Russian; development of oral and aural skills; elementary composition; readings of simplified texts.

#### 102 Intermediate Russian (3) (V)

Prerequisite: Russian 101 or equivalent. Further development of language skills through the reading and discussion of literary texts. May be taken concurrently with 108 after consultation with instructor.

#### 108 Oral and Written Composition (3) (V)

Prerequisite: Russian 102 or equivalent. Emphasis will be placed upon the development of oral and written skills. May be taken concurrently with 102 after consultation with instructor.

#### 110 Russian Literature in Translation (3) (V)

Reading of representative works drawn from nineteenth century Russian literature. Course will focus upon works of Pushkin, Lemontov, Gogol and Turgenyev. Lectures and discussion. May be taken to fulfill humanities requirement.

#### 112 Twentieth Century Russian Soviet Literature in Translation (3) (V)

Reading and discussion of the most representative writings from Gorki to Pasternak. May be taken to fulfill humanities requirement.

#### 190 Special Readings (1-10)

Prerequisites: Russian 101 or equivalent. Readings on literary topics mutually acceptable to student and instructor.

#### 200 Syntax of the Russian Language (3) (V)

Prerequisite: Russian 108 or equivalent. Synchronic analysis of the phonemic, morphological, syntactic and semantic system of present-day Russian; dialectal variations.

### 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.

#### 103 Intermediate Spanish (3) (F&W)

Prerequisite: Spanish 2 or equivalent. Accelerated grammar review and cultivation of language skills through the study of selected modern works. Designed primarily for those students intending to major in Spanish. Credit is not granted for both 101 and 103.

#### 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, Garcia Lorca, Buero Vallejo and others. May be taken to fulfill humanities requirement. May not count toward the Spanish major.

#### 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. May not count toward the Spanish major.

#### 150 European Literature in Translation: Special Topics (3) (V)

Majors 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.

#### 171 Spanish Conversation and Pronunciation (3) (F)

Prerequisite: Spanish 101 or equivalent. Emphasis will be placed upon the development of oral skills in Spanish and upon the problems of Spanish pronunciation and intonation. May be taken concurrently with Spanish 101 after consultation with instructor.



## Modern Foreign Languages Description of Courses

### 172 Spanish Composition (3)

Prerequisite: Spanish 101 or equivalent. Emphasis in developing the capacity and the ability to write in Spanish. May be taken concurrently with Spanish 101 after consultation with instructor.

### 190 Special Readings (1-3) (V)

Prerequisite: Spanish 101 and consent of the department. Independent study on mutually acceptable topics through readings, reports and conferences.

### 200 Syntax of the Spanish Language (3) (W)

Prerequisite: Spanish 171 or 172, or equivalent. 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 101 or equivalent. The development of Spanish peninsular civilization from its Romantic beginnings to the present.

### 211 Hispanic Culture and Civilization: Spanish America (3) (W)

Prerequisite: Spanish 101 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)

(Same as French 220 and German 220) 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 contrasting linguistics in foreign language teaching.

### 264 Curriculum and Methods of Teaching Foreign Languages (3) (F&W)

(Same as Education 264) Prerequisite: Education 163, Spanish 200. 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 101. Study of selected texts of Spanish writers from the Middle Ages to the present and the historical, cultural and political factors which influence their writings. Required for Spanish majors.

### 281 Introduction to Hispanic Literature: Spanish America (3) (W)

Prerequisite: Spanish 101. 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.

### 295 Advanced Language Workshop in Spain (3) (S)

Prerequisite: Consent of the department. Workshop

to provide the advanced student of Spanish with a living exposure to the spoken and written language. Classroom instruction will be reinforced through daily contact with the local population. Emphasis is placed on pronunciation, intonation, systematic development of vocabulary and increased communication skills.

### 296 Advanced Workshop in Culture and Civilization in Spain (3) (S)

Prerequisite: Consent of the department. Spanish culture and civilization will be explored through lectures, discussions, visits and excursions.

### 310 Spanish Literature from 1898 to 1939 (3) (Alt. F)

Prerequisite: Spanish 280. A study of cultural and literary characteristics of the period. Emphasis on leading novelists, poets, essayists and dramatists.

### 315 Spanish Literature from 1939 to the Present (3) (Alt. F)

Prerequisite: Spanish 280. A study of cultural and literary developments since the Spanish Civil War. Emphasis on leading novelists and dramatists.

### 320 Realism and Naturalism in the XIXth Century Spanish Novel (3) (V)

Prerequisite: 280. A study of the culture and literature of Spain in the XIXth century with emphasis on the leading novelists of this epoch (Galdós, Clarín, Pardo Bazán, Blasco-Ibáñez).

### 321 Spanish Poetry and Drama of the XIXth Century (3) (V)

Prerequisite: 280. A study of the culture and literature of Spain in the XIXth century with emphasis on the leading poets (Espronceda, Bécquer) and playwrights (Zorrilla, Duque de Rivas).

### 325 Poetry and Drama of the Golden Age (3) (Alt W)

Prerequisite: Spanish 280. Selective readings from the drama of Lope de Vega, Tirso de Molina, Ruiz de Alarcón, Calderon de la Barca and from the poetry of Garcilaso, Fray Luis de León, San Juan de la Cruz, Góngora, Lope de Vega, Quevedo.

### 330 Cervantes (3) (V)

Prerequisite: Spanish 280. A study of Don Quixote in relation with the author'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)

Prerequisite: Spanish 280. Designed to acquaint students with the cultural background of Medieval and Renaissance Spanish traditions. Critical reading and discussion of representative works of these periods: Poema del Cid; El Conde Lucanor; Libro de Buen Amor; El Romancero; La Celestina; the picaresque novel, and Don Quixote.

### 340 Spanish American Literature of the XIXth 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 novelists and essayists of the epoch.

**341 Modernismo (3) (F)**

Prerequisite: Spanish 281. The genesis, development and influence of this literary movement in Spanish American letters with emphasis on modernista poetry and prose.

**345 Spanish American Literature of the Twentieth Century (3) (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.

**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.

**390 Special Readings (1-10) (V)**

Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.

**395 Advanced Language Workshop in Spain (3) (S)**

Prerequisite: Consent of the department. Workshop to provide the advanced student of Spanish with a Spanish with a living exposure to the spoken and written language. Classroom instruction will be reinforced through daily contact with the local population. Emphasis is placed on pronunciation, intonation, systematic development of vocabulary and increased communication skills. Special project agreeable to instructor and student is required.

**396 Advanced Workshop in Culture and Civilization in Spain (3) (S)**

Prerequisite: Consent of the department. Spanish culture and civilization will be explored through lectures, discussions, visits and excursions. Special project agreeable to instructor and student is required.

**399 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.

## Philosophy

### Program

The Department of Philosophy offers three plans of study leading to the bachelor of arts degree with a major in philosophy. One of these plans is designed to accommodate students who are seeking a general liberal arts education, whether as their ultimate academic objective or as a preparation for a professional school, such as law. A second is designed to enable students to achieve a double major in philosophy and some other discipline. The third program prepares students to enter graduate school in philosophy.

All of these programs offer complementary approaches. A balanced concentration in philosophy is achieved through courses in the techniques of logical analysis, the study of philosophical classics, and the examination of selected problems.

The department has a strong belief in the importance of a liberal arts education for all students and a commitment to the continuation of this tradition. Since philosophy has always played a central role in this tradition, the department has defined its aims in terms of its contribution to a liberal arts education at UMSL. The department aims to make available to all students an exposure to philosophy as an aid to understanding and critically evaluating the conceptual bases of their culture; to provide to those who seek it a grasp of philosophy which is a part of the breadth necessary to a liberal arts education; to offer to students in a variety of disciplines—art, education, history, and the natural and social sciences—a view of the philosophic problems raised in and by their disciplines; to provide a grounding in philosophy for those students going into professional schools of all sorts and for students going into graduate schools in other disciplines in the humanities and the sciences; and to prepare for graduate school those students desiring to work professionally in philosophy.

Even a student with immediate career goals may wish to consider an undergraduate major in philosophy, or a double major in philosophy and some other discipline. The study of philosophy encourages verbal precision, a heightened awareness of the

assumptions used in any discussion, and an attitude of both open-mindedness and responsible criticism towards new and unusual ideas. Such abilities are useful in many practical pursuits, especially those requiring decision-making under uncertainty or seeing some degree of order in a chaotic situation. For this reason a student planning a career in law, business, or any field combining qualitative and quantitative judgments would do well to consider some form of concentration in philosophy.

In keeping with these aims, the department has designed a program which will accommodate students at all levels and which will meet a variety of interests. A number of courses are taught without prerequisites which deal with current issues or with traditional problems. These are designed to make available to the student some training in the conceptual approaches which have been developed in philosophy for confronting a variety of types of problems. In addition, the department offers a number of courses designed to be of interest to students majoring in other fields or interested in the intellectual climate of particular periods. In all of these courses, each student is encouraged to engage in discussion, to bring his or her interests and expertise into play in the activity of philosophy.

The faculty of the department of philosophy comprises a cross-section of the major schools and interests in philosophy in America. While the department places some emphasis on the Anglo-American tradition of analysis and logic, the Continental schools of phenomenology and existentialism are also represented, as are the Marxist and the Asian philosophic traditions.

Several department members have a background in areas other than philosophy. Of the members with strong interests in logic, one has a graduate degree in linguistics and two other undergraduate degrees in mathematics. The professor whose main field is the philosophy of science has a year of post-doctoral study in biology. A native German speaker is the usual leader of seminars in the German philosophers Kant and Hegel. And the man who teaches

philosophy of law and social and political philosophy has post-doctoral study in law. From this diversity, the department has derived a program of courses which complement and interact with one another.

To enable a student to take advantage of the diversity of offerings in the department, a booklet is issued each semester, prior to pre-registration. In it, each instructor provides a description of the topics which will be dealt with in each of the courses during the next semester and attempts to indicate the proposed approach and the areas for which his or her course may be of interest.

The department does not regularly assign advisers but each major is encouraged to select some member of the department who shares the student's interest and is personally congenial to serve in the role of adviser. An entering major is expected to discuss objectives, interests, and programs with the adviser as early in his or her academic career as possible. Thereafter, the student should meet with the adviser at least once a semester to discuss progress, any change in interests or goals, and plans for the coming semester.

#### **General Education Requirements**

Students majoring in philosophy must satisfy the general education requirements of the university listed on page 30 and the general education requirements of the College of Arts and Sciences listed on page 41.

Students may take any course in philosophy to satisfy the university's humanities area requirement. The course in Asian philosophy also satisfies the college requirement for a course that is not Euro-American.

All courses in philosophy may be taken on pass-fail basis but no philosophy course taken on this basis may be counted toward a major in philosophy.

#### **Degree Requirements**

Each student with a major in philosophy is required to complete one of the following programs. An entering major should discuss

his or her objectives with an adviser at their first meeting for guidance into the appropriate program. However, the various programs overlap in such a way that it is usually possible to change from one to another as late as the beginning of the senior year. Indeed, in so far as it is compatible with his or her interests and objectives, each student is encouraged to view the first program as a pattern for course selection.

All of these programs share the requirement that at least 30 hours of philosophy be completed and that no more than 45 hours in philosophy will be counted toward a degree. No philosophy courses taken on a pass-fail basis may be used to fulfill this requirement.

#### **Program One**

This is designed to prepare a student to undertake graduate work in philosophy. It requires, among the basic 30 hours:

##### Philosophy 160, Formal Logic

At least three courses in the history of philosophy (181, 182, 183, 184, 185, 210, 301, 302, 305, 306, 307, 308, and 370), representing at least two different historical periods (as defined by the 181-185 sequence), at least one of which must be at the 300 level.

At least one advanced course in aesthetics, social philosophy, or ethics (225, 230, 235, 265, and 285), and at least two courses in philosophy of science, epistemology, or metaphysics (250, 255, 270, 278, 280, and 281). When appropriate, 380 and 390 may be used as courses satisfying one of these requirements.

Because Greek, Latin, French, and German are the major languages in which philosophy has been done in the West, students in this program should satisfy the foreign language requirement with one of these languages. Another language may be substituted only when the department decides that it is appropriate for a well articulated set of objectives which the student presents.

## Philosophy

**Program Two**

This less restrictive program is intended for a general liberal arts student or a student whose special interest, such as prelaw preparation, does not fall clearly into any one traditional academic department. It requires:

Philosophy 160, Formal Logic

At least two courses in the history of philosophy (as listed in Program One).

At least 15 hours at the 200 level or above.

**Program Three**

This program is open only to those seeking a double major in philosophy and some other discipline.

It can provide not only a general educational broadening but also an enhanced background for a student planning graduate work in some other discipline. Such a student would gain a head start in one area usually included in graduate study—the examination of the basic intellectual foundations of the discipline.

It is the least restrictive, for the only requirements are:

Philosophy 60, Logic and Language or 160, Formal Logic

At least 12 hours at the 200 level or higher.

With the consent of the department, up to six of the remaining 15 hours in Program Three may be replaced by philosophically relevant courses from other departments. The courses acceptable for replacement will depend upon the other major of the student. Some examples are: for a student whose other major is a science, the history of that science; for a student whose other major is literature, an advanced course in linguistics or in the works of a philosophically inclined author (e.g., Milton, Melville, Goethe); for a student whose other major is mathematics, mathematical logic.

With the consent of the department, qualified majors in any program may earn departmental honors by completing at least

six hours and not more than nine hours of Philosophy 291 (Senior Thesis), submitting an acceptable thesis before the end of the senior year, and passing an oral examination based on the subject of the thesis. In such cases, the 30 hours required for the major will include the credit earned in Philosophy 291.

**Related Area Requirements**

Because of the interaction of philosophy with a number of other disciplines, it is recommended that majors acquire a familiarity with some other field above the introductory level. This recommendation will, of course, be satisfied automatically by majors in Program Three and, to a lesser extent, by those in Program Two. Majors planning to go on to graduate school in philosophy should especially resist the temptation to become totally involved in the course offerings in philosophy, to the detriment of the breadth of their education.

## Philosophy Faculty

Ronald Munson Chairman, Associate Professor  
Ph.D., Columbia University

Edward B. Costello Associate Professor  
Ph.D., Northwestern University

James F. Doyle Associate Professor  
Ph.D., Yale University

Peter Fuss Associate Professor  
Ph.D., Harvard University

Robert M. Gordon Associate Professor  
Ph.D., Columbia University

John E. Clifford Assistant Professor  
Ph.D., University of California, Los Angeles

David A. Conway Assistant Professor  
Ph.D., Princeton University

Paul R. Gomberg Assistant Professor  
Ph.D., Harvard University

Stephen E. Norris Assistant Professor  
Ph.D., University of Pittsburgh

Henry L. Shapiro Assistant Professor  
Ph.D., Columbia University

James H. Walters Assistant Professor  
Ph.D., University of Wisconsin

David J. Griesedieck Instructor  
M.A., Princeton University

## Philosophy Description of Courses

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.

### **75 Approaches to Ethics (3) (F&W)**

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.

### **85 Philosophy of Religion (3) (F&W)**

A philosophical investigation of such problems as the nature of religious faith and experience, the relation of faith and reason, alternative concepts of deity and the problem of evil.

### **90 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.

### **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.

### **150 Philosophy and Current Issues (3)**

A careful examination of such current social controversies as women's liberation, the ethics of abortion, public accountability of holders of high offices, and the subtler forms of racism and other prejudices. Although there is no formal prerequisite, it is recommended that students have taken, or be concurrently enrolled in, at least one other philosophy course.

### **160 Formal Logic (3) (F&W)**

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)**

Critical study of selected philosophical classics of India and China.

### **181 Ancient Philosophy (3) (V)**

Freshman admitted by consent of department. The principle philosophical doctrines of the ancient world, with special emphasis on the philosophies of Plato and Aristotle. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course, especially Philosophy 50 or its equivalent.



## Philosophy

### Description of Courses

#### 182 Medieval Philosophy (3) (Alt. W)

A critical study of the important philosophies of the period from Augustine to the Renaissance. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course, especially Philosophy 50 or its equivalent.

#### 183 Early Modern Philosophy (3) (Alt. F)

Principal figures in the development of rationalism, empiricism and skepticism in early modern Europe, from Descartes through Hume. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course, especially Philosophy 50 or its equivalent.

#### 184 Kant and 19th Century Philosophy (3) (Alt. F)

A study of Kant and such major 19th century figures as Hegel and Nietzsche, Mill and Pierce. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course, especially Philosophy 50 or its equivalent.

#### 185 Twentieth Century Philosophy (3) (Alt. W)

Representative topics in contemporary philosophy, with readings selected from pragmatism, logical positivism, linguistic analysis and existentialism. Although there is no formal prerequisite, it is recommended that students have taken at least one other philosophy course, especially Philosophy 50 or its equivalent.

#### 210 American Philosophy (3)

Prerequisite: Six hours of philosophy or consent of instructor. A study of selected American philosophers.

#### 220 Philosophical Issues in Education (3)

A critical study and discussion of selected topics 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.

#### 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 organization.

#### 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.

#### 245 Existentialism and Phenomenology (3) (V)

A study of some major representatives of these schools from Kierkegaard to the present.

#### 250 Philosophy of Science (3) (F)

An examination of logical and methodological problems, related to the sciences, including the

structure of scientific explanations, laws and theories; methods of concept formation; and confirmation and the problem of induction.

#### 255 Philosophy of Social Science (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.

#### 260 Logical Explorations (3) (Alt. W)

Prerequisite: Philosophy 160. A variable content course in which techniques of modern logic are used to explore one or more of the following topics: modal logic, the logic of decision and action, value theory and decision analysis, induction and inductive logic, the logic of knowledge and belief, system construction and contemporary logical theory. The topic will be announced prior to registration. This course may be repeated for credit on approval by the department.

#### 265 Philosophy of Law (3) (Alt. W)

An examination of typical problems raised by law, including the basis of legal obligations and rights, relations between law and morality, the logic of legal reasoning and the justification for punishment.

#### 269 The Marxist Heritage (3) (W)

(Same as Political Science 269)  
study of Marx and leading Marxists, designed to evaluate their influence on recent political, economic, and social thought and institutions.

#### 270 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.

#### 278 Philosophy of Mind (3) (Alt. F)

Prerequisite: Six 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.

#### 280 Theories of Knowledge (3) (Alt. F)

Prerequisite: Six 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.

#### 281 Metaphysics (3) (Alt. W)

Prerequisite: Six 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.

#### 283 Problems in Philosophical Theology (3) (V)

Prerequisite: Six hours of philosophy or consent of instructor. An intensive study of problems arising out



of traditional and contemporary philosophical theology.

**285 Recent Ethical Theory (3) (V)**

Prerequisite: Six hours of philosophy or consent of instructor. A study of major contributions to twentieth century ethics, including works by such writers as Moore, Dewey, Ross, Stevenson, Hare and Rawls.

**291 Senior Thesis (1-10) (F&W)**

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: Six hours of philosophy or consent of instructor. A study of selected Platonic dialogues.

**302 Aristotle (3) (Alt. W)**

Prerequisite: Six hours of philosophy or consent of instructor. A selective study of Aristotle's major works.

**305 The Rationalists (3) (Alt. F)**

Prerequisite: Six hours of philosophy or consent of instructor. An examination of the philosophies of such major figures as Descartes, Spinoza and Leibniz.

**306 The British Empiricists (3) (Alt. W)**

Prerequisite: Six hours of philosophy or consent of instructor. An examination of the philosophies of such major figures as Locke, Berkeley and Hume.

**307 Kant (3) (Alt. W)**

Prerequisite: Six hours of philosophy or consent of instructor. A systematic study of the *Critique of Pure Reason*.

**308 Hegel (3) (V)**

Prerequisite: Six hours of philosophy or consent of instructor. A critical study of the writing and influence of Hegel.

**350 Special Readings (1-10) (F&W)**

Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.

**360 Advanced Formal Logic (3) (V)**

Prerequisite: Philosophy 160 or consent of the instructor. Rigorous study of major 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: Six hours of philosophy or consent of instructor. A critical 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.

**380 Special Topics in Philosophy (3) (V)**

Prerequisite: Six hours of philosophy or consent of instructor. A critical study of classical and/or contemporary contributions to a selected topic in philosophy. The topic to be considered will be

announced prior to registration. This course may be repeated for credit on approval by the department.

**390 Philosophical Issues in Other Disciplines (3) (V)**

Prerequisite: Consent of instructor. An examination of selected philosophical issues in a discipline other than philosophy. One or more such disciplines as history, political science, psychology, sociology, biology, physics, or mathematics will be chosen, and philosophical issues selected, and announced prior to registration, usually in consultation with the other department concerned. This course is normally taught as a seminar and attempts to serve advanced students in other departments with or without previous background in philosophy.

## Physics

**Program**

The Department of Physics offers course work leading to the bachelor of arts in physics, bachelor of science in physics, bachelor of arts in physics with teacher certification in cooperation with the School of Education, and bachelor of science in education with an emphasis in physics.

In addition, the department offers many courses with no science prerequisites which may be of interest to nonscience majors.

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 low temperature 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.

Students planning to major in chemistry, engineering, or physics are required to take the calculus-based general physics sequence:

- 10 Experimentation in Physics
- 111 Physics: Mechanics and Heat
- 112 Physics: Electricity, Magnetism, and Optics

Students majoring in biological science may elect the noncalculus general physics sequence, Physics 11 and 12, Basic Physics, or the calculus-based sequence. Students majoring in music are urged to take the Physics of Music: Physics 170 and 171.

All physics courses below the 300 level are offered on a regular basis in the evening. In addition, all 300 level applied physics courses are offered in the evening. During summer sessions only the introductory courses will normally be offered.

In addition to its regular offerings in physics, the department also houses faculty in related fields and offers courses in Geology, Atmospheric Physics, Astronomy and Engineering. For a comprehensive

description of the latter see the section on Preprofessional Programs in this bulletin.

**General Education Requirements**

All physics majors must complete the university and College of Arts and Sciences requirements specified on pages 30 and 41, respectively for the bachelor of arts or bachelor of science degrees. Any of the following courses intended for general college audiences may be used to satisfy the general education science requirement:

**Astronomy**

- 1 Cosmic Evolution-Introductory Astronomy
- 11 Planets and Life in the Universe
- 12 The Violent Universe and the New Astronomy

**Atmospheric Science**

- 1 Elementary Meteorology

**Geology**

- 1 General Geology
- 2 Historical Geology

**Physics**

- 1 Foundations of Modern Physical Theory I
- 170 Physics of Music
- 172 Light and Color

The astronomy, atmospheric science, and geology courses may be used to satisfy the earth science requirements in certain education degree programs.

**Degree Requirements****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 include the following 37 hours of physics:

- 1 Foundations of Modern Physical Theory I
- 10 Experimentation in Physics
- 111 Physics: Mechanics and Heat

- 112 Physics: Electricity, Magnetism, and Optics
- 113 Physics: The Structure of Matter
- 200 Survey of Theoretical Physics
- 201 Elementary Electronics I
- 221 Mechanics
- 223 Electricity and Magnetism
- 311 Advanced Physics Laboratory I
- 312 Advanced Physics Laboratory II

and at least two of the following Physics courses:

- 225 Physical Optics
- 241 Thermal and Statistical Physics
- 282 History of Physics
- 331 Introduction to Quantum Mechanics

#### Related Area Requirements

Twenty-one hours of mathematics are required including the following:

- 80 Analytic Geometry and Calculus I
- 122 Computers and Programming
- 175 Analytic Geometry and Calculus II
- 201 Analytic Geometry and Calculus III
- 302 Applied Mathematics I

Mathematics 303, Applied Mathematics II, and 316, Functions of a Complex Variable, are strongly recommended. Students with experience in digital computer programming may be excused from Mathematics 122, Computers and Programming. Chemistry 11 and 12, or equivalent are required. All students are urged to begin the calculus sequence (Mathematics 80, Analytic Geometry and Calculus I) as soon as possible.

#### Bachelor of Science in Physics

The B.S. degree provides the student with a choice of three options, each of which is designed to fit the special needs of the individual student: physics option, astrophysics option, and applied physics option.

