

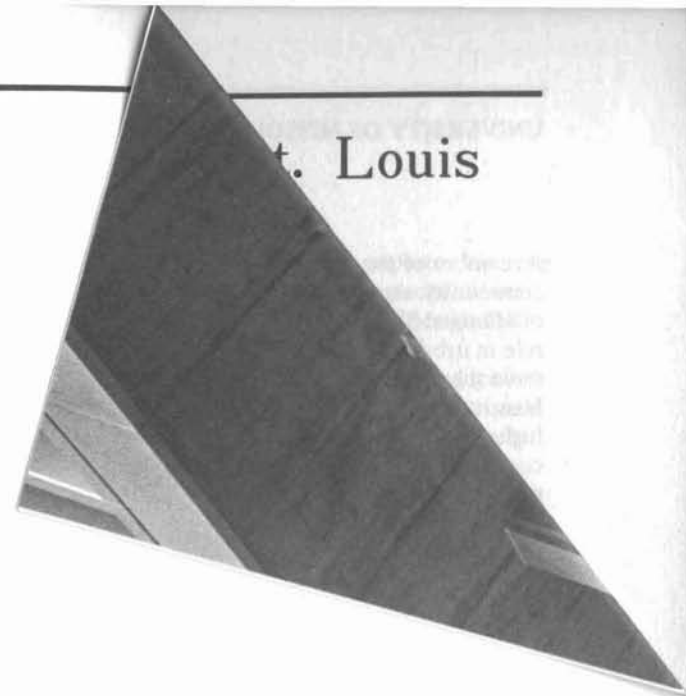
**UASL**

**Undergraduate  
Bulletin  
1973-74**



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t. Louis



University of Missouri-St. Louis  
Undergraduate Bulletin  
1973-1974

The University of Missouri-St. Louis is an equal employment and educational opportunity institution.

## UMSL UNDERGRADUATE BULLETIN

This bulletin includes a description of undergraduate courses and announcement of undergraduate programs at the University of Missouri-St. Louis. All statements in this publication concerning regulations, fees, curricula or other matters are subject to change without notice. They are not to be regarded as offers to contract. For information concerning the University of Missouri-Columbia, the University of Missouri-Rolla or the University of Missouri-Kansas City, write directly to the Director of Admissions at the campus concerned. Inquiries regarding admission to the University of Missouri-St. Louis should be addressed to the Director of Admissions, University of Missouri-St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121.

## UMSL

University of Missouri-St. Louis

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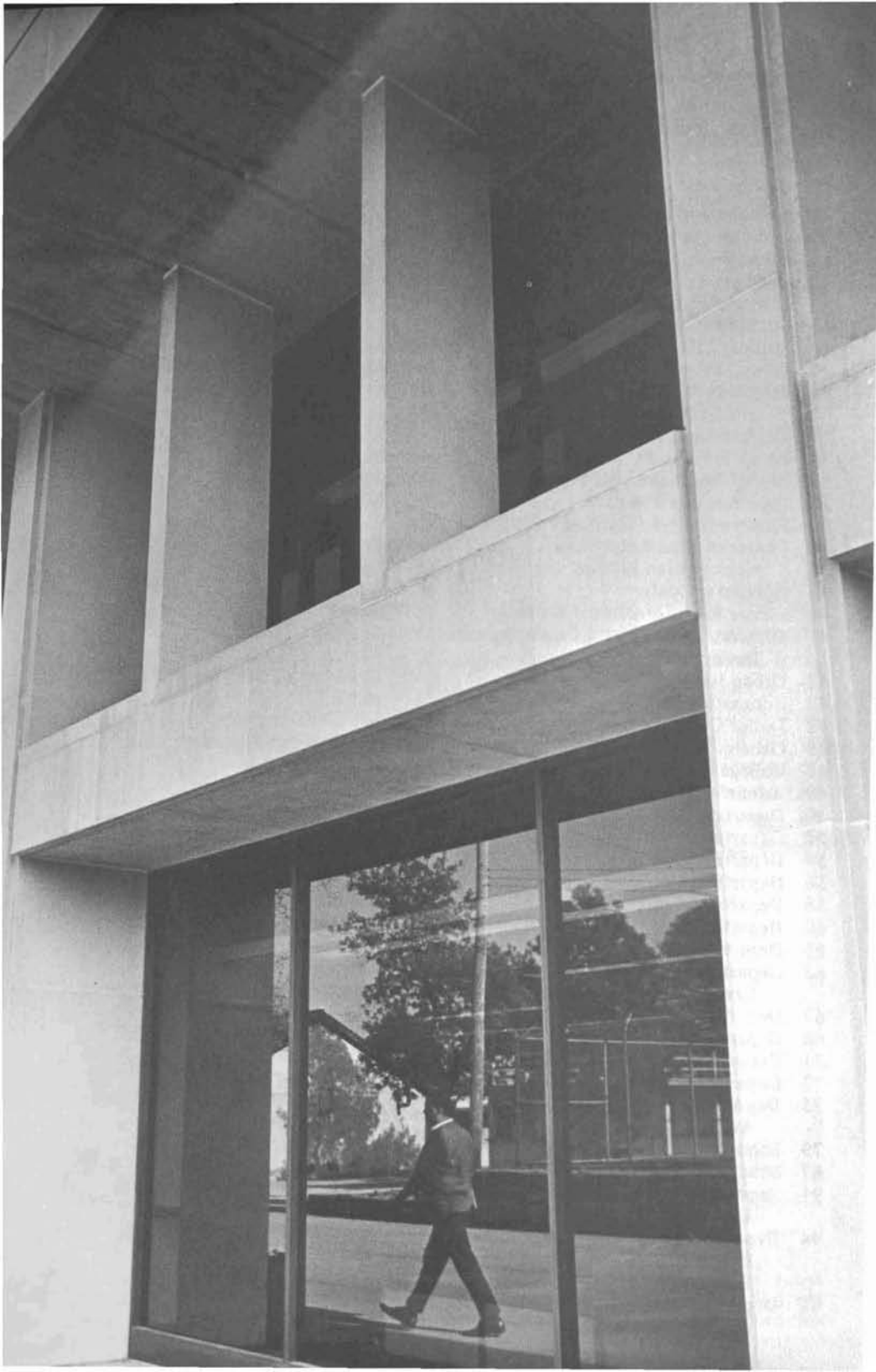
Robert E. Smith, Director, Office of Public Information  
John Chamberlain, Editor

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## Table of Contents

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





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## University of Missouri-St. Louis

### HISTORY OF THE UNIVERSITY OF MISSOURI

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

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

The university has grown from a graduating class of two on the Columbia campus in 1843 to a total on-campus enrollment this year of approximately 47,000 students, representing every state and many foreign countries. One

of the nation's 1,145 accredited colleges and universities, the University of Missouri ranks among the top fifteen in size of enrollment.

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

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

The university is rich in tradition, yet looks also to the future, mindful that the purpose to which it is dedicated can only be achieved through devotion to the ideals of scholarship and continued search for new levels of attainment and creativity.



## UNIVERSITY OF MISSOURI-ST. LOUIS

A member of the four-campus community since 1963, the University of Missouri-St. Louis plays an important role in urban education. Established to serve the rapidly growing need of Missouri's largest metropolitan area for high quality education at moderate cost, the university is living up to that continuing challenge.

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

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

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

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

In order to extend the availability of higher education to the public, the

Evening College degree programs parallel those offered in other divisions of the university. Degrees may be earned by attending evenings only.

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

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

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

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

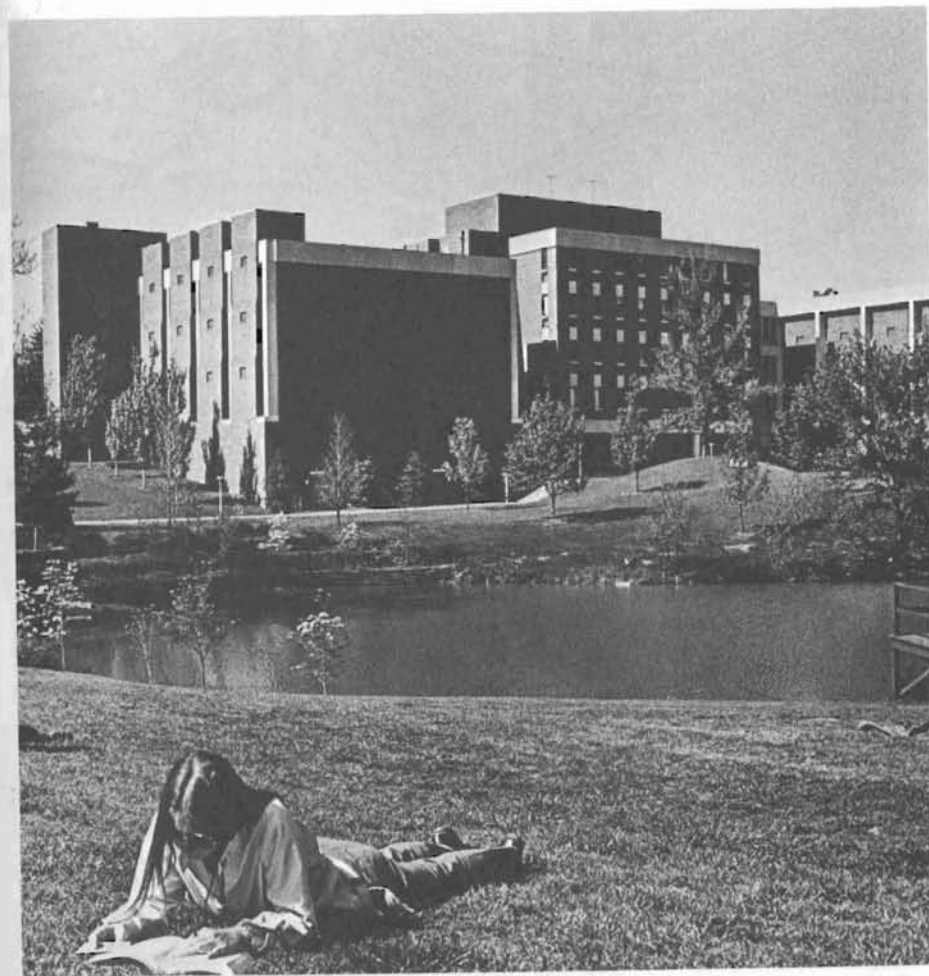
Above all is the university's concentration on the student and the quality of education. The University of Missouri-St. Louis holds high its objective of academic excellence. All students are required to follow a curriculum that gives broad training in the liberal arts and sciences as well as depth in a major of the student's choice. The university encourages students to qualify for advanced placement and credit, to enroll whenever possible in seminars, individual reading courses and courses

## UNIVERSITY OF MISSOURI-ST. LOUIS

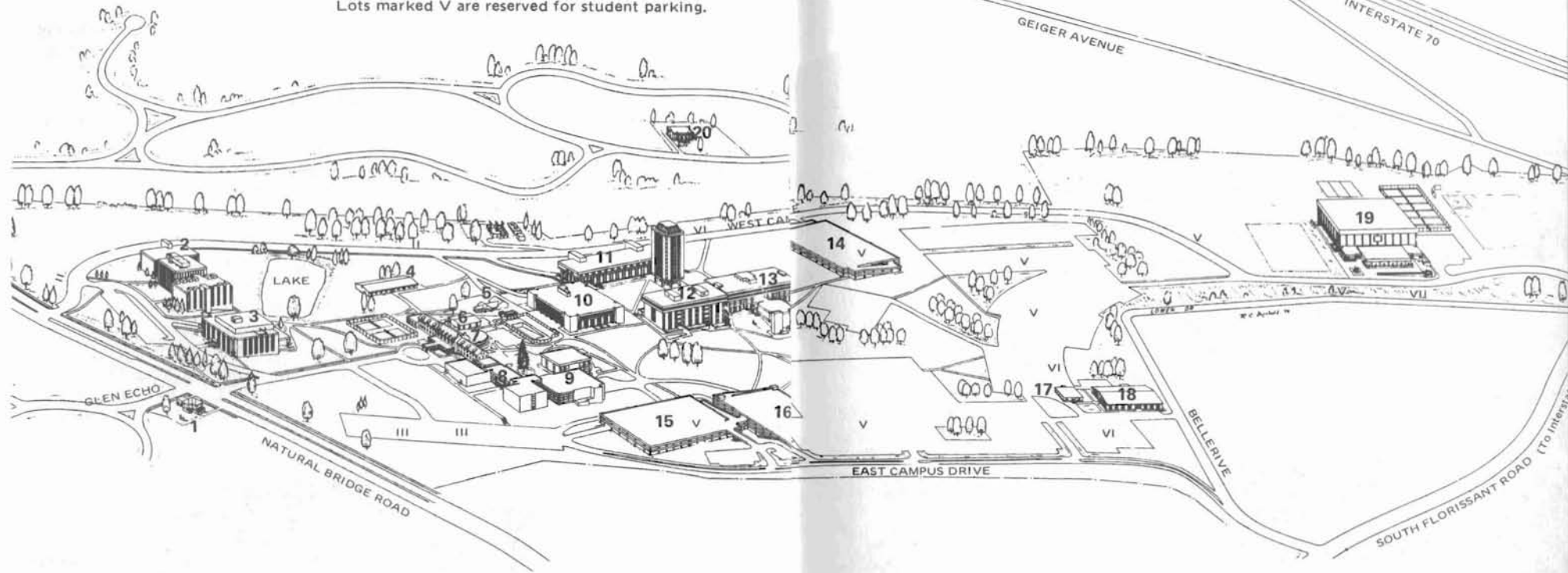
emphasizing undergraduate research. Research is also conducted through graduate programs in business administration, chemistry, sociology, economics, education, history, political science and psychology. The curriculum is supplemented by a wide range of extracurricular activities.

The university is pledged to maintain

a primary concern with superior teaching and frequent informal contacts between faculty and students. It is through this concern with the student and concentration upon quality in education that the University of Missouri-St. Louis aims to provide more creative research and service to the metropolitan community.



NOTE: Parking areas are designated by Roman numerals.  
Lots marked V are reserved for student parking.



## INDEX OF BUILDINGS

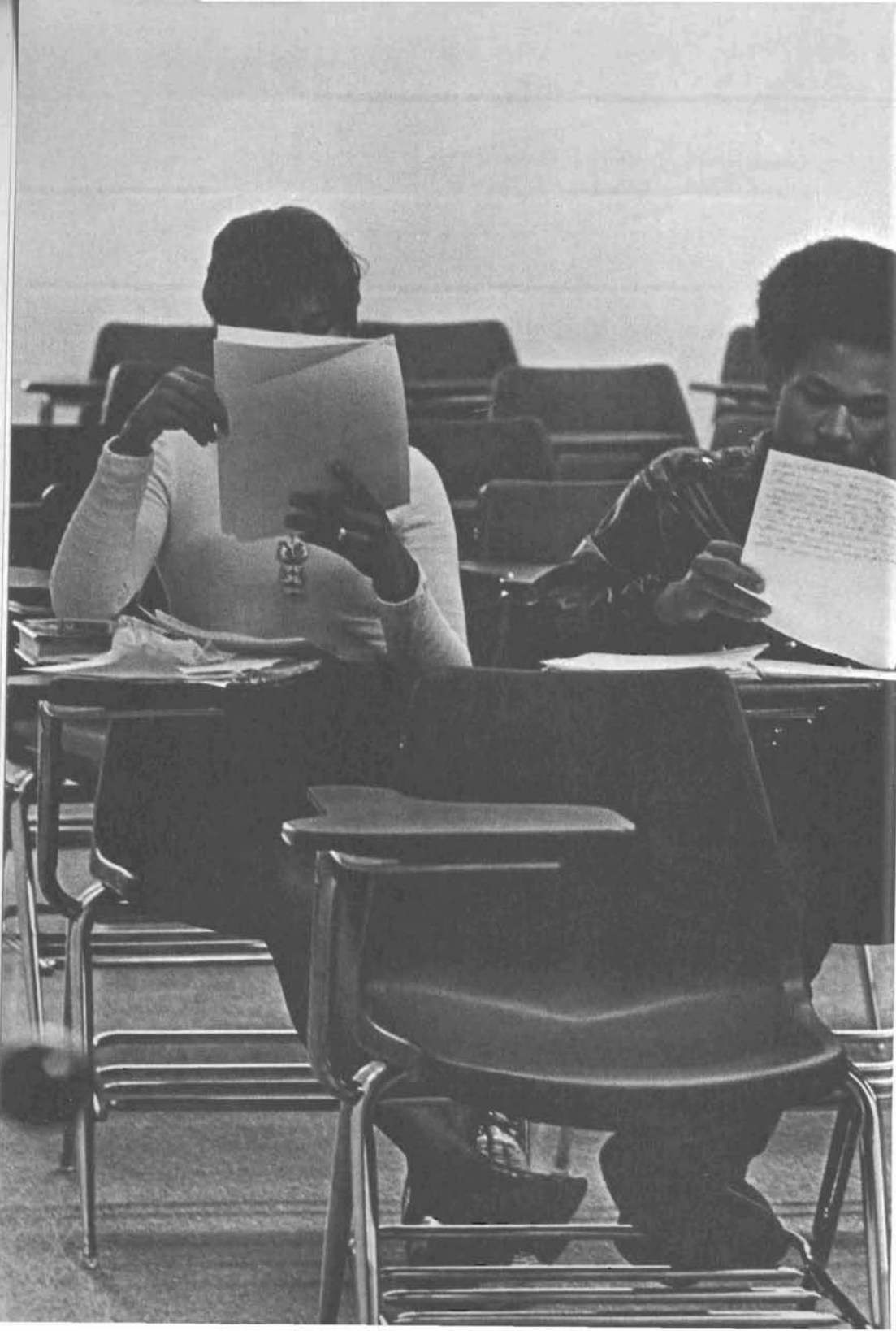
1. 7956 Natural Bridge Road
2. Benton Hall
3. Stadler Hall
4. University Center Annex
5. Campus Shop
6. Physical Plant Shop
7. Administration Building
8. J. C. Penney Continuing Education Building
9. University Center
10. Thomas Jefferson Library
11. Social Sciences, Business & Education Building & Tower
12. Clark Hall
13. Lucas Hall
14. Parking Garage No. 1
15. Parking Garage No. 2
16. Parking Garage No. 3
17. UMR Graduate Engineering Center
18. Office Building
19. Multi-Purpose Building
20. Chancellor's Residence

## INDEX OF DEPARTMENTS & OFFICES

- (18) Accounting Department
- (13) Administration of Justice Program
- (11) Administration, Philosophy and Secondary Education Department
- (7) Admissions Office
- (7) Alumni Activities
- (13) Arts & Sciences, College of
- (19) Athletic Department
- (13) Audio-Visual Department
- (11) Behavioral Studies and Research Department
- (3) Biology Department
- (9) Bookstore, University
- (11) Business Administration, School of
- (2) Business Office
- (9) Cafeteria
- (7) Cashier's Office
- (2) Chancellor's Office
- (2) Chemistry Department
- (11) Community and Metropolitan Studies, Center of
- (11) Computer Center

- (11) Education, School of
- (11) Elementary Education Department
- (13) English Department
- (13) Evening College
- (8) Extension Division
- (18) Extension Division, University-Wide, Area Director
- (2) Faculties, Office of the Dean of
- (7) Financial Aids Department
- (2) Graduate School
- (13) History Department
- (11) International Studies, Center for
- (12) Language Laboratory
- (10) Library Office
- (18) Mail Room
- (12) Mathematics Department
- (18) Mental Health Specialists Program
- (11) Midwest Community Education Development Center
- (12) Modern Foreign Languages and Literatures Department
- (18) Payroll Department
- (18) Personnel Office
- (13) Philosophy Department

- (2) Physics Laboratories
- (7) Placement Office
- (11) Political Science Department
- (18) Print Shop
- (3) Psychology Department
- (18) Publications, Campus
- (2) Public Information, Office of
- (18) Purchasing Department
- (13) Radio Station KWMU
- (18) Receiving Office
- (2) Research Administration, Office of
- (11) Sociology/Anthropology Department
- (9) Student Activities Office
- (7) Student Affairs, Office of the Dean of
- (7) Student Government
- (7) Student Health
- (18) Student Loan
- (9) Student Newspaper
- (9) Student Programming Office
- (11) Student Teaching Office
- (2) Switchboard
- (17) UMR Graduate Engineering Center in St. Louis
- (7) UMSL Police
- (2) UMSL Project



## Admission

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

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

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

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

**Entering Freshmen** Entering freshmen

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

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

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

**Advanced Payment Fee** Upon notification of acceptance to the fall or winter semester, a student will be requested to submit a \$50 non-



## ADMISSION

refundable advance payment on his registration fee. This amount is credited to the student's incidental fee when he enrolls in the university.

## MISSOURI FRESHMEN

**Missouri Freshmen Policy** The freshman admissions policy is listed below.

1. Admission to a University of Missouri campus as a regular freshman student will be granted to an applicant who presents evidence which indicates he has a reasonable probability of success as demonstrated by the experience of students admitted in previous years.
2. The selection of a student for admission as a regular freshman will be based upon a combination of high school class rank and performance on a standardized college aptitude test and, where appropriate, upon recommendations by persons who are knowledgeable of the student's potential for success in university-level education. The specific standards for admission will be the same for each of the four campuses of the university. The following plans are available to applicants:

**Plan A:** Graduates of fully accredited high schools may be admitted to the University of Missouri-St. Louis on the basis of their high school records and scores of a nationally standardized test. Applicants must have passed their high school courses with satisfactory marks. Admission by certificate is restricted to graduates of schools accredited by the University of Missouri, by other

state universities of similar rank, by the North Central Association or by other recognized accrediting agencies.

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

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

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

3. The University seeks to honor fully its educational commitments through experimental programs for limited numbers of educationally and economically disadvantaged students. An applicant to any of these programs must have a reasonable probability of achieving success.

## ADMISSION

4. Qualified applicants will be admitted and notified of their admission in the order of receipt of completed applications. The director of admissions will accept applications for admission for the fall semester as of the preceding October 1 on the basis of six or more high school semesters. Completed applications, including high school transcripts and test scores, should be on file by February 1 in order to guarantee that they receive full consideration.