##### 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 option are at least 45 but no more than 51 hours of physics including:

- 10 Experimentation in Physics
  - 111 Physics: Mechanics and Heat
  - 112 Physics: Electricity, Magnetism, and Optics
  - 113 Physics: The Structure of Matter
  - 200 Survey of Theoretical Physics
  - 201 Elementary Electronics I
  - 221 Mechanics
  - 223 Electricity and Magnetism
  - 225 Physical Optics
  - 241 Thermal and Statistical Physics
  - 311 Advanced Physics Laboratory I
  - 312 Advanced Physics Laboratory II
  - 331 Introduction to Quantum Mechanics
  - 335 Atomic and Nuclear Physics
- and two additional 300-level courses.

#### Related Area Requirements

Twenty-seven hours of mathematics are required including the following:

- 80 Analytic Geometry and Calculus I
- 122 Computers and Programming
- 175 Analytic Geometry and Calculus II
- 201 Analytic Geometry and Calculus III
- 302 Applied Mathematics I
- 303 Applied Mathematics II
- 316 Functions of a Complex Variable

Students with experience in digital computer programming may be excused from Mathematics 122, Computers and Programming. Additional hours in mathematics at the 200 level or beyond are highly recommended. Chemistry 11 and 12, or equivalent are required. All students are urged to begin the calculus sequence (Mathematics 80, Analytic Geometry and Calculus I) as soon as possible.

##### 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.

The requirements for the B.S. degree with the astrophysics option include at least 42 but no more than 51 hours of the following physics and astronomy courses:

## Physics

## Physics

- 10 Experimentation in Physics
- 111 Physics: Mechanics and Heat
- 112 Physics: Electricity, Magnetism, and Optics
- 113 Physics: The Structure of Matter
- 200 Survey of Theoretical Physics
- 221 Mechanics
- 223 Electricity and Magnetism
- 225 Physical Optics
- 241 Thermal and Statistical Physics

## Astronomy

- 101 Practical Astronomy
  - 201 Astrophysics
- and two of the following:

- 1 Cosmic Evolution - Introductory Astronomy
- 11 Planets and Life in the Universe
- 12 The Violent Universe and the New Astronomy

## Related Area Requirements

Twenty-four hours of mathematics are required including:

- 80 Analytic Geometry and Calculus I
- 122 Computers and Programming
- 175 Analytic Geometry and Calculus II
- 201 Analytic Geometry and Calculus III
- 302 Applied Mathematics I
- 303 Applied Mathematics II

Additional hours of mathematics at the 300 level are recommended. Chemistry 11 or equivalent is required. All students are urged to begin the calculus sequence (Mathematics 80, Analytic Geometry and Calculus I) as soon as possible.

## 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. All courses required in the applied physics option are offered in the evening on a regular basis. In some cases students may elect engineering courses from the University of Missouri-Rolla

## Graduate Engineering Center at UMSL.

The requirements for the B.S. degree with applied physics option include a minimum of 42 hours and a maximum of 49 hours of the following physics courses:

- 10 Experimentation in Physics
- 111 Physics: Mechanics and Heat
- 112 Physics: Electricity, Magnetism, and Optics
- 113 Physics: The Structure of Matter
- 200 Survey of Theoretical Physics
- 201 Analytic Geometry and Calculus III
- 221 Mechanics
- 223 Electricity and Magnetism
- 241 Thermal and Statistical Physics
- 311 Advanced Physics Laboratory I
- 312 Advanced Physics Laboratory II
- 325 Linear Analysis of Physical Systems

and two of the following physics courses:

- 353 Physics of Fluids
- 354 Atmospheric Physics
- 355 Topics in Space Physics
- 356 Quantum Optics

## Related Area Requirements

Twenty-seven hours of mathematics are required including:

- 80 Analytic Geometry and Calculus I
- 122 Computers and Programming
- 175 Analytic Geometry and Calculus II
- 201 Analytic Geometry and Calculus III
- 302 Applied Mathematics I
- 303 Applied Mathematics II

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, Analytic Geometry and Calculus I) as soon as possible.

**Bachelor of Science in Education with an Emphasis in Physics**

The bachelor of science in education with an emphasis in physics is designed for a 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 student must fulfill the general education requirements of the School of Education. For details of the program consult the physics department and the School of Education.

Physics  
Faculty

Corneliu Eftimiu, Chairman, Professor  
Ph.D., University of Bucharest

Peter H. Handel, Professor  
Ph.D., University of Bucharest

John S. Rigden, Professor  
Ph.D., Johns Hopkins University

Bob L. Henson, Associate Professor  
Ph.D., Washington University

Robert Hight, Associate Professor  
Ph.D., University of Missouri-Columbia

Philip B. James, Associate Professor  
Ph.D., University of Wisconsin

Jacob J. Leventhal, Associate Professor  
Ph.D., University of Florida

Frank E. Moss, Associate Professor  
Ph.D., University of Virginia

Gerald R. North, Associate Professor  
Ph.D., University of Wisconsin

Ta-Pei Cheng, Assistant Professor  
Ph.D., Rockefeller University

Bernard Feldman, Assistant Professor  
Ph.D., Harvard University

Larry J. Lee, Assistant Professor, Geology  
Ph.D., Washington University

Richard D. Schwartz, Assistant Professor, Astronomy  
Ph.D., University of Washington

Physics  
Description of Courses**Astronomy****1 Cosmic Evolution-Introductory Astronomy (4) (F&W)**

Prerequisite: None. Planets: A brief survey of their motions and properties. Stars: Observations, including stellar spectra and colors; stellar evolution, and star clusters. Galaxies: Structure and content of the Milky Way Galaxy, its relationship to other galaxies. Cosmology: The origin and evolution of the universe. Three lectures and two multi-media.

**11 Planets and Life in the Universe (4) (F)**

Prerequisite: None. Man's concept of the solar system from Stonehenge to Einstein; geology and meteorology of the planets of our solar system, with particular attention to results from the space program; exobiology--study of the possibilities of life on other worlds and the best method of communicating with it. Three lecture hours and one observing session per week.

**12 The Violent Universe and the New Astronomy (4) (W)**

Prerequisite: Astronomy 1 or consent of instructor. A non-technical course focusing on recent results which larger telescopes and the space program have made available. Pulsars, X-ray stars, and black holes; radio astronomy, our galaxy, and interstellar molecules; exploding galaxies and quasars; origin of the expanding universe. Three lecture hours and one observing session per week.

**101 Practical Astronomy (3) (V)**

Prerequisite: One course in astronomy or consent of instructor. Tools of the astronomer: telescopes, photometers, and so on. Students will work on a number of projects which will enable them to develop expertise in obtaining, reducing, and analyzing astronomical observations. Student observing will be an important part of the course.

**201 Astrophysics (3) (V)**

Prerequisite: Mathematics 80, Physics 111 or consent of instructor. A moderately technical introduction to astrophysics. Topics will include: physics of stellar interiors and atmospheres; interpretation of stellar spectra; stellar evolution; radio astronomy; and cosmology.

**Atmospheric Science****1 Elementary Meteorology (4) (W)**

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. Applications to weather forecasting. Three hours lecture and two hours laboratory per week.

**Engineering****30 Engineering Graphics (3)**

Prerequisite: Math 40 or equivalent. Lettering, drafting equipment, technique and standards. Technical sketching, engineering curves, charts and graphs. Multi-view and pictorial drawing, space analysis of lines, planes and solids. Basic dimensioning, sections, shop processes and shop drawings and sketches. Engineering organization charts and flow diagrams. Design analysis and use of standard parts. Graphical mathematics, micro-filming, computer drafting and reproduction processes. Creative design.

**85 Statics and Elementary Strength of Materials (3)**

Prerequisites: Math 80. Physics 111 or Physics 111 concurrently. Fundamentals of statics; static equilibrium and introduction to elements of mechanics of elastic materials.

**185 Introduction to Dynamics (3)**

Prerequisite: Engineering 85. Basic fundamentals of particle and rigid body dynamics; energy and momentum methods.

**201 Elementary Electronics I (3)**

Prerequisite: Physics 112. Primarily a laboratory study of characteristics of standard circuit elements, amplifier circuits, power supplies, operational amplifiers, digital and switching circuits, servo systems, shielding and noise problems, transducers and oscilloscopes. Six hours of laboratory per week. (Same as Physics 201).

**202 Elementary Electronics II (3)**

Prerequisite: Engineering 201. Continuation of Engineering 201. Six hours laboratory per week. (Same as Physics 202).



## Physics

### Description of Courses

#### Geology

**1 General Geology (4) (F&W)**

Prerequisite: None. Earth materials, geologic processes, and earth history, and the application of geology to the problems in urban development and conservation.

**2 Historical Geology (4)**

Prerequisite: None. Study of changes in geography, climate and life through geologic time; origin of continents, ocean basins and mountains in light of continental drift; urban development and energy resources. (3 hour lecture, 1 hour lab).

**101 Urban Geology (4) (V)**

Prerequisite: Geology 1. Techniques and action course dealing with geologic and environmental problems of urbanized areas.

**130 Common Rocks and Minerals (3)**

Prerequisite: Geology 1. Laboratory and field identification of common minerals and rocks by physical properties. (1 hour lecture, 2 hours lab).

**290 Research (1-10) (F,W,S)**

Prerequisites: Consent of Instructor. Independent geology research projects arranged between student and instructor. Hours arranged.

#### Physics

**1 Foundations of Modern Physical Theory I (4) (F,W,S)**

Prerequisite: Mathematics 2 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.

**10 Experimentation in Physics (2) (F,W,S)**

Prerequisite: Mathematics 40 (may be taken concurrently) or equivalent. A laboratory course designed to introduce the students to electrical circuits and elementary electronics. No prior knowledge of circuits or electronics will be assumed. Four hours laboratory per week.

**11 Basic Physics (4) (F)**

Prerequisite: Mathematics 30 or Mathematics 40. A survey course specifically designed for students in the health and life science covering such topics as classical mechanics, heat, sound, electricity, magnetism, light, and radiation. No credit is given for students majoring in physics, chemistry, or engineering. Three hours of lecture and two hours laboratory.

**12 Basic Physics (4) (W)**

Prerequisite: Physics 11. A continuation of Physics 11.

**111 Physics: Mechanics and Heat (3) (F&W)**

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&W)**

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. Musical sound is the subject matter of this course: how it originates (musical instruments), how it is reproduced (stereo sound systems), how it is transmitted, and how it is perceived.

**171 Applications of the Physics of Music (2)**

Prerequisite: Mathematics 02 or equivalent. Demonstrations and experiments concerning the origination, the reproduction, the synthesis, the transmission, and the detection of musical sounds.

**172 Light and Color (3) (V)**

Prerequisite: Mathematics 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.

**173 Applications of Light and Color (2) (V)**

Prerequisite: Mathematics 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, diffraction, and interference will be demonstrated. Color analysis and synthesis.

**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.

**201 Elementary Electronics I (3) (F,W,S)**

Prerequisite: Physics 112. Primarily a laboratory study of characteristics of standard circuit elements, amplifier circuits, power supplies, operational amplifiers, digital and switching circuits, servo systems, shielding and noise problems, transducers and oscilloscopes. Six hours of laboratory per week.

**202 Elementary Electronics II (3) (F,W,S)**

Prerequisite: Physics 201. Continuation of Physics 201. Six hours laboratory per week.

**221 Mechanics (3) (F)**

Corequisite: Physics 200 and Mathematics 302. 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.

**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: Mathematics 201 and Physics 113. 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)**

Same as Education 280. Prerequisite: Education 163 and a near-major in the subject area. 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 (1-10) (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 (1-10) (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 towards microscopic 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 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 equation of theoretical physics; calculus of variations, Green's functions; linear vector spaces, integral equations. Three hours lecture and one hour discussion per week.

## Physics Description of Courses

**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) (W)**  
Prerequisite: Physics 201, Mathematics 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.

**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 316. (Mathematics 316 may be taken concurrently.) Topics include special phenomena such as scattering of waves, thermal motion in gases, atmospheric disturbances, treated by methods of advanced mechanics electromagnetism and quantum mechanics. Three hours 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) (F)**  
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) (W)**  
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) (F)**  
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) (W)**  
Prerequisite: Physics 113 and 200. Mathematics 302. Review of atomic theory and spectroscopy. Selected applications to modern optical phenomena such as optical pumping, lasers, masers, Mossbauer effect, and holography.

**357 Applied Solid State Physics (3) (F&S)**  
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.

**381 Directed Readings in Physics (Credit Arranged)**  
Prerequisite: Consent of Instructor. A study of special topics in Physics for senior undergraduates or Graduate students.

## Political Science

### Program

The Department of Political Science offers work leading to the bachelor of arts in political science, bachelor of science in the School of Education with an emphasis in social studies (see School of Education for details), and master of arts in political science (see the *Graduate Bulletin* for details).

It is the purpose of these programs to prepare students for graduate work in any of the fields of political science, to prepare students for admission to law school (see prelaw program), to prepare students for career in local, state, and national government, the civil service and the foreign service, to prepare students for careers in secondary education, and to provide a grounding in the social sciences as part of a liberal arts education.

Principal areas of concentration are urban and regional politics, American politics, political process and behavior, international politics, comparative politics, public administration, and political theory.

Research in political science is assisted by UMSL's Center of Community and Metropolitan Studies, Center for International Studies, and Computer Center. The department is a member of the Inter-University Consortium for Political Research, thereby providing students access to a wide range of survey data in American, European, and international politics.

### General Education Requirements

Each political science major must satisfy the general education requirements of the university listed on page 30 and the general education requirements of the College of Arts and Sciences listed on page 41. Courses in political science may be used to 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. All courses in the department may be taken on pass-fail. A major may count six hours in political science taken on pass-fail towards

his or her major.

### Degree 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, Government in Modern Society: American Politics and 12, Government in Modern Society: Comparative Politics. 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 School of Education on page 172. The minimum course work in political science is 30 hours rather than the 36 hours required for the A.B. degree.

### Related Area Requirements

Each political science major must complete a minimum of 18 hours of administration of justice, economics, history, psychology, or sociology-anthropology. Twelve hours must be completed in one discipline and six hours in a second. 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 early as possible, each student should determine if he or she 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 or her adviser regarding other recommended electives.

Political Science  
Faculty

Lyman T. Sargent Chairman, Professor  
Ph.D., University of Minnesota

Edwin H. Fedder Director, Center for International  
Studies, Professor  
Ph.D., American University

Werner F. Grunbaum Professor  
Ph.D., University of Chicago

Norton E. Long Director, Center of Community and  
Metropolitan Studies, Curator's Professor  
Ph.D., Harvard University

Eugene J. Meehan Professor  
Ph.D., London School of Economics

Bryan T. Downes Associate Professor  
Ph.D., Washington University

Kenneth F. Johnson Associate Professor  
Ph.D., University of California, Los Angeles

E. Terrence Jones Associate Professor  
Ph.D., Georgetown University

Frederic S. Pearson Associate Professor  
Ph.D., University of Michigan

Richard D. Baron Assistant Professor  
J.D., University of Michigan

John N. Collins Assistant Professor  
Ph.D., Northwestern University

Roy B. Flemming Assistant Professor  
Ph.D., University of Michigan

Joel Glassman Assistant Professor  
Ph.D., University of Michigan

Ruth S. Jones Assistant Professor  
Ph.D., Georgetown University

Lance T. LeLoup Assistant Professor  
Ph.D., Ohio State University

Hans J. Michelmann Assistant Professor  
Ph.D., Indiana University

Alvin H. Mushkatek Assistant Professor  
Ph.D., University of Oregon

J. Martin Rochester Assistant Professor  
Ph.D., Syracuse University

Thomas M. Uhlman Assistant Professor  
Ph.D., University of North Carolina

Harry Mellman Lecturer  
Ph.D., University of Illinois

Political Science  
Description of Courses

Prerequisites may be waived by consent of  
department.

**Ungrouped 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.

**77 Third World Development (3)**

Same as Sociology 77 and Anthropology 77.  
Prerequisite: None. An interdisciplinary course  
concerned with the process of development and  
underdevelopment in the modern world. We will  
focus upon the internal structures of societies, the  
effects of foreign policies, and cooperative and  
coercive international relations as they have affected  
developing nations. The loss of many valuable aspects  
of life that has accompanied previous patterns of  
development will be examined in light of the  
possibility of alternative strategies.

**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.

**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.

**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.

**390 Special Readings (1-10) (F&W)**

Prerequisite: Consent of instructor. Independent study  
through readings, reports, and conferences. May be  
repeated.

**Group I: Public Law****225 Jurisprudence (3) (V)**

Prerequisite: Political Science 11 or 12. Development of law and legal systems, comparison of methods and procedure in making and enforcing law in Roman and common law systems; consideration of fundamental legal concepts; contributions and influence of schools of legal thought in relation to law and government.

**227 Urban Law: Poverty and the Justice System (3)**

Prerequisite: Political Science 11, or AOJ 220, or equivalent, or consent of instructor. Examination of administrative regulations and the civil law process as it affects the life of urban residents.

**320 Introduction to American Constitutional Law (3) (F&W)**

Prerequisite: Political Science 11. Study of leading American constitutional principles as they have evolved through important decisions of the United States Supreme Court. Course fulfills the state requirement.

**321 Civil Liberties (3) (V)**

Prerequisite: Political Science 11. Civil rights in the American constitutional context, emphasizing freedom of religion, freedom of expression, minority discrimination, loyalty and rights of defendants.

**324 Judicial Behavior (3) (V)**

Prerequisite: Political Science 11 or 12. Anthropological, economic, psychological, and social dimensions of judicial behavior; judicial attitudes, voting behavior, and decision-making.

**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.

**218 Social Choice in Political Economic Systems (3)**

Same as Economics 218. Prerequisite: Two courses in economics, political science or sociology. A study of the mechanisms of social choice from the standpoint of individual and political party maximization of personal objectives. This area draws on work done by sociologists, political scientists, and economists.

**230 The American Presidency (3) (V)**

Prerequisite: Political Science 11. Study of the constitutional, political, legislative, and administrative roles played by the American chief executive in the development of public policy.

**234 Political Sociology (3) (V)**

Same as Sociology 234. Prerequisite: Political Science 11, Sociology 10 or 20. The analysis of power as a social phenomenon. The processes of legitimating power and instituting authoritative structures. Stabilizing of social control and social integration at various levels of social and political organization.

**235 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.

**331 Legislative Process (3) (V)**

Prerequisite: Political Science 11. Congressional elections, constituent relations, policy making and leadership, relations between Congress and administrative and executive agencies, the committee system, seniority and procedure. Congress as an element in the party system.

**332 Studies in Political Behavior (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.

**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.



Political Science  
Description of Courses

**Group III: Public Administration**

**140 Public Administration (3) (V)**

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.

**345 Business and Government (3) (V)**

Same as Economics 355. Prerequisite: Economics 51. Relations between business firms and government at all levels. Questions of regulation, public ownership guidelines and competition considered.

**349 Studies in Public Administration (3) (V)**

Prerequisite: Political Science 11 or 12. Selected topics in administrative organization, personnel management, fiscal control, public policy and political administrative environments. May be repeated.

**Group IV: Comparative Politics**

**253 Political Systems of South America (3) (V)**

The political systems, international problems, and socio-economic-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 socio-economic-cultural environments of the governmental process in Mexico, Central America, and the Caribbean. Course fulfills 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.

**341 Comparative Public Administration (3) (V)**

Prerequisite: Political Science 11 or 12. A comparative study of the characteristics of public administrators, their institutions and environments in Western democratic, developing nations and Communist political systems.

**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) (V)**

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.



**Group V: Theory and Methodology**

**100 Research Methods in Political Science (3) (V)**  
Prerequisite: Political Science 11 or 12. Methods of testing casual 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.

**265 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.

**269 The Marxist Heritage (3) (V)**  
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 and social phenomena; critics of the scientific approach in political science, nature and logic and 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.

**304 Survey Research Practicum (3)**  
Same as Economics 304 and Sociology 304.  
Prerequisite: Junior standing and consent of the instructor. The execution of a sample survey, including establishing study objectives, sampling, questionnaire construction, interviewing, coding, data analysis, and presentation of results.

**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.

**375 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.

**378 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.

Political Science  
Description of Courses

**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 I (3)**

Prerequisite: Political Science 11 or 12. Introduction to the nature of theory and scientific methods in the study of international political processes, focusing on the principal empirical theories of the field.

**387 International Politics: Theory and Process II (3)**

Prerequisite: Political Science 386. Continuation of Political Science 386, with emphasis on student participation in the formation and testing of various theories.

**388 Studies in International Relations (3) (V)**

Prerequisite: Consent of instructor. Regional or functional problems in international relations, e.g., international relations of the Middle East, Western Europe, international coalitions. May be repeated.

## Psychology

### Program

The Department of Psychology offers work leading to the bachelor of arts degree and has developed four curriculum plans in order to meet the varied needs of its majors: Graduate School preparation, general psychology, child care and development specialization, and community mental health specialization. These four curriculum plans are described in detail below.

In conjunction with course work in the department students have the opportunity to do research in a wide variety of areas, including animal and human learning, perception, physiological, personality-social, developmental, clinical, and community psychology. Laboratory facilities for such research activities are available. With a variety of curricula and research experiences available, majors may work out programs closely suited to their interests with the guidance of their adviser.

### General Education Requirements

Each psychology major must satisfy all the general education requirements of the university listed on page 30 and the general education requirements of the College of Arts and Sciences listed on page 41. 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 foreign language will be acceptable to the Department of Psychology. Psychology majors may not take courses in psychology using the pass-fail option.

### Degree Requirements

Each psychology major must complete 32 hours of psychology. No more than 45 hours of psychology may be counted toward the Bachelor of Arts Degree. Required for all majors is the departmental core curriculum:

10 Introductory Psychology (or equivalent)

101 Psychological Statistics  
219 General Experimental Psychology

Each psychology major must take Mathematics 30 or the equivalent prior to taking Psychology 101, Psychological Statistics. An understanding of statistics is of fundamental importance no matter which of the four curriculum plans the student may intend to follow. Psychology 219, General Experimental Psychology, is intended to acquaint the student with a number of research methods which can be applied to a wide range of substantive problems. Since statistical techniques are extensively utilized in analyzing research results, Psychology 101 is a prerequisite for Psychology 219.

In addition to the core curriculum listed above, at least seven more courses are required. The four areas of concentration specify as many as five of these seven courses. In all cases at least three of these seven courses must be numbered 192 or above. Not more than six hours of readings courses beyond 192 and 193 may be counted toward the major. All programs are to be developed with the guidance of the student's adviser.

### Graduate School Preparation

This course of study is most suitable for students planning application to a doctoral program in psychology. In addition to the departmental core requirements list above, these students are required to take Psychology 261, History and Systems of Psychology, a course which the department considers among the most beneficial for those students considering the possibility of advanced graduate work. One of the following laboratory courses is also required:

214 Physiological Psychology  
254 Experimental Social Psychology  
255 Psychology of Perception  
257 Psychology of Learning  
258 Comparative Psychology  
265 Psychological Tests and Measurements

Students following the graduate school preparation curriculum are strongly encouraged to take Psychology 192 and 193,

## Psychology

Senior Readings and Senior Seminar, as electives. These courses provide an opportunity to undertake directed readings, directed research, or both, with a faculty member of the student's choice. Critical thinking, initiative, and independence are emphasized in these courses. Students wishing to enroll in Senior Readings or Senior Seminar should consult their advisers.