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

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

### Approved College Aptitude Tests

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

1. (SCAT) Cooperative School and College Ability Test, Series II, Form 1C (College Level). This test is administered to Missouri

high school students through the Missouri College Testing Program. The student should request that a report of his score be sent to the university campus to which he applies for admission.

2. (OSUP) Ohio State University Psychological Test, Form 24 or Form 25. This test is administered to Missouri high school students through the Missouri College Aptitude and Statewide Testing Program. Scores are reported to the high school which will submit the score to the university campus, usually as an entry on the high school transcript which accompanies the application form.
3. (ACT) American College Testing Program. This test is administered at many locations across the United States under the auspices of the ACT program. The student should request that a test score report be sent to the university campus to which he applies for admission.
4. (SAT) Scholastic Aptitude Test. This test is administered at many locations across the United States under the auspices of the College Entrance Examination Board. The student should request that a test score report be sent to the university campus to which he applies for admission.

**Additional Information** Additional and more detailed information on the university's new policy for freshman admission will be provided to Missouri high school guidance counselors. The same information will be sent to out-of-state counselors on request. High school students should contact their guidance counselors for additional information.

Entrance examinations should be

## ADMISSION

taken during the senior year at the earliest possible time. Students who plan to use the College Boards for placement test scores should present a score in English and in mathematics. All test scores should be on file in the Admissions Office before June 1.

Students who plan to enroll in mathematics courses will be required to present scores from the Missouri Mathematics Placement Test. The Mathematics Placement Test is administered as part of the Missouri Colleges Placement Test battery. The University of Missouri-St. Louis is a testing center. Additional information may be obtained from the Admissions Office.

**Preparation for College** Applicants must present 15 acceptable high school units, excluding physical education and military science. The minimal recommended pattern is: English-four units; mathematics-two units, excluding general mathematics; science-one unit of laboratory science; social studies-one unit. For students planning to pursue a liberal arts degree, two units in one foreign language are recommended.

It is recommended that any remaining units in addition to the above schedule should be taken from such areas as art, music, economics, a second foreign language, two additional units of the same language, mathematics and science. The student should choose his remaining units in keeping with his career choice.

**Advanced Standing for Freshmen** The University of Missouri-St. Louis grants advanced standing in the form of credit hours to entering freshmen who, on the basis of performance on the Advanced Placement Tests of the College Entrance Examination Board

and faculty administered tests, demonstrate proficiency in certain college-level courses such as English, mathematics, history, biology, chemistry, physics, accounting, political science and foreign languages.

Applications to take CEEB examinations and inquiries about the material covered should be addressed to College Board Advanced Placement Examinations, Box 592, Princeton, New Jersey 08540. The score reporting institution code number for the University of Missouri-St. Louis is 6889.

Test scores should be sent to the director of admissions. These must be on file before the first day of classes.

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

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

Out-of-state applicants may be considered for admission with the completion of six semesters of work provided space is available.

A non-refundable application evaluation fee of \$10 must accompany

## ADMISSION

the application for admission. Checks or money orders should be made payable to the University of Missouri. Upon notification of acceptance, the applicant will be requested to submit a \$50 non-refundable advance payment of his registration fee. This amount will be credited to the student's incidental fee when he enrolls in the university. Non-resident students are subject to the non-resident tuition fees.

## TRANSFER STUDENTS

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

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

be submitted by July 1; for the winter semester by December 1; and for the summer session by May 1.

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

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

**Advanced Standing** Advanced standing in the form of credit hours may be allowed for work satisfactorily completed in another college or university of recognized standing 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.

## ADMISSION

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

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

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

upon college work is not eligible to take part in this program designed particularly for entering freshmen.

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

**Adults and Veterans** Applicants who are veterans of military service or who are over twenty-one years of age and who do not qualify for admission as regular freshman students, but who by reason of special preparation or attainment or exceptional aptitude are judged qualified to pursue certain courses, may be admitted as special or irregular students although not as candidates for a degree. Such students may become regular degree candidates on the basis of their performance in the course work undertaken. Military personnel, veterans and other adults may qualify for admission by satisfactorily passing the high school level General Education Development tests prepared for the United States Armed Forces Institute.

## GRADUATE STUDENTS

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

## ADMISSION

in Business is required.

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

## STUDENTS FROM OTHER COUNTRIES

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

All students will be required to





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.

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

### THE EVENING PROGRAM

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

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

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

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

be admitted as a special student though not as a candidate for a degree.

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

### OTHER STUDENTS

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

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

**Credit for Military Service** Credit may be allowed for many of the service

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

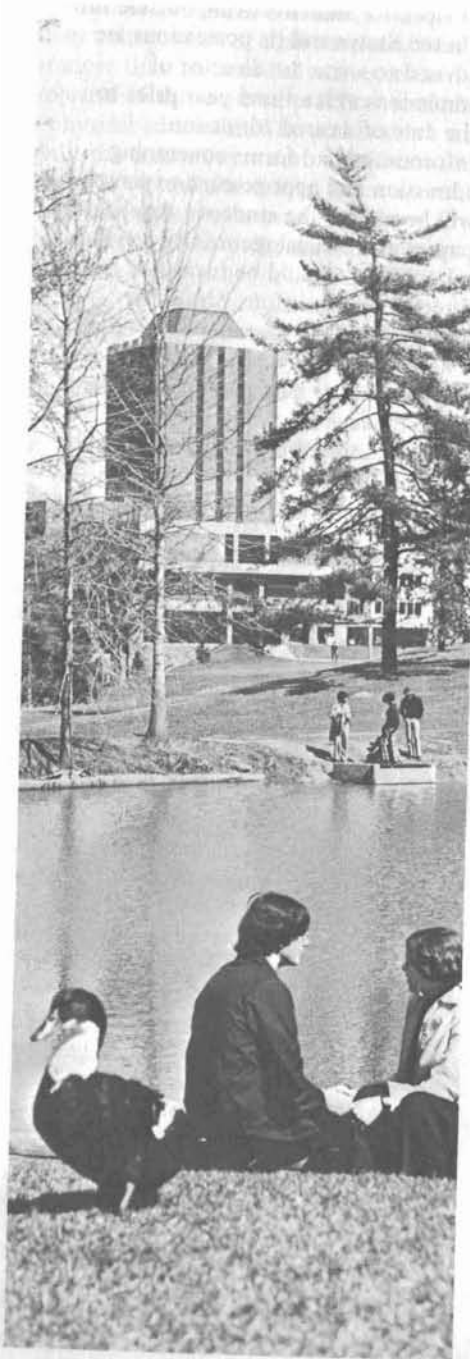
### REGISTRATION FOR FORMER STUDENTS

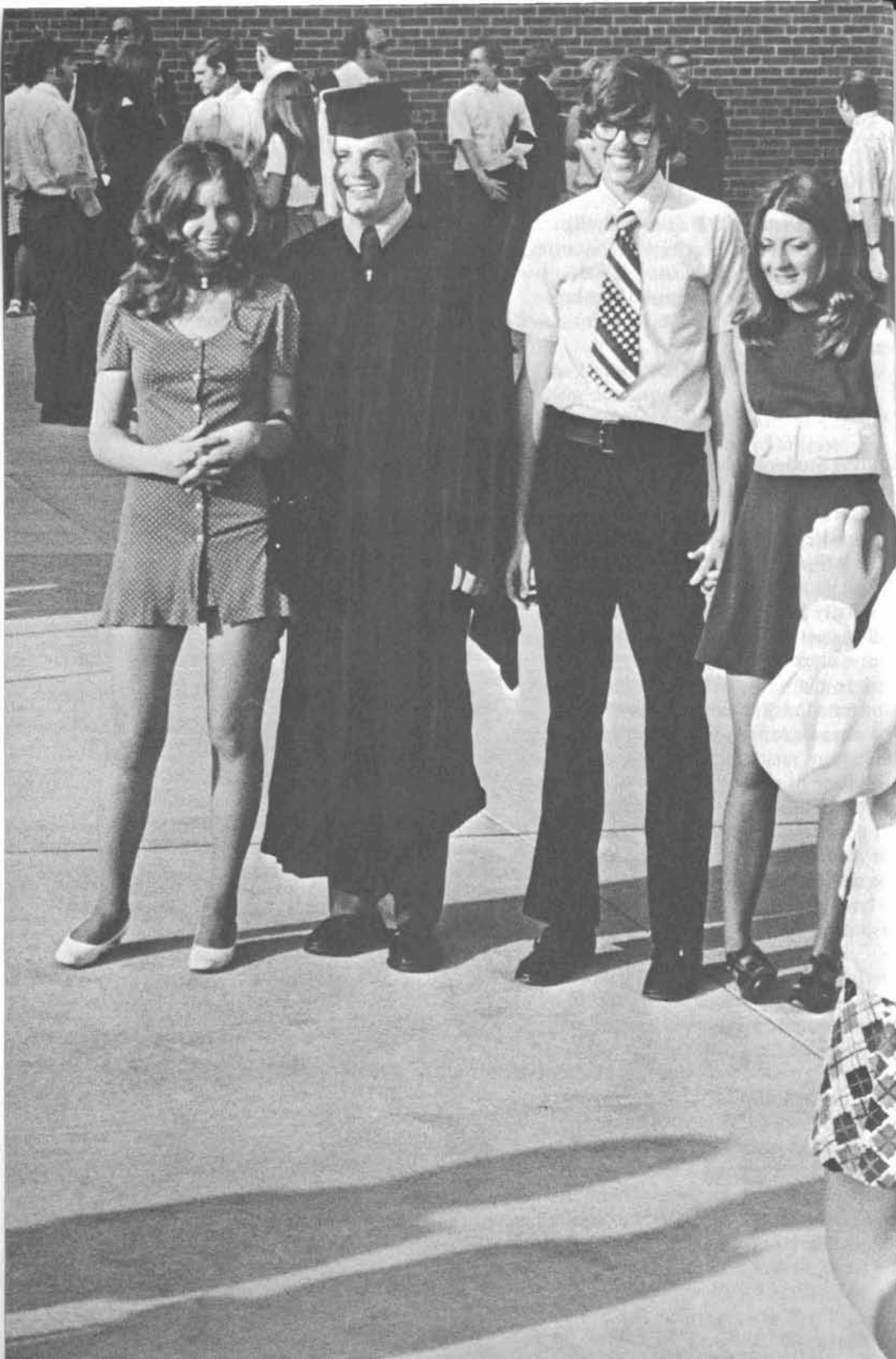
Former students (not currently enrolled) should file a request for permit to re-enroll with the director of admissions at least thirty days in advance of the registration period.

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

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

A student who enters after the regular registration period, may, because of closed courses, find difficulty in securing the subjects he desires; moreover, he may not be permitted to carry the full amount of work but must enroll for a proportionately reduced amount of work depending on the date of entrance. Ordinarily, no student will receive credit for work in any division of the university after the expiration of one-eighth of the scheduled time. The dates of the regular registration period are shown in the university calendar.





## Fees and Expenses

Detailed information regarding fees and expenses is furnished in the University of Missouri-St. Louis *Schedule of Courses* and a pamphlet, *Tuition and Residency Rules*, available from the Cashier's Office.

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

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

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

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

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

Regular Semester	
Hours Credit	Incidental Fee
9 or more .....	\$250.00

Summer Session	
5 or more .....	\$125.00

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

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

## FEES AND EXPENSES

within a year following payment.

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

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

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

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

Summer Session	
Hours Credit	Non-Resident Fee
1-3	No Fee
4	\$130.00
5 or more	\$250.00

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

### Regular Semester

Hours Credit	Fee
10 or more	\$24.50

### Summer Session

Hours Credit	Fee
5 or more	\$12.25

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

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

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

1. For Music Majors: A single fee of \$45.00 per semester to cover all required applied music instruction.

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

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

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

**Parking Fee** There will be a parking fee for each motor vehicle (except

## FEES AND EXPENSES

motorcycles and motorscooters) used by a student on campus based on \$2.50 per credit hour up to a maximum of \$25.00. The daily fee charge for students who do not use campus parking facilities regularly is 50 cents.

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

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

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

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

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

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

### Refund of Fees

#### Regular Semester

Withdrawals	Refund
Before the day classwork begins	Full refund less \$10 for cost of handling registration

Within two calendar weeks from and

including the day classwork begins 70% refund

After two calendar weeks and including six calendar weeks 50% refund

After six calendar weeks No refund

#### Summer Session

Before the day classwork begins Full refund less \$10 for cost of handling registration.

Within one calendar week from and including the day classwork begins 70% refund

After one calendar week and up to including three calendar weeks 50% refund

After three calendar weeks No refund

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

#### Regular Semester

##### Schedule for refunds

1st through 4th week	75% refund
5th through 8th week	50% refund
9th through 12th week	25% refund
13th week and after	No refund

#### Summer Session

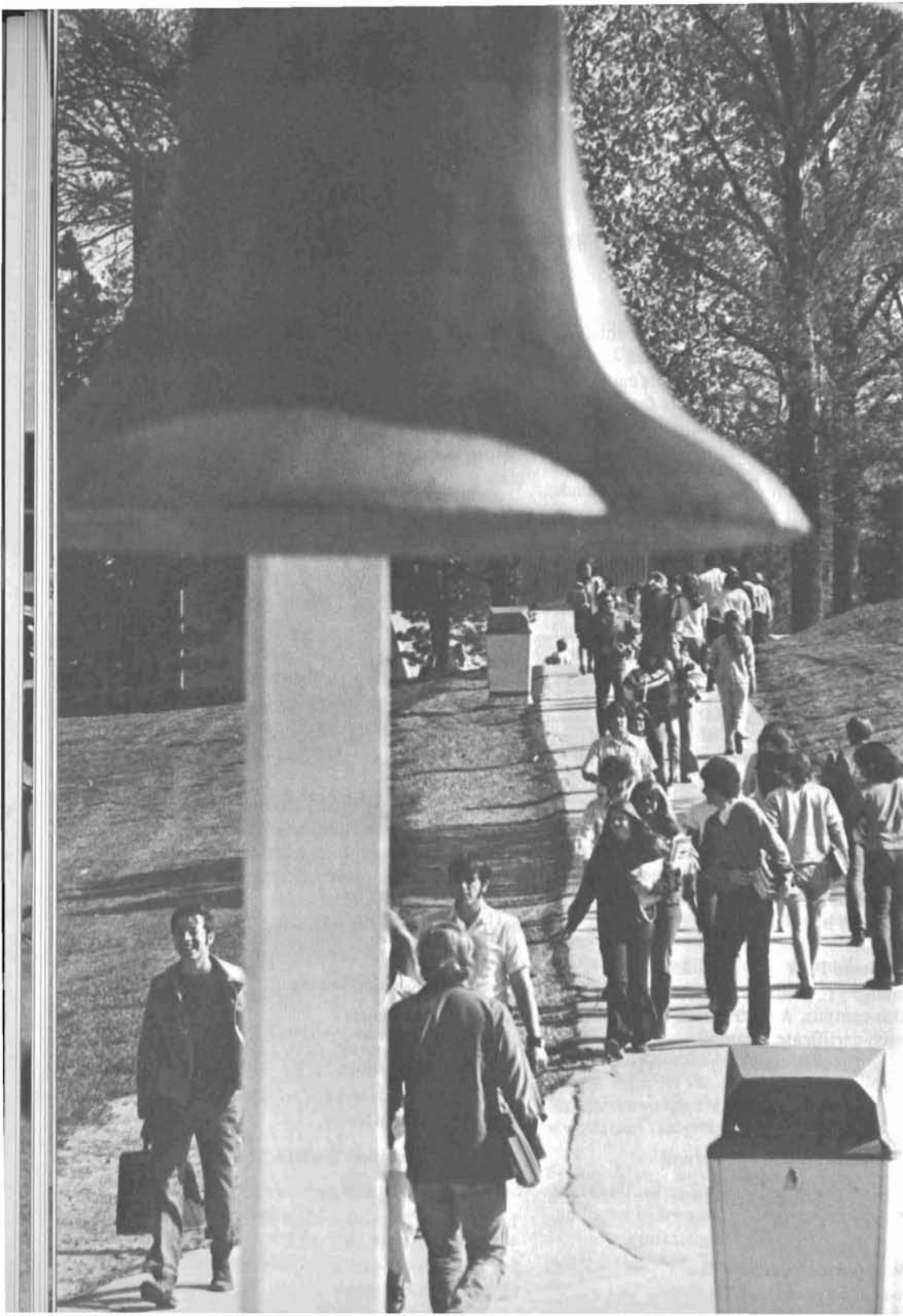
##### Schedule for refunds

1st through 2nd week	75% refund
3rd through 4th week	50% refund
5th through 6th week	25% refund
6th through 8th week	No refund



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## Student 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.

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

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

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

These scholars are chosen on the basis of high school rank, test scores and the recommendation of the high school principal or counselor. Curators

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

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

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

## STUDENT FINANCIAL AID

provided their cumulative collegiate grade point averages meet the established standards and sufficient funds are available.

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

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

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

Upperclassmen (sophomores through seniors) must have achieved a specified cumulative grade point average over at least 24 acceptable hours

excluding summer session. Students transferring from other institutions of higher education will be considered on the same basis as continuing students. An upperclass student's eligibility for waiver of incidental fee will be determined annually after the close of the regular academic year. An application showing need for financial aid is required for the waiver-of-fees. Forms are available in the student aid office.

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

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

## RESERVE OFFICER TRAINING CORPS SCHOLARSHIPS

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

## STUDENT FINANCIAL AID

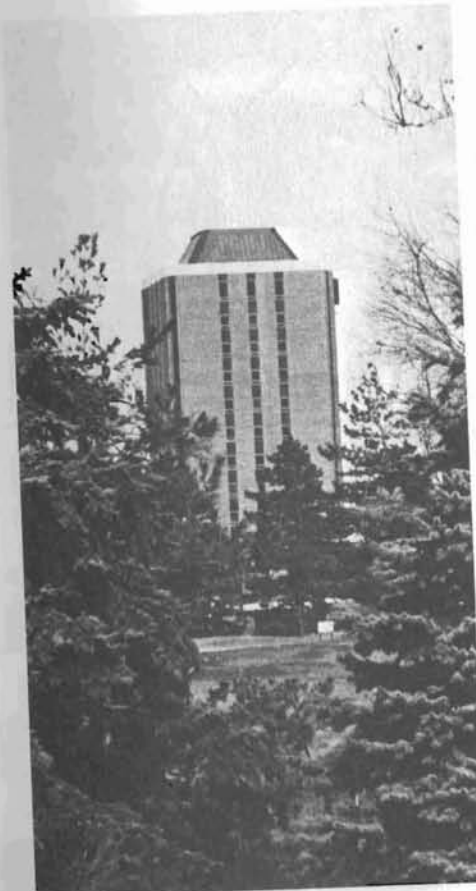
year scholarship may continue to compete annually under the program locally administered by the Aerospace Studies Program, St. Louis University.

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

**Army ROTC Scholarships** In addition to four-year ROTC scholarships awarded to graduating high school students, Army ROTC scholarships are available to qualified second, third and fourth

year students enrolled in Army ROTC. These scholarships pay full tuition, books and lab fees plus \$100 monthly subsistence allowance for up to ten months of the school year. Selection for the three, two and one-year scholarships is based upon academic achievement, leadership potential and demonstrated motivation toward a career as a commissioned officer.

Additional information may be obtained from the Professor of Military Science, Washington University, telephone 863-0100, extension 4662.





## Student Life

### STUDENT AFFAIRS

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

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

**Office of the Dean** The Office of the Dean supervises the entire Student Affairs program and coordinates the various activities and services promoted by the Office of Student Activities, the Office of Student Programming, the Office of Alumni Activities, the University Placement Office and the Student Health Center. In addition, the dean of students is designated by the

University of Missouri "Rules of Procedure in Student Disciplinary Matters" as the primary officer for administration of discipline.

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

### OFFICE OF STUDENT ACTIVITIES

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

These recognized student



## STUDENT LIFE

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

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

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

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

### OFFICE OF PROGRAMMING

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

Included in the Program Board's offerings are a weekday (Monday-Tuesday) and a weekend (Friday-

Saturday) film series, frequent informal concerts in the University Center Lounge featuring professional entertainers and a variety of music forms, lectures, concerts, performances by professional theatre companies, art exhibitions and the social activities connected with Homecoming.

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

### OFFICE OF ALUMNI ACTIVITIES

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

### STUDENT HEALTH CENTER

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

## STUDENT LIFE

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

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

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

### LIBRARY SERVICES

The Thomas Jefferson Library has approximately 340,000 volumes and seats approximately 1,000 students. Some 7,836 reels of microfilm, 500,000 microfiche and microcards, and 85,144 government documents augment a reference and research collection of 182,100 volumes.

Thirty staff members and professional librarians are available to assist students and faculty members. Additional library materials are available through the Inter-Library Loan Service from other University of Missouri libraries. Faculty and graduate students engaged in research can request materials from other libraries in the country through this service.

The library is open from 7:30 a.m. to midnight, Monday through Thursday, 7:30 a.m. to 8:00 p.m. on Friday, 8:00 a.m. to 5:00 p.m. on Saturday, and 2:00 p.m. to 10:00 p.m. on Sunday.

Special hours are posted for holidays, vacation periods and exam periods.

### UNIVERSITY CENTER

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

### UNIVERSITY BOOKSTORE

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

The Bookstore is the campus headquarters for the ordering and selling of textbooks and supplementary reading materials including paperback books. Small items such as pens, 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 and caps and gowns are ordered through the Bookstore.



## GENERAL REGULATIONS

students who are in good standing have the option of taking on a pass-fail grading basis up to 24 credit hours during their academic careers.