### 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 core requirements these students are also required to take one of the following:

- 214 Physiological Psychology
- 254 Experimental Social Psychology
- 255 Psychology of Perception
- 257 Psychology of Learning
- 258 Comparative Psychology
- 265 Psychological Tests and Measurements

### Child Care and Development Specialization

This area of specialization is most appropriate for students with no plans for graduate training who have decided to make their careers in child-related fields and who would prefer a somewhat more focused program than might be obtained in the general psychology major area. This area is ideal for double majors in education and psychology or for students interested in dealing with children in a variety of career fields. In addition to the departmental core requirements, these students are required to take at least five of the following courses (two of them must be at the 200 level):

- 111 Human Motivation
- 150 Psychology of Individual Differences
- 170 Child Psychology
- 171 Adolescent Psychology
- 172 Psychology Maturity and Old Age
- 205 Cognitive Development
- 206 Social Development
- 216 Personality Theory
- 249 Human Learning
- 256 Cognitive Processes

### Community Mental Health Specialization

This area is most appropriate for students with no plans for graduate training who wish to make their careers in community activity. 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 core requirements, these students are required to take at least five of the following courses (two of them must be at the 200 level):

- 105 Group Prejudice and Minority Identity
- 145 Abnormal Psychology
- 155 Community Psychology
- 156 Environmental Psychology
- 160 Social Psychology
- 225 Behavior Modification
- 246 Introduction to Clinical Psychology
- 254 Experimental Social Psychology
- 260 Attitude Structure and Change
- 265 Psychological Tests and Measurements

## Psychology Faculty

James T. Walker Chairman, Associate Professor  
Ph.D., University of Colorado

Edmund S. Howe Professor  
Ph.D., University of London

Arthur L. Irion Professor  
Ph.D., State University of Iowa

Alan G. Krasnoff Professor  
Ph.D., University of Texas

Lewis J. Sherman Professor  
Ph.D., University of Illinois

Gary K. Burger Associate Professor  
Ph.D., Loyola University

Alan E. Gross Associate Professor  
Ph.D., Stanford University

Theresa S. Howe Associate Professor  
Ph.D., University of California at Berkeley

Samuel J. Marwit Director, Counseling Service,  
Associate Professor  
Ph.D., State University of New York at Buffalo

Miles L. Patterson Associate Professor  
Ph.D., Northwestern University

D. J. Zerbolio, Jr. Associate Professor  
Ph.D., Michigan State University

John J. Boswell Assistant Professor  
Ph.D., Tulane University

Donald D. Lisenby Assistant Professor  
Ph.D., Washington University

Jacob L. Orlofsky Assistant Professor  
Ph.D., State University of New York at Buffalo

Jayne E. Stake Assistant Professor  
Ph.D., Arizona State University

Alice G. Vlietstra Assistant Professor  
Ph.D., University of Kansas

## Psychology Description of Courses

### 3 General Psychology (3) (F&W)

A broad introductory survey of the general principles of human behavior. Psychology 3 may be applied toward fulfillment of the general education requirement in social science. However, it does not satisfy the prerequisite requirements of other courses in psychology at the 200 level or above and should not be taken by majors in psychology.

### 10 Introductory Psychology (4) (F&W)

A one semester prerequisite for students intending to major in psychology or take psychology courses at the 200 level or above. The course offers a survey of the facts, principles and methods in the scientific study of human behavior.

### 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. (Does not count toward major).

### 75 Crime and Punishment (3)

(Same as Psychology 75, Sociology 75, and Anthropology 75) An interdisciplinary course. An introduction to sociological and psychological explanations of crime and punishment. An examination of private and governmental responses to the threats of crime and delinquent behavior.

### 99 The City (3) (F&W)

(Same as History 99, Political Science 99, Sociology 99 and Economics 99) Prerequisite: None. An interdisciplinary course. Consideration of economic factors, urban institution, 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 major).

### 101 Psychological Statistics (4) (F&W)

(With laboratory) Prerequisite: Psychology 10 or equivalent, Mathematics 30 or equivalent. Statistical methods in psychological measurement, and analysis of psychological data. Frequency distribution analysis, sampling, test of significance, correlational methods.

### 105 Group Prejudice and Minority Identity (3) (V)

(Same as Sociology 105) Prerequisite: Psychology 3 or 10 or Sociology 10. The psychological study of determinants of identity formation and transformation among minority groups.

### 111 Human Motivation (3) (V)

Prerequisite: 3 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 implications of motivation theory and research to other areas in psychology.

### 112 Principles of Learning (3) (V)

Prerequisite: Psychology 03 or 10. A consideration of critical findings in learning.

## Psychology Description of Courses

### 114 Physiological Psychology (3) (V)

Prerequisite: Psychology 3 or 10 or equivalent 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 3 or 10. Introduction to major symptom complexes, theories of etiology and treatment of behavior disorders.

### 150 The Psychology of Individual Differences (3) (F)

Prerequisite: Psychology 3 or 10. 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 3 or 10. 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 3 or 10 and a 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 3 or 10 or Sociology 10. Study of interaction between the individual and his social environment. Examination of basic principles, concepts, methods.

### 170 Child Psychology (3) (F&W)

Prerequisite: Psychology 3 or 10. Principles of biological, behavioral and personality development from conception to puberty.

### 171 Adolescent Psychology (3) (F&W)

Prerequisite: Psychology 3 or 10. Principles of biological, behavioral and personality development from puberty to maturity.

### 172 Psychology Maturity and Old Age (3) (V)

Prerequisite: Psychology 3 or 10. Exploration of the physiological and social development and changes accompanying the mature years of adulthood and later maturity, old age. Theories to explain functioning in these years as well as specific results of studies which help understand changes in all areas of functioning would be included.

### 192 Senior Readings (3) (V)

Prerequisite: Consent of instructor. Directed readings and research, one product of which shall be a formal paper.

### 193 Senior Seminar (3) (V)

Prerequisite: Consent of instructor. Directed readings and research, one product of which shall be a formal paper.

### 205 Cognitive Development (3) (V)

Prerequisite: 6 hours of Psychology or permission of instructor. Data and theory concerned with development of perceptual, language and symbolic abilities in infants and young children, including discussion of deprivation and enrichment of cognitive development.

### 206 Social Development (3) (V)

Prerequisite: 6 hours of Psychology or permission of instructor. Data and theory concerned with development of social behavior in infants and young children. Discussion will include the formation and interruption of attachment, the effects of social isolation, sex role development, identification, and development of moral judgments in children.

### 210 Motivation Theory (3) (V)

Prerequisite: 9 hours of psychology. Survey of current theoretical material in the area of motivation.

### 214 Physiological Psychology (3) (V)

(With Laboratory) Prerequisite: Psychology 219 and Biology 1 and 3 or consent of instructor. The biological and physiological correlates of behavior. Special emphasis placed on the neural and endocrine system.

### 216 Personality Theory (3) (V)

Prerequisite: 9 hours of psychology. Structural and dynamic aspects of the human personality considered in the context of selected theoretical systems.

### 218 Industrial Psychology (3) (V)

(Same as Business Administration 318) Prerequisite: Psychology 101 or equivalent, or Business Administration 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.

### 219 General Experimental Psychology (3) (F&W)

(With laboratory) Prerequisite: Psychology 101. Research methods and analysis techniques used in psychological inquiry. Special emphasis placed on the logic of research design. Includes laboratory study of and analysis of selected methods.

### 225 Behavior Modification (3) (V)

Prerequisite: 9 hours of Psychology, or consent of instructor. Methods, applications, and ethics of the use of behavior theory (primarily Skinner's operant conditioning) to the control of human behavior in a variety of settings including mental institutions, grade schools, universities, individual treatment, and communal living.

### 246 Introduction to Clinical Psychology (3) (W)

Prerequisite: 9 hours of Psychology, including Psychology 145, or 216. A conceptual framework for research, description and understanding of clinical

phenomena. Assessment, interviewing, the clinical use of tests and psychological approaches to treatment.

**249 Human Learning (3) (V)**

Prerequisite: Psychology 219. Theory and data pertaining to human learning, transfer, short and long-term retention, and forgetting of verbal and non-verbal information.

**254 Experimental Social Psychology (3) (V)  
(With laboratory)**

Prerequisite: Psychology 219. Social psychological processes both inside and outside of the laboratory including an emphasis on experimental methods in research.

**255 Psychology of Perception (3) (V)**

(With laboratory) Prerequisite: Psychology 219. Classical and current problems in psychophysics, sensory physiology and the developmental and comparative psychology of sensory processes. Includes laboratory study of selected sensory and perceptual phenomena.

**256 Cognitive Processes (3) (V)**

Prerequisite: 9 hours of psychology. Evolution of contemporary approaches to the higher mental functions. Analyses of some of the psychological processes involved in association, memory, meaning, language and conceptual behavior.

**257 Psychology of Learning (3) (V)**

(With laboratory) Prerequisite: Psychology 219. Major theoretical positions and experimental conditions of learning. Includes laboratory study of selected problems.

**260 Attitude Structure and Change (3) (V)**

Prerequisite: Psychology 101 or equivalent, plus 6 hours in either psychology or sociology. Theories of attitude structure and attitude change; measurement; current research.

**261 History and Systems of Psychology (3) (F)**

Prerequisite: 12 hours of psychology. Historical antecedents of contemporary scientific psychology, including a survey of systems and schools of psychology.

**265 Psychological Tests and Measurements (3)  
(V)**

(With laboratory) Prerequisite: Psychology 101; Psychology 219 or consent of instructor. Survey of psychological testing and principles of test construction and evaluation. Laboratory experience in construction, administration and interpretation of selected tests.

**290 Psychology Readings (3) (V)**

Prerequisite: Psychology 3 or 10 and consent of instructor. Readings on a topic mutually acceptable to student and instructor.

**301 Advanced Statistics and Experimental Design  
(3) (V)**

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) (V)**

Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.



## Sociology and Anthropology

**Program**

The Department of Sociology and Anthropology offers work leading to the bachelor of arts in anthropology, bachelor of arts in sociology, bachelor of arts in sociology with an emphasis in social service, bachelor of science in the School of Education with an emphasis in social studies (see School of Education for details), and master of arts in sociology (see *Graduate Bulletin* for details).

Academic work in the department is offered with the following aims:

To prepare students for careers in social work and secondary education not requiring further graduate study, to prepare for graduate school students desiring to work professionally in sociology, anthropology, or social work, to provide grounding in the disciplines of sociology and anthropology, or social work, to provide grounding in the disciplines of sociology and anthropology as part of a liberal arts education for students going into professional schools such as law or medicine and for students going on to graduate school in other related fields such as urban studies, criminology, and population studies, and to provide for all students exposure to the social sciences as part of the necessary breadth required for a sound liberal arts education.

The department faculty stresses the scientific and applied aspects of the department's disciplines. Social forces and cultural traditions affecting the individual are studied from a scientific perspective, and first-hand exposure to their effects are stressed through community involvement. Throughout, the contributions of sociology and anthropology toward a well-rounded liberal arts education are emphasized.

The department's scientific approach is reflected in an emphasis on the development of adequate theoretical and methodological tools. In addition there is a strong emphasis on the applied uses of sociological and anthropological insights and methods which is given a distinctly urban thrust in all three of the department's fields: sociology, social work, and anthropology. Many faculty are

engaged in research on urban-related issues and work with various urban agencies, particularly in the areas of crime, delinquency, social welfare, and education. Also a number of the faculty have appointments in the Center of Community and Metropolitan Studies and the Center for International Studies. This involvement tends to support a pattern of interdisciplinary cooperation on various research projects and academic concerns which is also demonstrated in the encouragement given to departmental majors to strengthen their academic program by taking related area work in other social science disciplines.

Academic work and research in the department is further enhanced by the availability of the following resources:

The Quantitative Sociology Laboratory is equipped with a computer terminal, key punch, and several calculators. This equipment provides both faculty and students in the department with the facilities needed to perform a wide variety of types of data analysis and simulation procedures. The lab is staffed with lab assistants qualified to provide instruction in the use of the machinery and can assist students in the department's courses in quantitative techniques.

The Anthropology Laboratory has three related purposes: it is intended to help students in human origins to master anatomical and genetic concepts more fully than can be done through reading and lecture alone; to give students an opportunity to evaluate for themselves a little of the evidence for human evolution; and to provide some minimum facilities for research in physical anthropology. To achieve these purposes, the laboratory is staffed with assistants qualified to help students master the human origins course. The laboratory is equipped with skeletal materials for learning human and comparative anatomy, with materials for the study of elementary genetics, with a collection of excellent casts of some of the fossils which are important in the study of human evolution, and with anthropometric instruments for the study of growth and variations in humans.

The Undergraduate Sociology Teaching Laboratory contains a library consisting of books and journals available to students in the department. The room is designed as a center for undergraduates with flexible seating arrangements so it can serve a variety of needs. Personnel from the quantitative lab supervise this lab.

The Comparative Social Organization Laboratory houses specialized equipment such as audio-visual equipment, a tracing table, an assortment of maps, etc., to be used by students for a wide variety of projects. Storage and work space enable the lab to be used as a work center for class projects.

The Social and Behavioral Sciences Laboratory incorporates both small group interaction and simulation facilities, and provides consultation services, direct computer access, audio-visual, and closed circuit video facilities for teaching and research.

Students in the department may choose to major in anthropology, sociology, or sociology with an emphasis in social service. In each of these three areas a variety of approaches is represented in the department enabling the student to be exposed to coverage of the range of each discipline. To aid students in selecting a reasonable program of study each major is assigned a faculty adviser. Students are urged to consult with their faculty adviser early in planning their undergraduate program. There is, in addition, a general undergraduate adviser in the Department of Sociology and Anthropology, who also serves as department ombudsperson to help students regarding academic and curricular matters.

The ombudsperson keeps regular advising hours. Each major should obtain a copy of the "Guide to Undergraduate Studies in Sociology/Anthropology" available from the adviser to familiarize the student with the degree program, rules, and regulations, and interest of the faculty members of the department.

Besides the degree programs, the

Department of Sociology and Anthropology also offers a large number of general education courses. Several of the departmental course offerings are required courses in degree programs in the administration of justice and School of Education. Other course offerings enable students in related fields such as psychology, political science, and economics to become acquainted with multidisciplinary approaches to various substantive areas.

#### **General Education Requirements**

Students with undergraduate majors in the Department of Sociology and Anthropology must satisfy the general education requirements on page 30, and the requirements of the College of Arts and Sciences on page 41. Courses in sociology or anthropology may be used to meet the university's social science area requirements. Any foreign language may be used to meet the College of Arts and Sciences foreign language requirement. The non-Euro-American requirement may be met by any non-Euro-American course.

Majors may not take department courses which will apply toward their major on pass-fail. However, if a student desires to take more departmental courses than needed to fulfill the degree requirements, these additional courses may be taken on pass-fail.

#### **Degree Requirements**

##### **Bachelor of Arts in Sociology**

There are four core requirements for the major in sociology:

- 10 Introduction to Sociology (3)
- 110 Sociological Theory (3)
- 120 Quantitative Techniques (4); or Mathematics 31, Elementary Statistical Methods (3); or Mathematics 102, Finite Mathematics I (4)
- (Students planning to do graduate study, specifically Sociology 422, Advanced Quantitative Techniques, are urged to take Sociology 120 rather than the Mathematics option.)
- 130 Research Methods (4)

## Sociology and Anthropology

These courses reflect the strong scientific approach of the department and introduce the student to the scientific study of society and institutions. The courses provide the conceptual and methodological tools with which to understand social realities. Basic social theories, concepts, and principles are introduced, a wide range of methods and techniques for generating and interpreting sociological and anthropological data are provided. These courses provide the overall framework for the student's further study in the department.

After completing this core of study the student goes on to advanced course work within his or her respective major. Within the major students generally range rather broadly within the discipline and in related areas to construct a program tailored to their own interests and vocational plans. Most students do not concentrate on any one area within the discipline.

In addition to the above 14 hours, at least 18 hours of major elective credit selected from departmental courses must be taken. Of the 18 hours no more than three hours in sociology and no more than three hours in anthropology under the 100 level will be counted toward the 18 elective hours, and at least three credit hours must be taken on the 300 level in sociology. Sociology 350 (Special Study) cannot be used to satisfy this requirement for a 300-level course.

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.

The elective courses enable the student to become familiar with some of the substantive areas within the field. Selection of these electives will generally be based on a student's particular interests. Advisers can be very helpful in recommending appropriate courses that would be of interest to an individual student and would balance the student's knowledge of the field. Applied

training through one or more practicum courses relevant to a variety of potential career choices may be taken as part of these 18 hours of elective credit.

Students may take more than 18 hours of electives but they cannot exceed 45 hours (including required courses) of sociology credit. Credits above 45 hours will not count as part of the 120 hours needed for graduation.

### Related Area Requirement

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.

### Bachelor of Arts in Sociology with Emphasis on Social Service

This program reflects the growing urgency being expressed by tax-supported social services and private social agencies to recruit better prepared beginning practitioners who will bring a broad academic grounding in the social sciences coupled with some direct exposure to the social service delivery systems. Civil service requirements and job descriptions assume the need for understanding facts, theories, and concepts which underlie rational efforts to design institutional facilities to help large segments of the population cope with the on-going demands of an urban society, or to respond to the personal crises of individuals and families.

Students majoring in the social service emphasis will be prepared to enter professional schools of social work looking toward eventual careers in supervision, administration, and research, or they should be able to qualify for immediate beginning positions such as those in hospital social service departments, public welfare, community mental health, services to the aging, day care centers, social security offices, and recreational services. For students intent on entering a particular kind of agency service, social work faculty can

help advise concerning relevant substantive courses; more often students will probably elect a curriculum suited to a social work generalist.

The core requirements are:

**Sociology**

10 Introduction to Sociology (3)

**Social Work**

100 Introduction to the Human Services (3)

**Sociology**

110 Sociological Theory (3)

120 Quantitative Techniques (4)

**Social Work**

200 Social Welfare as an Institution (3)

210 Interventive Strategies with Individuals and Small Groups (3) or

**Sociology**

130 Research Methods (3)

**Social Work**

320A Practicum in Supervised Field Experience and Operational Research (4)

At least nine additional hours of major electives must be selected from departmental courses in social work or sociology. Social service majors are strongly urged to include among these electives Social Work 320B, Practicum in Supervised Field Experience and Operational Research.

**Related Area Requirements**

The following related area courses are required:

Psychology 3 or 10 General or Introductory Psychology

Sociology 160 or Psychology 160 - Social Psychology

Political Science 11 or Economics 40

Anthropology, Biological science and Spanish are strongly advised by schools of social work.

**Bachelor of Arts in Anthropology**

Completion of the following core of courses provides the student with a minimum background in scientific method and techniques in anthropology and introduces the two postulates which differentiate anthropology from the other social sciences. First, that man is an animal (albeit a very distinctive one) with an evolutionary history which is a major factor in his nature. Second, that human social behavior cannot be fully understood without cross-cultural comparisons.

The following courses are required for the major in anthropology:

**Anthropology**

5 Human Origins (4)

11 Man, Culture, and Society (3)

**Sociology**

120 Quantitative Techniques (4)

**Anthropology**

325 Comparative Social Organization (3)

381 Theories of Anthropology (3)

291 Senior Seminar (3)

In addition, the student is required to complete one course in philosophy chosen from Philosophy 160, 250, or 255 prior to the student's enrollment in Anthropology 291, Senior Seminar.

For completion of the major the student must take at least 12 credit hours of electives from courses offered by the Department of Sociology and Anthropology. The total number of elective anthropology credits may not exceed 25 of which no more than three credit hours may be from courses numbered less than 100. Elective courses in excess of 25 hours may not be counted as any part of the 120 credit hours required for graduation.

Electives are chosen by the student in terms of interests and educational goals. Each student is assigned an adviser who is available to help the student in selecting appropriate electives to meet educational goals. Those who plan to do graduate work in anthropology should plan their entire programs in consultation with their faculty

**Sociology and Anthropology**

advisers to be sure of having appropriate courses in other departments. Those who do not plan on getting a graduate degree will also find that their advisers can be very helpful in planning a course of study.

## Sociology and Anthropology Faculty

### Sociology

Harry H. Bash Chairman, Assistant Professor  
Ph.D., University of Pennsylvania

K. Peter Etkorn Professor  
Ph.D., Princeton University

Jerome Himelhoch Professor  
Ph.D., Columbia University

George J. McCall Professor  
Ph.D., Harvard University

Solomon Sutker Professor  
Ph.D., University of North Carolina

Sara Boggs Associate Professor  
Ph.D., Washington University

Muriel Pumphrey Professor, Social Work  
D.S.W., Columbia University

Sara Smith Sutker Associate Professor  
Ph.D., University of North Carolina

William Erickson Assistant Professor  
Ph.D., University of Illinois

Norman Flax Assistant Professor, Social Work  
Ph.D., St. Louis University

Judith Handel Assistant Professor  
Ph.D., University of California

John Hepburn Assistant Professor  
Ph.D., University of Iowa

Daniel J. Monti Assistant Professor  
Ph.D., University of North Carolina

Frank M. Newport Assistant Professor  
Ph.D., University of Michigan

Herman W. Smith Assistant Professor  
Ph.D., Northwestern University

### Anthropology

Lloyd Collins Associate Professor  
Ph.D., University of Arizona

Thomas H. Hay Associate Professor  
Ph.D., Michigan State University

Stuart Plattner Assistant Professor  
Ph.D., Stanford University

S. B. Scheiner Assistant Professor  
Ph.D., University of California

## Sociology and Anthropology Description of Courses

### Sociology

#### 10 Introduction to Sociology (3)

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.

#### 30 Interpretation of Sociological Data (3) (F&W)

Prerequisite: Sociology 10. An introduction to the understanding of sociological research. Emphasis would be placed on how research is conducted and on how to read and interpret data analysis. This would be done in a non-technical fashion. Sociology majors cannot receive sociology credit for this course.

#### 45 Race (3)

Same as Psychology 45 and History 45 and Anthropology 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.

#### 65 The University (3)

See Interdisciplinary Course 65.

#### 75 Crime and Punishment (3) (W)

See Administration of Justice 75, Psychology 75, Anthropology 75. Prerequisite: None. An introduction to sociological and psychological explanations of crime and punishment. An examination of private and governmental responses to the threats of crime and delinquent behavior.

#### 77 Third World Development (3)

See Political Science 77, Anthropology 77. Prerequisite: None. An interdisciplinary course concerned with the process of development and underdevelopment in the modern world. We will focus upon the internal structures of societies, the effects of foreign policies, and cooperative and coercive international relations as they have affected developing nations. The loss of many valuable aspects of life that has accompanied previous patterns of development will be examined in light of the possibility of alternative strategies.

#### 90 Freshman Seminar (3)

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. Prerequisite: None. 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.

#### 105 Group Prejudice and Minority Identity (3)

Same as Psychology 105. Prerequisite: Psychology 3 or Psychology 10, or Sociology 10. The psychological



## Sociology and Anthropology

### Description of Courses

and sociological study of determinants of identity formation and transformation among minority groups.

**106 Development of Social Thought (3) (F)**  
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 (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. (with laboratory).

**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) (F&W)**  
Same as Psychology 160. Prerequisite: Sociology 10 or Psychology 10. 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 Crimes (3) (F&W)**  
Prerequisite: 3 hours of 100 level Sociology. A theoretical and research-oriented approach to delinquency and youth crime, including types, trends, causation, correction and prevention.

**218 Social Choice in Political-Economic Systems (3)**  
Prerequisite: Two courses in Economics, Political Science or Sociology. Same as Economics 218, Political Science 218. A study of the mechanisms of social choice from the standpoint of individual and

political party maximization of personal objectives. This area draws on work done by sociologists, political scientists and economists.

**224 Sociology of the Family (3) (F&W)**  
Prerequisite: Sociology 10. Universal and variable aspects of family organization, family role systems, changes in family social structure.

**234 Political Sociology (3)**  
Same as Political Science 234. Prerequisite: Sociology 10 or Political Science 11. 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.

**238 Medical Sociology (3)**  
Prerequisite: Sociology 10. The application of sociology to the field of health. Social elements of the etiology of disease and its distribution. The sick role, doctor-patient relationships and the social organization of hospitals and medical careers.

**256 Sociology of Education (3) (F)**  
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.

**260 Social Interaction in Small Groups (3) (F)**  
Prerequisite: Sociology 160 or Psychology 160. Analysis of human interaction with emphases on group problem solving, group structure and group process.

**264 The Sociology of Religion (3)**  
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) (W)**  
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) (W)**  
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 profession, the police and various social institutions. Consideration is given to law as an instrument of social change.

**286 The Sociology of Art and Literature (3) (W)**  
Prerequisite: Sociology 10. The creative individual, his work and his public. Social pressures and rewards.