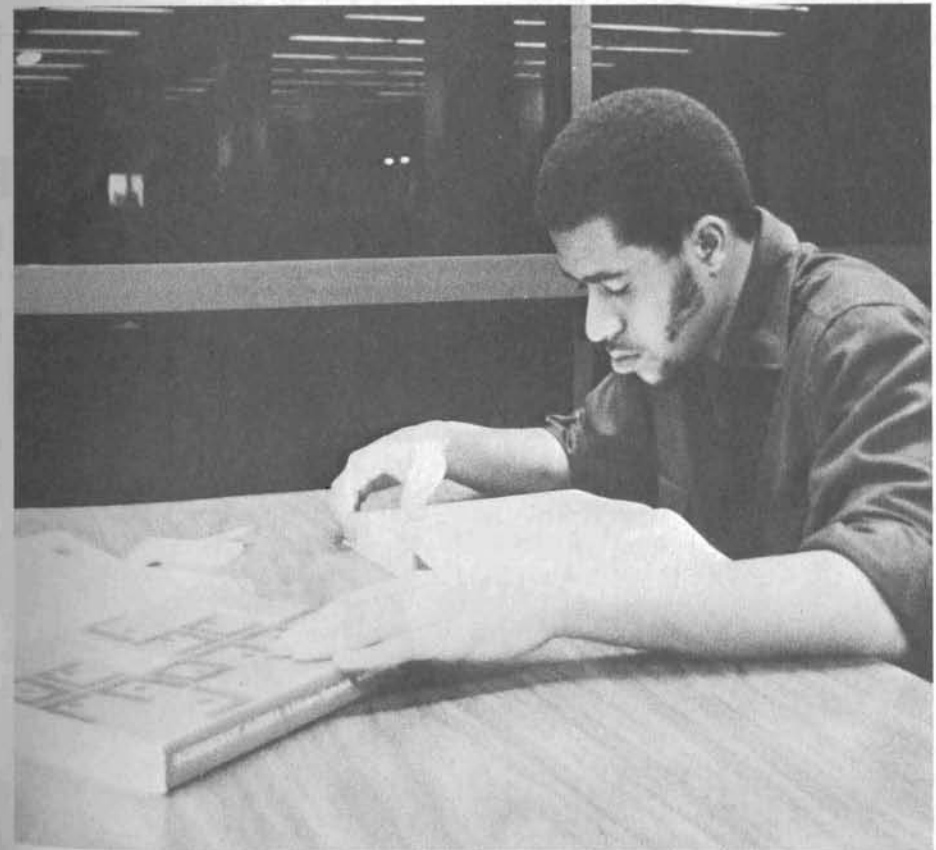
Under the system students may take elective courses or courses which satisfy the general education requirements. "Pass" grades ("A" through "D") have no numerical value in computing a student's overall academic average, but will satisfy hourly graduation requirements.

In most cases courses required for a specific degree may not be taken on the pass-fail basis. Academic departments

may designate other courses within their jurisdiction which may not be taken under the option.

Students register for courses in the normal manner, and may exercise the pass-fail option by notifying the Office of the Dean of the appropriate division before the end of the first four weeks of the term. Instructors are not informed which students are taking courses on the pass-fail system.

A grade of "F" received on the pass-fail system will be computed in the overall grade-point average as if the student had received a grade of "F" on the regular grading scale.





## College of Arts and Sciences

The Thirteen departments of the College of Arts and Sciences have curricula designed to provide a general foundation in the liberal arts for all students. At the same time, a major in any of these departments affords a degree of specialization sufficient to prepare students for professional or graduate careers.

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

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

During the first semester, freshmen are generally advised concerning the selection of course work in the Office

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

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

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



## COLLEGE OF ARTS AND SCIENCES

natives of that culture and not upon the interactions of that culture with Euro-American cultures.

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

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

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

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

### Communicative Skills:

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

### Mathematics Skills:

- A. Completing two years of high school mathematics exclusive of general mathematics or business mathematics with

grades of "C" or better.

- B. Receiving a satisfactory score on the mathematics placement test.
- C. Passing a college level mathematics course.
- D. Passing Mathematics 02

### Requirements for the A.B. Degree

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

A.B. degree candidates must also complete 13 college credit hours or the equivalent in proficiency in one foreign language. (All foreign language courses numbered 100 or 101 meet this requirement.) Students entering with no high school foreign language units must enroll in Language 1 and complete the following sequence: 1, 2, 101, (or 100).

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

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

Any student who wishes to be exempt and who has excelled in his courses or otherwise acquired language proficiency must take a proficiency examination which will be given in January and August. (Specific dates,

## COLLEGE OF ARTS AND SCIENCES

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.

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

### Requirements for the B.M. Degree

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

**Arts and Sciences as Preliminary to Business and Education** Students planning to take a degree in the School of Education 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. These students need not meet graduation requirements of the college, but they are responsible for meeting requirements set by the school into which they intend to petition for admission. Students working for a B.S. in secondary education may choose to major in any one of the departments of the College of Arts and Sciences.

## ADMINISTRATION OF JUSTICE PROGRAM

### Faculty

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

\*Primary appointment, Department of Political Science

## COLLEGE OF ARTS AND SCIENCES

**General Education Requirements** Each administration of justice major must satisfy the general education requirements of the university listed on page 21, the general education requirements of the College of Arts and Sciences as they apply to the S. degree and the requirements of the administration of justice program.

The 13 hours of foreign language required for the A.B.B. degree optional for the B.S. candidate. Students may 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-Western requirement may be met by taking any Asian or African studies course.

**Program Requirements** The Administration of Justice Program offers students three options: 1) The American Policing System; 2) Etiology and Treatment of Offenders; and 3) Criminal Justice Planning. Every candidate for the B.S.S. degree in administration of justice must complete a core curriculum consisting of the following courses: Sociology 1120, 214 and 326, and Administration of Justice 99, 100, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

In addition to the core curriculum, students must select at least one course from one of the three program options. These are, as follows: Option 1: Economics 51, Administration of Justice 221, 250, 260, 325, and Political Science 340; Option 2: Psychology 1, 2, 145, or 171, Sociology 130 and Administration of Justice 205, 310,

330, 340, and either 227 or 360; and Option 3: Mathematics 40, or its equivalent, and 101, Business 104, 224, and 375, Economics 51 and 301, and 6 units from Administration of Justice 205, 227, or 310. The maximum number of hours under any option is 39 hours of AOJ courses.

## DEPARTMENT OF BIOLOGY

### Faculty

**Lawrence D. Friedman, Ph.D.** (University of Wisconsin), chairman, associate professor  
**Robert S. Bader, Ph.D.** (University of Chicago), dean, College of Arts and Sciences, professor  
**Frank H. Moyer, Ph.D.** (Johns Hopkins University), professor  
**Monroe W. Strickberger, Ph.D.** (Columbia University), professor  
**Jacques J. Delente, Ph.D.** (University of Caen), visiting associate professor  
**Harvey P. Friedman, Ph.D.** (University of Kansas), associate professor  
**Gary T. Heberlein, Ph.D.** (Northwestern University), associate professor  
**John E. Averett, Ph.D.** (University of Texas-Austin), assistant professor  
**Albert Derby, Ph.D.** (City University of New York), assistant professor  
**Theodore H. Fleming, Ph.D.** (University of Michigan), assistant professor  
**Charles R. Granger, Ph.D.** (University of Iowa), assistant professor  
**Donald E. Grogan, Ph.D.** (University of Missouri-Columbia), assistant professor  
**Buford R. Holt, Ph.D.** (Michigan State University), assistant professor  
**John E. Ridgway, Ph.D.** (University of Texas-Austin), assistant professor  
**Bedford M. Vestal, Ph.D.** (Michigan State University), assistant professor

## COLLEGE OF ARTS AND SCIENCES

**Larry J. Lee, Ph.D.** (Washington University), assistant professor  
**Ann A. Wilke, M.S.**, instructor  
**Dimple J. Jud, A.B.**, assistant instructor

**General Education Requirements** Each biology major must satisfy the general education requirements of the university listed on page 21 and the general education requirements of the College of Arts and Sciences listed on page 47. Courses in 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 requirements with one of these languages. Biology majors who wish to substitute other languages for those listed may do so in consultation with their adviser.

**Related Area of Study Requirements** Each biology major must complete 15 hours of chemistry including Chemistry 11, 12, 261 and 263. He must take one year's course work in introductory physics or the equivalent, and Mathematics 101 or the equivalent. Additional work in chemistry, physics and mathematics is recommended.

**Departmental Requirements** Each biology major must complete at least 33 hours of biology including Biology 10, 224, 276, 289 and a minimum of one course to be taken from each of the following three areas:

- I (Cellular and Molecular Area)  
Biology 216, 235, 310, 314, 317, 334;
- II (Organismal Area) Biology 213, 235, 250, 280, 334, 381;
- III (Population and Ecology Area)  
Biology 242, 246, 280, 295,

322, 342, 381.

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.

### Departmental Recommendation

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



## DEPARTMENT OF CHEMISTRY

## Faculty and Staff

Charles W. Armbruster, Ph.D. (Washington University), Chairman  
Associate Professor

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

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

Robert W. Murray, Ph.D. (Yale University) Professor

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

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

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

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

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

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

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

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

Eric Block, Ph.D. (Harvard University) Assistant Professor

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

Joyce Y. Corey, Ph.D. (University of Wisconsin) Assistant Professor

John L. Gutweiler, Ph.D. (Saint Louis University) Visiting Assistant Professor

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

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

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

Rosemarie Nassif, Ph.D. (Catholic University of America) Visiting Assistant Professor

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

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

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

Paul L. Gierer, Ph.D. (Southern Illinois University-Carbondale) Research Associate

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

George Semeniuk, Ph.D. (Duke University) Research Associate

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

Robert Cabaniss, Glassblower

Jack L. Coombs, B.A. Laboratory Stores Manager

William Garrison, Electronics Technician

Norman Windsor, Electronics Technician

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

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

The 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.

A major in Chemistry also provides excellent pre-professional education for those interested in the health sciences (medicine, dentistry, etc.).

**General Education Requirements** Each chemistry major must satisfy the general education requirements of the University listed on p. 21 and the general education requirements of the College of Arts and Sciences listed on p. 47. 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 & 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.

**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, 175, and 201 and Physics 111, 112, and one physics laboratory course (preferably Physics 201).

## DEPARTMENTAL REQUIREMENTS

**Bachelor of Arts in Chemistry** The candidate for the A.B. degree with a major in chemistry must complete 32 hours of chemistry including Chemistry

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

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

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

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



## COLLEGE OF ARTS AND SCIENCES

may be substituted for Chemistry 262.

**Bachelor of Arts in Chemistry - 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, 163, 271, and 302; Chemistry 280; Psychology 1, 2, and 271.

**Bachelor of Arts in Chemistry - 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, Business Administration 31 and 140. Following completion of this core curriculum the student may wish to choose from one of the following further options: 1) Quantitative Management - Business Administration 109, 202, 308, and 375; Marketing Management - Business Administration 106, 275 and/or 301; Financial Management - Business Administration 204, 334 and 350; Accounting - Business Administration 145, 340 and/or 345.

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

## DEPARTMENT OF ECONOMICS

### Faculty

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

\*Joint appointment with School of Business Administration

## BACHELOR OF ARTS IN ECONOMICS

**General Education Requirements** Each candidate for the bachelor of arts in economics must satisfy the general education requirements of the university listed on page 21 and the general education requirements of the College of Arts and Sciences listed on page 47.

## COLLEGE OF ARTS AND SCIENCES

Courses in economics may be used to meet the university's social science area requirements. The college's foreign language requirement may be met in any language. The non-Western area requirements may be met by taking any non-Western course. Students not majoring in economics may take any economics course on a pass-fail basis. Candidates for the A.B. may take any course outside the major field, as well as Economics 50 and 51 on a pass-fail basis.

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

**Departmental Requirements** Candidates for the A.B. degree in economics are required to take at least 33 hours in the major field, including all of the following courses: Economics 50, 51, 250 and 251. Candidates for the B.S. degree in secondary education with a major in economics should refer to page 96 of this catalog.



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

## BACHELOR OF SCIENCE IN ECONOMICS

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

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

## COLLEGE OF ARTS AND SCIENCES

mathematics course numbered 175 or higher.

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

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

## GEOGRAPHY COURSES

The Department of Economics offers several courses in Geography that do not carry credit toward the major for the A.B. or B.S. in economics. They can be used to satisfy the university's social science area requirement. Each of these courses also satisfies the state certification requirements for elementary teachers and for secondary social studies teachers.

Geography courses may be taken on a pass-fail basis.

## DEPARTMENT OF ENGLISH

### Faculty

Jane Williamson, Ph.D. (Bryn Mawr College), chairman, associate professor  
B. Bernard Cohen, Ph.D. (Indiana University), professor  
Charles T. Dougherty, Ph.D. (University of Toronto), professor  
William C. Hamlin, Ph.D. (University of Missouri-Columbia), professor  
Spencer M. Allen, B.J., director, Urban Journalism Center, associate professor journalism

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

## COLLEGE OF ARTS AND SCIENCES

Diane Kurtz, M.A., instructor  
Jane Parks, M.A., instructor  
Judith Pearson, M.A., instructor  
LaVerne Peters, M.A., instructor speech  
Carolyn Planck, M.A., instructor speech  
Barbara Relyea, M.A., instructor  
Jacqueline Resnikoff, M.A., instructor  
Kathleen Sala, M.A., instructor speech  
Howard Schwartz, M.A., instructor  
Lorraine Sheehan, M.A., instructor  
Jeanne Sherrill, M.A., instructor  
Kim Sindel, M.A., instructor  
Marion Steefel, M.A., instructor

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

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

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

literature courses: English 171, 172, 373, 374 or 375.

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

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

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

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

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

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

## COLLEGE OF ARTS AND SCIENCES

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

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

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

## DEPARTMENT OF FINE ARTS

### Faculty

**Arnold Perris**, Ph.D. (Northwestern University), chairman, associate professor music

### Music

**Kenneth E. Miller**, Ph.D. (Northwestern University), professor

**Ronald Arnatt**, D.M. (Westminster Choir College), associate professor

**Warren T. Bellis**, D.M.A. (University of Michigan), associate professor

**Gertrude Ribla**, (Metropolitan Opera), associate professor

**Neil Bjurstrom**, Ph.D. (University of Iowa), assistant professor

**Clarence Drichta**, M.M., assistant professor

**Evelyn Mitchell**, (Concert Pianist), assistant professor

**Leonard Ott**, Ph.D. (Michigan State University), assistant professor

\*\***Franklin Perkins**, Ph.D. (Washington University), assistant professor

\***George Berry, Jr.**, instructor (bassoon)

\*\***Kenneth Billups**, M.M., instructor

**Hubert Drury**, M.M., instructor (piano)

\***Jan Gippo**, M.M., instructor (flute)

**Laura Hearne**, B.M., instructor (harp)

\***Henry Loew**, instructor (string bass)

\***John MacEnulty**, instructor (tuba)

\***James Meyer**, B.S., instructor (saxophone)

\***Linda Moss**, M.M., instructor (viola)

\***Richard O'Donnell**, instructor (percussion)

\***Kenneth Patti**, B.M., instructor (violin)

**Delores Riley**, M.A., instructor

**Alan Rosenkoetter**, instructor (guitar)

**Evelyn Rubenstein**, instructor (piano)

\***Bernard Schneider**, B.M., instructor (trombone)

\***Gary Smith**, M.M., instructor (trumpet)

\***Janis Smith**, B.M.E., instructor (flute)

**Mary Kay Stamper**, M.A., instructor

\***Thomas Stubbs**, B.S., instructor (percussion)

\*\***Linda Warren**, M.M., instructor

\***Christine Ward**, M.A., instructor (clarinet)

\***Richard Woodhams**, instructor (oboe)

\*Member, Saint Louis Symphony Orchestra

\*\*Evening College

### Art

\*\***Marie Larkin**, Ed.D. (University of Missouri-Columbia), professor

**Paul Corby Finney**, Ph.D. (Harvard) assistant professor

**Carole N. Kaufmann**, Ph.D. (UCLA) assistant professor

**Sylvia Walters**, M.F.A. (University of Wisconsin), assistant professor

**William Epton**, M.A., instructor

**Patricia Kieft**, M.A., instructor

**Nancy Pate**, M.A., instructor

**Marie Schmitz**, M.A., instructor

**Jean Tucker**, M.A., instructor,

\*\*Evening College

### MUSIC

The Department of Fine Arts offers a bachelor of arts (A.B.) with a major in

## COLLEGE OF ARTS AND SCIENCES

music or music history and literature, and a bachelor of music (B.M.) with a major in music education. An audition is required for admission to the major. Each major must satisfy the general education requirements of the university (see page 21). The B.M. program requires courses in music and music education which lead to teacher certification. Foreign language study is required for applied voice students only.

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

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

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

### Music: A.B.

Music Theory 3, 4, 111, 112 (12 hours)

Music History and Literature 101, 102 and one 300 level (9 hours)

Advanced Music Theory 141, 151 (6 hours)

Principal Applied Area and Ensemble (20 hours)

Senior Readings 192 (2 hours)

### Music History and Literature: A.B.

Music Theory 3, 4, 111, 112 (12 hours)

Music History and Literature 101, 102 (6 hours)

Advanced Music Theory 141, 151 (4 hours)

Music History and Literature, 300 level (9 hours)

Principal Applied Area: Piano (12 hours)

Senior Readings 192 (2 hours)

### Music Education: B.M.

Music Theory 3, 4, 111, 112, 141 (14 hours)

Music History and Literature 101, 102 and one 300 level (9 hours)

Principal Applied Music (16 hours)

Beginning Instrumental Techniques (10-13 hours) (Instrumental certification)

Conducting 151, 251 (4 hours)

Ensemble (4 hours)

Curriculum and Methods of Teaching Elementary and Secondary School Music (6 hours)

Professional Education and Student Teaching (15 hours)

Senior Readings 192 (2 hours)

### ART

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

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





**DEPARTMENT OF HISTORY**

**Faculty**

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

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

**General Education Requirements**

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

**Departmental Requirements** A major in history consists of at least 36 hours with a maximum of 45 hours. The student must achieve an overall grade point average of 2.0 in all courses attempted in his major department, and must have a minimum of 36 hours of "C" work or better. Majors are required to take History 31 and 32; two courses from sequence History 3, 4, 5, 71, and 120; one course at the 290 level; two 300-level European History courses; two 300-level United States History

courses; one 300-level course in another area; and two electives. Other areas, at present, consist of Asian, Latin American, Wars of National Liberation, Asian-American Relations, Quantitative Methods and History of Science. No more than 15 hours at the 300-level may be elected in any of these three divisions. History 265 may be elected by those students seeking certification.

**DEPARTMENT OF MATHEMATICS**

**Faculty**

- Deborah Tepper Haimo, Ph.D.** (Harvard University), professor
- Edward Z. Andalafte, Ph.D.** (University of Missouri-Columbia), associate professor
- Raymond Balbes, Ph.D.** (University of California, Los Angeles), chairman, associate professor
- Gerald Peterson, Ph.D.** (University of Utah), associate professor
- Jerrold Siegel, Ph.D.** (Cornell University), associate professor
- Grant V. Welland, Ph.D.** (Purdue University), associate professor
- William Connett, Ph.D.** (University of Chicago), assistant professor
- Richard Friedlander, Ph.D.** (University of California, Los Angeles), assistant professor
- Rangachary Kannan, Ph.D.** (Purdue University), visiting assistant professor
- Jerome Katz, Ph.D.**, (Yale University), assistant professor
- Edmund Kelly, Ph.D.**, (Massachusetts Institute of Technology), assistant professor
- Wayne L. McDaniel, Ph.D.**, (St. Louis University), assistant professor
- Alan L. Schwartz, Ph.D.**, (University of

Wisconsin), associate chairman, assistant professor  
**James C. Thorpe, Ph.D.**, (Princeton University), assistant professor  
**Frederick Wilke, Ph.D.** (University of Missouri-Columbia), assistant professor  
**Kathleen Aubrey, M.S.**, instructor  
**Michael Avitahl, M.S.**, instructor  
**Thelma Balbes, M.A.**, instructor  
**Ta-Chean Hsu, M.S.**, instructor  
**Matthew Jurotich, M.Sc.**, instructor  
**Chang Je Kim, M.S.**, instructor  
**Arthur Kuehn, M.S.**, instructor  
**Jean Kuntz, M.A.**, instructor  
**Barbara Matthei, M.A.**, instructor  
**Richard Matthei, M.A.**, instructor  
**Sanjiv Rangachari, M.Sc.**, instructor  
**Cynthia Siegel, M.S.**, instructor  
**Shirley Smith, M.S.**, instructor  
**Mary Ann Smola, A.M.**, instructor, assistant to the chairman  
**Mary Stephen, M.A.**, instructor  
**David Stevens, M.A.**, instructor  
**Patricia Stevens, M.A.**, instructor  
**James C. Thorpe, M.A.**, instructor

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

#### Related Area of Study Requirements

In order to broaden a student's understanding of the sources and uses of

mathematics, the department requires study in one or two areas related to mathematics. Each major must complete courses listed in any two of (a) through (l) below:

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

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

1. Algebra-Number Theory: Mathematics 335, 340, 341
2. Analysis: Mathematics 310, 311, 316
3. Geometry: Mathematics 362, 366, 367
4. Applied Mathematics-Probability-Statistics: Mathematics 301, 303, 304, 320, 321, 323, 327

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

**Departmental Recommendations** The department teaches a terminal course, Mathematics 15, for the student who wishes to take a mathematics course and whose major department does not require a course in mathematics.

Mathematics 50 and Mathematics 151 are courses especially designed for the elementary education major:

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

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

## DEPARTMENT OF MODERN FOREIGN LANGUAGES AND LITERATURES

### Faculty

**Marcus Allen, Ph.D.** (University of Pittsburgh), chairman, associate professor of French  
**Enrique Noble, Ph.D.** (University of Havana), professor of Spanish  
**Alfred F. Goessl, Ph.D.** (Tulane University), associate professor of German  
**Robert Floyd Anderson, Ph.D.** (Case Western Reserve University), visiting assistant professor of Spanish  
**Robert I. Cloos, Ed.D.** (Rutgers University), assistant professor of German and education  
**Kay Cushman, Ph.D.** (Indiana University), assistant professor of French\*  
**Fiorenza Di Franco, Ph.D.** (Case Western Reserve University) visiting assistant professor of French  
**Ingeborg M. Goessl, Ph.D.** (University of Kansas), assistant professor of German  
**Paul Hoffman, M.A.** assistant professor of German  
**Carol Merrick, Ph.D.** (University of Wisconsin) assistant professor of Spanish  
**Michael L. Rowland, Ph.D.** (University of North Carolina), assistant professor of French  
**Sonja G. Stary, Ph.D.** (University of Cincinnati), assistant professor of French  
**Marie Angele Abarnou, Licence-ès-lettres,** assistant instructor of French  
**John Antosh, M.A.**, instructor of German  
**Alexandra Butkoff, B.A.**, instructor of Russian

## COLLEGE OF ARTS AND SCIENCES

Albert Camigliano, M.A., instructor of German  
Luis F. Clay, M.A., instructor of Spanish  
Julianne Dueber, M.A., instructor of Spanish  
Minette Grunmann, M.A., instructor of French

\*On leave of absence 1972-73

Martha Heard, M.A., instructor of Spanish  
Michael Hurley, M.A., instructor of Spanish  
Maria Johnson, M.A., instructor of Spanish  
Zayda M. Jung, M.A., instructor of Spanish  
Albert Kalmar, M.A., instructor of German  
Michael J. Mahler, M.A., director of language laboratories  
Rolf Mueller, M.A., instructor of German  
Roger Noel, M.A., instructor of French  
Dolores Richardson, M.A., instructor of French  
Barbara L. Sandmel, M.A., instructor of French  
Gail D. Stark, M.A., instructor of French

The Department of Modern Foreign Languages and Literatures offers work leading to the degree of bachelor of arts, and a field of concentration in foreign language and literature for the elementary and secondary school teacher. The requirements are:

### General Education Requirements

Each language major must satisfy the general education requirements of the University listed on page 21 and the general education requirements of the College of Arts and Sciences listed on page 47. Courses in foreign language,

literature and civilization may be used to meet the university's humanities area requirement. The foreign language requirement of the College of Arts and Sciences may be met in any language.

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

**French** Each major in French must complete the following courses: 101, 171, or 172, 180, 200, 280, 281, and four courses on the 300 level. The following courses in other departments are recommended: Anthropology 345, Language and Culture; Anthropology

## COLLEGE OF ARTS AND SCIENCES



346, Grammatical Theory; English 131 and 132, English Literature Survey; German 110; Spanish 110; History 328, 329, Modern France.

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

**Spanish** Each major in Spanish must complete the following courses: 101, 102, 108, 210, or 211, 280, 281, and four courses on the 300 level, one of which must be 399. The following courses in other departments are recommended: Anthropology 345, Language and culture; Anthropology 346, Grammatical Theory; English 131, 132, English Literature Survey; French 110; German 110; History 311, Spain; History 375, 376, Latin America.

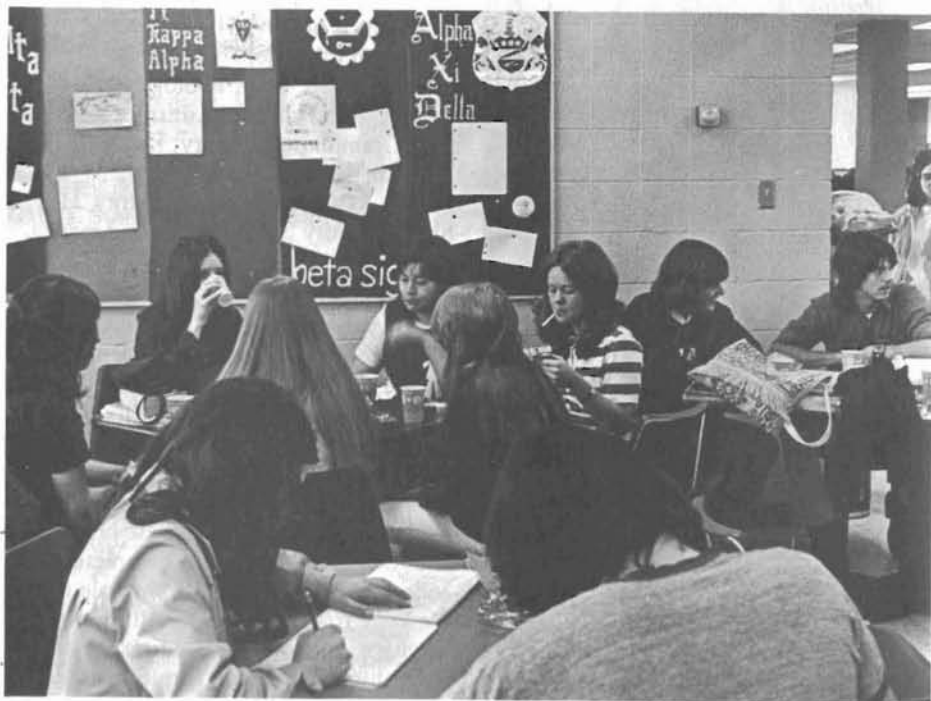
### Requirements for the A.B. Degree

Every A.B. degree candidate must successfully complete a curriculum which includes either a departmental major or an approved integrated inter-disciplinary field. A major must include at least 30 credit hours, but not more than 45 hours in the major department. The requirements vary within these limits. A.B. candidates must also complete 13 college credit hours or the equivalent in the same foreign language. All foreign language courses numbered 100 or 101 meet this requirement. Students entering



with no high school foreign language units must enroll in Language 1 and complete the following sequence: 1, 2, 100 or 101. Experience has indicated that two recent years of the language on the high school level, with above average performance, are necessary for the student to perform satisfactorily in Language 2. If the student's background is deficient, he may enroll in Language 1. Three years of high school language are necessary for a student to enroll in Language 100 or 101. A student with four high school units in one language is exempt from the language requirement. Any student who wishes to be exempt and who has excelled in his courses or otherwise acquired language proficiency must take a proficiency examination, which will be given in January and August.

(Specific dates, times and places will be announced in the course schedules). A passing grade will indicate that the student has achieved a level of proficiency equal to Language 101 and has fulfilled the foreign language requirement. A grade less than passing means that the student must take at least Language 100 or 101. In no case, with the exception of native speakers, will a student be permitted to enroll in a course above the 101 level without taking the proficiency examination. Native speakers may meet the requirement by presenting proof of competence. The Department will certify native speakers of those languages taught at the University. Those proficient in other languages must submit certification of competence to the College of Arts and Sciences.



## DEPARTMENT OF PHILOSOPHY

### Faculty

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

The Department of Philosophy offers a program of study leading to the degree of bachelor of arts with a major in philosophy. Many courses in this program are, by design, of general interest to all students. Several courses address themselves to issues raised by various fields of activity, such as art, education, law or the natural and social sciences, and will be of interest to students concerned with these fields.

Courses primarily for philosophy majors offer complementary approaches—through logical analysis, the study of philosophical classics, and exploration of selected problems—aiming at a balanced concentration in philosophy. Wherever possible, instruction in philosophy relies on discussion in which students are active participants.

### General Education Requirements

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

### Departmental Requirements

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

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

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

With the consent of the department, qualified majors in philosophy may earn departmental honors by 1) completing at least six hours and no more than nine hours of Philosophy 291 (Senior Thesis) during the senior year; 2) submitting an acceptable thesis before the end of the senior year; and 3) passing an oral

## COLLEGE OF ARTS AND SCIENCES

examination based on the subject of the thesis. In such cases, the 30 hours required for a major in philosophy will include the credit earned in Philosophy 291.

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

### Departmental Recommendations

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

## DEPARTMENT OF PHYSICS

### Faculty

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

**Larry J. Lee**, Ph.D. (Washington University), assistant professor  
**Suzanne Gronemeyer**, A.M., instructor  
**Ray E. Elmes**, manager of physics laboratories

**Leonard Piskorski**, senior machinist  
**Walter Hofheinz**, senior electronist

\*Joint appointment with School of Education

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

### BACHELOR OF ARTS IN PHYSICS

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

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

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

## COLLEGE OF ARTS AND SCIENCES

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

### Departmental Requirements

Thirty-six hours of physics including Physics 1, 10, 111, 112, 113, 200, 201, 221, 223, 311, 312, and at least two of the following: 225, 241, 282, 331 are required.

### BACHELOR OF SCIENCE IN PHYSICS

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

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

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

**Related Area of Study Requirements** Twenty-seven hours of mathematics including Mathematics 80, 122, 175, 201, 302, 303 and 304 are required. (Students with experience in digital computer programming may be excused from Mathematics 122.) Additional

hours in mathematics at the 200 level or beyond are highly recommended. Chemistry 11 and 12 or equivalent is required. All students are urged to begin the calculus sequence (Mathematics 80) as soon as possible.

**Departmental Requirements** At least 49 but no more than 51 hours of physics including Physics 1, 10, 111, 112, 113, 200, 201, 221, 223, 225, 241, 311, 312, 331, 335, 343 and 344 are required.

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

**General Education Requirements** Same as physics option.

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

**Departmental Requirements** At least 49

## COLLEGE OF ARTS AND SCIENCES

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

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

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

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

**Departmental Requirements** A

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

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

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

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

**Departmental Requirements** Physics: Thirty-one hours of physics including Physics 1, 10, 111, 112, 113, 201, 202,

## COLLEGE OF ARTS AND SCIENCES

221, 282, 311, 312 are required. Education: Eighteen hours of education including Education 101, 163, 268, 271 and 302 are required.

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

## DEPARTMENT OF POLITICAL SCIENCE

### Faculty

- E. Terrence Jones, Ph.D.** (Georgetown University), chairman, associate professor  
**Edwin H. Fedder, Ph.D.** (American University), director, Center for International Studies, professor  
**Werner F. Grunbaum, Ph.D.** (University of Chicago), professor  
**Norton E. Long, Ph.D.** (Harvard University), director, Center of Community and Metropolitan Studies, curator's professor  
**Eugene J. Meehan, Ph.D.** (London School of Economics), professor  
**Robert S. Sullivant, Ph.D.** (University of Chicago), dean, Graduate School, professor  
**Bryan T. Downes, Ph.D.** (Washington University), associate professor  
**Kenneth F. Johnson, Ph.D.** (University of California, Los Angeles), associate professor  
**Harell R. Rodgers, Jr., Ph.D.** (University of Iowa), associate professor  
**Lyman T. Sargent, Ph.D.** (University of Minnesota), associate professor





## COLLEGE OF ARTS AND SCIENCES

Richard D. Baron, J.D. (University of Michigan), assistant professor  
John N. Collins, Ph.D. (Northwestern University), assistant professor  
Richard E. Hayes, Ph.D. (Indiana University), assistant professor  
Ruth S. Jones, Ph.D. (Georgetown University), assistant professor  
Thomas J. Pavlak, Ph.D. (University of Illinois), assistant professor  
Frederic S. Pearson, Ph.D. (University of Michigan), assistant professor  
Harry Mellman, Ph.D. (University of Illinois), lecturer

The Department of Political Science offers work leading to two undergraduate degrees: the A.B. degree in the College of Arts and Sciences and the B.S. degree in the School of Education.

The requirements for the A.B. degree with a major in political science are as follows:

**General Education Requirements** Each political science major must satisfy the general education requirements of the university listed on page 21 and the general education requirements of the College of Arts and Sciences listed on page 47. Courses in 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.

**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 expects to continue in graduate work in political science or law, or is preparing for government service, foreign service or elementary or secondary school teaching, and should consult with his adviser regarding other recommended electives.

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

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

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

## DEPARTMENT OF PSYCHOLOGY

### Faculty

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

## COLLEGE OF ARTS AND SCIENCES

Edmund S. Howe, Ph.D. (University of London), professor  
Arthur L. Irion, Ph.D. (State University of Iowa), professor  
Alan G. Krasnoff, Ph.D. (University of Texas), professor  
Frederick J. Thumin, Ph.D. (Washington University), professor\*  
Theresa S. Howe, Ph.D. (University of California at Berkeley), associate professor  
James T. Walker, Ph.D. (University of Colorado), associate professor  
D. J. Zerbolio, Ph.D. (Michigan State University), associate professor  
John J. Boswell, Ph.D. (Tulane University), assistant professor  
Charles Gouaux, Ph.D. (Purdue University), assistant professor  
Donald D. Lisenby, Ph.D. (Washington University), assistant professor  
Samuel J. Marwit, Ph.D. (State University of New York at Buffalo), director, Counseling Service, assistant professor  
Miles L. Patterson, Ph.D. (Northwestern University), assistant professor  
Denton J. Stewart, Ph.D. (Temple University), assistant professor  
David R. Ziff, Ph.D. (University of Texas), assistant professor

\*Primary appointment, School of Business Administration

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

**General Education Requirements** Each psychology major must satisfy the general education requirements of the

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

**Related Areas of Study Requirements** Each psychology major must take Mathematics 30 or the equivalent prior to or concurrent with Psychology 101.

**Departmental Requirements and Areas of Concentration** Each psychology major must complete 32 hours of psychology including Introductory Psychology (preferably in the freshman year), and immediately afterwards Psychology 101 and 219. At least nine additional hours must be at the 190 level or above. In no case will more than 45 hours of psychology be applied toward the A.B. degree in psychology.

**1) Graduate School Concentration** This course of study would be most suitable for students planning application to a doctoral program in psychology. In addition to the departmental requirements, these students are also required to take Psychology 192, 193 and 261 and one of the following: 214, 254, 255, 257, 258 or 265.



The following two areas of concentration would be most appropriate for students with no plans for doctoral training who have decided to make their careers in community activity or child-related fields and would prefer a somewhat more integrative focus than might be obtained in the General Psychology Major area.

**2) Child Care and Development Concentration**

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

**3) Community Mental Health Concentration**

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

**4) General Psychology Major**

This area is suitable for students interested primarily in a general liberal education in psychology without any particular career or professional concentration. In addition to the departmental requirements, these

students are also required to take one of the following: Psychology 214, 254, 255, 257, 258 or 265.

**DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY**

**Faculty**

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

**Anthropology Faculty**

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

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

Students may declare a major in Sociology by filling out a petition form in the office of the Dean of Arts and Sciences (refer to Section IV under "Degrees" in the catalog). After declaration, a copy of the student's academic file is sent to the department. These records are maintained by the general undergraduate

## COLLEGE OF ARTS AND SCIENCES

Sociology advisor who also acts as ombudsperson for students. This advisor keeps regular advising hours. Each Sociology major should obtain a copy of the "Guide to Undergraduate Studies in Sociology-Anthropology" from this advisor. In addition, each sociology major is assigned to a faculty advisor. The students are urged to consult with their faculty advisor early in planning their undergraduate program.

### General Education Requirements

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

### Departmental Program Emphases

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

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

philosophy of science.

### Sociology Core Requirements

- Soc. 10 Introduction to Sociology (3)
- Soc. 110 Sociological Theory (3)
- Soc. 120 Quantitative Techniques or Math 102 Finite Mathematics (4)
- Soc. 130 Research Methods (4)

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

- a) no more than 3 hours in Sociology and no more than 3 hours in Anthropology under the 100 level will be counted toward the 18 elective hours.
- b) at least 3 credit hours must be taken on the 300 level in Sociology.

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

### UNDERGRADUATE SOCIAL SERVICE MAJOR

**Related Area Requirements** Same as for Sociology Majors.

### Undergraduate Social Service Major Requirements

- Soc. 10 Introduction to Sociology (3)
- Soc. 110 Sociological Theory (3)
- Soc. 120 Quantitative Techniques or Math 102 Finite Mathematics (4)
- Soc. 130 Research Methods (4)
- Soc. 242 Sociological Aspects of Social Work (3)

## COLLEGE OF ARTS AND SCIENCES

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

Twelve (12) hours of credit to be chosen from: Social Issues and Community Organization, Social Psychology, Sociology of Deviant Behavior, Sociology of the Family, Juvenile Delinquency, Criminology, Medical Sociology, Sociology of Education, Social Stratification, Urban Sociology, Problems of the Urban Community, Minority Groups.

### THE B.A. IN ANTHROPOLOGY

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

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

### Anthropology Requirements:

- Anthropology 5 Human Origins (4)
- Anthropology 11 Man, Culture & Society (3)
- Sociology 120 Quantitative Techniques (4)
- Anthropology 325 Comparative Social Organization (3)
- Anthropology 291 Theories of Anthropology (3)
- Anthropology 390 Senior Seminar (3)

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

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







## School of Business Administration

### FACULTY

**Emery C. Turner, D.B.A.** (Washington University), dean, professor of accounting

**Donald H. Driemeier, D.B.A.** (Washington University), associate dean, associate professor of finance

**Sioma Kagan, Diplom-Ingenieur, Ph.D.** (Columbia University), professor of international business

**Frederick E. May, Ph.D.** (University of Michigan), professor of marketing

**Fred J. Thumin, Ph.D.** (Washington University), professor of management and psychology

**Dik Twedt, Ph.D.** (Northwestern University), professor of marketing

**Robert S. Stich, Ph.D.** (Oklahoma State University), professor of finance and business policy

**Albert P. Ameiss, Ph.D.** (St. Louis University), associate professor of accounting

**Howard Baltz, Ph.D.** (Oklahoma State University), associate professor of quantitative management science

**Philip Brumbaugh, Ph.D.** (Washington University), associate professor of quantitative management science

**Vincent B. D'Antoni, D.B.A.** (Washington University), associate professor of finance

**David P. Gustafson, Ph.D.** (Stanford University), associate professor of management

**Robert E. Markland, D.B.A.** (Washington University), associate professor of management

**R. Frank Page, Ph.D.** (University of Illinois), C.P.A., associate professor of accounting

**Donald Rogoff, D.B.A.** (Michigan State University), associate professor of finance

**Robert A. Schuchardt, D.B.A.** (Washington University), associate professor of accounting

**Norbert C. Terre, D.B.A.** (Washington University), C.P.A., associate professor of accounting

**James P. Tushaus, Ph.D.** (University of Illinois), associate professor of marketing

**George C. Witteried, M.B.A., J.D.** (Northwestern University), associate professor of industrial relations

**Larry D. Baker, D.B.A.** (Indiana University), assistant professor of management

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

**Nicholas DiMarco, Ph.D.** (Case-Western University), assistant professor of management

## SCHOOL OF BUSINESS ADMINISTRATION

**Douglas E. Durand, Ph.D.** (Washington University), assistant professor of management

**Joseph P. Giljum, J.D.** (St. Louis University), L.L.M. (New York University), C.P.A., assistant professor of law and taxation

**John F. Haneski, Ph.D.** (Purdue University), assistant professor of management and economics

**Franklin S. Houston, Ph.D.** (Purdue University), assistant professor of marketing

**J. Ronald Hoffmeister, Ph.D.** (University of Illinois), assistant professor of finance

**Charles R. Kuehl, Ph.D.** (University of Iowa), assistant professor of management

**Carl F. Meyer, D.Sc.** (Washington University) assistant professor of quantitative management science

**Steven D. Norton, Ph.D.** (Case-Western Reserve University), assistant professor of management

**Paul Skjerseth, Ph.D.** (St. Louis University), assistant professor of quantitative management science

**Earl Wims, Ph.D.** (University of Iowa), assistant professor of marketing

**James Wong, Ph.D.** (Ohio State University), assistant professor of marketing

**Albert E. Avery, M.S.** (Purdue University), instructor of finance

**David Bird, M.S.** (Washington University), instructor of computer science

**John Blodgett, M.A.** (Duke University), instructor of computer science

**Lindell P. Chew, M.B.A.**, (University of Missouri-Columbia), instructor of marketing

**John E. Cox, M.A.** (University of Iowa), instructor of accounting

**James Davis, M.B.A.** (Tulane University), instructor of accounting

**David R. Ganz, M.S. in C.**, (St. Louis University), instructor of accounting

**William P. Heinbecker, M.A.** (Washington University), associate director, Computer Center; instructor of quantitative management science

**Marie Adele Humphreys, M.A.** (Southern Illinois University), instructor of quantitative management science

**Nicholas A. Kargas, M.A.** (Southern Illinois University), C.P.A., instructor of accounting

**Sam R. Lloyd, M.B.A.** (Oklahoma State University), Director, Organizational Development Programs; instructor of marketing

**Booker Middleton, M.A.** (St. Louis University), instructor of management

**Earl Salsman, M.S. in C.** (St. Louis University), C.P.A., instructor in accounting

**Elbert A. Walton, M.B.A.** (Washington University), instructor in accounting

The School of Business Administration offers work leading to the bachelor of science in business administration degree (B.S.B.A.). This degree represents a balanced educational program combining a liberal arts education with the important core courses of a professional education in business administration. There is ample opportunity within this curriculum to concentrate in one of the traditional areas: accounting, economics, finance, management or marketing. The degree is designed to educate a graduate to render both an initial and long-range contribution to society and to develop fully his own potential in an economic environment. In addition, the curriculum in business administration offers an excellent foundation for work toward a law degree, graduate work in business, or economics.

## SCHOOL OF BUSINESS ADMINISTRATION

**Admission** The School of Business Administration at the University of Missouri-St. Louis is a two year, junior-senior level program.

**Prerequisites** for admission to the School of Business Administration are:

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

Qualifying courses generally include all courses from the Arts and Sciences and such other courses as may be considered to be supportive to the study of management. No more than fifteen hours of introductory courses in Business Administration (courses numbered below 200) may be counted as qualifying work toward admission.

Students transferring to the University of Missouri-St. Louis will be considered as candidates for admission on the basis of an examination of their individual records. The examination will result in either regular admission or a specification of requirements to be met prior to admission.

The sixty (60) hours of work needed for admission should include: fulfillment of the university general education requirements (required of all students pursuing a degree from the university); Business Administration 140—Fundamentals of Financial Accounting and 145—Fundamentals of Managerial Accounting; Economics 50

and 51—Principles of Economics; and Business Administration 31—Elementary Statistics. A student is also required to include a science lecture, a non-Western course, two behavioral science courses, and required mathematics course work within his first sixty hours. These are requirements of the School of Business Administration.

**General Education Requirements** All business administration students must complete the requisite courses to fulfill the university general education requirements listed on page 21.