**290a 290b 290c Undergraduate Seminar in Sociological Issues (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.



**298 Practicum in Field and Laboratory Research (1-3)**

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.

**304 Survey Research Practicum (3) (W)**

Same as Economics 304 and Political Science 304. Prerequisite: junior standing and consent of instructor. The execution of a sample survey, including establishing study objectives, sampling, questionnaire construction, interviewing, coding, data analysis, and presentation of results.

**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) (W)**

Prerequisite: Either social work 220 or Sociology 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.

**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. 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) (F)**

Prerequisite: Sociology 214 or 326. Institutional responses to crime and delinquency. Theories and programs of rehabilitation and punishment. Organizational conditions affecting behavior of correctional personnel.

**330 Field Research in Criminology (2-4)**

Prerequisite: Sociology 130 and 214 or 326 or their equivalent. Students will participate in individual or

group research projects involving systematic data collection and sociological analysis concerning the causation or societal reaction to crime, delinquency or related forms of deviance. One option available to students will be an opportunity to study organizations dealing with juvenile or adult offenders.

**336 Complex Organizations (3) (F)**

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) (F)**

Prerequisite: Sociology 10; junior standing or consent of instructor. Sociological aspects of theories relating man and ecological environment. Selected topics including fertility and population change, community planning and urbanism and demographic aspects of Western and non-Western cultures.

**344 Problems of Urban Community (3) (W)**

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.

**346 Demographic Techniques (3) (W)**

Prerequisite: Sociology 120 or equivalent. This course is designed to familiarize students with the research techniques used in population analysis. Topics included are: appraisal or census and vital data; measurement or mortality, fertility, and migration; standardization; construction of life tables; and population projection.

**350 Special Study (1-10) (V)**

Prerequisite: Consent of instructor. Independent study through readings, reports and field work.

**352 Advanced Principles of Sociology (3)**

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.

**354 Occupations and Their Work Settings (3)**

Prerequisite: Sociology 10; junior standing or permission of instructor. The social nature of work; the work plant as a social system; occupational role behaviors, including deviant occupations; the socialization of the worker; determinants of occupational behavior in American and other societies; social problems of work; the impact of the community on work behavior.

**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)**

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.

## Sociology and Anthropology

### Description of Courses

#### **378a 378b Selected Topics in Social Psychology (3) (W)**

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.

#### **394 Methods in Theory Construction (3) (W)**

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.

#### **Social Work**

#### **100 Introduction to the Human Services (3) (F&W)**

Prerequisite: Sociology 10 or Psychology 10. An examination of the network of health, mental health, recreational, rehabilitative, income maintenance, community action and preventive programs presently operating in modern urban communities to help individuals and families cope with their social needs. The contributions of the various helping professions and paraprofessional personnel will be reviewed in relation to possible future career choices.

#### **200 Social Welfare as a Social Institution (4) (F&W)**

Prerequisite: Sociology 10 or Psychology 10, Social Work 100. A study of the development of social welfare services and the social work profession, including major policy alternatives and the philosophy and the ethics underlying present practices and systems. Current issues will be seen in the light of long terms trends, such as the selection of target groups, sponsorship and financing, manpower needs, and the relationships with other social institutions. A laboratory period will be used for field trips to social agencies.

#### **210 Interventive Strategies in Social Work With Individuals and Small Groups (3) (F)**

Prerequisite: Social Work 200 and Sociology 160 or Psychology 160. A presentation of basic knowledge, skills, and theories used in social work practice, such as problem identification, interviewing, crisis intervention, milieu therapy, ego support, teaching of interpersonal skills, group therapy, use of community resources and evaluation of progress. Socio-cultural factors affecting the delivery of services and the various helping roles a social worker might assume will be identified and illustrated by role play and demonstrations by experienced social workers.

#### **220 Social Issues and Community Organization (3) (F&W)**

Prerequisite: Social Work 200 and Sociology 160 or Psychology 160. The identification of public issues in relation to society as a whole with a consideration of alternatives for stimulating wide participation in community planning and social action to solve such problems. Methods of inducing citizen efforts to assure that human needs are met will be appraised.

#### **300a 300b Interventive Strategies in Social Work Practice with Vulnerable Populations (3) (W)**

Prerequisite: Social Work 210 or 220. An advanced course in social work methods which considers how social work skills may be applied in work with specific client groupings. During one semester, emphasis will be placed on groups with situational and developmental problems such as the physically ill and handicapped, the unemployed, the aging, dependent children, school drop-outs, single person families. In the next semester treatment of persons with markedly deviant behavior will be considered such as adult and juvenile offenders, the mentally ill, child abusers, alcoholics, children with school phobias. (Credit may be given for both A & B).

**320a 320b Practicum in Supervised Field Experience & Operational Research (4) (F&W)**  
 Prerequisite: Social Work 210 or 200 and Social Work 300. Participation as a staff worker in the service programs at an agency selected by the student from a wide variety of approved settings. Students work two days per week with a biweekly seminar. With the instructor's permission both sections of this course might be taken together in a specially arranged "block" placement four days per week in one semester. (Credit may be given for both A & B).

**350 Special Study (Credit arranged).**  
 Prerequisite: Consent of Instructor. Independent study through advanced readings in method and philosophy on a topic of particular interest, or field research in an agency.

**390 Seminar in Social Work Issues (3) (F&W)**  
 Prerequisite: Consent of Instructor. Current and future policy considerations in designing and implementing social work service delivery arrangements. Issues will be selected according to the interests of the class.

## Anthropology

**5 Human Origins (4) (with laboratory) (F&W)**  
 Prerequisites: 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)**  
 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)**  
 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.

**75 Crime and Punishment (3)**  
 (Same as Administration of Justice 75, Psychology 75, and Sociology 75.) An interdisciplinary course. An introduction to sociological and psychological explanations of crime and punishment. An examination of private and governmental responses to the threats of crime and delinquent behavior.

**77 Third World Development (3)**  
 See Political Science 77, Sociology 77.  
 Prerequisite: None. An interdisciplinary course concerned with the process of development and underdevelopment in the modern world. We will focus upon the internal structures of societies, the effects of foreign policies, and cooperative and coercive international relations as they have affected developing nations. The loss of many valuable aspects of life that has accompanied previous patterns of development will be examined in light of the possibility of alternative strategies.

**90 Freshman Seminar (3)**  
 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)**  
 Prerequisite: Anthropology 11 or consent of the instructor. An introduction to Mexico and Central America from an anthropological point of view. The evolution of the indigenous civilizations of the Aztec and Maya. The conquest and colonial experiences and the development of modern communities.

**203 Cultures of South Asia (3)**  
 Prerequisite: Anthropology 11 or consent of the instructor. A survey of the cultures of South Asia

## Sociology and Anthropology Description of Courses

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 non-Euro-American requirements of the College of Arts and Sciences.

**205 Cultures of Southeast Asia (3)**  
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 non-Euro-American requirement of the College of Arts and Sciences.

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

**227 Urban Anthropology (3) (W)**  
Prerequisite: Anthropology 11. A comparative analysis of the cultural roles of urban centers and the processes of urbanization in non-western and western societies, past and present. A consideration of urban influences on rural America and the traditional peasant and primitive peoples of Africa, Asia and Latin America.

**243 Economic Anthropology (3)**  
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)**  
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)**  
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)**  
Prerequisite: Anthropology 11 or consent of the 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) (F)**  
Prerequisite: Anthropology 11 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 societal organization primarily in non-Western cultures, Processes of system maintenance and change.

**327 Fieldwork in Anthropology (3) (W)**  
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) (F)**  
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) (W)**  
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) (F)**  
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)**  
Prerequisite: One course in linguistics or consent of instructor. Linguistic analysis of syntax including introduction to formal structures of symbolic, social and cultural behavior.

**350 Special Study (1-10)**  
Prerequisite: Consent of the 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 interaction between 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 (1-4) (F&W)**  
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.

## Preprofessional Programs

Many students who attend UMSL are interested in professional careers in such fields as engineering, dentistry, journalism, law, medicine, and pharmacy. Although UMSL does not offer a specific preprofessional major in any of these areas, a student may develop a very satisfactory preprofessional program of study utilizing the academic offerings available at UMSL. With early and careful advising, the student may develop a lower-division (freshman/sophomore) program of study in preparation for transfer into a professional program in the junior year, or he or she may select a major field of study and related area courses which will constitute a very strong undergraduate preparation for graduate professional study. It must be stressed however, that the student should seek a preprofessional faculty adviser in the area of his or her interest early in the academic career in order to insure the development of a sound, comprehensive program of study in keeping with the interests and level of ability and the admission requirements of the professional program to which he or she applies. The following information on preprofessional study at UMSL is provided to give the student some minimal guidelines and assistance in designing a program of study.

### Preengineering

The Preengineering program at UMSL provides for a solid scientific base through area requirements in mathematics, chemistry, physics, and communications. Flexibility is built into the program through the engineering, science and communications electives. Students who have chosen a specific engineering discipline must choose these electives in consultation with advisers, so that they may transfer to an engineering college beginning their junior year. Ordinarily, this transfer can be effected without loss of credit and with full standing. Alternatively, students can remain at UMSL to pursue bachelor of science degrees in pure science or in an applied area of physics, mathematics or chemistry. It is important to bear in mind that hard career decisions are not necessary during the first two years. The built-in flexibility encourages students to experiment with various areas in engineering and applied science in order to find the most appropriate and rewarding directions to aim their talents. Specific inquiries regarding the preengineering program should be addressed to:

Director, Preengineering Program  
Department of Physics  
University of Missouri-St. Louis  
8001 Natural Bridge Road  
St. Louis, Missouri 63121  
Telephone: (314) 453-5934

In addition to the general education requirements, prospective preengineering students are required to take a mathematics placement test in the spring of the academic year prior to enrollment. This test is administered at UMSL. Additional information may be obtained from the Office of Admissions. Students whose test results indicate inadequate preparation in mathematics are strongly urged to take Math 40 in the summer session prior to freshman-year enrollment.

Although UMSL does not have a required pattern of high school units for admission it is recommended that students who plan to pursue a preengineering program complete at least three units of high school

mathematics including units of algebra (excluding general mathematics) and trigonometry. Calculus, if available in the high schools, is recommended.

#### **Required Curriculum for Freshmen and Sophomores**

A total of 66 hours is required in the preengineering program including:

##### Chemistry

11 Intro Chemistry

##### Physics

1 Foundations Modern Physics  
111 Mechanics and Heat  
112 Electricity, Magnetism and Optics

##### Mathematics

80 Analytic Geometry and Calculus I  
175 Analytic Geometry and Calculus II  
201 Analytic Geometry and Calculus III  
302 Applied Mathematics

##### Communication

Math 122 Fundamental Computer Programming  
English 10 Composition  
Three hours electives

##### Engineering

30 Engineering Graphics  
85 Statics and Elementary Strength of Materials  
185 Introduction to Dynamics  
Six hours Engineering or Science electives.

##### Humanities and Social Science

12 hours electives

#### **Prejournalism**

UMSL does not offer a degree program in journalism. Students who wish to pursue a journalism degree should consult the school(s) to which they plan to apply to get information on suggested prejournalism courses of study.

Students who wish to work toward a degree in journalism at the University of Missouri must complete their junior and senior years at the School of Journalism at the University of Missouri - Columbia. Of the 60 hours to be taken at UMC, approximately 30 will be devoted to journalism courses with the remaining 30 hours as electives in other disciplines.

For entrance, the student must present to the School of Journalism 60 credit hours (exclusive of physical education) with a cumulative grade point average of 2.25 on work completed after October 1, 1972, and a grade point average of 2.50. Satisfactory completion of an entrance test may be required.

The following studies are mandatory for entrance to the School of Journalism:

**Foreign Language:** Completion of a reading course beyond the equivalent of the intermediate level (generally 12 to 13 hours.) Completion of the 101 level courses will satisfy the language requirement. Students with four or more high school units in one foreign language will have fulfilled this requirement.

**Physical, Behavioral, or Biological Science:** Four hours credit, including one hour of lab; or Mathematics 30 will satisfy the requirement.

**General Economics:** Three hours credit. Economics 50 or 51 will satisfy the requirement.

**American Government:** A minimum of three hours credit. Political Science 11, Government in Modern Society, will satisfy the requirement.



## Preprofessional Programs

Literature: Six hours credit, at least three of which must be in the English language. Literature 12, Literary Types; Literature 131, English Literature; or Literature 132, English Literature II, will satisfy the requirement.

English Composition: The completion, with a grade of B or higher, of English 160, Advanced Expository Writing; or English 65, Honors Exposition; or the equivalent of English 160. The equivalent of English 160 completed with a C average will be accepted if there is a satisfactory grade on the English proficiency examination.

Recommended but not required for entrance into the UMC School of Journalism are courses in American history, general sociology, general psychology, introduction to philosophy, principles of marketing, elementary accounting, college algebra, and elements of college mathematics.

For additional information, or prejournalism advising, contact Spencer Allen, director, Urban Journalism Center, Phone: 453-5485.

## Prelaw

There is no single series of courses at UMSL which can properly be designated a prelaw program. Requirements for admission to any particular law school will be found in the catalogue (or official bulletin) of that law school. With few exceptions, admission to most accredited law schools is limited to holders of the bachelor's degree who, as early as possible in their senior year, take the Law SAT examination administered by the Educational Testing Service.

It is clear that, in the admissions process, law schools are searching primarily for candidates who have demonstrated not only a well-rounded educational background but also some evidence that they have grasped well the ability to be analytical and critical, to think clearly, and to be able to articulate their thoughts. For some students, this may lead to majors which will contain room for excellent grounding in various fields of political science, in English and American history, constitutional history and law, jurisprudence, or administration of justice. But it is clear that law schools have been equally interested in undergraduates who have chosen to concentrate in such fields as business, English, philosophy, psychology, mathematics, and other fields which, to the uninitiated, seem hardly related to legal studies.

Law schools, basically post-undergraduate schools whose methodology is totally unlike that of the undergraduate college, are, in effect, searching for the type of student who throughout a collegiate career can demonstrate that he or she knows how to work and is capable of achieving excellence in academic work.

Most law schools would hardly admit to a minimum grade-point average for admission but most of them are not interested in the student who is satisfied with a C average or slightly above. Almost all law schools will use as a portion of their process of analysis of candidates for admission both the cumulative grade average through at least the first three years as well as the grade achieved on the Law SAT examination.

Since admission requirements and fees vary from one law school to another, students are urged to begin as early as possible in their collegiate careers to investigate both of these areas.

Despite its relative youth, UMSL has had success in placing its graduates in law schools throughout the country, including a number of the so-called "prestigious" institutions. Each law school handles its own financial aid program, including loans, and the undergraduate is well-advised to consider the financing of a legal education as he or she works his or her way through a collegiate career. Although UMSL does not have a law school, the University of Missouri provides such training at its law schools at Columbia and Kansas City.

The prelaw adviser maintains a reasonably complete and up-to-date set of law school catalogs, information on the Law School Admission Test, and other information which is available for the use of individual students. For further information and for specific prelaw advising, contact Dr. Harry G. Mellman, Prewal Adviser, Department of Political Science, phone: 453-5591.

#### **Premedical Sciences Program**

UMSL does not award a bachelor of arts with a major in premedical sciences. Students desiring to enter medical schools, dental schools, or schools of veterinary medicine should pursue A.B. or B.S. degrees with majors in the discipline of their choice, but they should elect to take whatever additional courses may be necessary for admission.

Many medical, dental, and veterinary schools recommend the following undergraduate courses:

#### **Biology**

10 Introductory Biology  
224 Genetics  
as well as additional courses in development and/or physiology.

#### **Chemistry**

11 Introductory Chemistry I  
12 Introductory Chemistry II  
261 Structural Organic Chemistry  
262 Organic Reactions  
263 Techniques of Organic Chemistry  
as well as additional courses in organic chemistry and quantitative analysis.

#### **Mathematics**

Including calculus as appropriate for the major degree.

#### **Physics**

1 year (8 credits) or as appropriate for major degree chosen.

There is considerable variation in the admission requirements of professional schools and prospective applicants are urged to consult the catalogs of the institutions to which they intend to apply. Updated information may be found in the bulletin *Medical School Admission Requirements* for the current year (United States and Canada) available from the Association of American Medical College, One Dupont Circle, N.W., Washington, D.C. 20036 at \$4.00 per copy. The Office of the Dean, College of Arts and Sciences has an examination copy for use within the office.

## Preprofessional Programs

Since students will normally apply to professional schools during their junior year, and since admission to professional schools will not be confirmed until after successful completion of the science requirement for admission, students are encouraged to fulfill their science requirements before the end of their junior year. In order to complete the requirements by this time, premedical students should normally take Chemistry 11, Introductory Chemistry I and Chemistry 12, Introductory Chemistry II during their freshman year.

All professional schools require prospective students to take national standardized exams prior to applying for admission. Since scores from these tests are used as one of the criteria for selecting students for admission, the test should be taken before or during the Junior year. Pre-med students take the Medical College Admission Test, pre-vet students take the Veterinarian Medical Aptitude Test, and pre-dent students take the Dental Aptitude Test.

Each year the number of applicants to schools of health professions greatly exceeds the number of available places. Students interested in health care professions are urged to have alternate plans should they be unable to gain entrance to a school in their preferred field. Pharmacy, nursing, optometry, and laboratory technology may be considered as alternative fields.

For additional information, testing dates or premedical advising, consult the Biology Department, 326 Stadler Hall, phone: 453-5811, or the Chemistry Department, 441 Benton Hall, phone: 453-5311.

### Prepharmacy Program

Admission to a school of pharmacy usually requires one or two years of college work in specified areas. Most colleges of pharmacy recommend the so-called 2-3 plan which includes two years of college work followed by three years of professional courses in the college pharmacy. Entrance requirements vary somewhat from college to college, and students taking preprofessional courses on this campus are advised to consult the catalog of the college of pharmacy to which they expect to apply.

The following is a typical two-year sequence in prepharmacy and meets the requirements for admission to the School of Pharmacy of the University of Missouri-Kansas City and the St. Louis College of Pharmacy.

#### Freshman Year

First Semester:  
Chemistry 11 Introductory Chemistry I (5)  
Mathematics 40 Precalculus Mathematics (4)  
English 10 Composition (3)  
Physics 11 Basic Physics (4)  
Total 16 hours

Second Semester  
Chemistry 12 Introductory Chemistry II (5)  
English 12 Literary Types (3)  
Physics 12 Basic Physics (4)  
Elective\* (3)  
Total 15 hours

#### Sophomore Year

First Semester  
Chemistry 261 Structural Organic Chemistry (3)  
Chemistry 263 Techniques of Organic Chemistry (2)  
Biology 10 Introductory Biology (5)  
Electives\* (6)  
Total 16 hours

Second Semester  
Chemistry 262 Organic Reactions (3)  
Biology Elective (5)  
Electives\* (6)  
Total 14 hours

\*Courses in statistics, psychology, speech, economics, and accounting are among

those most frequently required.

For additional information, or prepharmacy advising, contact the Chemistry Department, 438 Benton Hall, phone: 453-5311.

## Interdisciplinary Courses

In addition to regular departmental offerings, the College of Arts and Sciences also offers several interdisciplinary courses. These courses bring together the resources of two or more disciplines to focus on a topic which benefits from being studied from the point of view of more than one discipline. In many cases faculty from several different departments teach an interdisciplinary course together, thus giving the student the opportunity to experience faculty dialogue on issues in a cross-disciplinary fashion. Most of these courses have no prerequisites. Freshmen and sophomore students especially are encouraged to enroll in interdisciplinary courses.

Prerequisites may be waived by consent of instructor.

**45 Race (3) (V)**

(See Anthropology 45, History 45, Psychology 45, or Sociology 45) 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.

**50 Women (3) (F&W)**

(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, economic, social, political-legal, and historical.

**65 The University (3) (F)**

(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 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.

**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.

**75 Crime and Punishment (3) (V)**

See Administration of Justice 75, Psychology 75, Sociology 75, Anthropology 75. (Social Science Credit) Prerequisite: None. An introduction to sociological and psychological explanations of crime and punishment. An examination of private and governmental responses to the threats of crime and delinquent behavior.

**77 Third World Development (3) (V)**

See Political Science 77, Sociology 77, Anthropology 77. (Social Science Credit) Prerequisite: None. An

interdisciplinary course concerned with the process of development and underdevelopment in the modern world. Focus will be upon the internal structures of societies, the effects of foreign policies, and cooperative and coercive international relations as they have affected developing nations. The loss of many valuable aspects of life that has accompanied previous patterns of development will be examined in light of the possibility of alternative strategies.

**99 The City (3) (F&W)**

(See Administration of Justice 99, Economics 99, History 99, Political Science 99, Psychology 99, or Sociology 99. Prerequisite: None. An interdisciplinary course. Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburbia and the metropolitan area, ethnic groups, stratification and psychological implications of urban living. This course is primarily for freshmen and sophomores. It is open to juniors and seniors with the instructor's permission.

**101 Confusion to Chaos in the American Experience (3) (W)**

Same as History 101 and English 101. Prerequisite: None. Selected topics in American History and literature from the colonial period to the present.

**102 Ethnic Cultures in America: Their History and Literature (3) (F)**

See History 102 and English 102. Prerequisite: None. The course traces the history of the settlement of European Jewish, German, Italian, Irish, and Negro groups in America. It will emphasize the problems of assimilation as they are reflected for each group in appropriate literary forms.

## Literature in Translation

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.

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

**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)

**126 Continental Medieval Masterpieces**  
(See English 126)

**128 The Contemporary World in Literature**  
(See English 128)

**150 European Literature in Translation: Special Topics**  
(See French, German and Spanish 150)

## Study of Religion

Although UMSL does not have a religion department or offer a degree in religion, there are a number of courses which may be categorized under the heading of religion even though they are housed within a number of different departments in the college. These courses are listed here for the benefit of the student who may wish to take one or more courses in religion as a part of an academic program.

## Anthropology

265 Religion, Magic, and Science

## Art

206 Early Christian Art and Archaeology

210 Medieval Art

## English

125 Literature of the Old Testament

## History

90 Freshman Seminar: The New Testament

331a The Ancient World: Israel

332a Europe in the Early Middle Ages

334 The Age of Reformation

344a History of the Church: Early Christianity

344b History of the Church: The Middle Ages

## Interdisciplinary

70 Issues in Contemporary Religious Thought

## Music

5 Introduction to Non-Western Music

321 Music of the Middle Ages

## Philosophy

102 Philosophy of Religion

170 Asian Philosophy

323 Problems in Philosophical Theology

## Sociology

264 Sociology of Religion





## Program

The School of Business Administration at the University of Missouri-St. Louis was established in 1967 with the purpose of bringing public supported collegiate education in business to the St. Louis area. The school currently offers work leading to the degree of bachelor of science in business administration (B.S.B.A.) and a master's of business administration (M.B.A.). Both degree programs are accredited by the American Assembly of Collegiate Schools of Business which is recognized by the National Commission on Accrediting as the authorized professional accrediting body in collegiate business education.

The purpose of the School of Business Administration is to expand the liberal development of student capacities for communication, analysis, judgment, and the ability to relate to a total economic and physical environment.

The program leading to the B.S.B.A. represents a concentrated professional education in business. The required number of professional credit hours has purposely been kept at a minimum level to allow for a balanced educational program combining the best of both a liberal arts and professional degree. The degree requirements provide ample opportunity to develop an area of professional concentration in accounting, economics, finance, general management, management information systems, marketing, or quantitative science.

The program offered by the School of Business Administration toward the M.B.A. degree is listed in the *Graduate Bulletin*.

### Extension Programs

It has also been the goal of the School of Business Administration to provide, through the university's Extension Division, courses which would contribute to the continuing education of administrators and managers and which would enable these individuals to meet growing and changing needs from both a professional and personal perspective. During the last year, in cooperation with the university's Extension Division, the School of Business Administration has sponsored over

100 credit and noncredit courses in fulfilling this objective.