## SCHOOL OF BUSINESS ADMINISTRATION

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

### I. Non-Business Course

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

A. Economics 50 and 51	6 hours
B. Minimum mathematics proficiency of Mathematics 102—Finite Mathematics	4
C. Two courses in the behavioral sciences	6
D. A course in a non-Western subject	3
E. One lecture course in a biological or physical science	3
Remaining university general education requirements	20
	<b>42 hours</b>

### II. Requirements in Mathematics or Foreign Language

Each student is required to present either:

- Thirteen hours (13) of one foreign language or
- A minimum of Mathematics 101 or 80 and one additional quantitative course chosen from Mathematics 175; Business Administration 231, 308, 331, 375 or 385; or Economics 365. (Mathematics 80 is prerequisite to higher mathematics; Mathematics 101 is a terminal mathematics

course for those desiring no additional mathematics.)

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

### III. Required Business Courses

Business Admin. 140— Fundamentals of Financial Accounting	3 hours
Business Admin. 145— Fundamentals of Managerial Accounting	3
Business Admin. 31 or 131— Elementary Statistics*	3
Business Admin. 156— Legal Environment of Business	3
Business Admin. 106— Basic Marketing	3
Business Admin. 202— Fundamentals of Production	3
Business Admin. 204— Financial Management	3
Business Admin. 310— Management as a Behavioral Science I	3
Business Admin. 391— Seminar in Business Policy and Administration	3
Business Electives	18
	<b>45 hours</b>

\*Business Administration 31 will be offered through the summer session of 1974. Only Business Administration 131 will be offered after the fall semester of 1974.

### IV. Free electives

There are thirty-three (33) free elective hours. Up to nine (9) of these hours may

## SCHOOL OF BUSINESS ADMINISTRATION

be taken in the School of Business Administration; the remaining must be earned outside of the school. The combined hours in business and economics may not exceed seventy-eight (78).

33 hours

120 hours

### Limitation on Discipline Concentration

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

**General Education Requirements as Applicable to the Business Student** The specific requirements of the School of Business Administration may be used in partial fulfillment of the general education requirements as follows:

A student must demonstrate a minimum proficiency in mathematics, defined by the School of Business Administration faculty as the equivalent of Mathematics 102—Finite Mathematics. Mathematics 30—College algebra or Mathematics 40—Pre-Calculus Mathematics is prerequisite to Mathematics 102—Finite Mathematics.

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: Humanities, Science and Mathematics, Social Science.

- Humanities includes all courses in philosophy; any appreciation-type course, such

as Masterpieces of Art or Introduction to Music and/or any literature course, including literature courses in classical and modern languages. Humanities does not include applied music or applied art.

### B. Science and Mathematics

Science may be physical science or biological science. The science and mathematics requirement is fulfilled by the School of Business Administration requirements: College Algebra or Pre-Calculus Mathematics, Finite Mathematics and a science lecture. (This assumes that a student does not transfer in a proficiency of college algebra, pre-calculus mathematics or greater.)

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



**C. Language-Mathematics Option**

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

- (1) A language option which requires 13 hours of a foreign language. This is satisfied by taking a sequence of courses numbered 1–five hours credit, 2–five hours credit, and 101–three hours credit. Such students must still meet the School of Business Administration finite mathematics and science lecture requirements and take the necessary mathematics or science course to fulfill the general education requirements. The 13 hours of foreign language will be counted toward hours for graduation under the “Free Electives” heading.
- (2) A mathematics option would be fulfilled by a student taking, as a minimum, the equivalent of Mathematics 101–Survey Calculus, plus one additional quantitative course such as: Economics 365–Economic Statistics and Econometrics; Business Administration 231–Intermediate Statistics; Business Administration 308–Production and Operations Management; Business Administration 331–Multivariate Analysis; Business Administration 375–Operations Research;

or Business Administration 385–Mathematical Programming. If a student desires to take additional mathematics, he should take Mathematics 80–Analytic Geometry and Calculus I rather than the survey calculus course. His next mathematics course, then, would logically be Mathematics 175–Analytic Geometry and Calculus II.

- D. Social Sciences** includes economics, history, political science, psychology, and sociology-anthropology. A student seeking a B.S. degree in Business Administration automatically fulfills this requirement. The social science requirement is met by:
- (1) satisfying the state requirement, (History 3 or 4–American Civilization, or Political Science II–Government in Modern Society, are some of the courses which fulfill this requirement), (2) meeting the School of Business Administration requirement of Economics 50 and 51–Principles of Economics, and (3) meeting the School of Business Administration requirement of two courses in the behavioral sciences. (psychology, sociology and anthropology.)

**Non-Western Courses** The faculty of the School of Business Administration requires that a student take one course in a non-Western subject which can be fulfilled by taking such courses

as History 210 or 211–Asian Civilization. (This is not a complete list of the courses which fulfill the non-Western requirement.)

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

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

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

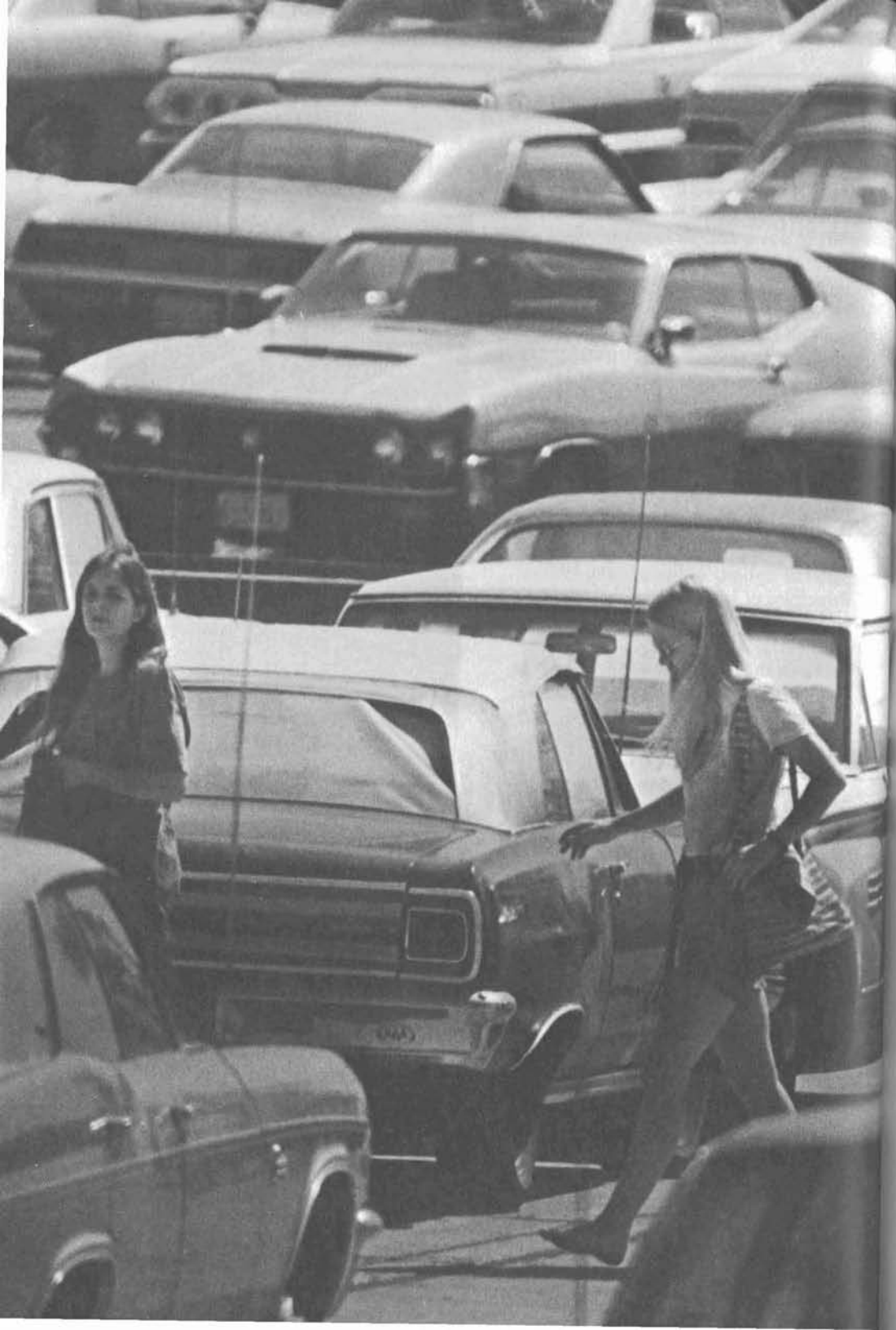
**Integration of the School of Business Administration Requirements into Students’ Programs** It is important that



students plan to include Fundamentals of Accounting, Principles of Economics, and Elementary Statistics in their sophomore schedules since these courses are prerequisite to virtually all upper division course work in business.

While not required, it is recommended that Fundamentals of Digital Computer Programming be taken by School of Business Administration students. This course may be taken in the sophomore year.

All schedules should be formulated in cooperation with an academic adviser. Prospective students for the School of Business Administration should see an academic adviser in the School of Business Administration at the beginning of their sophomore year.



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## School of Education

The Teacher Education Program, which is the responsibility of the School of Education, is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary and secondary school teachers and school service personnel.

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

### 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 or special education classrooms must apply for admission to the School of Education. Students who intend to teach in 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: Admission to the School of Education is not the same as admission to the Teacher Education Program. Students admitted to the School of Education must also be admitted to the Teacher Education Program.

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

1. **Satisfactory Completion of Two Years of College Work** A minimum of 60 semester hours of work must be completed with a grade point average of 2.0 or above. The grade point average used in considering admission to the school is calculated as a gross total representing all institutions attended and all courses attempted, provided that such courses are applicable toward the degree sought.
2. **Minimum Deficiencies in General Education** A student may have no more than nine hours of deficiencies in general education.
3. **Special Requirements** Specific prerequisites and/or other special

## SCHOOL OF EDUCATION

requirements of the curriculum area for which the student is applying must be met.

Application for admission to the School of Education is handled by the Office of Admissions and Records.

**Admission to Teacher Education** The Teacher Education Program is open to all students who intend to become teachers, regardless of the college or school in which they are enrolled. The School of Education, as the academic unit responsible for teacher education, administers the program. 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 (1) health, (2) reasons for becoming a teacher, (3) previous experiences working with children and/or youth, and (4) grades received in university level courses. Upon favorable action by the Teacher Education Committee, 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. Candidates must meet these requirements for admission:

A minimum of 60 semester hours of approved course work with a grade point average of 2.0 or higher. Completion of Education 101 or equivalent with a grade of C or better.

Students and their advisers will be notified of their status by the Teacher Education Committee.

Application forms for Levels I and II may be picked up in the Office of Teacher Education Advisement and Certification. 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, as directed by the Office of Clinical Experiences.

Applications must be filed during the periods designated by the Office of Clinical Experiences. Application forms are available in that office. 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.
2. Completion of 90 semester hours of approved course work.
3. A grade point average of 2.2 or above. (NOTE: this requirement will be in effect starting with all students who do their student teaching during the 1973-74 academic year.)

## SCHOOL OF EDUCATION

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

**Office of Teacher Education Advisement and Certification** The Office of Teacher Education Advisement and Certification

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

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

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

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

**Certification** In cooperation with the Missouri State Department of Education, the School of Education, University of



## SCHOOL OF EDUCATION

Missouri-St. Louis is responsible for issuing teaching certificates to students who have completed the requirements for the degree bachelor of science in education. Students who will receive the bachelor of science in education degree must complete the Application for Degree card and Application for Missouri Teacher's Certificate forms in the Office of Teacher Education Advisement and Certification during the semester prior to the one in which they expect to finish degree requirements.

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 post-degree students seeking teacher certification. Immediately after the semester in which certification requirements are completed, students must go to the Office of Teacher Education Advisement and Certification and fill out the State Certification forms.

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

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

**Pre- and Post-Student Teaching Clinical Experiences** Arrangements for these Clinical Experiences are handled by the Office of Clinical Experiences. When arrangements have been completed, students will be given letters verifying

their status in the University of Missouri-St. Louis Teacher Education Program. Officials of local schools and agencies now require such letters because of the large numbers of people wishing to visit their institutions.

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

Student Teaching is not offered during the summer.

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

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

## SCHOOL OF EDUCATION



books, school reference books, models, maps, globes, filmstrips, and charts.

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

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

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

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

## DEPARTMENT OF ELEMENTARY EDUCATION

### Faculty

**Wallace Z. Ramsey, Ed.D.** (University of Missouri-Columbia), chairman, professor

**Richard W. Burnett, Ed.D.** (Indiana University), director, Reading Clinic, professor

**Hans C. Olsen, Ed.D.** (University of Illinois), assistant dean, School of Education, professor

**Huber M. Walsh, Ed.D.** (University of California, Los Angeles), professor

**Walter J. Cegelka, Ed.D.**, (Syracuse University), associate professor

**Donald R. Greer, Ph.D.** (University of Missouri-Columbia), coordinator, Teacher Education Resource Center, associate professor

**Robert E. Rea, Ph.D.** (Southern Illinois University), associate professor

**Elizabeth P. Watson, Ed.D.** (Indiana University), associate professor

**Dick Miller, Ed.D.** (Utah State University), assistant professor

**John L. Morris, Ph.D.** (St. Louis University), assistant professor (on leave)

**Leo V. Rodenborn, Ed.D.** (Oklahoma State University), assistant professor

**Sister Sara Rowland, Ph.D.** (St. Louis University), assistant professor

**Thomas R. Schnell, Ph.D.** (Southern Illinois University), assistant professor

## SCHOOL OF EDUCATION

Doris A. Trojcek, Ed.D. (Indiana University), assistant professor  
 George J. Yard, Ph.D. (St. Louis University), assistant professor  
 Thelma Clark, M.A., instructor  
 Aline Crawford, M.A., instructor  
 Ellen R. Green, M.Ed., instructor  
 Judy Kupersmith, M.S., instructor  
 Edith S. McKinnon, M.A.T., instructor  
 Donald D. Meyer, M.A., assistant to the coordinator of clinical experiences, instructor  
 Donna Jo Vandagriff, M.S., instructor

The Department of Elementary Education offers three programs leading to a bachelor of science in education degree: early childhood education, general elementary education, and special education (mentally retarded). It also provides needed courses for post-degree students seeking teacher certification in elementary education and the education of the mentally retarded. In addition, the Department offers a program of studies leading to a master of education degree in the area of elementary education and special education (mentally retarded, emotionally disturbed, and learning disabilities).

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

### GENERAL EDUCATION REQUIREMENTS

**English, Speech**  
 English 10 ..... 3 hours  
 Speech ..... 3 hours  
6 hours

**Mathematics**  
 Mathematics 50 and 51 (No credit toward graduation is granted for Mathematics 15 unless both Mathematics 50 and 51 are completed)..... 6 hours  
6 hours

**Science**  
 Biological Science ..... 3 hours  
 Physical Science ..... 3 hours  
 Science Lab ..... 2 hours  
8 hours

**Humanities**  
 Music 134 plus two courses chosen from the fields of art, music, philosophy and literature ..... 8 hours  
8 hours

**Social Science**  
 Psychology 1, 2 and 270 . 9 hours  
 Political Science 11 or 376 ..... 3 hours  
 History 3 and 4..... 6 hours  
 Sociology 224..... 3 hours  
21 hours

### DEPARTMENTAL REQUIREMENTS

Ed. 101 The School in Contemporary Society ..... 3 hours  
 Ed. 140 Elementary School Organization, Management and Techniques of Teaching ..... 3 hours  
 Ed. 150 Children's Literature and Language Arts ..... 3 hours  
 Ed. 302 Psychology of Teaching and Learning ..... 3 hours  
 Ed. 315 Principles of Early Childhood Education . 3 hours

## SCHOOL OF EDUCATION

Ed. 316 Creative Experiences for Young Children ..... 3 hours  
 Ed. 317 Exploring the Physical World with Young Children or Ed. 151 Teaching of Science in the Elementary School .. 3 hours  
 Ed. 318 Exploring the Social World with Young Children or Ed. 152 Teaching of Social Studies in the Elementary School... 3 hours  
 Ed. 325 Teaching Reading in the Elementary School .. 3 hours  
 Ed. 251 Elementary School Student Teaching.... 6 hours  
33 hours

### AREA OF CONCENTRATION

12 semester hours in Humanities, Social Sciences or Natural Sciences and Mathematics. Must be courses numbered 100 or above which are not used to meet the requirements in professional education or related areas. Courses not to be taken in more than three departments. .... 12 hours  
12 hours  
 Electives ..... 26 hours  
26 hours  
120 hours

**Elementary Education** The Elementary Education curriculum prepares students to teach in grades kindergarten through six and non-departmentalized grades seven and eight.

### GENERAL EDUCATION REQUIREMENTS

**English, Speech**  
 English 10 ..... 3 hours  
 Speech 101 ..... 3 hours  
6 hours

**Mathematics**  
 Mathematics 50 and 51 (No credit toward graduation is granted for Mathematics 15 unless both Mathematics 50 and 51 are completed). . . . 6 hours  
6 hours

**Science**  
 Biological Science ..... 3 hours  
 Physical Science ..... 3 hours  
 Science Lab ..... 2 hours  
8 hours

**Humanities**  
 Music 134 plus two courses chosen from the fields art, music, philosophy and literature ..... 8 hours  
8 hours

**Social Science**  
 Psychology 1, 2, and 270 ..... 9 hours  
 Political Science 11 or 376 3 hours  
 History 3 and 4 ..... 6 hours  
 Geography 101 ..... 3 hours  
21 hours

### RELATED AREA REQUIREMENTS

Ed. 137 Music ..... 2 hours  
 Ed. 139 Art ..... 3 hours  
 Ed. 110 Elements of Health Education ..... 3 hours  
 Ed. 155 Physical Education Activities in the Elementary School .. 3 hours  
11 hours

### DEPARTMENTAL REQUIREMENTS

Ed. 101 The School in Contemporary Society ..... 3 hours  
 Ed. 140 Elementary School Organization, Management and Techniques of Teaching ..... 3 hours

## SCHOOL OF EDUCATION

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

### AREA OF CONCENTRATION

- 12 semester hours of Humanities, Social Sciences or Natural Sciences and Mathematics. Must be courses numbered 100 or above which are not used to meet the requirements in professional education or related areas. Courses not to be taken in more than three departments . . . . . 12 hours  
12 hours
- Electives . . . . . 18 hours  
18 hours  
120 hours

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

### GENERAL EDUCATION REQUIREMENTS IN ELEMENTARY EDUCATION

See page 92.

### RELATED AREA REQUIREMENTS IN ELEMENTARY EDUCATION

See page 93.

### DEPARTMENTAL REQUIREMENTS IN ELEMENTARY EDUCATION

See page 92.  
(Education 251 not required)

### DEPARTMENTAL REQUIREMENTS IN SPECIAL EDUCATION

- Ed. 313 Psychology of the Exceptional Child . . . . . 3 hours
- Ed. 240 Education of the Mentally Retarded . . . 3 hours
- Ed. 310 Interpretation of Educational Tests and Measurements . . . . . 3 hours
- Ed. 312 Speech and Language Problems of Exceptional Children . . . . . 3 hours
- Ed. 369 Analysis and Correction of Reading Disabilities 3 hours
- Ed. 252 Elementary School Student Teaching in Special Education . . . 6 hours  
21 hours
- Electives . . . . . 15 hours  
15 hours  
120 hours

### DEPARTMENT OF ADMINISTRATION, PHILOSOPHY AND SECONDARY EDUCATION

## SCHOOL OF EDUCATION

### Faculty

- Robert R. Gard**, Ed.D. (Arizona State University), chairman, associate professor
- H. E. Mueller**, Ed.D. (University of Missouri-Columbia), director of admissions and registrar, professor
- Harold E. Turner**, Ed.D. (George Peabody College), professor
- Henry R. Weinstock**, Ed.D. (University of Georgia), professor
- Joy E. Whitener**, Ed.D. (Washington University), dean, Evening College, Professor
- Walter Ehrlich**, Ph.D. (Washington University), associate professor
- Angelo Puricelli**, Ph.D. (St. Louis University), assistant dean, Extension Division, associate professor
- John S. Rigden**, Ph.D. (Johns Hopkins University), associate professor
- Charles G. Smith**, M.S., athletic director, associate professor
- Blanche M. Touhill**, Ph.D. (St. Louis University), associate professor
- Paul D. Travers**, Ed.D. (George Peabody College), associate professor
- Clive C. Veri**, Ph.D. (University of Nebraska), associate dean, Extension Division, associate professor
- Robert I. Cloos**, Ed.D. (Rutgers University), assistant professor
- Clarence Drichta**, M.M., assistant professor
- Dennis Fallon**, Ph.D. (University of Minnesota), assistant professor
- Charles Fazzaro**, Ed.D. (West Virginia University), assistant professor
- Richard J. Friedlander**, Ph.D. (University of California, Los Angeles), assistant professor
- Charles Granger**, Ph.D. (University of Iowa), assistant professor
- Jane A. Miller**, Ph.D. (Tulane University), assistant professor
- Everett Nance**, Ed.D. (Western Michigan University), director, Midwest Community Education Center, assistant professor
- Jerry L. Pulley**, Ed.D. (University of Missouri-Columbia), assistant professor
- Virgil N. Sapp**, B.S., dean, Extension Division, assistant professor
- Robert J. Starr**, Ed.D. (University of Missouri-Columbia), assistant professor
- Margaret Sullivan**, Ph.D. (St. Louis University), assistant professor
- Martin Towey**, Ph.D. (St. Louis University), assistant professor
- Samuel E. Wood**, Ed.D. (University of Florida), coordinator of clinical experiences, School of Education, assistant professor
- Dorothy Doyle**, M.A., instructor
- Charlyn Fox**, M.S., instructor
- Barbara Heimburger**, M.A.T., instructor
- Barbara Mann**, M.S., instructor
- Edith Young**, M.Ed., instructor

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



**SCHOOL OF EDUCATION**

Secondary Education requirements include the following:

**UNIVERSITY GENERAL EDUCATION REQUIREMENTS**

See page 21.

**PROFESSIONAL REQUIREMENTS**

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

Ed. 101 The School in Contemporary Society . . . . .	3 hours
Ed. 163 Techniques of Secondary School Teaching . . . .	3 hours
Psych. 171 Adolescent Psychology . . . . .	3 hours
Ed. 302 Psychology of Teaching and Learning . . . . .	3 hours
Ed. Methods Course in Teaching Major . . . .	3 hours
Ed. 271 Secondary School Student Teaching . . . .	6 hours
	<u>21 hours</u>

**TEACHING FIELDS**

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

business education	
English education	
foreign language education (French, German, Spanish)	
mathematics education	
music education (see page 59.)	
physical education	
science education (biology, chemistry, physics)	
social studies education . . .	30-40 hours
	<u>30-40 hours</u>
Electives . . . . .	17-27 hours
	<u>17-27 hours</u>
	120 hours

**Graduate Programs** NCATE-approved M.Ed. programs are offered in secondary education, elementary administration, and secondary administration.

**SCHOOL OF EDUCATION**



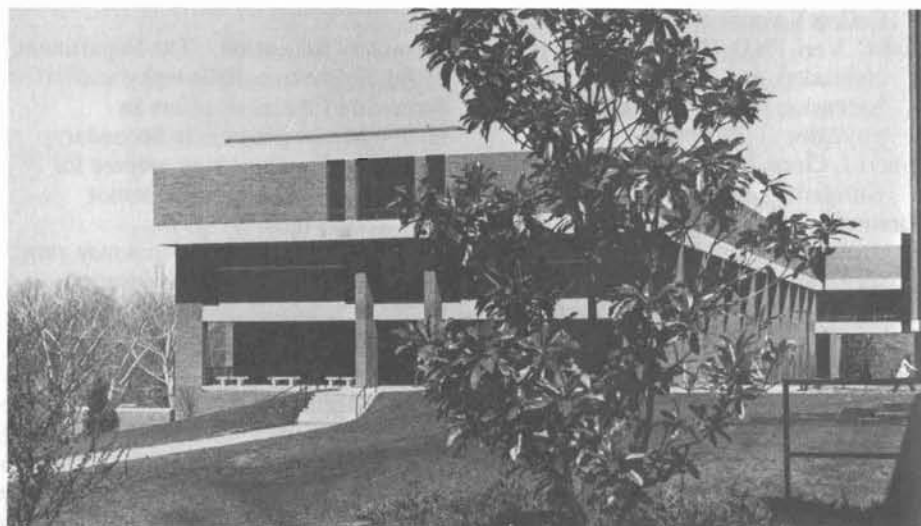
**DEPARTMENT OF BEHAVIORAL STUDIES AND RESEARCH**

**Faculty**

- Thomas E. Jordan, Ed.D.** (Indiana University), interim chairman, professor
- William L. Franzen, Ph.D.** (University of Wisconsin), dean, School of Education, professor
- George E. Mowrer, Ed.D.** (University of Missouri-Columbia), professor
- Harold W. Richey, Ph.D.** (University of Kansas City), professor
- Arthur E. Smith, Ph.D.** (St. Louis University), associate dean, School of Education, professor
- King M. Wientge, Ed.D.** (Washington University), professor
- Margaret C. Fagin, Ed.D.** (Syracuse University), associate professor
- Jon C. Marshall, Ed.D.** (University of Kansas), associate professor
- W. Ray Rhine, Ph.D.** (University of Texas), associate professor

- Gaylen Wallace, Ed.D.** (Oklahoma State University), associate professor
- Barbara Fulton, Ph.D.** (University of Missouri-Columbia), assistant professor
- Rickey L. George, Ph.D.** (Northwestern University), assistant professor
- Joseph Kuzniar, Ed.D.** (West Virginia University), assistant professor
- Robert Packard, Ph.D.** (University of Minnesota), assistant professor
- Robert Tolsma, Ph.D.** (Iowa State University), assistant professor
- Doris Knight, M.Ed.**, instructor

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





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## Evening College

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

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

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

College credit courses are offered in administration of justice, anthropology, art, astronomy, biology,

business administration, chemistry, economics, education, English, French, geography, geology, German, history, mathematics, music, philosophy, physics, political science, psychology, sociology, Spanish and speech.

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

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

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

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

## EVENING COLLEGE

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

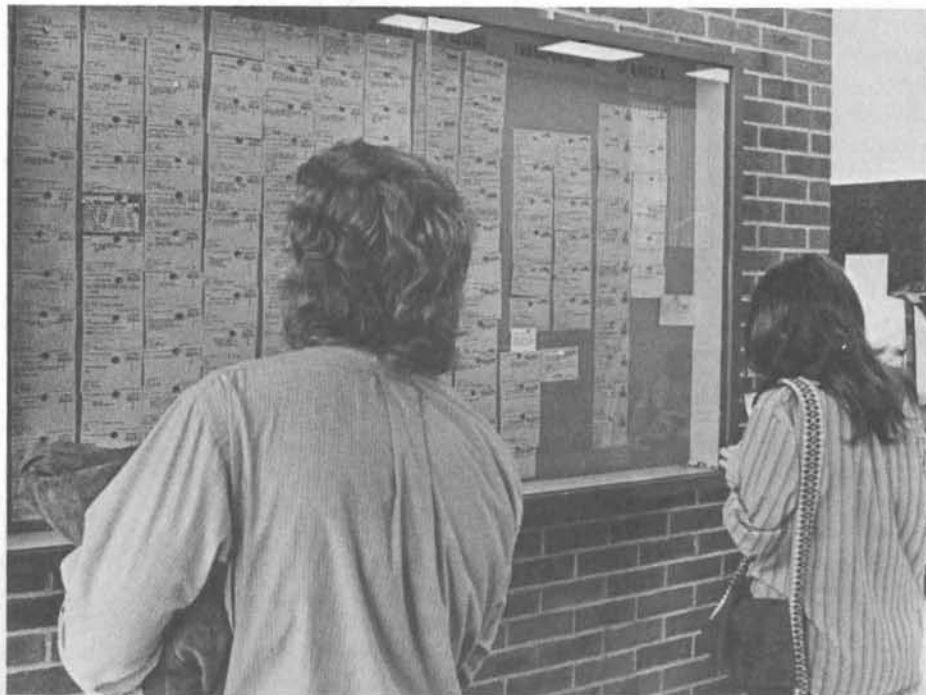
Evening College classes are conducted according to the same standards traditionally maintained by the University. The library, laboratories, cafeteria, business office, placement service, health service, bookstore, etc., are available to evening students during evening hours.

**Counseling and Advising Services** As part of the Evening College's attempt to assist its students and prospective students in their course planning and vocational choice, counseling and

advising services are available during day and evening hours. A staff of professional counselors and advisors will help the individual prepare a program appropriate to his or her needs. There is no fee for this service. Appointments may be arranged by calling the Evening College office either day or evening.

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

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



## Extension Division

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

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

The Extension Division includes the following areas:

### EXTENSION ARTS AND SCIENCES

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

with pressing social concerns or problems.

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

### EXTENSION BUSINESS ADMINISTRATION

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

### EXTENSION EDUCATION

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



## EXTENSION DIVISION

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

### PROGRAMS FOR WOMEN

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

### CREDIT COURSES

The Extension Division offers many undergraduate courses at off-campus locations. This office coordinates and facilitates credit courses by the College of Arts and Sciences, School of Business Administration and School of Education.

Hospital employees and nurses in training may take courses in anatomy, chemistry, English, history, microbiology, psychology and sociology. Third and fourth year undergraduate courses are offered to business, industry and government employees.

### NON-CREDIT PROGRAMS

The office of non-credit programs

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

### ENROLLMENT

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



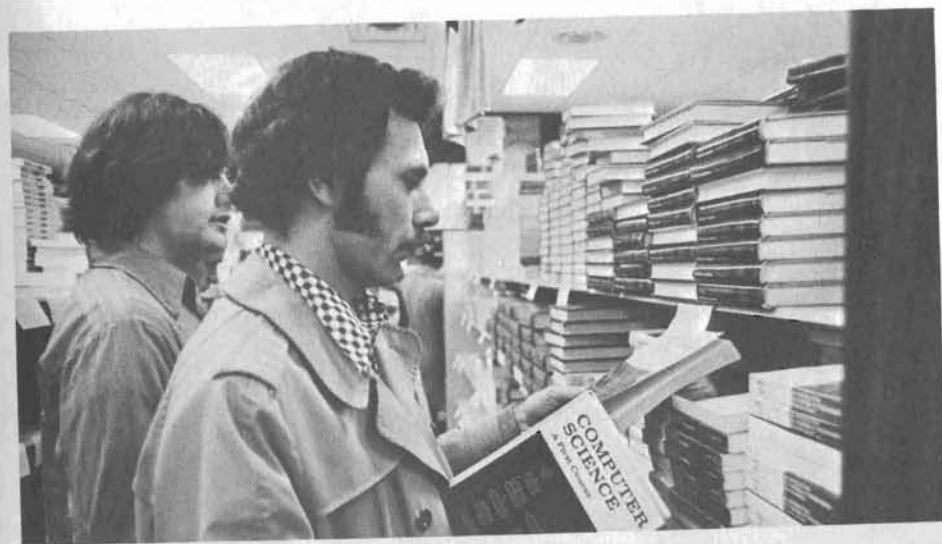
## Graduate School

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

elementary or secondary guidance and counseling. In the School of Business Administration, a graduate program leading to the master of business administration degree is offered.

Additional graduate programs are being developed.

Information regarding graduate programs is given in the *Graduate Bulletin*. Inquiries regarding specific graduate programs may be addressed to the Office of Admissions, the Graduate School, or the appropriate department or school.





## Description of Courses

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

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

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

**COURSE NUMBER** Each course bears a distinguishing number which identifies it within the department and indicates, broadly, its rank. The

numbering system is as follows:

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

## DESCRIPTION OF COURSES

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

### Code

- F** offered every fall  
**W** offered every winter  
**S** offered in summer (absence of this letter does not necessarily mean that the course is never offered in summer)  
**F&W** offered every fall and winter  
**Alt. F** offered every alternate fall  
**Alt. W** offered every alternate winter  
**V** offered on a variable basis

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

**Credit** The unit of credit at the university is the semester hour, which represents a subject pursued one period weekly for one semester of approximately 16 weeks or for a total of approximately 16 periods for one term. In general, a course valued at three

semester hours meets for three periods weekly for one semester.

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

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



## DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

### ADMINISTRATION OF JUSTICE

*Prerequisites may be waived by consent of instructor.*

- 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: 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.
- 100 Problem Areas in the Administration of Criminal Justice (3) (F&W)**  
 A survey of the problem areas in the administration of criminal justice system delineated by recent national commission studies.
- 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, 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 a criminal law that serves the public interest and not private interests.
- 205 The Juvenile Justice System (3) (F&W)**  
 Prerequisite: AOJ 100 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.
- 220 Criminal Law and Procedure (3) (F&W)**  
 Prerequisite: AOJ 100, Junior standing, or consent of instructor. An analysis of substantive criminal law and its procedural aspects.
- 221 Evidence (3) (F)**  
 Prerequisite: AOJ 220 or equivalent, or consent of instructor. Fundamental questions of evidence and theory of proof, including hearsay, documentary proof, self-incrimination, relevance, and presumptions.
- 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 Poverty and the Justice System (3) (W)**  
 Prerequisite: AOJ 220 or equivalent, or consent of instructor. Examination



DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- civil law process as it affects the life of the urban and the rural poor.
- 250 **Police Administration (3) (F)**  
Prerequisite: AOJ 100 or consent of instructor. Organization and administration of police systems; peculiar characteristics of police organizations and police personnel, relation of police departments to other public agencies; control and responsibility of police departments. In general, the application of generalizations from public administration to police systems.
- 251 **Special Administrative Problems in the Administration of Justice (1-6) (V)**  
Prerequisite: Consent of instructor. Selected topics, approved by the faculty, to fill special agency educational needs offered only in special seminars, workshops, conferences, and institutes in cooperation with the Extension Division.
- 260 **Police-Community Relations (3) (W)**  
Prerequisite: AOJ 100 or consent of instructor. An analysis of current Police-Community Relations in large central cities, and a study of the development of Police-Community Relations units. An analysis of the internal and external problems involved in a successful program development.
290. **Special Readings (1-6) (V)**  
Prerequisite: Consent of instructor. Individualized study, under regular faculty supervision, designed to meet particular educational needs of selected students.
- 295 **Field Placement (3) (F&W)**  
Prerequisite: Soc. 120, AOJ 200 and 220, or consent of instructor. Field placement under faculty supervision, in administration of justice agencies. It may be substituted for AOJ 399 (may be repeated once for credit.)
- 310 **COMMUNITY APPROACHES TO PREVENTION AND CONTROL OF CRIME AND DELINQUENCY (3) (F&W)**  
Prerequisite: AOJ 100 and 200 and Senior standing, or consent of instructor. An analysis of the rationale and the principles of community organizations as they seek to address the problems of crime and delinquency. Programs in the St. Louis Metropolitan Area will be used as case studies.
- 325 **CRIMINAL LAW IN ACTION (3) (F&W)**  
Prerequisite: AOJ 220 or equivalent, and Senior standing or consent of instructor. An examination of the legal and social objectives of the criminal law and the diverse limitations on the exercise of police power.
- 330 **CORRECTIONAL INSTITUTIONS (3) (F)**  
Prerequisite: 100 and 200 and Senior standing, or consent of instructor. The Correctional Setting as an aspect of the criminal justice system. An analysis of the administrative involvement and a study of the modes of organization and management which seem applicable to these types of settings.
- 340 **PROBATION AND PAROLE (3) (W)**  
Prerequisite: 100 and 200 and Senior standing, or consent of instructor. The historical development of the rehabilitative ideal of probation and parole. An analysis of the principles of probation and parole, both juvenile and adult.
- 360 **COMPARATIVE JUSTICE SYSTEM (3) (V)**  
Prerequisite: AOJ 200 and 220 and Senior standing. Analysis of the criminal justice systems of selected nations in an attempt to identify similarities and dissimilarities with American practice. Particular attention will be focused upon the police and corrections systems.
- 380 **SEMINAR IN ADMINISTRATION OF JUSTICE (3) (F&W)**  
Prerequisite: Soc. 120, AOJ 200 and 220, Senior standing, or consent of instructor. Study of selected special problems in the administration

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- of justice. (May be repeated for credit.)
- 399 **INDEPENDENT STUDY AND RESEARCH (3) (F&W)**  
Prerequisite: Soc. 120, AOJ 200 and 220, Senior standing or consent of instructor. Directed research and reading. May involve the performance of a research task in cooperation with an operating criminal justice agency. (May be repeated once for credit.)
- 90 **Freshman Seminar (3) (V)**  
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 201 **Cultures of Middle America (3) (V)**  
Prerequisite: Anthropology 11 or consent of the instructor. An introduction to Mexico and Central America from an anthropological point of view. The evolution of the indigenous civilizations of the Aztec and Maya, of the conquest and colonial experiences, and the development of modern communities.
- 203 **Cultures of South Asia (3) (V)**  
Prerequisite: Anthropology 11 or consent of the instructor. A survey of the cultures of South Asia including the prehistory of the area, the ethnographic and linguistic groupings and the social organization and cultural systems of these groups. This course satisfies the Asian-African requirement of the College of Arts and Sciences.
- 205 **Cultures of Southeast Asia (3) (V)**  
Prerequisite: Anthropology 11 or consent of the instructor. A survey of the cultures of Southeast Asia including the prehistory of the area, the ethnographic and linguistic groupings, and their social organization and cultural systems of these groups. This course satisfies the Asian-African requirement of the College of Arts and Sciences.
- 207 **Cultures of Native North America (3) (V)**  
Prerequisite: Anthropology 11 or consent of the instructor. A survey of the aboriginal cultures of North American including prehistory of the area, the ethnographic and linguistic groupings, and the social organization and cultural systems of these groups.
- 227 **Urban Anthropology (3) (V)**  
Prerequisite: Anthropology 11. A comparative analysis of the cultural roles of urban centers and the processes of urbanization in non-western and
- 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) (V)**  
Prerequisite: 12 hours of college course credit. Origins and functions of conceptions of race. Biological and social definitions of race; the function of racial ideologies for societies; social historical and psychological bases of racism in the U.S.; the consequences of racism for the individual and societies.
- 51 **Introduction to Anthropological Linguistics (3) (V)**  
Relation between man and language in synchronic and historical perspective. The design features of language equality, diversity, and relativity in structures and functions of language, including non-western languages.

ANTHROPOLOGY

*Prerequisites may be waived by consent of instructor.*

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- western societies, past and present. A consideration of urban influences on rural America and the traditional peasant and primitive peoples of Africa, Asia and Latin America.
- 243 **Economic Anthropology (3) (V)**  
Prerequisite: Anthropology 11 or consent of instructor. An introduction to the range of economic organizations found in the world. Anthropological models of productions and exchange. The notion of "rationality" as applied to non-Western economic systems. The contribution of anthropology to the understanding of economic development.
- 245 **Political Anthropology (3) (V)**  
Prerequisite: Anthropology 11 or consent of instructor. A review of the pertinent literature on the political process in native and non-Western societies with emphasis upon local-level politics in traditional modern interface of emerging nations.
- 253 **Contrastive Analysis (3) (V)**  
Prerequisite: Anthropology 51 or consent of instructor. Examination of two models-structural linguistics and transformational grammar-for the purpose of formulating a contrastive grammar of a western and non-western language.
- 265 **Religion, Magic and Science (3) (V)**  
Prerequisite: Anthropology 11 or consent of 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) (V)**  
Prerequisite: Anthropology 11 or 111; or consent of instructor. An introduction to psychological anthropology focusing on cultural influences on cognition and perception. Theories of "primitive mind" will be reviewed in historical perspective, and cross-cultural research in perception, learning and cognition considered. Recent studies of sociocultural
- systems and cognitive styles will be examined and their implications for education explored.
- 291 **Senior Seminar**  
Prerequisite: Anthropology 381, senior standing. A continuing investigation of the problems anthropologists choose to explain, the ways they go about explaining these issues, and the procedures used to examine anthropological explanations.
- 325 **Comparative Social Organization (3) (F)**  
Prerequisite: Anthropology 11 or consent of instructor. The range and variation of societal organization primarily in non-Western cultures. Processes of system maintenance and change.
- 327 **Fieldwork in Anthropology (3) (V)**  
Prerequisite: 9 hours of Anthropology or Sociology or consent of instructor. An introduction to anthropological fieldwork in complex societies emphasizing participant observation, interviewing and use of key-informants. Attention will be given to theoretical considerations and problems of method as well as to the application of these techniques in actual field-work. Current issues in the ethics of field research and action anthropology will be discussed.
- 335 **Culture Change (3) (V)**  
Prerequisite: Anthropology 11 or consent of instructor. An intensive investigation into the elements and processes of culture change with regard to specific theories of culture change. The course examines the relationship between microchange in primitive and modern complex societies.
- 337 **Applied Anthropology (3) (V)**  
Prerequisite: Anthropology 335 or 381. A description and analysis of the methods, principles and use of anthropology in solution of practical problems associated with the changing conditions of our times. The course will examine a wide variety of cross-cultural case studies.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 345 **Language and Culture (3) (V)**  
Prerequisite: Anthropology 11 or consent of the instructor. The relationship between language and culture. Works of Sapir, Whorf, Lee and others will be considered.
- 346 **Grammatical Theory (3) (V)**  
Prerequisite: One course in linguistics or consent of instructor. Linguistic analysis of syntax including introduction into formal structures of symbolic, social and cultural behavior.
- 350 **Special Study (credit arranged) (F&W)**  
Prerequisite: Consent of 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 (3) (V)**  
Prerequisite: Anthropology 11 or consent of instructor. Selected topics in social, cultural, and physical anthropology, with emphasis on current issues and trends in the field of anthropology. May be repeated.
- nature of art, functions and methods of creative expression.
- 2 **Introduction to Art II (3) (F&W)**  
Prerequisite: Art I. Study of the historical movements in art with emphasis on the major artists and monuments.
- 6 **Introduction to the Afro-American Arts (3) (V)**  
A survey of the cultural contributions of African music, dance and sculpture to contemporary America.
- 40 **Basic Drawing (3) (V)**  
Prerequisite: Consent of department. An introduction to drawing through the study of the figure, object and environment.
- 50 **Basic Design (3) (V)**  
Prerequisite: Consent of Department. Studio problems in the creative use and integration of the elements of two dimensional design: line, form, space, texture and color.
- 90 **Freshman Seminar (3) (V)**  
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 139 **Art Activities for Elementary School (3) (F&W) (Same as Education 139)**  
A study of art principles; provides laboratory experiences with various media and materials. Stresses curriculum planning and development of the elementary school program in art.
- 145 **Survey of Oriental Art (3) (V)**  
Prerequisite: Art II. The study of the architecture, sculpture and painting of India, China, Japan and Southeast Asia, emphasizing art as a universal language that furthers our understanding of radically different cultures.
- 201 **Art History Media Lab (2) (V)**  
Consent of instructor. Technical demonstration of and research into the various materials and media used by the artist.

ART

Prerequisites may be waived by consent of instructor.