### University Year for Action

Since January of 1972 the School of Business Administration has participated with the Federal ACTION Agency in providing the opportunity for a small number of select students to spend one academic year working as an intern in one of several agencies concerned broadly with the area of business and economic development in the St. Louis metropolitan area. This program allows the student to earn a full year's academic credit in a program which combines both regular class room and internship credit. The program provides the unique opportunity for the junior or senior business student to test, in a practical setting, some of his or her university-gained knowledge. The students participating in this program receive a nominal monthly stipend from the federal government.

### Career Opportunities

The current economics climate appears to favor those students seeking careers for which their business training has prepared them. Graduates of the School of Business Administration are placed at job entry levels in areas which require accounting, finance, management, computer, marketing, and quantitative management backgrounds. It is important to note that the demand for individuals trained in these areas appears to be equally strong for females as well as males.

### Advising

All schedules should be formulated in cooperation with an academic adviser. Prospective business administration students should declare their major with the College of Arts and Sciences in their freshman year and plan to meet with an academic adviser in the School of Business Administration prior to the beginning of their sophomore year.

### Admission Requirements

The School of Business Administration is a two year, junior-senior level program. Prerequisites for admission to the school are:

1 At least a 2.00 average for all work attempted at UMSL and

2 At least a 2.00 average for all qualifying work with a minimum of 60 semester hours of credit. Qualifying work includes a maximum of 15 hours of introductory courses in business administration (courses numbered below 200). The rest of the 60 hours must come from nonbusiness courses in arts and sciences and such other disciplines as may be supportive of the study of business.

Normally the qualifying work includes the following courses: Business Administration 140, Fundamentals of Financial Accounting and 145, Managerial Accounting; Economics 50 and 51, Principles of Economics I and II and Business Administration 131, Elementary Statistics.

It is important that students plan to complete these courses by the end of their sophomore year since they are prerequisite to virtually all upper division course work.

3 Completion of the combined university and School of Business Administration general education requirements.

#### **Transfer Students**

Transfer students applying for admission to the School of Business Administration are expected to meet the same requirements as those previously enrolled at UMSL. Those students who fail to meet any of these requirements may be given admission to the university even though they will not be directly admitted to the School of Business Administration.

#### **General Education Requirements**

All students must meet the university general education requirements as listed on page 30. In addition, the student must meet the specific general education requirements as outlined by the School of Business Administration. The following indicates how the business student may integrate these specific requirements with the broader university general education requirements.

#### **Minimum Mathematics Proficiency**

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 30, College Algebra or Mathematics 40, Pre-Calculus Mathematics is prerequisite to Mathematics 102, Finite Mathematics.

#### **Social Science Requirement**

In choosing the courses to be used in meeting the social science portion of the general education requirements, the student should be aware of the following business school requirements: all students are required to take Economics 50 and 51, Principles of Economics I and II, and all students are required to take two courses in the behavioral sciences (psychology, sociology or anthropology).

#### **Non-Euro-American Requirement**

As a part of the student's general education background one course in a non-Euro-American subject is required of all business students.

#### **Degree Requirements**

The following is a summary of the requirements for the B.S.B.A. degree which includes those specific general education requirements previously outlined:

#### **General Education Requirements 42 hours**

The combined effect of the university general education requirements and the specific preprofessional requirements of the business school is as follows:

English composition (a minimum grade of C or demonstrated proficiency);

Three courses in the humanities to be chosen from the areas of art appreciation, music appreciation, philosophy, or literature;

Five courses in social science to include Economics 50 and 51, one course to meet the state requirement, and two courses in behavioral science to be chosen from anthropology, psychology, or sociology;

## Program

Three courses in math-science to include minimum proficiency in Mathematics 102, Finite Math (this requires a proficiency of college algebra) and a minimum of one lecture course in either a biological or physical science; and

One course in a non-Euro-American subject.

### Language or Math Option

Each student is required to choose one of the following options:

thirteen (13) hours of one foreign language; or  
a minimum of Mathematics 101, Survey Calculus (Mathematics 80, Analytic Geometry and Calculus I, should be taken by those students who plan to pursue any further calculus); and

one quantitative course from the following options: Business Administration 231, Intermediate Statistics; B.A. 308, Production and Operations Management; B.A. 331, Multivariate Analysis; B.A. 375, Operations Research; B.A. 385, Mathematical Programming; Economics 365, Econometrics; Math 175, Analytic Geometry and Calculus II.

The 13 hours of foreign language do not fulfill any specific requirements within the general education requirements and therefore should be counted among the hours designated as free electives.

### Required Business Courses 45 hours

131 Elementary Statistics (3)  
140 Fundamentals of Financial Accounting (3)  
145 Managerial Accounting (3)  
106 Basic Marketing (3)  
156 Legal Environment of Business (3)  
202 Fundamentals of Production (3)  
204 Financial Management (3)  
210 Management as a Behavioral Science I (3)  
391 Business Policy and Administration (seminar) (3)  
Business Electives - a minimum of 18 hours.

### Free Electives 33 hours

There are approximately 33 free elective

hours. Up to nine of these hours may be taken in the School of Business Administration; the remaining must be earned outside of the school.

### Total Hours 120

### 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 up to 18 hours beyond the required courses. The combined hours in business and economics courses may not exceed 78.

### Pass-Fail Option

The business student may elect to take up to 24 hours of course work on a pass-fail basis. Specifically exempted from the pass-fail option, however, are those courses designed to fulfill a School of Business Administration specific course requirement. This would mean that not available to be taken on a pass-fail basis are such courses as: Economics 50 and 51, courses taken to fulfill the Math-Language option, and the required business courses.

The business student may elect to take up to 12 of the allowed 24 pass-fail hours in School of Business Administration electives. The nonbusiness major may take any business administration course on a pass-fail basis provided prerequisites are met and this is in compliance with the student's degree requirements.

Students transferring from other institutions are required to complete a minimum of 21 hours of credit in the area of business at UMSL on a regular graded basis.

## Faculty

- Emery C. Turner Dean  
Professor  
D.B.A., Washington University
- Donald H. Driemeier Associate Dean, Associate  
Professor  
D.B.A., Washington University
- Sioma Kagan Professor  
Diplom-Ingenieur, Ph.D., Columbia University
- Robert E. Markland Professor  
D.B.A., Washington University
- Frederick E. May Professor  
Ph.D., University of Michigan
- Robert S. Stich Professor  
Ph.D., Oklahoma State University
- Fred J. Thumin Professor  
Ph.D., Washington University
- Dik Twedt Professor  
Ph.D., Northwestern University
- Albert P. Ameiss Associate Professor  
Ph.D., St. Louis University
- John J. Anderson Associate Professor  
Ph.D., University of Wisconsin-Madison
- Howard Baltz Associate Professor  
Ph.D., Oklahoma State University
- Vincent B. D'Antoni Associate Professor  
D.B.A., Washington University
- David P. Gustafson Associate Professor  
Ph.D., Stanford University
- John F. Kottas Associate Professor  
Ph.D., Northwestern University
- R. Frank Page Associate Professor, C.P.A.  
Ph.D., University of Illinois
- Robert A. Schuchardt Associate Professor  
D.B.A., Washington University
- Norbert C. Terre Associate Professor, C.P.A.  
D.B.A., Washington University
- James P. Tushaus Associate Professor  
Ph.D., University of Illinois
- George C. Witteried Associate Professor  
M.B.A., J.D., Northwestern University
- Larry D. Baker Assistant Professor  
D.B.A., Indiana University
- Nicholas DiMarco Assistant Professor  
Ph.D., Case Western Reserve University
- Douglas E. Durand Assistant Professor  
Ph.D., Washington University
- David R. Ganz Assistant Professor  
M.S. in C., St. Louis University
- Joseph P. Giljum Assistant Professor, C.P.A.  
J.D., St. Louis University  
L.L.M., New York University
- J. Ronald Hoffmeister Assistant Professor  
Ph.D., University of Illinois
- Richard E. Homans Assistant Professor  
Ph.D., University of Houston
- Franklin S. Houston Assistant Professor  
Ph.D., Purdue University
- Charles R. Kuehl Assistant Professor  
Ph.D., University of Iowa
- Hon-Shiang Lau Assistant Professor  
Ph.D., University of North Carolina
- Robert M. Nauss Assistant Professor  
Ph.D., University of California-Los Angeles
- Steven D. Norton Assistant Professor  
Ph.D., Case Western Reserve University
- L. Douglas Smith Assistant Professor  
Ph.D., University of Minnesota
- Earl Wims Assistant Professor  
Ph.D., University of Iowa
- Albert E. Avery Instructor  
M.S.
- Jack D. Becker Instructor  
M.B.A.
- David Bird Instructor  
M.S.
- John Blodgett Instructor  
M.A.
- Lindell P. Chew Instructor  
M.B.A.
- John E. Cox Instructor  
M.A.
- James Davis Instructor  
M.B.A.
- William P. Heinbecker Associate Director,  
Computer Center, Instructor
- James M. Krueger Instructor  
M.B.A.
- Donald R. Kummer Instructor  
M.B.A.
- Sam R. Lloyd Director, Organizational Development  
Programs, Instructor  
M.B.A.
- Kenneth Locke Instructor  
M.B.A.
- R. Neil Maddox Instructor  
M.B.A.

Faculty

Description of Courses

Booker Middleton Instructor  
M.A.

Rita M. Montgomery Instructor  
M.S., J.D.

Earl Salsman Instructor  
M.S. in C., C.P.A.

Alan C. Schuermann Instructor  
M.A.

Elbert A. Walton Instructor  
M.B.A., J.D.

Prerequisites may be waived by consent of department.  
\*Starred prerequisites may be taken concurrently with listed offering.

**104 Introduction to FORTRAN Programming (3)**  
A study of the principles of programming digital computers using the FORTRAN language.

**106 Basic Marketing (3)**  
Prerequisite: Fundamentals of Accounting 140, Economics 51, and \*Elementary Statistics 131. 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 Introduction to COBOL Programming (3)**  
Fundamentals of computer programming using the COBOL language. The programming of business applications for the computer is stressed.

**110 Introduction to Management Information Systems (3)**  
Prerequisite: None. The systems concept and systems analysis are studied, which includes the definition of a system. Financial cost accounting and generalized management information systems are analyzed. The social implications of such systems are examined.

**131 Elementary Statistics (3)**  
Prerequisite: Mathematics 102. 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. Formerly Elementary Statistics 31.

**140 Fundamentals of Financial Accounting (3)**  
Prerequisite: Sophomore standing. A one semester course in financial accounting theory and practices with primary emphasis upon the accounting cycle and the preparation of financial statements for proprietary, partnership and corporate entities.

**145 Managerial Accounting (3)**  
Prerequisite: Accounting 140 or equivalent. This is an advanced course in accounting that goes beyond the scope of a second semester course in fundamentals; and emphasizes the development, interpretation and use of relevant cost behavior, control and traceability concepts for purposes of management planning, controlling and decision-making. Topics include: the contribution concept, direct costing, performance standards and variance analysis, responsibility accounting, segment profitability, alternative choice decisions and capital budgeting.

**156 Legal Environment of Business (3)**  
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 131 and 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: Managerial Accounting 145, Economics 51 and \*Elementary Statistics 131. 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.

**210 Management as a Behavioral Science I (3) (Formerly 310)**

Prerequisite: Statistics 131, and three hours in Anthropology, Psychology or Sociology. Organization theory examined as to its historical basis and current status, from a systems perspective. Nature and relevance of individual and organizational goals considered. Technological and structural influence on organizational behavior is examined. Characteristics of individuals and groups in an organization context explored.

**224 Introduction to Systems Programming (3)**

Prerequisite: Grade of "A" or "B" in Introduction to FORTRAN 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 131, 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)**

Same as Economics 253. 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 Economics 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 promotionals, 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.

**289 Career Planning (1)**

Prerequisite: A minimum of Junior standing. The emphasis of this course will be to assist business students to develop an understanding of themselves as related to employment, to develop an understanding of the world of work, and to integrate these so that effective career decisions can be made.

**295 Business Administration Problems (1-10)**

Prerequisites: To be determined each time the course is offered. Study of selected special problems in business and administration. May be repeated for credit with different topics.

**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: Basic Marketing 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 phenomenon-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



Description of Courses

heavily to enhance decision-making in marketing, especially the selection, allocation, budgeting and forecasting of marketing resources.

**305 Computer Systems (3)**

Prerequisite: BA110, or BA109 if prior to Fall 1975, or consent of instructor. Computer systems, their hardware and basic operating software, are studied with attention to the factors involved in computer system implementation and maintenance. Examples of integrated business computer systems, including communication systems, are analyzed.

**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.

**311 Management as a Behavioral Science II (3)**

Prerequisite: Management as a Behavioral Science I 210. Using a task, people, structure and technology perspective, the organization is viewed as a social-technological system. Various methods of changing organizations to meet both individual and organizational goals are considered through the use of cases, exercises and readings.

**312 Industrial and Labor Relations (3)**

Prerequisite: Management as a Behavioral Science I 210. 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 101 or Management as a Behavioral Science 210. 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 131, 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 with a minimum grade of "C" and Managerial Accounting 145 and "Elementary Statistics 131. 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: 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 with a minimum grade of "C" and Managerial Accounting 145, (or consent of instructor). 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 objects 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. Prerequisite: Economics 220. Discussion of factors affecting economic conditions, short-term fluctuations in business activity and plans and policies for economic stabilization. Emphasis on problems and techniques of forecasting aggregate and industry demand.

**375 Operations Research (3)**

Prerequisite: Elementary Statistics 131, Mathematics 101 and Mathematics 102. Application of the theories and techniques of operations research to problems of business, government and industry; with emphasis on the construction and utilization of quantitative decision models.

**380 International Business (3)**

Prerequisite: Economics 51. U.S. in the world economy; emerging nations; foreign exchange market; foreign investment; commercial documents; world trade; management of enterprises abroad.

**385 Mathematical Programming (3)**

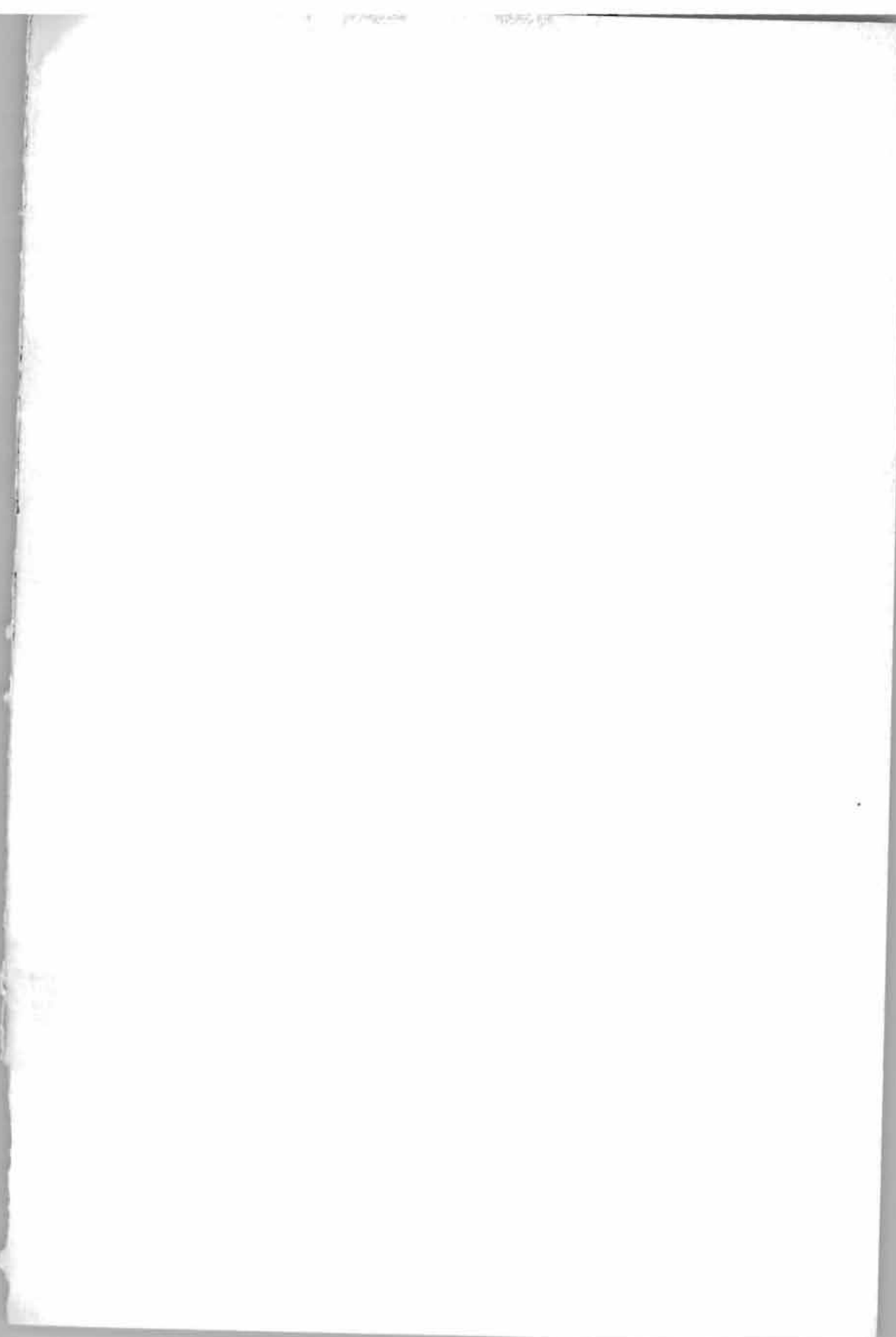
Prerequisite: Elementary Statistics 131, Mathematics 101 and Mathematics 102. A study of mathematical programming theory and algorithmic developments. Consideration is given to linear programming, integer programming, quadratic programming, dynamic programming and other related techniques.

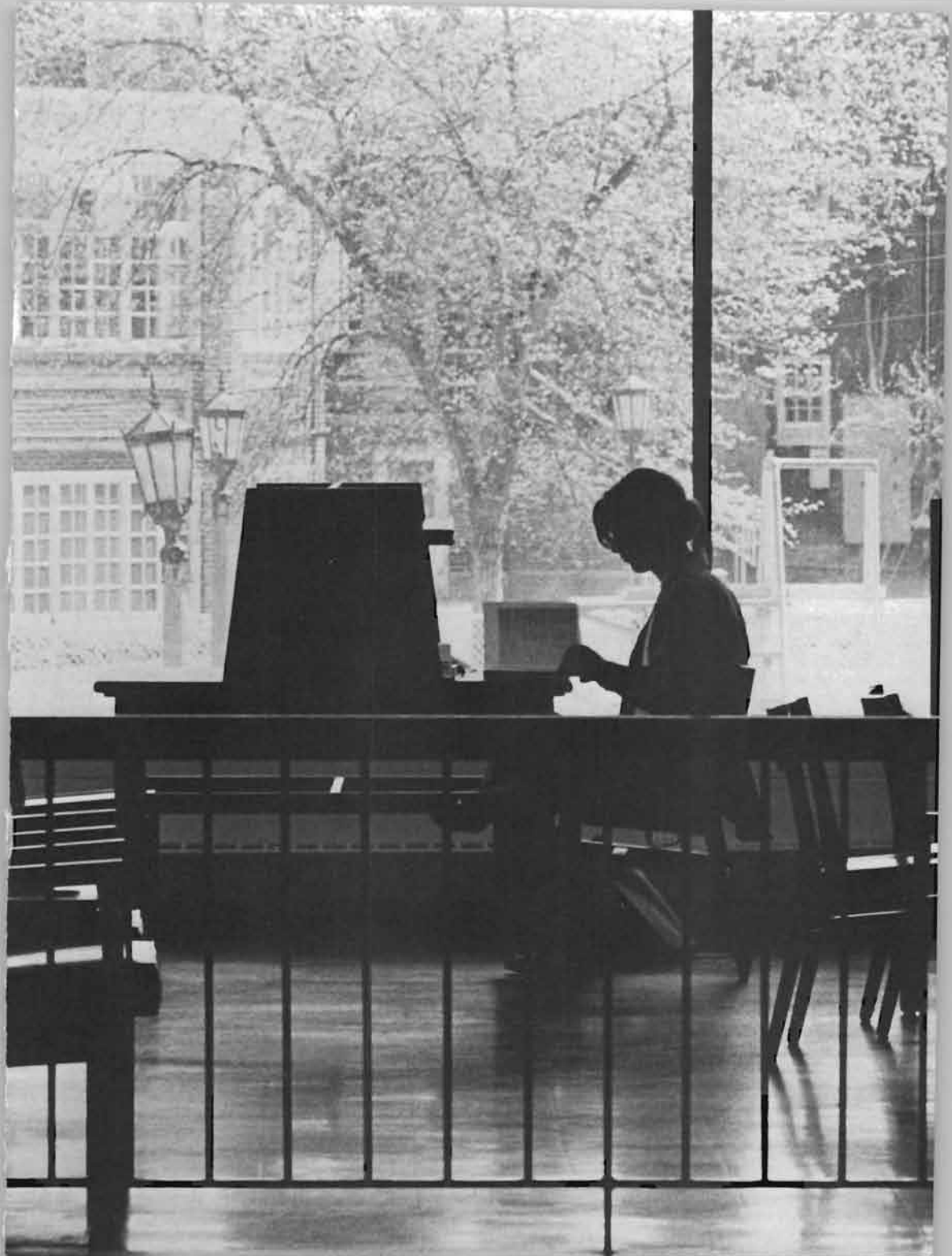
**391 Business Policy and Administration (3)**

Prerequisite: Senior standing, Basic Marketing 106, Financial Management 204 and Management as a Behavioral Science 210. 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 operation 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).

**395 Business Administration Seminar (1-10)**

Prerequisite: To be determined each time the course is offered. May be repeated for credit.





Program

**Program**

The School of Education acts on the premise that the process of developing and maintaining a quality educational setting in an urban area necessitates both advancing the field of education and meeting changing societal needs. It is committed to the university concept of quality in research, excellence in teaching, and the extension of these research and teaching capabilities through a service commitment to the community.

The school meets its commitment to research, teaching, and service in part through the teacher education program, for which it is responsible. It offers curricula leading to 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. The school meets the needs of students by offering its undergraduate programs through both the day division and the Evening College.

Programs leading to the master of education degree are offered in elementary education, secondary education, elementary and secondary school administration, and elementary and secondary school counseling. Within these programs, graduate courses are available which allow for areas of emphasis in reading, special education (emotional disturbance, mental retardation and learning disabilities), educational psychology, junior college counseling, employment counseling, psychological examination, research and evaluation, and some academic disciplines.

The University of Missouri-St. Louis, through 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.

**Extension Activities**

In conjunction with the Extension Division, the School of Education provides courses that help those at the undergraduate, graduate, and inservice levels who wish to extend their professional skill and knowledge.

The School of Education in cooperation with the Extension Division also extends research and service to educational personnel in the St. Louis metropolitan area, as well as to those in other parts of Missouri and the Midwest. The School of Education and Extension Division cooperate in identifying off-campus preservice and inservice educational needs. To the extent that available resources allow, the School of Education meets these needs. The Extension Division encourages continuing education in all areas relating to school personnel and administers details of off-campus credit and noncredit courses.

**Admission Requirements**

Students who wish to prepare for careers in teaching must be aware of two types of admission within the university. One is admission to the School of Education, the other is admission to the teacher education program. Admission to one is not the same as admission to the other. These are completely separate procedures handled by different offices.

**Admission to the School of Education**

After completing two years of college course work at an accredited institution, students who intend to teach in elementary, early childhood, special education, business education, or physical education settings must apply for admission to the School of Education. Students who intend to teach in other secondary school classrooms may elect to apply for admission to the School of Education in order to pursue courses of study culminating in the bachelor of 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: Students

admitted to the School of Education must also be admitted to the teacher education program.

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.

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 requirements of the curriculum area for which the student is applying must be met.

Application for admission to the School of Education is processed by the Office of Admissions and Records.

#### **Admission to Teacher Education**

The teacher education program, administered by the School of Education, is open to all students who intend to become teachers regardless of the college or school in which they are enrolled. The admission policies and procedures are designed to ensure early identification of all students who desire to become teachers in order that they may receive guidance in the selection of the most appropriate sequence of courses and experiences. This allows time for correction of deficiencies that would hinder teaching competence and it permits students to examine, with assistance, the depth of their interest in a teaching career.