- 1 **Introduction to Art I (3) (F&W)**  
Illustrated discussion with examples from varied historic and contemporary art fields on the

## DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 205 **Classical Art and Archaeology of Greece and Rome (3) (V)**  
Prerequisite: Art II. A general survey of the development of material culture in Greece and Rome from the earliest times through the Hellenistic Period and the Roman Empire.
- 210 **Medieval Art (3) (V)**  
Prerequisite: Art II. 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 I and II or consent of Department. A study of photography: its historical development, an examination of it as an art medium, and its influence on the development of modern art.
- 221 **Italian Renaissance Art (3) (V)**  
Prerequisite: Art II. A study of Italian Renaissance Art from its early developments in the fourteenth and fifteenth centuries to its climax and maturity in the sixteenth century.
- 222 **Northern Renaissance Art (3) (V)**  
Prerequisite: Art II. 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 II. Art and architecture in Italy and France from c. 1600-1750. A study of the Baroque, Classicist and Rococo styles with emphasis on the contributions of individual artists.
- 227 **Baroque Art in Holland, Flanders and Spain (3) (V)**  
Prerequisite: Art II. 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 II. 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 II. The study of European Art from Neoclassicism and Romanticism through Post-Impressionism.
- 242 **Twentieth Century Art (3) (V)**  
Prerequisite: Art II. A detailed study of trends in contemporary art from Fauvism and Cubism to Abstract Expressionism and more recent developments.
- 245 **The Art of the Print (3) (V)**  
Prerequisite: Art II. Dealing with the history of print forms: woodcuts, etchings, engraving, lithographs, silk-screen, monotypes and mixed media. Special emphasis will be given to the importance of prints to the art and artists of our time.
- 290 **Special Study (credit arr.) (F,W)**  
Prerequisite: Junior or Senior standing and consent of department and instructor. Independent study through readings, reports or field research.

## ASTRONOMY

*For additional information consult the Physics Department.  
Prerequisites may be waived by consent of instructor.*

- 1 **General Astronomy (4) (F,W,S)**  
Prerequisite: Mathematics 02 or equivalent. Study of the solar system, stars, galaxies, galactic clusters, and cosmologies. History of Astronomy from the Greeks to the present. Three lecture hours and two hours multi-media per week.
- 11 **Introduction to Astronomy I (4) (F)**  
Prerequisite: Mathematics 175 and Physics 112. An introduction to modern concepts of the physical nature of the astronomical universe. Topics to include instruments, stars, sun, nebula, star clusters, galaxies, various objects that make up the solar system and their motion.

## DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 12 **Introduction to Astronomy II (4) (W)**  
Prerequisite: Mathematics 175, Physics 112, Astronomy 11. A continuation of Astronomy 11.
- 222 **Introduction to Celestial Mechanics I (3) (F)**  
Prerequisite: Mathematics 302 (or concurrent registration). Topics include vectorial mechanics, central force motion, orbit determination, introduction to the digital computer, earth satellite theory.
- 223 **Introduction to Celestial Mechanics II (3) (W)**  
Prerequisite: Mathematics 302 (or concurrent registration), Introduction to Celestial Mechanics I or consent of instructor. A continuation of Astronomy 222.
- 231 **Introduction to Radio Astronomy (3) (F)**  
Prerequisite: Physics 231, Mathematics 201. Discussion of techniques and observational results of utilizing the radio frequency position of the electromagnetic spectrum. Three hours lecture per week.
- 232 **Measurements in Astronomy (3) (W)**  
Prerequisite: Physics 231 and Mathematics 201. Determining of stellar positions, magnitude and spectra; utilizing optical and photographic observations. Three class hours per week.

## ATMOSPHERIC SCIENCE

*For additional information consult the Physics Department.  
Prerequisites may be waived by consent of instructor.*

- 1 **Elementary Meteorology (4) (F)**  
Prerequisite: High school physics or chemistry. An elementary survey of atmospheric phenomena intended to fulfill the science requirement. Topics included are temperature, pressure and

moisture distributions in the atmosphere and dynamical effects such as radiation, stability, storms, and general circulation. Application to weather forecasting. Three hours lecture and two hours laboratory per week.

## BIOLOGY

*Prerequisites may be waived by consent of department or instructor.*

- 1 **General Biology (3) (F&W)**  
Emphasis on fundamental principles of biology. Biology 1 can be applied toward fulfillment of the general education requirement in science. Biology 1 does not satisfy the prerequisite requirements of other courses in biology at the 200 level or above. Students who plan to pursue a career in medicine or one of the medical oriented professions should enroll in Biology 10 rather than Biology 1.
- 3 **General Biology Laboratory (2) (F&W)**  
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) (F&W)**  
Prerequisite: Chemistry 11 (May be taken concurrently). A one semester prerequisite for students intending to major in biology or take biology courses at the 200 level or above. This course offers an introduction to some of the biological properties and relationships of organisms, both plant and animal. The laboratory work emphasizes an experimental approach to biological processes. Three hours lecture and three and one-half hours laboratory per week.
- 110 **The Biology of Man (3) (F)**  
Prerequisite: Biology 1 or consent of



DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- instructor. Lectures and assigned readings concerning man's characteristics as a primate and his changing relationship to the environment. Discussions of aggression, sexuality, modern medicine, human evolution, environmental exploitation, and other topics of current interest. Three hours lecture per week.
- 115 **Human Heredity and Evolution (3) (W)**  
Prerequisite: Biology 1. The study of heredity and evolution with special reference to human populations. Three hours lecture per week.
- 116 **Microbiology and Man (3) (W)**  
Prerequisite: Biology 1 or its equivalent. A survey of microbial structure, genetics, and physiology, with special emphasis on their interaction with man. Transmission and control of such organisms will be discussed in relation to maintenance of health. Three hours lecture per week.
- 118 **Microbiology and Man Laboratory (2) (W)**  
Prerequisite: Must be taken concurrently with Biology 116. Standard techniques for identification, growth and control of microorganisms.
- 210 **Biology - General Ecology (3) (V)**  
Prerequisite: Biology 1 or Biology 10. An examination of the relationships between living organisms and their environment. Three hours per week.
- 212 **Ecology Laboratory (2) (V)**  
Prerequisite: Biology 210 (may be taken concurrently) and Biology 10 or consent of instructor. An analysis of factors influencing the abundance and distribution of living organisms. Three and one-half hours per week.
- 213 **General Physiology (3) (W)**  
Prerequisite: Biology 10 and Chemistry 11. The basic functional aspects of organ systems in relation to the physiochemical properties of protoplasm. Three hours lecture per week.
- 215 **General Physiology Laboratory (2) (W)**  
Prerequisite: Biology 213 (may be taken concurrently). Instrumental and experimental studies in physiology. Three and one-half hours laboratory per week.
- 216 **Microbiology (3) (W)**  
Prerequisite: Biology 10. A study of microorganisms, their metabolism, genetics, and their interaction with other forms of life. Three hours lecture per week.
- 218 **Microbiology Laboratory (2) (W)**  
Prerequisite: Biology 216 (May be taken concurrently). Experimental studies and procedures of microbiological techniques. Three and one-half hours laboratory per week.
- 224 **Genetics (3) (F)**  
Prerequisite: Biology 10. The fundamental principles of inheritance, including classical genetic theory as well as recent advances in the molecular basis of heredity. Three hours lecture per week.
- 226 **Genetics Laboratory (2) (F)**  
Prerequisite: Biology 224 (May be taken concurrently). Laboratory to accompany Biology 224. Three and one-half hours laboratory per week.
- 235 **Development (3) (W)**  
Prerequisite: Biology 10. (Biology 224 recommended but not required). Basic principles of development from the point of view of growth, morphogenesis and differentiation. Three hours lecture per week.
- 237 **Development Laboratory (2) (W)**  
Prerequisite: Biology 235 (May be taken concurrently). Three and one-half hours laboratory per week.
- 242 **Population Biology (3) (W)**  
Prerequisite: Biology 224. The structure, operation and evolution of populations. Three hours lecture per week.
- 244 **Population Biology Laboratory (2) (W)**  
Prerequisite: Biology 242 (May be taken

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- concurrently). Laboratory to accompany Biology 242. Three and one-half hours laboratory per week and/or field studies to be arranged.
- 246 **Evolution (3) (V)**  
Prerequisite: Biology 224. The course and mechanisms of organic evolution. Three hours lecture per week.
- 250 **Plant Form and Function (3) (F)**  
Prerequisite: Biology 10. A general survey of the plant groups from algae through angiosperms. Morphology, reproduction, and central physiological concepts unique to the plant kingdom will be discussed. Three hours lecture per week.
- 252 **Plant Form and Function Laboratory (2) (F)**  
Prerequisite: Biology 250 (May be taken concurrently). Examination of representatives of the plant kingdom and experimentation in plant physiology. Three and one-half hours laboratory per week.
- 276 **Biological Chemistry (3) (W)**  
Prerequisite: Chemistry 261, 263 and Biology 10. The chemistry and 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) (W)**  
Prerequisite: Biology 276 (May be taken concurrently). Experiments designed to illustrate biochemical principles and modern biochemical procedures. One hour lecture and three and one-half hours laboratory per week.
- 280 **Animal Behavior (3) (F)**  
Prerequisite: Biology 10, or consent of instructor. The study of invertebrate and vertebrate behavior, including developmental, genetic and ecological aspects of behavior; behavior interactions within and between populations. Three hours lecture per week.
- 282 **Animal Behavior Laboratory (2) (F)**  
Prerequisite: Biology 280 (May be taken concurrently). Observational and experimental studies of animal behavior in the field and laboratory. Three and one-half hours laboratory per week.
- 285 **Methods of Teaching Biology in Secondary Schools (3) (Same as Education 269) (W)**  
Prerequisite: Education 163 and a near-major in biology. A study of the scope and sequence of the life science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. To be taken concurrently with student teaching.
- 289 **Seminar (2) (F&W)**  
Prerequisite: None. Required of all biology majors during a semester of their senior year. Presentation of selected papers by students.
- 290 **Research (Credit arranged) (F&W)**
- 295 **Field Biology Seminar (5) (V)**  
Prerequisite: Three courses in Biology and consent of the instructor. Intensive study of the flora and fauna of selected areas of the North American continent including a ten day field trip during spring recess and associated laboratory work. The area studied will be announced in the schedule of courses. Three hours lecture per week plus field trip and associated laboratory work to be arranged. *Note:* There is a specific fee charged for this course.
- 305 **Morphology of Nonvascular Plants (3) (Alt F)**  
Prerequisite: Biology 250, or consent of instructor. An intensive study of algae through the mosses and liverworts, stressing relationships between the groups. Field studies and phytocology stressed. Three hours lecture per week.
- 306 **Morphology of Vascular Plants (3) (Alt W)**  
Prerequisite: Biology 250, or permission of instructor. An intensive study of ferns through angiosperms, stressing

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- relationships between the groups. Field studies and phytoecology stressed. Three hours lecture per week.
- 307 **Nonvascular Plant Laboratory (2) (Alt F)**  
Prerequisite: Biology 305 (May be taken concurrently). Laboratory to accompany Biology 305. Three and one-half hours per week.
- 308 **Vascular Plant Laboratory (2) (Alt W)**  
Prerequisite: Biology 306 (May be taken concurrently). Laboratory to accompany Biology 306. Three and one-half hours per week.
- 310 **Cellular Biology (3) (F)**  
Prerequisite: Biology 224 and 276 (Biology 276 may be taken concurrently). Chemistry, structure, and function of cells. Three hours lecture per week.
- 317 **Immunobiology (3) (F)**  
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) (F)**  
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) (V)**  
Prerequisite: Biology 224. Selected topics in genetic theory. Three hours lecture per week.
- 322 **Cytogenetics (3) (V)**  
Prerequisite: Biology 224. Chromosome structure, function, and behavior, and the origin and evolutionary significance of various cytological systems. Three hours lecture per week.
- 323 **Advanced Genetics Laboratory (2) (V)**  
Prerequisite: Biology 321 (May be taken concurrently). Instrumentation
- and experimental studies in genetic analysis. Three and one-half hours laboratory per week.
- 324 **Cytogenetics Laboratory (2) (V)**  
Prerequisite: Biology 322 (May be taken concurrently). Laboratory to accompany Biology 322. Three and one-half hours laboratory per week.
- 330 **Advanced Development (3) (Alt F)**  
Prerequisite: Biology 235. A discussion of experimental approaches as applied to the analysis of development. Three hours lecture per week.
- 332 **Advanced Development Laboratory (2) (Alt F)**  
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 per week to be arranged.
- 334 **Plant Growth and Development (3) (Alt W)**  
Prerequisite: Biology 250, 276, or Chemistry 261 or permission of instructor. Developmental processes in plants will be viewed from both morphological, anatomical and physiological standpoints. The interplay of controlling chemical, physical and biological factors will be discussed. Three hours lecture per week.
- 336 **Plant Growth and Development Laboratory (2) (Alt W)**  
Prerequisite: Biology 334 (May be taken concurrently). Laboratory to accompany Biology 334. Three and one-half hours per week.
- 342 **Population and Community Ecology (3) (F)**  
Prerequisite: Biology 242. Studies of the structure and organization of natural communities stressing the abundance and distribution of species, the regulation of species and the evolution of demographic parameters in populations. Three hours lecture per week.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 344 **Population and Community Ecology Laboratory (2) (F)**  
Prerequisite: Biology 342 (May be taken concurrently). Laboratory and field studies of the organization of communities. Three and one-half hours laboratory per week.
- 360 **Techniques in Electron Microscopy (2) (Alt W)**  
Prerequisite: Biology 10 and junior standing or consent of instructor. A general consideration of the application of electron microscopy to biological research. Discussion of transmission and scanning electron microscopy and associated techniques of specimen preparation. Designed for the professional biologists. Two lecture hours per week.
- 362 **Electron Microscopy Laboratory (3) (Alt W)**  
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.
- 376 **Advanced Metabolism (3) (F)**  
Prerequisite: Biology 276. Topics include control of cellular metabolism, membrane transport, mechanisms of action of enzymes and hormones, and enzyme kinetics. Three hours lecture per week.
- 378 **Advanced Metabolism Laboratory (2) (F)**  
Prerequisite: Biology 278 or consent of instructor. Independent projects related to metabolic control, using advanced analytical and synthetic procedures. Three and one-half hours laboratory per week.
- 381 **Biosystematics (3) (Alt W)**  
Prerequisite: Biology 10 and junior standing, or consent of instructor. Biosynthetic relationships of secondary compounds and their implications to taxonomy, phylogeny, and population biology. Three hours lecture per week.
- 383 **Biosystematics Laboratory (2) (Alt W)**  
Prerequisite: Biology 381, must be taken concurrently. Techniques and instrumentation necessary for the isolation and identification of the various types of secondary compounds considered. Three and one-half hours per week.
- 392 **Selected Topics (Arranged hrs.) (V)**  
Prerequisite: Junior standing & 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.

CHEMISTRY

*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 hrs. 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.
- 5 **Problems in Chemistry (0) (F&W)**  
Prerequisite: None. Enrollment determined by score on the placement exam given in Chemistry 11. Application of mathematical principles to chemistry problems. Course meets one hour weekly. No credit toward a degree.

## DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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 hrs. 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 hrs. required for graduation. Three hrs. lecture and 1 hr. discussion per week; 3 1/2 hrs. 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: Junior standing (or consent of instructor). The course will familiarize the student with the literature of chemistry and its use. One hour lecture per week.
- 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.

## DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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 (may be taken concurrently). An introduction to laboratory techniques and procedures of synthetic organic chemistry. One hour lecture and four and one-half hours laboratory per week.
- 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.
- 289 **Seminar (1) (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 both semesters of their senior year.
- 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) (F)**  
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) (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) (F)**  
Prerequisite: Chemistry 232 (may be taken concurrently). A systematic study of the structure and properties of the elements and their compounds, with emphasis on the correlation of chemical properties with theoretical concepts. Three hours lecture per week.



DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 342 **Inorganic Chemistry II (3) (W)**  
Prerequisite: Chemistry 341.  
Continuation of Chemistry 341 with emphasis on such topics as metals, non-aqueous solvents, chemical dynamics, organometallic chemistry, chemistry of the less common elements and certain frontier areas. Three hours lecture per week.
- 343 **Inorganic Reactions (2) (F)**  
Prerequisite: Chemistry 341 (may be taken concurrently). The more sophisticated techniques of physical and analytical chemistry will be used to study inorganic compounds and their reactions. One hour lecture and four and one-half hours laboratory per week.
- 352 **Nuclear Chemistry (3) (V)**  
Prerequisite: Chemistry 232.  
Properties of radioactive nuclei, nature of radioactivity, nuclear reactions and applications of 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)**  
Prerequisite: Consent of instructor. A study of the history of the teaching of chemistry and the methods of instruction and evaluation used in the discipline.
- 381 **Special Topics (3) (F&W)**  
Prerequisite: Consent of instructor. A reading and seminar course in selected advanced topics. Three hours lecture per week.
- ECONOMICS**
- Prerequisites may be waived by consent of department*
- 40 **Introduction to the American Economy (3) (V)**  
No credit for students majoring in

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- Economics. Introduction to economic analysis and problems through an examination of the development and operations of the American economy; study of its evolution, institutions and principal problems.
- 50 **Principles of Macroeconomics (3) (F&W)**  
Introduction to the subject of economics with emphasis on the operation of the national economy, money and banking, and international economic relations.
- 51 **Principles of Microeconomics (3) (F&W)**  
Introduction to the subject of economics with emphasis on the theory of the firm, price determination and resource allocation.
- 90 **Freshman Seminar (3) (V)**  
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 99 **The City (3) (F&W) (Same as Administration of Justice 99, History 99, Political Science 99, Psychology 99 and Sociology 99)**  
Prerequisite: 12 hours of college credit. An interdisciplinary course. Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburbia and the metropolitan area, ethnic groups, stratification and psychological implications of urban living. Does not count toward a major in economics.
- 160 **The Measurement of Economic Activity (3) (V)**  
Prerequisite: Mathematics 40 or Mathematics 15 or one and one-half high school units in algebra. The kinds and purposes of economic measurements, sources of data, and techniques of arrangement. Emphasis on enterprise and social accounting, index numbers, input-output, flow-of-funds and cost-benefit studies.
- 200 **Macroeconomics for the School Curriculum (3) (V)**  
Prerequisite: Upperclass or graduate standing in School of Education. Analysis of forces affecting the national economy, with emphasis on income determination, employment, money and banking, and international trade and finance. Special reference to topics included in elementary and secondary school social science curricula.
- 201 **Microeconomics for the School Curriculum (3) (V)**  
Prerequisite: Upperclass or graduate standing in School of Education. Analysis of market forces, with emphasis on business firms, households, and productive-factor markets, price determination and resource allocation. Special reference to topics included in elementary and secondary school social science curricula.
- 210 **Urban Geography (3) (V)**  
Prerequisite: Sophomore standing. An in depth examination of urban growth, the location and basis of cities, and the internal spatial structure of cities provide the main topics of consideration. In addition, contemporary urban problems including zoning, urban renewal, blight, the journey to work and shop, pollution, etc., are discussed with a spatial emphasis. Consideration is confined almost exclusively to North American cities.
- 216 **Public Finance: Federal (3) (F)**  
Prerequisite: Economics 40 or 50. The nature and scope of public finance. Analysis of expenditure, revenue and financial administration of the Federal government, with emphasis on current problems.
- 220 **Money and Banking (3) (F&W)**  
Prerequisite: Sophomore standing. Topics presented in a spatial (geographic) framework include the diffusion of innovations, population (distribution, problems, and solutions), settlement patterns, migration, poverty, and urban-social problems (e.g., race and residential choice).