The admission program requires student action at three stages or levels. The first of these, Level I, occurs at the conclusion of 30 semester hours of university course work. At that time students should apply for admission to candidacy. The application requires information concerning health, reasons for becoming a teacher, previous experiences working with children and/or

youth, and grades received in university level courses. Upon favorable action by the Teacher Education Council, students will be accepted as official candidates for admission to the teacher education program.

The second stage, Level II, requires that upon completion of 60 semester hours of approved course work, official candidates apply for formal admission to the teacher education program. Requirements for admission are a minimum of 60 semester hours of approved course work with a grade point average of 2.0 or higher and completion of Education 101 or equivalent with a grade of C or better.

They must also submit an Affidavit of Moral Character.

Students and their advisers will be notified of their status by the Teacher Education Council.

Application forms for Levels I and II and Affidavit of Moral Character may be obtained in the Office of Teacher Education Advisement and Certification, 461 Social Sciences, Business, and Education Building (SSBE). Students are responsible for making application at both levels.

The third stage, Level III, consists of applying for admission to student teaching. Students must make formal application for admission to student teaching at least one full semester prior to the one in which they plan to do their student teaching.

Applications must be filed during the periods designated by the Office of Clinical Experiences, 461 SSBE. Application forms are available in that office during the first four weeks of the semester preceding the semester in which students plan to do their student teaching. Upon receipt of students' formal applications, they will be checked to ensure that the students meet these requirements:

1 Full admission to the teacher education program.

Program

2 Completion of 90 semester hours of approved course work.

3 A grade point average of 2.2 or above must be attained one semester prior to the one in which students plan to do their student teaching. This requirement went into effect with all students who did 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. Lists of these courses are available in the Office of Teacher Education Advisement and Certification, the Office of Clinical Experiences, and from advisers. This requirement went into effect starting with all students who did 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.  
Business Education  
Ed. 101, 163, 231, 232, 235, 236, 237, 238.  
Also Psy. 171.

Early Childhood Education  
Ed. 101, 140, 150, 302, 315, 316, 317, 318, 325. Also Psy. 170

Elementary Education  
Ed. 101, 140, 150, 151, 152, 153, 302, 325.  
Also Psy. 170.

Physical Education  
Elementary School Option: Ed. 101, 140.  
Also Psy. 170.  
Secondary School Option: Ed. 101, 163.  
Also Psy. 171.

Secondary Education  
Ed. 101, 163, 365 (English Education only).  
Also Psy. 171.

Special Education  
Ed. 101, 140, 150, 151, 152, 153, 240, 302, 311, 313, 325. Also Psy. 170.

Note: Students in the business education, physical education, and secondary education programs are strongly urged to take Ed. 302 prior to student teaching. Special education students are advised to complete Ed. 310, 312, 369, and 390 before they do their student teaching.

8 Completion at UMSL 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. This requirement went into effect starting with all students who did their student teaching during the 1973-74 academic year.

A Missouri School Personnel Health Certificate signed by a physician and a chest x-ray report, both valid for the year in which the students will do their student teaching, must accompany the application forms. Missouri School Personnel Health Certificates are available in the Office of Clinical Experiences (461 SSBE).

**General Education Requirements**

Undergraduate students in the School of Education follow the general regulations of the university and departmental requirements listed on page 30.

**Office of Teacher Education Advisement and Certification**

The Office of Teacher Education Advisement and Certification (461 SSBE) 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; others 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.

#### **Certification**

In cooperation with the Missouri State Department of Education, the School of Education is responsible for issuing teaching certificates to students who have completed the requirements for the bachelor of science in education degree.

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 all certification requirements. In addition, the school has responsibility for advisement and recommendation to the State Department of Education of those postdegree students seeking teacher certification.

Certification in the following teaching fields may be obtained by completing undergraduate programs at UMSL: elementary education, early childhood education, special education (E.M.R.), music education, and physical education plus the secondary education areas of biology, business education, chemistry, English, foreign language (French, German, Spanish), mathematics, physics, and social studies.

All requests and inquiries regarding certification should be directed to the Office of Teacher Education Advisement and Certification, 461 SSBE.

#### **Application for Degree and/or Certificate**

Students who will receive the bachelor of science in education degree must complete the application for degree card and Application for Missouri Teacher's Certificate forms in the Office of Teacher Education Advisement and Certification at the time they apply for admission to student teaching or during the semester prior to the one in which they expect to finish degree requirements.

Students seeking the bachelor of arts degree with teacher certification must go to the Office of Teacher Education Advisement and Certification during the last month of the semester in which requirements are completed and fill out the state certification forms.

#### **Office of Clinical Experiences**

All matters pertaining to off-campus clinical experiences in teacher education are the responsibility of the Office of Clinical Experiences. Arrangement for these clinical experiences are handled by this office. 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 page 173. 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,

Program

and time of school officials protected, are the bases for this policy. Failure to observe this request is grounds for removal from student teaching.

Four other policies should be noted.

1 Student teaching is not offered during the summer or in the evening.

2 Student teaching must be done in residence.

3 During the semester in which students enroll for student teaching, the maximum load they may carry is 15 semester hours, six of which are in student teaching (Education 251, 252, or 271).

4 The student teaching seminar is an integral and regularly scheduled part of the student teaching course for those in the early childhood, elementary, and special education programs.

Requests for further information about student teaching policies and procedures should be directed to the Office of Clinical Experiences in the School of Education, 461 SSBE.

**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 houses 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 affords opportunities for students to acquaint themselves with and develop their skills in using instructional media.

The Instructional Television Laboratory provides resources 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 the policies and procedures of the Resource Center should be directed to the Coordinator of the Teacher Education Resource Center in the School of Education, 461 SSBE.

**Educational Services**

The Educational Services Center (427 SSBE) 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.

## Administration, Foundations, and Secondary Education

### Program

At the undergraduate level, the Department of Administration, Foundations, and Secondary Education coordinates programs that prepare students for teaching in secondary schools (grades 7-12). An unusual feature of these programs is the close interdisciplinary cooperation between the professional school and the departments in other university divisions. Joint appointees provide liaison, teach special methods classes, and supervise student teachers. In addition to interdisciplinary preparations, business education and physical education majors are offered within the School of Education (see pages 178 and 183 respectively).

Options open to undergraduate students include either the bachelor's degree in arts and sciences plus certification or the bachelor of science in education degree which carries with it Missouri certification. Business education and physical education programs culminate in the bachelor of science in education degree only. Post-baccalaureate students may earn secondary certification.

Early advisement and careful planning are essential in the pursuit of secondary education programs. Joint appointees and other designated advisers in the College of Arts and Sciences are prepared to advise prospective teachers, as are personnel in the Office of Teacher Education Advisement and Certification.

### Graduate Programs

NCATE approved master in education programs are offered in secondary education, elementary administration, and secondary administration. In addition, administrative certification for AA schools may be earned in a sixty-hour program.

### Interdisciplinary Program

In addition to the university general education requirements listed on page 30, interdisciplinary preparations, totaling 120 hours, include the following requirements:

#### Program Requirements

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

#### Education

- 101 The School in Contemporary Society (3)
- 163 Techniques of Secondary School Teaching (3)

#### Psychology

- 171 Adolescent Psychology (3)

#### Education

- 302 Psychology of Teaching and Learning (3)
- Methods Course in Teaching Major (3)
- 271 Secondary School Student Teaching (6)

Total 21 hours

**Note:** Postdegree certification students may take Education 322 in lieu of Education 101.

### Teaching Fields

Secondary teaching fields require 30 to 40 hours of specific subject requirements in one of the following areas:

English education, foreign language education (French, German, Spanish), mathematics education, music education (see page 81), science education (biology, chemistry, physics) and social studies education.

**Note:** Social studies education students must complete an academic major in one of the following disciplines: economics, history, political science, psychology, or sociology and meet these minimum hour requirements in the social sciences: American history 9 hours, European or world history 9 hours, U.S. and/or state government 6 hours, economics 6 hours, sociology 3 hours, geography 3 hours.

Electives 17-27 hours

Administration, Foundations, and  
Secondary Education

**Business Education**

In addition to the university general education requirements listed on page 30, business education majors must complete the following requirements, totaling 120 hours:

**Program Requirements**

Education

- 101 The School in Contemporary Society (3)
- 163 Techniques of Secondary School Teaching (3)

Psychology

- 171 Adolescent Psychology (3)

Education

- 302 Psychology of Teaching and Learning (3)
- 261 Curriculum and Methods of Teaching Business Subjects (3)
- 271 Secondary School Student Teaching (6)

Total 21 hours

**Note:** Postdegree certification students may take Education 322 in lieu of Education 101.

**Academic Major**

The requirements for a major in business education include work in secretarial training and business administration.

Education

- 231 Methods of Teaching Typewriting (3)
- 232 Methods of Teaching Shorthand (3)
- 235 Methods of Teaching Accounting and Data Processing (3)
- 236 Methods of Teaching Social Business Subjects (3)
- 237 Secretarial Practice (3)
- 238 Field Experience and Seminar in Secretarial Practice (3)

Business Administration

- 140 Fundamentals of Financial Accounting (3)
- 340 Intermediate Accounting Theory (3)

Economics

- 51 Principles of Microeconomics (3)

Business Administration

- 106 Basic Marketing (3)
- 256 Business Law or

- 156 Legal Environment of Business (3)

Total 33 hours

Electives 24 hours

Courses in this part of the program should be selected only after consultation with the adviser.

## Administration, Foundations and Secondary Education Faculty

Jerry L. Pulley Chairman, Associate Professor  
Ed.D., University of Missouri-Columbia

H. E. Mueller Director of Admissions  
and Registrar, Professor  
Ed.D., University of Missouri-Columbia

John S. Rigden Professor  
Ph.D., Johns Hopkins University

Wilburn Shannon Visiting Professor Extension  
Division  
Ed.D., Harvard University

Harold E. Turner Professor  
Ed.D., George Peabody College

Henry R. Weinstock Professor  
Ed.D., University of Georgia

Joy E. Whitener Dean, Evening College, Professor  
Ed.D., Washington University

Walter Ehrlich Associate Professor  
Ph.D., Washington University

Robert R. Gard Associate Dean,  
School of Education, Associate Professor  
Ed.D., Arizona State University

Donald R. Greer Coordinator Teacher  
Education Resource Center, Associate Professor  
Ph.D., University of Missouri-Columbia

Robert B. Jones Assistant to the Chancellor,  
Associate Professor  
Ed.D., Indiana University

A. L. King Associate Professor  
Ph.D., Texas Tech University

Jon Marshall Associate Professor  
Ed.D., University of Kansas

Angelo Puricelli Assistant Dean of Education for  
Extension Division, Associate Professor  
Ph.D., St. Louis University

Blanche M. Touhill Associate Dean of Faculties,  
Associate Professor  
Ph.D., St. Louis University

Paul D. Travers Associate Professor  
Ed.D., George Peabody College

Martin Behnke Assistant Professor  
M.A.,

Russell Cooper Assistant Professor  
Ed.D., Indiana University

Charles Fazzaro Assistant Professor  
Ed.D., West Virginia University

Charlyn Fox Assistant Professor  
Ph.D., Indiana State University

Richard J. Friedlander Assistant Professor  
Ph.D., University of California, Los Angeles

Charles Granger Assistant Professor  
Ph.D., University of Iowa

Larry Hale Assistant Professor  
Ph.D., University of Nebraska

Conney M. Kimbo Dean of Student Affairs,  
Assistant Professor  
Ph.D., University of Iowa

Jane A. Miller Assistant Professor  
Ph.D., Tulane University

Everett Nance Director, Midwest Community  
Education Center, Assistant Professor  
Ed.D., Western Michigan University

Virgil N. Sapp Dean, Extension Division,  
Assistant Professor  
B.S.

Wendell L. Smith Assistant Dean, Extension Division,  
Assistant Professor  
Ph.D., Ohio State University

Robert J. Starr Assistant Professor  
Ed.D., University of Missouri-Columbia

Margaret Sullivan Assistant Professor  
Ph.D., St. Louis University

Martin Towey Assistant Professor  
Ph.D., St. Louis University

Donald Udell Assistant Professor  
Ed.D., Arizona State University

Fred Willman Assistant Professor  
Ph.D., University of North Dakota

Edith Young Assistant Professor  
Ed.D., University of Missouri-Columbia

Dorothy Doyle Instructor  
M.A.

Administration, Foundations, and  
Secondary Education  
Description of Courses

Prerequisites may be waived by consent of department.

**Business Education**

**30 Shorthand Theory I (2) (F)**

Prerequisite: Typewriting. Study of Gregg shorthand theory with emphasis on reading, writing and taking dictation at moderate rates. Not open to students with previous training in Gregg shorthand theory.

**31 Shorthand Theory II (2) (W)**

Prerequisite: Shorthand Theory I or equivalent and Business and Professional Typewriting I or equivalent. Review of Gregg Shorthand Theory; development of speed and accuracy in taking dictation; emphasis on transcribing techniques and office-style dictation.

**32 Business and Professional Typewriting I (2) (F)**

Prerequisite: Beginning Typewriting. Review of typewriting techniques and skills; development of speed and accuracy; instruction in the preparation of business and professional papers and forms with emphasis on word processing and secretarial typing.

**33 Business and Professional Typewriting II (2) (W)**

Prerequisite: Business and Professional Typewriting I or equivalent. Preparation of business and professional papers and forms in simulated office situations; instruction in typing short cuts.

**231 Methods of Teaching Typewriting (3) (F)**

Prerequisite: Intermediate Typewriting or equivalent. Instruction in the methods and techniques used to teach basic and advanced typewriting.

**232 Methods of Teaching Shorthand (3) (F)**

Prerequisite: Gregg Shorthand Theory II; transcription or equivalent. Instruction in methods and techniques used in teaching Gregg shorthand, dictation, and transcription with emphasis on planning and organizing a shorthand laboratory and a secretarial practice laboratory.

**235 Methods of Teaching Accounting and Data Processing (3) (W)**

Prerequisite: Business Administration 140, 340 or equivalent. Methods and techniques of teaching data processing and accounting in the secondary schools.

**236 Methods of Teaching Social Business Subjects (3) (F)**

Prerequisite: Economics 51, Business Administration 106, 256, 156. Methods and techniques of teaching general business, business law, economics, consumer economics and business principles and management in the secondary curriculum.

**237 Secretarial Practice (3) (W)**

Prerequisite: Education 31 and 33 or consent of instructor. Study of secretarial office procedures; office-style dictation for transcription; word processing; office machines; records management.

**238 Field Experience and Seminar in Secretarial Practice (3) (V)**

Prerequisite: Education 101, 237 and admission to the School of Education. Practical experience in office procedures. To be taken before student teaching.

**261 Curriculum and Methods of Teaching Business Subjects (3) (F&W)**

Prerequisite: Education 163, 231, 232, 235, 238 and near major in the subject matter. Study of the scope and sequence of business education courses in the high school curriculum, with emphasis on business English, distributive education program, organizations and publications. 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. Course meets first four weeks and last week of semester.

**300 Administration and Supervision of Office Personnel (3) (W)**

Prerequisite: Consent of instructor. An advanced course in office administration and supervision designed to meet the needs of business personnel involved in administrative office management work; emphasis on updating leadership and human relations skills, organizing, planning, controlling office services, and business data processing systems.

### Foundations

#### 320 Comparative Education (3) (V)

A comparative study of representative systems of education in South America, Europe and Asia in contrast with the American System.

#### 321 Progressivism and Modern American Education (3) (V)

Relationship between American progressive school theory and contemporary classroom practices, including the open classroom, the community school, the alternate school, open admissions, and learning by individual contract. Trends will be interpreted in the light of various roles of the classroom teacher in the modern school.

#### 322 History of American Education (3) (F&W)

Prerequisite: A course in American history or consent of instructor. An overview of the evolutionary development of American educational theory and practice from the early colonial period to the present. Attention is also given to selected issues in professional education.

#### 330 Educational Statistics (3) (V)

Statistical methods for teachers, supervisors, superintendents and beginning graduate students. Frequency distributions, measures of central tendency, variability, sampling and correlation.

#### 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.

#### 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.

### Secondary Education

#### 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.

#### 262 The Curriculum and Methods of Teaching English (3) (F&W)

Same as English 262. Prerequisite: Education 163 and a near major in the subject matter. 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.

#### 263 The Curriculum and Methods of Teaching Art (3) (V)

Prerequisite: Education 163 and a near major in the subject matter. A study of the scope and sequence of art courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of art. To be taken concurrently with student teaching.

#### 264 The Curriculum and Methods of Teaching Foreign Language (3) (F&W)

Same as French 264, German 264, Spanish 264. Prerequisite: Education 163 and a near major in the subject matter. A study of the scope and sequence of the foreign language courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of foreign language. To be taken concurrently with student teaching.

#### 265 The Curriculum and Methods of Teaching History and Social Studies (3) (F&W)

Same as History 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 (not counted as credit for a major in history). To be taken concurrently with student teaching.

#### 266 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



Administration, Foundations  
and Secondary Education  
Description of Courses

field of mathematics. To be taken concurrently with student teaching.

**267 The Curriculum and Methods of Teaching  
Secondary School Music (3) (W)**

Same as Music 267. 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 art courses, administrative procedures. The class is divided when appropriate according to the vocal or instrumental programs of the students.

**271 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.

**280 The Curriculum and Methods of Teaching  
Physical Sciences (3) (F)**

Same as Chemistry 280 and Physics 280. Prerequisite: Education 163 and a near major in the subject matter. A study of the scope and sequence of the physical science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of science. To be taken concurrently with student teaching.

**285 The Curriculum and Methods of Teaching the  
Life Sciences (3) (W)**

Same as Biology 285. Prerequisite: Education 163 and a near major in the subject matter. A study of the scope and sequence of the life sciences courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of science. To be taken concurrently with student teaching.

**352 Secondary School Curriculum (3) (V)**

Prerequisite: Education 163. Sources, scope and organization of the curriculum, modern trends and methods of investigation.

**365 Problems of Teaching Reading in Secondary  
Schools (3) (F,W,S)**

Prerequisite: Education 101. Methods and materials for improving reading in secondary school classes, including content fields.

**370 Field Study in Secondary Education (1-10) (V)**

Identification of specific problems in the area of secondary education. Course is conducted as a field study in the public schools. A maximum of eight credit hours may be applied toward an advanced degree contingent upon adviser approval.

## Behavioral Studies

### Program

The Department of Behavioral Studies coordinates course work in educational psychology, counseling, physical education, special education, and related areas. Programs leading to the bachelor of science in education degree are available in physical education and special education.

Two options are open to physical education majors: one for those who plan to be teachers of physical education in elementary schools, the other prepares those who will be secondary school physical education teachers. Students thinking of a career in physical education are urged to give careful consideration to teaching at the elementary school level. In either case, however, early advisement and careful planning are necessary.

The special education program prepares students to teach educable mentally retarded children. These students also receive certification as regular elementary or secondary school teachers upon completion of the special education curriculum. Given the nature of the program, students need to carefully plan their entire academic program in close consultation with advisers.

In addition to undergraduate and postdegree certification courses and curricula, programs are offered which lead to master of education degrees in elementary guidance and counseling, secondary guidance and counseling, and special education (educable mentally retarded, trainable mentally retarded, emotionally disturbed, and learning disabilities).

### Physical Education

The physical education program totaling 120 hours, provides one option for those who will teach in elementary schools and another for those planning to teach in secondary schools. The program includes:

#### General Education Requirements

##### English

Proficiency or English 10 (0-3)  
Speech 101 (recommended) (3)

##### Mathematics and Science (three courses)

Proficiency or Mathematics 02 (0)  
Chemistry 1 (recommended) (3)  
Biology 1 (recommended) (3)  
Biology 3 (recommended) (2)

##### Humanities (three courses) (9)

##### Social Sciences (three courses)

Psychology 3 (6)  
American History or Government (3)

##### Electives (10-13 hours)

Total (42 hours)

### Program Requirements

All students majoring in physical education are required to meet established proficiency levels in the following areas: aquatics (Life Saving Certificate), gymnastics (floor exercise), dance (ballroom dance), lifetime sports (tennis, golf, and bowling), and team sports (basketball, volleyball, and soccer).

Proficiency levels may be satisfied through independent study, sports instruction, or workshops. Generally, students will have two years to complete these proficiencies, which are required for entry into the corresponding analysis and teaching course. No credit hours are earned by satisfying this requirement.

The following theory of physical education courses are required:

##### Education

200 Human Anatomy and Physiology (4)  
202 Sports Medicine (3)  
203 Kinesiology (3)  
204 Physiology of Human Exercise (3)

**School of Education**

184

Behavioral Studies

- 205 Psychology of Sport (3)
- 206 Sociology of Sport (3)
- 207 History and Philosophy of American Physical Education and Sport (3)

Total (22 hours)

**Elementary School Option**

**Option Requirements**

The following courses concerning laboratory analysis in physical education are required:

Education

- 103 Analysis and Teaching of Social Dance (3)
- 104 Analysis and Teaching of Gymnastics (3)
- 105 Analysis and Teaching of Team Sports (3)
- 108 Clinical Experience in Elementary Physical Education (3)
- 110 Elements of Health Education (3)
- 155 Physical Education Activities in the Elementary School (3)
- 216 Rhythm and Movement (3)

Total (21 hours)

**Program Requirements**

Education

- 101 The School in Contemporary Society (3)
- 140 Elementary School Organization, Management and Techniques of Teaching (3)
- 251 Elementary School Student Teaching (6)
- 268 The Curriculum and Methods of Teaching Physical Education (3)
- 302 Psychology of Teaching and Learning (3)

Total (18 hours)

**Secondary School Option****Option Requirements**

The following courses concerning laboratory analysis in physical education are required:

## Education

- 102 Analysis and Teaching the Aquatic Sports (3)
- 103 Analysis and Teaching of Social Dance (3)
- 104 Analysis and Teaching of Gymnastics (3)
- 105 Analysis and Teaching of Team Sports (3)
- 106 Analysis and Teaching of Lifetime Sports (3)
- 109 Clinical Experience in Secondary Physical Education (3)
- 155 Physical Education Activities in the Elementary School (3)

Total (21 hours)

**Program Requirements**

## Education

- 101 The School in Contemporary Society (3)
- 163 Techniques of Secondary School Teaching (3)
- 271 Secondary School Student Teaching (6)
- 268 The Curriculum and Methods of Teaching Physical Education (3)
- 302 Psychology of Teaching and Learning (3)

Total (18 hours)

**Special Education**

The Special Education curriculum, totaling 120 hours, is designed for students who wish to become teachers of the educable mentally retarded. These students also receive certification as regular elementary or secondary school upon completion of the special education programs.

**General Education Requirements**

English, Speech - six hours

English 10 (3)

Speech (3)

Mathematics - six hours

Mathematics 50 and 151 (No credit toward graduation is granted for Mathematics 15 unless both Mathematics 50 and 151 are completed).

Science - eight hours

Biological Science (3)

Physical Science (3)

Science Lab (2)

Humanities - eight hours

Music 134 plus two courses chosen from the fields of art, music, philosophy, and literature

Social Science - 15 hours

Psychology 3 and 170 (6)

Political Science 11, 176, or 170 (3)

History 3, 4, or 5 (6)

Geography 101 (3)

**Related Area Requirements**

Music 137 (2)

Art 139 (3)

110 Elements of Health Education (3)

155 Physical Education Activities in the Elementary School (3)

Total (11 hours)

**Program Requirements**

## Education

101 The School in Contemporary Society (3)

140 Elementary School Organization, Management and Techniques of Teaching (3)

150 Children's Literature and Language Arts (3)

Behavioral Studies

- 151 Teaching of Science in the Elementary School (3)
- 152 Teaching of Social Studies in the Elementary School (3)
- 153 Teaching Mathematics in the Elementary School (3)
- 302 Psychology of Teaching and Learning (3)
- 325 Teaching Reading in the Elementary School (3)

Total (24 hours)

Note: Post degree certification students may take Education 322 in lieu of Education 101.

**Special Education Requirements**

Education

- 313 Psychology of the Exception Child (3)
- 311 Introduction of Mental Retardation (3)
- 312 Speech and Language Problems of Exceptional Children (3)
- 240 Education of the Mentally Retarded (3)
- 310 Interpretation of Educational Tests and Measurements (3)
- 369 Analysis and Correction of Reading Disabilities (3)
- 390 Behavior Management (3)
- 252 Elementary School Student Teaching in Special Education (6)

Total (27 hours)

Electives (12 hours)

Note: With consent of their adviser students who enrolled in their first Special Education class after September 1, 1973 may omit one of the following: Education 110, 137, 139, 155, 151, or 152.

## Behavioral Studies Faculty

Arthur E. Smith Chairman, Professor  
Ph.D., St. Louis University

William L. Franzen Dean, School of Education,  
Professor  
Ph.D., University of Wisconsin

Thomas E. Jordan Dean, Graduate School,  
Professor  
Ed.D., Indiana University

George E. Mowrer Professor  
Ed.D., University of Missouri-Columbia

Harold W. Richey Professor  
Ph.D., University of Kansas City

King M. Wientage Professor Emeritus  
Ed.D., Washington University

Gaylen Wallace Associate Professor  
Ed.D., Oklahoma State University

Walter J. Cegelka Associate Professor  
Ed.D., Syracuse University

Margaret C. Fagin Associate Professor  
Ed.D., Syracuse University

Rickey L. George Associate Professor  
Ph.D., Northwestern University

W. Ray Rhine Associate Professor  
Ph.D., University of Texas

Charles G. Smith Associate Professor,  
Athletic Director  
M.S.

Patricia Jakubowski-Spector Associate Professor  
Ed.D., University of Illinois

Bruce Clark Assistant Professor  
Ph.D., University of Illinois

Therese Cristiani Assistant Professor  
Ed.D., Indiana University

Dennis Fallon Assistant Professor  
Ph.D., University of Minnesota

Barbara Fulton Assistant Professor  
Ph.D., University of Missouri-Columbia

Thomas Loughrey Assistant Professor  
Ph.D., University of Iowa

Sister Sara Rowland Assistant Professor  
Ph.D., St. Louis University

Donald Soltz Assistant Professor  
Ph.D., University of Chicago

Steven Spaner Assistant Professor  
Ph.D., Southern Illinois University-Carbondale

Richard Thurman Assistant Professor  
Ph.D., St. Louis University

George Yard Assistant Professor  
Ph.D., St. Louis University

Eleanor Cecil Instructor  
M.Ed.

Doris Knight Instructor  
M.Ed.

Barbara Mann Instructor  
M.S.

## Behavioral Studies Description of Courses

Prerequisites may be waived by consent of department.

### Physical 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 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 Lifetime Sports (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 155. Early professional preparation in elementary school physical education process and practice. Seminar precedes and accompanies clinical experience.

#### 109 Clinical Experience-Secondary Physical Education (3) (W)

Prerequisite: Consent of instructor. Supervised experience in junior or senior high 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. Considers health as it relates to the school and the child.

#### 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.

#### 200 Human Anatomy and Physiology (4) (F)

Prerequisite: Biology 1 and 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: Education 200. A study of the medical supervision of sports participants, training, prevention and care of injuries. Course grants Red Cross First Aid Certificate.

#### 203 Kinesiology (3) (W)

Prerequisite: Education 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: Education 200. A study of the physiological effects of human exercise and sport activities upon the human body; exercise metabolism, work and fatigue; development of strength and flexibility; and cardiorespiratory effects of exercise.

#### 205 Psychology of Sport (3) (F)

Prerequisite: Psychology 1, 2, and 170 or 171. A study of the following aspects of psychology as they influence performance in sport and physical activity; learning, retention, transfer, practice, motivation, anxiety, stress, relaxation and fatigue.

#### 206 Sociology of Sport (3) (W)

Prerequisite: Sociology 1 or 10. Study of sport in the socio-cultural process of school and society.

#### 207 History and Philosophy of American Physical Education and Sport (3) (F)

Prerequisite: Junior standing. A chronological study of the role of sport in American society and the development of physical education as a profession. Of particular interests will be the effect of religion, philosophy, economics, politics and education upon physical education and sport.

#### 210 Special Topics in Physical Education (1-3) (V)

Prerequisite: Consent of instructor. Independent study through readings, reports, field study or research.

#### 214 Physical Growth and Motor Development (3) (V)

Prerequisite: Psychology 170 and Education 155. Examination of physical growth and motor development of the human being from infancy through pre-adolescence. Emphasis on evaluative tools, techniques and studies of research findings. Laboratory and field experience for observation of infants and children. Participation in practical development of experimental environment that is to facilitate neuropsychological competency of pre-school aged children. Elective course suggested for students of early childhood, special education, elementary education, and physical education.

#### 216 Rhythm and Movement (3) (W)

Prerequisite: Education 155. Exploration into locomotor, non-locomotor forms and expressive movement through rhythm for children. Implications



for methodology in concept teaching for elementary educators.

**221 Growth and Development (3) (W)**

Comprehensive study of chronological age norms and the process of growth and development throughout the entire life span. There will be special emphasis on childhood, adolescence, and senescence.

**268 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.

**Special Education**

**240 Education of the Mentally Retarded (3) (F,W,S)**

Prerequisite: Education 101, 313, 311 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 School Student Teaching in Special Education (6) (V)**

Prerequisite: Education 240, 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 Exceptional Children (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.

**313 The Psychology of Exceptional Children (3) (F,W,S)**

Prerequisite: Psychology 170. A study of the unique psychological problems of children who deviate from the normal. Required of all majors in Special Education.

**390 Behavior Management (3) (F,W,S)**

Prerequisite: Education 313 and an appropriate introductory course in special education area of concentration. An in-depth exploration of various behavior control techniques that are particularly applicable to exceptional children. Students will be required to conduct at least one behavior modification project with exceptional children.

Behavioral Studies  
Description of Courses

**Educational Psychology**

**302 The Psychology of Teaching and Learning (3)**  
(F,W,S)

Prerequisite: Education 101, Psychology 170 or 171, and admission to the School of Education.

Application of the principles of psychology to an understanding of the dynamics of teaching behavior and learning behavior. Involves both theoretical and practical approaches to analysis of the learning environment of the school. Required of all who are preparing to teach.

**310 Interpretation of Educational Tests and Measurements (3)** (F,W,S)

A study of the principles of psychometrics with emphasis upon the classroom interpretation of group tests of intelligence and achievement. Required of all majors in Special Education.

**331 Classroom Measurement and Evaluation I (3)**  
(F,W)

Tests and measurements for the classroom. Basic measurement principles; test planning; construction and use of selection type tests, supply type tests, and performance tests; item analysis procedures, methods of summarizing test scores, determining derived scores and norms; and pupil evaluation.

**360 Principles and Procedures for Student Personnel Work (3)** (V)

Student personnel work in educational institutions, objectives of student personnel work, certain pertinent techniques.

**362 Occupational and Education Information (3)**  
(V)

Nature, use of occupational and educational information. Characteristics, requirements of occupations and training opportunities.

## Childhood Education

### Program

The Department of Childhood Education coordinates a quality program of professional education for students who wish to become teachers of children below the junior high school level. Though the shortage of elementary teachers no longer exists, there is still a need for those who are highly qualified and possess the personal, intellectual, and professional skills needed to become excellent teachers. Employment opportunities are especially great for teachers of young children (ages three-five).

The department has outstanding strength in the quality of its teaching staff. Since UMSL is located in a major metropolitan area, there are unusual opportunities to work with children in schools as part of the professional course work.

The Department of Childhood Education coordinates programs leading to a bachelor of science in education degree: early childhood education and general elementary education. It also schedules needed courses for postdegree students seeking teacher certification in elementary education. In addition, the department coordinates a program of studies leading to a master of education degree in the area of elementary education.

### General Education Requirements

The following work is required for programs in early childhood and elementary education:

English, Speech - six hours  
 English 10 (3)  
 Speech (3)

Mathematics - six hours  
 Mathematics 50 and 151 (No credit toward graduation is granted for Mathematics 15 unless both Mathematics 50 and 151 are completed).

Science - eight hours  
 Biological Science (3)  
 Physical Science (3)  
 Science Lab (2)

Humanities - eight hours  
 Music 134 plus two courses chosen from the

fields of art, music, philosophy, and literature.

Social Science - 15 hours  
 Psychology 3 and 170 (6)  
 Political Science 11, 176, or 170 (3)  
 History 3, 4, or 5 (6)

Childhood Education

**Early Childhood Education**

The early childhood education program, totaling 120 hours, 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.

**General Education Requirements**

In addition to the general education requirements listed on page 191, a student is required to take three additional hours of social sciences including Sociology 224.

**Area of Concentration**

Humanities, Social or Natural Sciences, and Mathematics - 12 hours

Courses selected must be numbered 100 or above and may not be used to meet the requirements in professional education. Courses may not be taken in more than three departments.

**Program Requirements**

- 101 The School in Contemporary Society (3)
- 140 Elementary School Organization, Management and Techniques of Teaching (3)
- 150 Children's Literature and Language Arts (3)
- 302 Psychology of Teaching and Learning (3)
- 315 Principles of Early Childhood Education (3)
- 316 Creative Experiences for Young Children (3)
- 317 Exploring the Physical World with Young Children or Education 151 Teaching of Science in the Elementary School (3)
- 318 Exploring the Social World with Young Children or Education 152 Teaching of Social Studies in the Elementary School (3)
- 325 Teaching Reading in the Elementary School (3)
- 251 Elementary School Student Teaching (6)

Note: Postdegree certification students may take Education 322 in lieu of Education 101.

Total (33 hours)

Electives (29 hours)

**Elementary Education**

The Elementary Education curriculum, totaling 120 hours, prepares students to teach in grades kindergarten through six and nondepartmentalized grades seven and eight.

**General Education Requirements**

In addition to the general education requirements listed on page 191, a student is required to take three additional hours of social sciences including Geography 101.

**Area of Concentration**

Humanities, Social or Natural Sciences, and Mathematics - 12 hours

Courses selected must be numbered 100 or above and may not be used to meet the requirements in professional education or related areas. Courses may not be taken in more than three departments.

**Related Area Requirements**

- 137 Music (2)
- 139 Art (3)
- 110 Elements of Health Education (3)
- 155 Physical Education Activities in the Elementary School (3)

Total (11 hours)

**Program Requirements**

- 101 The School in Contemporary Society (3)
- 140 Elementary School Organization, Management and Techniques of Teaching (3)
- 150 Children's Literature and Language Arts (3)
- 151 Teaching of Science in the Elementary School (3)
- 152 Teaching of Social Studies in the Elementary School (3)
- 153 Teaching Mathematics in the Elementary School (3)
- 302 Psychology of Teaching and Learning (3)
- 325 Teaching Reading in the Elementary School (3)
- 251 Elementary School Student Teaching (6)

Note: Postdegree certification students may take Education 322 in lieu of Education 101.

Total (30 hours)

Electives (21 hours)

## Childhood Education Faculty

Doris A. Trojcek Chairman, Associate Professor  
Ed.D., Indiana University

Richard W. Burnett Director, Reading Clinic,  
Professor  
Ed.D., Indiana University

Hans C. Olsen Associate Dean,  
School of Education, Professor  
Ed.D., University of Illinois

Wallace Z. Ramsey Professor  
Ed.D., University of Missouri-Columbia

Huber M. Walsh Professor  
Ed.D., University of California, Los Angeles

Robert E. Rea Associate Professor  
Ph.D., Southern Illinois University

Elizabeth P. Watson Associate Professor  
Ed.D., Indiana University

Lachlan Galbraith Assistant Professor  
Ph.D., University of California, Berkeley

Dick D. Miller Assistant Professor  
Ed.D., Utah State University

Bess Nelson Assistant Professor  
Ph.D., Ohio State University

Lloyd Richardson Assistant Professor  
Ph.D., George Peabody College

Leo V. Rodenborn Assistant Professor  
Ed.D., Oklahoma State University

Thomas R. Schnell Assistant Professor  
Ph.D., Southern Illinois University

Doris Stumpe Assistant Professor  
Ph.D., St. Louis University

Donna Jo Vandagriff Assistant Professor  
Ed.D., Indiana University

Ellen R. Green Instructor  
M.Ed.

Anne Lally Instructor  
M.Ed.

Edith S. McKinnon Instructor  
M.A.T.

## Childhood Education Description of Courses

### Childhood Education

Prerequisites may be waived by consent of department.

### Early Childhood

#### 315 Principles of Early Childhood Education (3) (F,W,S)

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.

#### 316 Creative Experiences for Young Children (3) (F,W,S)

Prerequisite: Education 315 and completion of humanities requirements in general education. A study of and experiences with materials, techniques and resources for promoting effective cognitive and motor development through the use of art media, songs and rhythms, play and creative dramatics.

#### 317 Exploring the Physical World with Young Children (3) (V)

Prerequisite: Education 315 and completion of science requirements in general education. A study of and experiences with materials, techniques and resources for broadening the child's awareness and understanding of science.

#### 318 Exploring the Social World with Young Children (3) (V)

Prerequisite: Education 315 and completion of social science requirements in general education. A study of and experience with materials, techniques and resources for furthering the child's mastery of the skills of communication; his understanding of people, social roles, society and various cultures; his ability to develop satisfying relationships with peers and adults.

## Childhood Education Description of Courses

### General Elementary Education

**2 Effective Reading and Study Skills (2) (F&W)**  
Designed to increase reading rate and comprehension and to develop study techniques appropriate to the purpose and difficulty of materials. Use is made of mechanical pacer, comprehension tests, vocabulary materials and lecture demonstrations. No credit toward a degree.

**137 Elementary School Music (2) (F&W)**  
(Same as Music 137) Prerequisite: Music 136 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.

**139 Art Activities for Elementary Schools (3) (F&W)**  
(Same as Art 139) A study of art principles; provides laboratory experience with various media and materials. Stresses curriculum planning and developments of the elementary school program in art.

**140 Elementary School Organization, Management and Techniques of Teaching (3) (F,W,S)**  
Prerequisite: Education 101 and admission to the School of Education. Organization and management of the elementary classroom emphasizing social factors affecting elementary schools. Formal and informal organizations in the school relating to administrative-teacher-pupil interactions and teacher-learning environment and general techniques of teaching.

**150 Children's Literature and Language Arts (3) (F,W,S)**  
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.

**151 Teaching of Science in the Elementary School (3) (F,W,S)**  
Prerequisite: Education 140 and completion of science requirements in general education. A study of elementary school science emphasizing the current science curricular content, methods of teaching and instructional materials. Analysis of forces affecting objectives, materials and teaching techniques.

**152 Teaching of Social Studies in the Elementary School (3) (F,W,S)**  
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.

**153 Teaching Mathematics in the Elementary School (3) (F,W,S)**  
Prerequisite: Education 140 and completion of mathematics requirements in general education. Organization and implementation of a modern elementary school mathematics program.

**251 Elementary School Student Teaching (6) (F&W)**  
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.

**257 Teaching Music in the Elementary School (3) (F)**  
Same as Music 257. Prerequisite: Music 112 and Education 101. For the Music Education major. A study of the elementary school music curriculum emphasizing the objectives, methods of teaching and staffing music classes, analysis of instructional materials and resources.

**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, comprehension and interests in independent reading.

**327 Teaching Reading in the Inner City (3) (F&W)**  
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.

**350 Elementary School Curriculum (3) (V)**  
Prerequisite: Education 140. Study of modern education with regard to objectives, content, methods in elementary school curriculum.

**369 The Analysis and Correction of Reading Problems in the Classroom (3) (F,W,S)**  
Prerequisite: Education 325, 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.

**372 Field Study in Elementary Education (1-3)**

## School-wide Courses

Several courses are offered by the School of Education for students in all undergraduate and post-degree certification programs. One of these courses, Education 101, is required in all programs. Students may elect the others to supplement their teacher education requirements.

### **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 today's society, exploration of the social and anthropological factors related to current educational problems. Cognitive and affective objectives of education are the content for examining educational practices and for exploring each student's personal attributes as they relate to the teaching act. Required of students admitted to the School of Education. Prerequisite to other professional course.

### **201 Black Americans in Education (3) (V)**

An examination and analysis of conditions affecting the education of Black Americans and their schools, with emphasis on relationships between schools and the Black Community, and needed changes in education.

### **220 Special Topics in Education (1-3) (V)**

Prerequisite: Completion of 75 hours and consent of instructor. Examination of a special area or topic within the field of education. Topics to be considered will be announced prior to registration and may vary. For elective credit only. This course may be repeated for different topics. Not to exceed a total of 6 hours credit.

### **290 Independent Study (1-3) (V)**

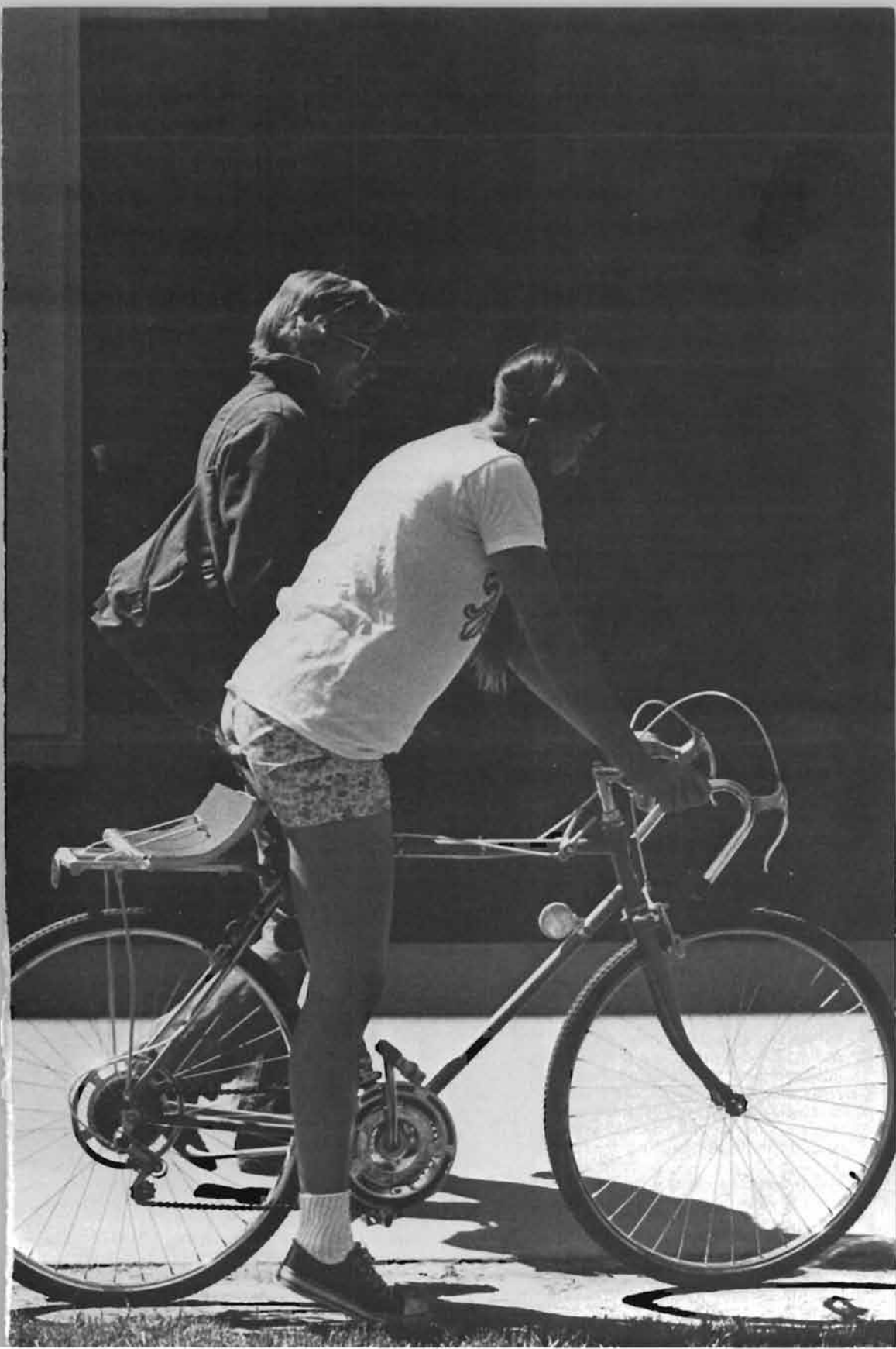
Prerequisite: Completion of 75 hours and consent of instructor. Independent study through readings, research, reports and conferences designed to provide depth in areas of study previously introduced in education courses. For elective credit only. May be repeated not to exceed a total of 3 hours credit.

### **363 Practicum in Individualized Instruction (3-6) (F,W)**

Prerequisite: Completion of the course(s) to which assigned for instruction and consent of instructor. Supervised instruction in individualized programs. Seminar accompanies instructional experience. May be repeated.







**Program****Evening College**

The Evening College was organized as a separate division of the University in 1964 to provide higher education for students in the St. Louis metropolitan area who, because of various circumstances, cannot attend day classes. The Evening College is committed to the education of mature persons who wish to live effectively in today's complex society.

The Evening College provides degree programs which 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 (with an applied physics option). In addition, the Evening College offers a bachelor of general studies degree which provides more flexibility for mature students in reaching their educational goals.

Majors available for the bachelor of arts degree are biology, chemistry, economics, English, history, mathematics, physics, political science, psychology and sociology. Courses are offered in 24 different academic areas including 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.

Persons who wish to maintain their professional competence or broaden their educational background will find a broad array of college credit courses which may be taken by students not working toward a degree. Courses may be taken for credit or as audit (in which case no credit is earned).

Preprofessional courses are available for most professional degrees. Such programs are outlined under the section dealing with preprofessional programs to be found on page 152.

Recognizing the value of continuing

education and career advancement, many institutions, businesses and industries in the St. Louis metropolitan area encourage employees to avail themselves of the educational opportunities which the Evening College affords.

The Veterans Administration has approved either full or part time study in the Evening College for educational benefits. If the student has never received Veterans Educational Assistance benefits, he or she should contact the St. Louis Office of Veterans Administration or the UMSL Veterans' Affairs Office.

Information concerning scholarships and financial assistance for Evening College students may be found under the student financial aid section of this bulletin (see page 15) or by contacting the Financial Aids Office, 10 Administration Building.

Students may qualify for advanced placement credit through the College Level Examination Program (CLEP) and military service training.

Since most Evening College students are employed full time, they normally carry less than a full academic load. However, the evening classes are scheduled between 5:30 p.m. and 9:35 p.m. to enable the student to carry a full load if he or she so desires.

Evening College classes are conducted according to the same standards traditionally maintained by the university. The library, laboratories, cafeteria, bookstore, health service, placement service, admissions office and cashier are available in the evening as well as day hours.

**Academic Advising and Program Planning**

Since information concerning academic programs and university regulations play an important role in academic success, all new students are encouraged to use these services. A staff of academic advisers will help the individual plan a program appropriate to his or her needs.

Transfer students or students who have accumulated 40 semester hours or more and

who wish to be assigned to a major area adviser and to graduate from the Evening College must file a declaration of degree candidacy form.

Appointments for program planning are encouraged and may be made by calling the Evening College office.

#### **Vocational Counseling and Career Planning**

Students who desire assistance making a vocational choice or indepth personal counseling will also find professional counselors who have had extensive experience with interests and motivations of adults. Vocational and educational counseling involving the use of psychological tests is available to students at no cost. This service is designed to provide students with a better understanding of their abilities, aptitudes, interests, and personality traits as related to vocational-educational choice and planning. Career counseling which extends over a longer period of time is also available. Appointments may be made by calling the Evening College office.

The Evening College is located in 324 Lucas Hall, phone, 453-5161.

#### **Bachelor of General Studies Degree**

The bachelor of general studies degree is offered only through the Evening College. This degree is designed to provide a meaningful alternative for mature students for which the traditional degree programs currently offered by the university lack import and for whom a more interdisciplinary program would be beneficial.

The bachelor of general studies program is expected to appeal to a variety of students whose circumstances, goals, and aspirations are different from those of the "typical" college student. It provides the flexibility needed to enable the student, with careful advisement, to develop an individualized program of study that is meaningful and appropriate not only for the individual but also for the university and for the community.

#### **Requirements for the Bachelor of General Studies Degree Program**

Admission to the program requires that the student be admissible to the Evening College of the University of Missouri-St. Louis.

Students applying for the bachelor of general studies program must complete an application form. The student's application must be approved by the General Studies Committee and the dean of the Evening College.

In reviewing the application, the criteria to be applied will be:

- 1 That the applicant be mature and his or her program of studies be reasonable.
- 2 That the student will be a broadly educated person who has demonstrated the equivalent academic proficiency required for any other undergraduate degree at UMSL.
- 3 That the program of studies of the student be structured to meet the unique educational goals of that person and should not be readily available under any other degree program offered by UMSL.
- 4 That the recipient of the bachelor of general studies degree should be better qualified because of that degree to deal with his or her life goals than if he or she had some other degree.

#### **General Education Requirements**

General education requirements consist of 42 semester hours of college credit. Additional information describing this requirement may be found on page 30 of this bulletin.

#### **Personal Emphasis Area**

Each candidate for the degree of bachelor of general studies must complete a program of studies consisting of a minimum of 30 semester hours designed in terms of the student's educational goals. In consultation with the student's faculty adviser, the student shall develop a personal emphasis area, selecting those courses appropriate to the student's goal or purpose. Regardless of the focus, theme, or purpose, the personal emphasis area should result from self-

examination and contribute to a self-realization and an advanced level of academic competence and achievement. The program of studies shall be approved by the student's faculty adviser, the dean, and the General Studies Committee. The student and faculty adviser shall periodically review the student's progress toward attaining his or her goal or objective and may make appropriate modifications in the program of studies, subject to the approval of the dean.

#### Hour and Grade Requirements

The bachelor of general studies requires completion of 120 semester hours.

No more than 30 semester hours of credit may be taken in any one department without the written consent of the chairman of that department.

A minimum of 45 semester hours must be earned in courses beyond the introductory level.

A cumulative grade point average of 2.0 is required both overall and in the personal emphasis area.

A minimum of 24 semester hours of graded credit must be completed in residence at UMSL, of which a minimum of 15 hours shall be in the personal emphasis area.

No more than 24 semester hours may be taken on the pass-fail option.

#### Credit for Experience, Special Projects, Examinations, and Nontraditional Forms of Study

Credit may be earned through the College Level Examination Program (CLEP) in accordance with established university policy or through examinations proposed or approved by a department of the university.

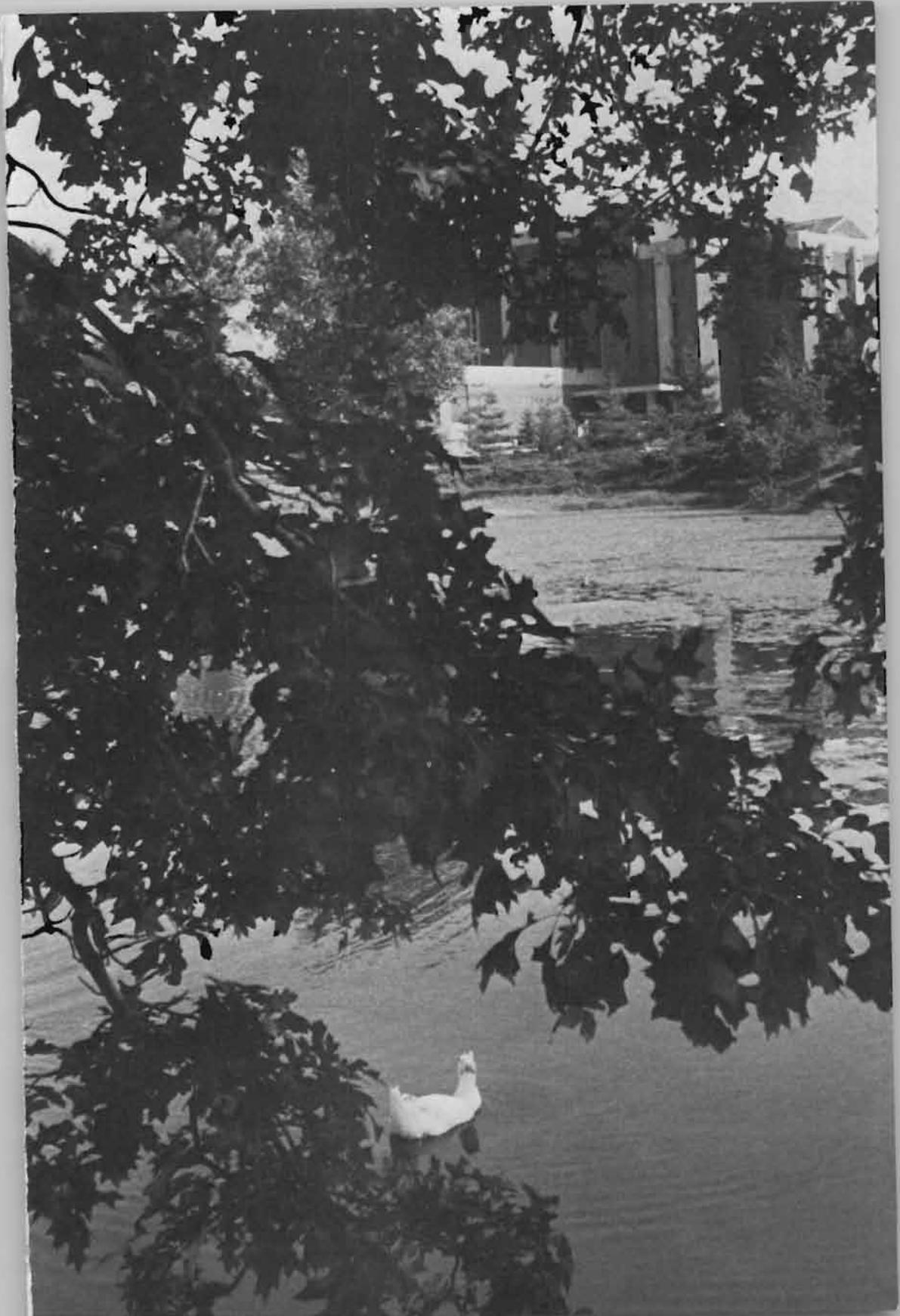
Credit may be earned through correspondence study, supervised independent study of research, and college level courses offered by television or similar educational media. It is the responsibility of the student to obtain approval for the credit to be applied under this option.

Students may receive credit for vocational experience, community service projects, or cultural activities only after they have completed 24 semester hours of course work in residence.

Credit may be granted for vocational experience when related to the student's personal emphasis area not to exceed three semester hours for each year of experience and only in exceptional circumstances up to a maximum of 12 semester hours. Each petition for credit for vocational experience shall be accompanied by a job description verified by the student's supervisor or employer or similar appropriate evidence. Credit may be granted only on recommendation of the student's faculty adviser and approval by the dean and the General Studies Committee.

Credit not to exceed six semester hours may be earned for participation in approved community service projects or cultural activities. The projects or activities must be formulated by the student and carried out under the supervision of a faculty member with the approval of the student's faculty adviser, the dean, and the General Studies Committee. A written report must be submitted by the student and approved by the supervisor upon the completion of the projects or activities.

Because of the experimental nature of the bachelor of general studies degree program, enrollment will be limited.





The 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 noncredit programs involving the greater St. Louis area and the state of Missouri.

The Extension Division includes the following areas:

**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.

**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.

Special women's management programs are available to assist companies in complying with affirmative action requirements.

**Education**

The overall aim of education extension is to provide services which translate into better teaching and learning situations in the public and private school classroom. The programs and courses provide for meeting and completing Missouri certification requirements, provide a basis for work on an advanced degree, and provide for inservice 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; and counseling relative to college credit available through the College Level Examination Program (CLEP).

**Credit Courses**

The Extension Division offers many credit 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.

**Noncredit Programs**

The office of noncredit 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 education programs administered by the UMSL Extension Division to meet their own particular needs. Faculty, staff, and full-time regularly enrolled students at UMSL may enroll in a noncredit extension program at reduced fees or



payment of direct costs (such as meals and instructional materials). Enrollment is contingent on availability of space.

Individuals, representatives of civic organizations, directors of business and industrial firms, and others who have specific educational needs are encouraged to write or call the UMSL Extension Division, or to contact the University of Missouri Extension Center in their home county.

Graduate study at UMSL embraces all study for degrees and certificates beyond the bachelor's degree. It is administered by the Graduate School under policies and regulations established by the graduate faculty of the university and by the Graduate Council. Graduate programs fall into two broad categories: professional programs directed by professional schools or committees, designed to develop a special professional competence and an advanced ability to explore problems peculiar to a professional field; and academic programs directed by academic departments or certain professional schools designed to develop command of a range of related subjects within an academic field, the ability to conduct original research, and to communicate effectively in a scholarly setting.

The university is authorized to grant the graduate degrees of master of arts, master of science, master of business administration, master of education, and doctor of philosophy. In addition, work leading to advanced certification is offered in certain fields of education. Degree programs have been established in the areas of biology, business administration, chemistry, economics, education, English, history, mathematics, political science, psychology, and sociology. In other academic areas, graduate work is offered and additional degree programs are in process of development.

From its beginnings, graduate education at UMSL has been guided by four broad purposes: development of excellence in scholarship; encouragement of creative productivity in research; fostering of the highest standards in professional competence and commitment; and development of skill in the communication of knowledge. Responsive to the unique and comprehensive demands of the St. Louis region, the university has moved rapidly in the development of specialized facilities, a distinguished and creative faculty, and appropriate graduate programs to achieve these objectives.

Information regarding graduate programs is given in the *Graduate Bulletin* available from

the admissions office. Inquiries regarding specific graduate programs may be addressed to the Office of Admissions, the Graduate School, or the appropriate department or school.

**Nebraska**

The University of Nebraska in Lincoln offers a program for Missouri residents in Architecture (quota twelve) where students may pursue a Bachelor of Architecture degree.

**Illinois**

A cooperative agreement exists between Southern Illinois University-Edwardsville and University of Missouri-St. Louis which permits students of one institution to take courses at the other institution as a regular part of their academic program. For further information consult the Registration Office (Room 10, Administration) or the Office of the Dean.

**Kansas**

The following programs are offered to Missouri residents at the Kansas campus indicated: Aeronautical Engineering at Wichita State University, Wichita with a B.S. in Aeronautical Engineering; Architecture at the University of Kansas, Lawrence with a Bachelor of Architecture or a B.S. in Architectural Engineering; Architecture at Kansas State University, Manhattan with a Bachelor of Architecture, B.S. in Building Construction or B.S. in Landscape Architecture; Grain Milling & Technology at Kansas State University, Manhattan with a B.S. in Feed Science and Management, Milling Science and Management, Bakery Science and Management, or Engineering Management; and Nuclear Engineering at Kansas State University, Manhattan with a B.S. in Nuclear Engineering.

Those students interested in officer education programs may enroll in the Army ROTC program hosted by Washington University or the Air Force ROTC program sponsored by St. Louis University. They provide undergraduate students with the opportunity to combine academic study with a military officer's educational program. The two services conduct courses leading to regular or reserve commissions at 4200 Forest Park Avenue.

For further information concerning these programs, write or call the following: Professor of Military Science, Washington University, telephone 863-0100, extension 4662, or Director, Aerospace Studies Program, St. Louis University, telephone 652-1022.

#### **Air Force Aerospace Studies**

##### **AS 101-102 United States Military Forces in the Contemporary World**

A study of the doctrine, mission and organization of the United States Air Force, U.S. strategic offensive and defensive forces; their mission, function and employment of weapon systems; civil defense; aerospace defense; operation of tactical air forces, with special attention to limited war; review of Army, Navy and Marine general purpose forces. One class hour per week. A leadership and management laboratory is required one hour per week.

##### **AS 201-202 The Development Growth of Air Power**

This course examines the development of air power over the past sixty years. It traces the development of various concepts of employment of air power and focuses upon factors which have prompted research and technological change. A variety of events and elements in the history of air power is stressed, especially where these provide significant examples of the impact of air power on strategic thought.

##### **AS 301-302 National Security Forces in Contemporary American Society (3)**

Focusing on the Armed Forces as an integral element of society, this course provides an examination of the broad range of American civil-military relations and the environmental context in which defense policy is formulated. Special themes include: the role of the professional officer in a democratic society; socialization processes within the Armed Services; the requisites for maintaining adequate national security forces; political, economic and social constraints upon the national defense structure; and the impact of technological and international developments upon strategic preparedness and the overall defense policy-making process.

##### **AS 401-402 The Professional Officer (6)**

A study of Air Force leadership and management including concepts of leadership, officer professionalism, behavioral science, variables affecting leadership, styles of leadership, legal responsibilities and concepts and principles of Air Force Management. Emphasis on student involvement and practice of communicative skills. Three class hours per week. A leadership and management laboratory provides advanced leadership experiences in officer-type activities, requiring an additional hour per week.

##### **AS 101L-102L, AS 201L-202L, AS 301L-302L, AS 401L-402L Leadership and Management Laboratory**

Involves a study of Air Force customs and courtesies; drill and ceremonies; career opportunities in the Air Force, and the life and work of an Air Force junior Officer. Students develop their leadership potential in a practical, supervised training laboratory, which typically includes field trips to the Air Force installations throughout the United States.

### **Military Science**

Prerequisites may be waived by consent of professor of military science. Course credit is for two semesters or one full year enrollment in the course.

#### **MS 101-102 Introduction to Military Science (2)**

Acquaints the student with the ROTC program and the career opportunities afforded ROTC graduates; provides a knowledge of the customs and traditions of the military service; familiarizes the student with the service weapon; develops a basic understanding of the organization and management of the U.S. Army and the Army's place in the world affairs. One and one-half class hours per week.

#### **MS 201-202 Applied Military Leadership and Management (2)**

Prerequisite: MS 101-102 or equivalent. Surveys American Military History from colonial times to the present, emphasizing the central importance of leadership in the growth and development of the Army; fundamentals of leadership; operations of the basic military team including missions, organization, communication and control; introduces military topography including the use of terrain maps and aerial photos. One and one-half class hours per week.

#### **MS 301-302 Advanced Leadership and Management (6)**

Prerequisite: Completion of the basic course or equivalent and selection by the professor of military science. Case studies in leadership, management and decision making; development of ability to communicate with emphasis on military situations, advanced offensive and defensive tactical operations (to include military geography, weapons systems and communication systems) and the role of the various branches of the Army, discussion of the military environment; preparing, presenting and evaluating military instruction. Three class hours per week.

#### **MS 401-402 Theory and Dynamics of the Military Team and Seminar in Leadership and Management (6)**

Prerequisite: MS 301-302. Studies of military operations and the military teams to include military geography and the coordination and planning between elements of the team; analysis of selected leadership and management problems involved in unit administration, military justice, and the Army readiness program; the position of the U.S. in the contemporary world scene discussed in the light of its impact on leadership and management problems of the military service; obligations and responsibilities of an officer on active duty. Three class hours per week.

#### **MS Military Science Leadership Laboratory**

Progressive development of leadership abilities through participation in leadership activities including command and staff action, familiarization with the service weapon, drill and ceremonies, field training exercises, and civilian and military guest speakers. Purpose of leadership laboratory is to develop leadership through demonstrated teamwork, esprit de corps, and unity of effort toward a common goal, emphasizing duties and responsibilities of junior leaders. Required of all students.

**Administration**

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**Board of Curators**

**All-University**

**Terms Expire January 1, 1975**

John Sam Williamson  
Columbia, Missouri

**Terms Expire January 1, 1977**

John H. Dalton  
Kennett, Missouri

Irvin Fane  
Kansas City, Missouri

Pleasant R. Smith  
Mexico, Missouri

**Terms Expire January 1, 1979**

William S. Thompson, Jr.  
St. Louis, Missouri

Van O. Williams  
Liberty, Missouri

Howard B. Woods  
St. Louis, Missouri

**Terms Expire January 1, 1981**

C. R. Johnston  
Springfield, Missouri

Wallace R. Stacey, M.D.  
Independence, Missouri

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Melvin D. George  
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Joe L. Saupe  
Director of University Institutional Research

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University of Missouri-Columbia

Dr. James C. Olson  
University of Missouri-Kansas City

Dr. Raymond Bisplinghoff  
University of Missouri-Rolla

Dr. Arnold B. Grobman  
University of Missouri-St. Louis

University of Missouri-  
Saint Louis

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Business Officer

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Athletic Director

Robert W. Thomas, M.A.  
General Manager, KWMU Radio

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Dean

Goble Jessup, B.S.  
Assistant to the Dean

Mark Nugent, M.S.  
Assistant Dean



University of Missouri-  
Saint Louis

Robert L. Smith, B.D.  
Assistant Dean

Dennis E. Donham, M.Ed.  
Assistant Dean

**School of Business Administration**

Emery C. Turner, D.B.A.  
Dean

Donald H. Driemeier, D.B.A.  
Assistant Dean

**School of Education**

William L. Franzen, Ph.D.  
Dean

Robert R. Gard, Ed.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**

Thomas E. Jordan, Ed.D.  
Dean and  
Director of Research

**Extension Division**

Virgil N. Sapp, B.S.  
Dean

Frederick C. Brechler, Ph.D.  
Assistant Dean

Sam L. Lloyd, M.B.A.  
Assistant Dean

Angelo H. Puricelli, Ph.D.  
Assistant Dean

Wendell Smith, Ph.D.  
Assistant Dean

**Student Affairs**

Conney M. Kimbo, Ph.D.  
Dean

**1975 First Semester**

Evening College and Graduate Registration  
August 19, 20 4:30-8:30 pm

Regular Registration, Day Students  
August 21, 22

New Student Orientation  
August 21, 22

Classwork begins 7:40 am  
August 28

Labor Day Holiday  
September 1

Thanksgiving Recess begins  
November 26 5:00 pm

Classwork resumes  
December 1 7:40 am

Classwork ends  
December 8 10:30 pm

Intensive Study Days  
(No classes or exams scheduled)  
December 9, 10

Final Examinations begin  
December 11

First Semester closes  
December 19 5:00 pm

Emergency Examination Days  
(Make up for snow days if necessary).  
December 22, 23

**1976**

Mid-Year Commencement  
January 4

**Second Semester**

Registration, Day Students  
January 12

Evening College and Graduate Registration  
January 13, 14 4:30-8:30 pm

Classwork begins  
January 19 7:40 am

University Holiday  
February 23

Spring Recess begins  
March 19 5:00 pm

Classwork resumes

March 29 7:40 am

Classwork ends  
May 3 10:30 pm

Intensive Study Days  
(No classes or exams scheduled)  
May 4, 5

Final Examinations begin  
May

Second Semester closes  
May 14 5:00 pm

Annual Commencement  
May 16

**Summer Session**

Evening College and Graduate Registration  
June 2, 3 4:30-8:30 pm

Regular Registration  
June 7

Classwork begins  
June 8 7:40 am

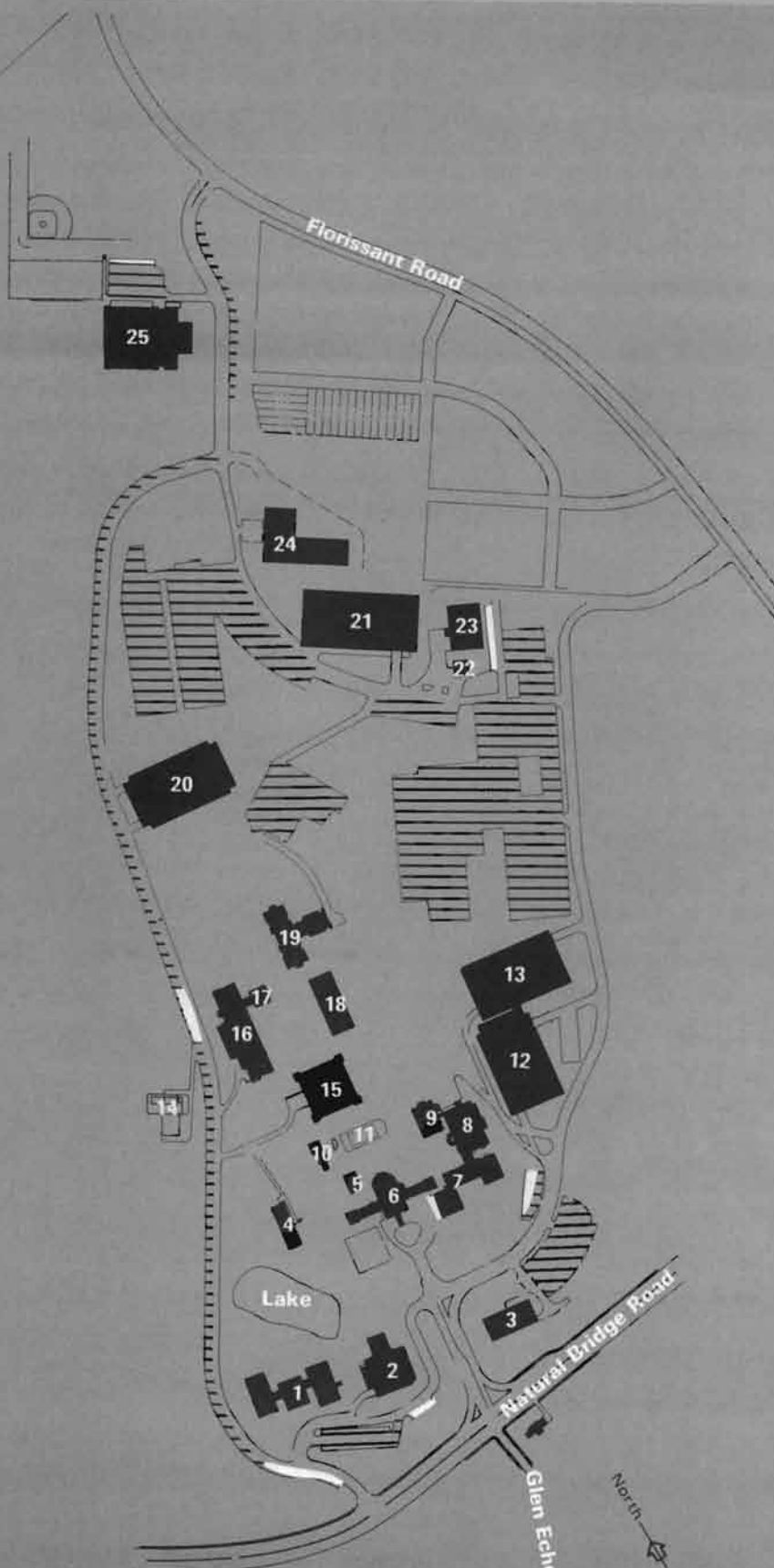
Independence Day Holiday  
July 5

Final Examinations  
July 29, 30

Summer Session closes, end of day  
July 30

Annual Commencement  
August 1

Campus Map



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Lake

3

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2

Natural Bridge Road

Glen Echo

North

### Key to Map

- 1 Benton Hall
- 2 Stadler Hall
- 3 Administration Building (under construction)
- 4 University Center Annex
- 5 Physical Plant Shop
- 6 Administration Building
- 7 J.C. Penney Continuing Education Building
- 8 University Center
- 9 University Center
- 10 Campus Shop
- 11 Swimming Pool
- 12 Parking Garage
- 13 Parking Garage
- 14 Power Substation
- 15 Thomas Jefferson Library
- 16 Social Sciences, Business, and Education Building
- 17 Social Sciences, Business, and Education Tower
- 18 Clark Hall
- 19 Lucas Hall
- 20 Parking Garage
- 21 Parking Garage
- 22 UMR Graduate Engineering Center
- 23 Office Building
- 24 General Services Building (under construction)
- 25 Multipurpose Building



Permit Parking



Visitor Parking

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506 SSBE Tower, 453-5485

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