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 230 **International Economic Analysis (3) (V)**  
Prerequisite: Economics 40, 50 or 51. Elementary trade and payments analysis; balance of payments, international economic problems; concentration on fundamentals of analysis and problems.
- 238 **Comparative Economic Systems (3) (W)**  
Prerequisite: Economics 40, 50 or 51. Comparative study of economic organization, growth and welfare in different national economies such as the United States, the Soviet Union and France.
- 239 **The Soviet Economy (3) (V)**  
Prerequisite: Economics 40, 50 or 51. Intensive analysis of the Soviet economy as a case study in central planning. Growth and development of the Soviet economy in historical perspective, and prospects for future evolution and structural change.
- 240 **Economic Development (3) (V)**  
Prerequisite: Economics 40, 50 or 51. Survey of economic growth as applied to underdeveloped countries. Analysis of development policies with emphasis on specific case studies.
- 241 **American Economic Development (3) (V)**  
Prerequisite: Economics 40 or 50 or consent of instructor. Economic analysis and interpretation of the evolution of the principal developments, institutions and structural characteristics of the economic system of the United States.
- 242 **European Economic Development (3) (V)**  
Prerequisite: Economics 40 or 50 or consent of instructor. Economic analysis and interpretation of the evolution of the principal developments, institutions and structural characteristics of the economic systems of Europe.
- 243 **Latin American Economic Development (3) (V)**  
Prerequisite: Economics 40 or 50 or consent of instructor. Economic analysis and interpretation of the evolution of the principal developments, institutions and structural characteristics of the economic systems of Latin America.
- 250 **Intermediate Economic Theory: Macroeconomics (3) (F)**  
Prerequisite: Economics 50 and Economics 51. Study of national income, expenditure and the forces determining the level of economic activity. Special emphasis on the theory of income determination and its application to public policy.
- 251 **Intermediate Economic Theory: Microeconomics (3) (W)**  
Prerequisite: Economics 50 and Economics 51. Analysis of prices in terms of equilibrium of the business firm and consumer demand in markets of varying degrees of competition.
- 253 **Managerial Economics (3) (V) (Same as Business Administration 253)**  
Prerequisite: Economics 51. Application of microeconomic theory to the decision-making process in the business firm. Discussion of cost behavior, price and output determination under various competitive conditions, as well as factors affecting wages, interest and profits.
- 260 **Labor Economics (3) (F)**  
Prerequisite: Economics 40, 50 or 51. Forms of labor organization, state and federal labor legislation and policies of labor unions. Emphasis on an application of economic theory to the relations of labor and business.
- 270 **Urban and Regional Economics (3) (V)**  
Prerequisite: Economics 40, 50 or 51. A survey of factors affecting the location of economic activity, industrial diversity, determinants of urban growth, the role of urban public economy, and the management of the urban environment.
- 301 **The Urban Environment and Planning (3) (V)**  
Prerequisite: Junior standing or 12 hours in social sciences. A survey of

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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.
- 317 **Public Finance: State and Local (3) (V)**  
Prerequisite: Economics 50 and Economics 51. A study of expenditure, taxation and financial administration of state and local governments, with emphasis on problems of current interest. Special attention given to research methods, as well as financial relations between various levels of government.
- 321 **Money (3) (V)**  
Prerequisite: Economics 220. Demand for money; determination of interest rates, prices and income; decision-making under conditions of uncertainty; term structure and interest rates. Other topics of mutual interest.
- 331 **International Economic Analysis (3) (V)**  
Prerequisite: Economics 50 and 51. Theory of international trade and payments, foreign exchange and balance of payments analysis; integration of commercial policy, international monetary and liquidity analysis.
- 345 **Population Economics (3) (V)**  
Prerequisite: Economics 40 or 50. A systematic study of the forces influencing the attributes, character, distribution and growth of population; emphasis on economic considerations.
- 350 **Special Readings (Credit arranged) (F&W)**  
Prerequisite: Consent of instructor. Unscheduled, independently directed readings on topics mutually acceptable to student and instructor.
- 351 **Mathematical Economics (3) (F)**  
Prerequisite: Economics 251 and Mathematics 101. Introduction to the development and use of mathematical models in economics. Decision and game theory. Selected topics in mathematical economics.
- 355 **Business and Government (3) (F) (Same as Political Science 345)**  
Prerequisite: Economics 51. Relations between business firms and government at all levels. Questions of regulation, public ownership, guidelines and competition considered.
- 356 **Industrial Organization (3) (W)**  
Prerequisite: Economics 51. Analysis of the economic factors influencing industrial structure and the conduct and performance associated with various market structures.
- 364 **Manpower Policies (3) (V)**  
Prerequisite: Economics 51. Analysis of the allocation of human resources with emphasis on the economic theory of labor markets in both the short and the long run. Discussion of the operation of the labor market in specific occupations.
- 365 **Economic Statistics and Econometrics (3) (W)**  
Prerequisite: Economics 50 and 51 and Statistics 31. Mathematics 80 or 101 recommended. Application of statistical techniques to economic research problems.
- 366 **Econometrics (3) (V)**  
Prerequisite: Economics 365. Continuation of Economics 365.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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.
- 370 **Economics of Location (3) (V)**  
Prerequisite: Economics 51. An analysis of the location of economic activity and the relationships that exist between regional economies.
- 371 **Issues in Urban Economics (3) (V)**  
Prerequisite: Economics 50. Problems of public policy in the city as they relate to education, housing, transportation, recreation and their financing. Recent government policies concerning the city and its surrounding areas will be emphasized.
- 380 **History of Economic Thought (3) (V)**  
Prerequisite: Economics 50 and Economics 51. The evolution of economic thought from the ancients through post-Keynesian theory.
- 50 **Short Story Writing (3) (F&W)**  
Prerequisite: English 10 or equivalent. Theory and practice of writing the short story.
- 51 **Poetry Writing (3) (V)**  
Theory and practice of writing poetry.
- 65 **Honors Exposition (3) (V)**  
Prerequisite: Honors qualification on placement examination or essay proficiency test. May not be taken in addition to English 10. Practice in expository writing, with readings in literature and related fields on topics to be announced each semester. *Does not count toward the major in English.*
- 115 **Commercial Writing (3) (F&W)**  
Prerequisite: English 10 or equivalent. Emphasis upon news writing, newspaper feature writing, magazine article writing and book reviewing.
- 130 **Writing Literary Criticism (3) (W)**  
Intensive training in the writing of literary criticism, with some attention to bibliography and to methods of research in literature. Recommended for all English majors.
- 160 **Advanced Expository Writing (3) (F&W)**  
Prerequisite: English 10 or equivalent. Emphasis upon developing the critical and analytical capabilities of the writer. Course offers an introduction to research methods. For English majors this course is a prerequisite or corequisite to 300-level English courses.

ENGLISH

*Prerequisites may be waived by consent of department.*

COMPOSITION

- 09 **English Composition (0) (F&W)**  
A review of elementary principles of writing expository prose. Special attention is given to sentence clarity, organization, the clear and orderly development of ideas, and good diction. The course does not fulfill the University requirement in communicative skills. *No credit toward any degree. The course meets three hours a week.*
- 10 **Composition (3) (F&W)**  
Theory and practice of writing expository prose. This course fulfills the general education requirement in

LANGUAGE

- 220 **Development of the English Language (3) (F&W)**  
A historical survey of the English language with primary emphasis on the development of Modern English from earlier periods of the language.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 221 **Introduction to Modern Linguistics (3) (F&W)**  
A survey of the areas of modern linguistics with emphasis on the English language: introductory transformational syntax and phonology, regional and social dialects, usage, lexicography, semantics, transformations in the language of children, the development of language study, and applications to the language arts programs in the schools.
- 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.
- 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.
- 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.
- 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.

LITERATURE

- 12 **Literary Types (3) (F&W)**  
The student is introduced to the various literary types, including poetry, drama, fiction and the essay.
- 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.
- 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)**  
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*.



## DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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.
- 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.
- 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.
- 326 **The Medieval Drama (3) (V)**  
The development of medieval drama from its liturgical origins to the English mystery cycles and morality plays, ending with the early pre-Elizabethan interludes.
- 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 writing of the period from the interludes of John Heywood to the closing of the theatres in 1642, with particular attention to the plays of Marlowe, Jonson, Webster and Ford. Though Shakespeare will not be studied in this course, connections between his works and those of his contemporaries will be discussed.
- 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,

## DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- Rowe, Gay, Fielding, Goldsmith, among others.
- 352 **Age of Dryden and Pope (3) (F)**  
The beginning of English neo-classic literature in the Restoration and its development through the first half of the eighteenth century, focusing on Dryden, Swift and Pope.
- 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)**  
Prerequisite: English 171. 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)**

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to twelve students.
- 250 **Special Studies (1-3) (F&W)**  
Prerequisite: A course in area of proposed work and consent of instructor. Individual work, with conferences adjusted to needs of the student. May not be used to meet specific English department distribution and language requirements.
- 262 **The Curriculum and Methods of Teaching English (3) (F&W) (Same as Education 262)**  
Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the English courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of English. To be taken concurrently with student teaching.
- 290 **Seminar (3) (F&W)**  
Prerequisite: Consent of instructor. Intensive reading, critical discussion and writing on topics to be announced each semester. Enrollment limited to twelve students.

FRENCH

*Prerequisites may be waived by consent of department.*

- 1 **Elementary French (5) (F&W)**  
Emphasis will be placed upon the speaking and understanding of French and upon the acquisition of the fundamentals of grammar and syntax. One hour language laboratory required.
- 2 **Elementary French (5) (F&W)**  
Prerequisite: French 1 or equivalent. Emphasis will be placed upon the speaking and understanding of French and upon the acquisition of the fundamentals of grammar and syntax. One hour language laboratory required.
- 10 **French for Music Majors (3) (V)**  
Prerequisite: None. A one semester course designed primarily for music majors. Emphasis will be placed on pronunciation, diction, and reading. This course may *not* be used to fulfill the language requirement of the College of Arts and Sciences. (This course may not be taken for credit by language majors).
- 101 **Intermediate French (3) (F&W)**  
Prerequisite: French 2 or equivalent. Grammar review and cultivation of language skills through the study of moderately difficult prose selections.
- 103 **Intermediate French (3) (V)**  
Prerequisite: French 2 or equivalent. Grammar review and cultivation of language skills through the study of moderately difficult prose selections. Designed primarily for those students intending to major in French. (Credit is not granted for both 101 and 103.)
- 110 **Modern French Literature in Translation (3) (Alt. F incl 72)**  
Prerequisite: Sophomore standing. Reading and discussion of selected works in French literature from the modern period. May be taken to fulfill the humanities requirement. Not open to French majors.
- 150 **European Literature in Translation: Special Topics (3) (V)**  
Major figures, works, or movements in the literature of 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 equivalent. An analytic and practical study of contemporary French sound structure.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 171 **French Conversation and Pronunciation (3) (F)**  
Prerequisite: 101 or equivalent. Emphasis will be placed upon the development of oral skills in French and upon the problems of French pronunciation.
- 172 **Composition French (3) (W)**  
Prerequisite: 101 or equivalent. Designed to develop writing skills in French.
- 180 **Advanced French (3) (F&W)**  
Prerequisite: 160, 171, 172 or equivalent. Development of language skills through reading and discussion of literary texts, may be taken concurrently with either French 171 or 172 after consultation with instructor.
- 200 **Advanced Grammar (3) (W)**  
Prerequisite: 160, 171, 172 or equivalent. Problems in grammatical analysis.
- 210 **French Civilization (3) (F)**  
Prerequisite: French 180 or equivalent. The culture and civilization of France up to World War I. All reading and classwork in French.
- 211 **French Civilization (3) (W)**  
Prerequisite: French 180 or equivalent. The culture and civilization of France from World War I to the present. All reading and classwork in French.
- 220 **Introduction to Linguistics (3) (F&W) (Same as 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 Languages (3) (F&W) (Same as Education 264)**  
Prerequisite: Education 163, French 200, 280, and 281. A study of the scope and sequence of the foreign language courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward the techniques and research tools of the scholar in the field of foreign languages.
- 280 **French Literature I: Middle Ages to the 18th Century (3) (F)**  
Prerequisite: French 180 or equivalent. Designed to acquaint the student with the development of French Literature from the Middle Ages to the 18th century. Critical reading of representative texts.
- 281 **French Literature II: 19th and 20th Centuries (3) (W)**  
Prerequisite: French 180 or equivalent. Designed to acquaint the student with the development of French literature from the 19th century to the present. Critical reading of representative texts.
- 300 **Syntax and Stylistics (3) (V)**  
Prerequisite: French 200 or equivalent. Advanced theoretical and practical study of Modern French syntax. Analysis of French prose style.
- 320 **Advanced Oral Composition (3) (V)**  
Prerequisite: French 171. Emphasis will be placed upon the development and refinement of skills in spoken French.
- 331 **Medieval and Renaissance Literature (3) (W not 74)**  
Prerequisite: French 280 or 281. Critical reading and analysis of representative works of the period in modernized French versions.
- 341 **Seventeenth Century French Theatre (3) (W not 74)**  
Prerequisite: French 280 or 281. Critical reading of selected plays by Corneille, Moliere, Racine and other dramatists of the seventeenth century.
- 342 **Seventeenth Century French Prose and Poetry (3) (W incl 74)**  
Prerequisite: French 280 or 281. A

## DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- critical study of representative poets and prose writers including novelists and philosophers.
- 353 **Eighteenth Century French Literature (3) (Alt F not 73)**  
Prerequisite: French 280 or 281. The philosophic movement. Selected works from Montesquieu, Voltaire, Diderot and Rousseau.
- 354 **Eighteenth Century French Theatre and Novel (3) (Alt F)**  
Prerequisite: French 280 or 281. Critical reading and discussion of representative novels and plays of the eighteenth century.
- 362 **Nineteenth Century French Novel (3) (Alt F)**  
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 not 73)**  
Prerequisite: French 280 or 281. A study of French poetry in the 19th and 20th centuries through critical readings of selected works by major poets.
- 371 **Twentieth Century French Novel (3) (Alt W incl 74)**  
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 not 74)**  
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.
- 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. Consideration is confined almost exclusively to North American cities.
- 220 **Social Geography (3) (V)**  
Prerequisite: Sophomore Standing. Topics presented in a spatial (geographic) framework include the diffusion of innovations, population (distribution, problems, and solutions), settlement patterns, migration, poverty, and urban-social problems (e.g., race and residential choice).

## GEOLOGY

*For additional information, consult the Physics Department.*

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

## GEOGRAPHY

*For additional information, consult the Economics Department.  
Prerequisites may be waived by consent of department.*

## DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 101 **Urban Geology (4) (V)**  
Prerequisite: Geology 1. Techniques and action course dealing with geologic and environmental problems of urbanized areas.
- language skills through the reading and discussion of literary texts. Designed primarily for majors. May be taken concurrently with German 108.

## GERMAN

*Prerequisites may be waived by consent of department.*

- 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.
- 10 **German for Music Majors (3) (F)**  
Prerequisite: None. A one semester course designed primarily for music majors. Emphasis will be placed on pronunciation, diction, and reading. This course may *not* be used to fulfill the language requirement of the College of Arts and Sciences. (This course may not be taken for credit by language majors).
- 100 **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
- 108 **Composition and Conversation (3) (F&W)**  
Prerequisite: German 101 or equivalent. Emphasis will be placed on speaking and writing German. May be taken concurrently with German 102.
- 110 **Masterpieces of German Literature in Translation (3) (V)**  
Prerequisite: Sophomore standing. Representative readings in German literature from the beginnings to the present. Emphasis to be placed upon German literature in the general context of European culture. May be taken to fulfill humanities requirement. Not open to German majors.
- 150 **European Literature in Translation: Special Topics (3) (V)**  
Major figures, works, or movements in the literature of Europe and their relevance to our own age. Topic announced in advance by the department. Does not count toward major in German. May be taken to fulfill the humanities requirement.
- 201 **Masterpieces of German Literature (3) (F)**  
Prerequisite: Two years of college German or equivalent. Introduction to German Literature. Readings and critical analysis of selected works of German literature.
- 202 **The German 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.



DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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, German 201, and 202. A study of the scope and sequence of the foreign language courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward the techniques and research tools of the scholar in the field of foreign languages.
- 299 **German Seminar (3) (W)**  
Prerequisite: Senior standing and two 300 level courses. Required of all German majors. Topic to be selected by instructor.
- 308 **Advanced Composition and Conversation (3) (V)**  
Prerequisite: German 208 or equivalent. Continuation of German 208. Designed to develop accuracy and fluency of expression in German.
- 315 **German Classicism and Romanticism (3) (V)**  
Prerequisite: German 201 and one other 200 level course in German. Representative writers from the classical and romantic periods of German literature, including works by Lessing, Goethe, Kleist and E.T.A. Hoffmann.
- 320 **German Realism and Naturalism (3) (V)**  
Prerequisite: German 201 and one other 200 level course in German. Representative writers of realism and naturalism in German literature, including works of Grillparzer, Hebbel, Stifter, Keller and Hauptmann.
- 345 **Modern German Literature (3) (V)**  
Prerequisite: German 201 and one other 200 level course in German. Representative works from modern German literature.
- 397 **Survey of German Literature Part I (3) (V)**  
Prerequisite: One other German literature course on the 300 level. Special emphasis on the summary and synthesis of trends and characteristics of major periods in German literature considered in the general context of European culture.
- 398 **Survey of German Literature Part II (3) (V)**  
Prerequisite: One other German literature course on the 300 level. Special emphasis on the summary and synthesis of trends and characteristics of major periods in German literature considered in the general context of European culture.

GREEK

*Prerequisites may be waived by consent of department.*

- 1 **Elementary Greek (4) (V)**  
Fundamentals of grammar and syntax, for students with no previous acquaintance with the language.
- 2 **Elementary Greek (4) (V)**  
Prerequisite: Greek 1 or equivalent. A continuation of Greek 1. Completion of the survey of grammar and syntax, accompanied by the reading of a short major text, usually a dialogue by Plato or a book of the New Testament.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

HISTORY

- 3 **American Civilization (3) (F&W)**  
Evolution of the cultural tradition of the Americas from the earliest times to the mid-nineteenth century, with emphasis on the relationship of ideas and institutions to the historical background. Course fulfills the state requirement.
- 4 **American Civilization (3) (F&W)**  
Continuation of History 3 to the present. Course fulfills the state requirement. Either 3 or 4 may be taken separately.
- 5 **American Civilization (3) (F&W)**  
Dominant themes in American Civilization from the sixteenth century to the present. Course fulfills the state requirement and may be taken as an alternative to History 3 and 4 by history majors.
- 31 **Topics in European Civilization: The Emergence of Western Europe to 1715 (3) (F&W)**  
Prerequisite: None. Lectures and discussions on the development of Western European society and tradition from approximately 1000 to 1715.
- 32 **Topics in European Civilization: 1715 to the Present (3) (F&W)**  
Prerequisite: None. Lectures and discussions on the development of Western European society and tradition from 1715 to the present.
- 45 **Race (3) (V) (Same as Anthropology 45, Psychology 45 and Sociology 45)**  
Prerequisite: 12 hours of college 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: 12 hours of college credit. An interdisciplinary course. Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburbia and the metropolitan area, ethnic groups, stratification and psychological implications of urban living.
- 101 **Confusion to Chaos: The American Experience (3) (F&W) (same as English 101)**  
Prerequisite: None. Selected topics in American history and literature from the colonial period to the present.
- 110 **Ancient Civilization (3) (V)**  
Prerequisite: None. Selected topics in the history of the Ancient Near East, Greece and Rome.
- 120 **Black History in the United States (3) (F&W)**  
Prerequisite: None. The experiences of Black people in America from the period of the slave trade to the twentieth century, beginning with the areas and cultures of West Africa. The development and importance of slave trade, the institutionalization of

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

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

**265 Curriculum and Methods of Teaching History and Social Studies (3) (F&W)**  
(Same as Education 265)

Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the history and social studies courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of history and social studies. May not be counted toward a major in history. To be taken concurrently with student teaching.

**292 Historiography (3) (F&W)**

Prerequisite: Consent of department. The development of the historical profession, the nature of history and the problems of historical writing.

**293 Senior Seminar (3) (F&W)**

Prerequisite: Consent of department. Required for all senior history majors who are candidates for graduation with honors. Recommended for all history majors planning to attend graduate school. Directed readings, research, and writing.

**301 United States History: Colonial America to 1763 (3) (F)**

Prerequisite: Junior standing or consent of the instructor. English background of colonization; rise of distinctive New England and Southern societies; English colonial policy to the Peace of Paris.

**302 United States History: Revolution and the New Nation, 1763-1815 (3) (W)**

Prerequisite: Junior standing or consent of the instructor. The American Revolution and the creation of the new

nation. The young republic and the development of the first American party system.

**303 United States History: Nationalism and Sectionalism, 1815-1860 (3) (W)**

Prerequisite: Junior standing or consent of the instructor. The Era of Good Feelings; the Age of Jackson; Manifest Destiny; the political and social developments of the antebellum period relating to the growth of sectionalism and the developing antislavery crusade.

**304 United States History: 1860-1900 (3) (W)**

Prerequisite: Junior standing or consent of the instructor. The Civil War; Reconstruction; industrial and urban expansion and their impact on American life.

**305 United States History: 1900-1940 (3) (F)**

Prerequisite: Junior standing or consent of the instructor. The economic, political and social developments and crises of the mature industrial United States. The growing importance of foreign relations.

**306 United States History: 1940 to the Present (3) (W)**

Prerequisite: Junior standing or consent of 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 the 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 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. None-science majors welcome.

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

Prerequisite: Junior standing or consent of the instructor. Development of women's economic, political and social role in the United States with special emphasis on the nineteenth and twentieth centuries. Women and work; women and the family; women and reform movements; women and education; feminist theorists and activists; images of women.

**322a Black History in the United States: Slavery and Emancipation (3) (F)**

Prerequisite: Junior standing or consent of the instructor. The origin, institution, and operation of American slavery; the Black response to slavery and the movement for emancipation.

**322b Black History in the United States: 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

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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 Hellenistic Period (3) (V)**  
Prerequisite: Junior standing or consent of the instructor. Survey of the political history of the major and minor dynasties subsequent to the death of Alexander, with more detailed consideration of literature and the visual arts, philosophy and religion.
- 331c **The Ancient World: Rome (3) (V)**  
Prerequisite: Junior standing or consent of the instructor. Survey of Roman history from the beginnings to 565 A.D.
- 332a **Europe in the Early Middle Ages (3) (F)**  
Prerequisite: Junior standing or consent of the instructor. The 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,

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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 nineteenth century Europe in conjunction with social, economic and political events of the time. Topics considered are Liberalism, Socialism, Irrationalism and
- 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
- Psychoanalysis. Thinkers considered are Bentham, St. Simon, J. S. Mill, Coleridge, Marx, Ruskin, R. Wagner, Schopenhauer, Nietzsche and Freud.



DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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 upon material artifacts as historical sources.
- 351a **Medieval England (3) (F)**  
Prerequisite: Junior standing or consent of the instructor. A brief summary of the Anglo-Saxon heritage and the impact of the Norman Conquest, followed by an investigation of the institutional, social and legal evolution of the Realm of England. English development will be viewed in its European context.
- 351b **Yorkist and Tudor England (3) (F)**  
Prerequisite: Junior standing or consent of the instructor. The turmoil over the monarchy and the consolidation of the Tudor dynasty. A study of the English Reformation and the political and economic changes of the sixteenth century.
- 351c **Stuart England (3) (W)**  
Prerequisite: Junior standing or consent of the instructor. A study of the English revolutions, religious controversy and the rise of Parliamentary power, the social and economic changes of the century and
- the role played by England in the European struggles of the period.
- 351d **Hanoverian England (3) (W)**  
Prerequisite: Junior standing or consent of the instructor. A study of English politics, economics and culture during the Hanoverian period (1714-1837).
- 351e **Victorian England (3) (F)**  
Prerequisite: Junior standing or consent of the instructor. A political, social and economic study of Great Britain during the reign of Queen Victoria (1837-1901).
- 351f **Modern Britain (3) (V)**  
Prerequisite: Junior standing or consent of the instructor. An economic, political and social study of Great Britain during the twentieth century.
- 352b **France: The Nineteenth Century, 1815-1914 (3) (V)**  
Prerequisite: Junior standing or consent of the instructor. The history of France between the end of the Napoleonic wars and the beginnings of World War One, with emphasis on the political and social struggles to establish a stable form of government.
- 352c **France: The Twentieth Century, 1914-1969 (3) (V)**  
Prerequisite: Junior standing or consent of the instructor. The history of France between the beginning of World War One and the fall of de Gaulle, with emphasis on the political and social struggles to establish a stable form of government, and on the diplomatic and economic struggles to remain a great power in the contemporary world.
- 353a **Modern Germany: To 1917 (3) (F)**  
Prerequisite: Junior standing or consent of the instructor. The development of modern Germany. Attention will focus on nationalism, unification, industrialization and the coming of the Great War.
- 353b **Modern Germany: Since 1917 (3) (W)**  
Prerequisite: Junior standing or consent of the instructor. Weimar Republic,

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- Nazi Reich and the postwar division. Attention will focus on the failure of democracy, totalitarianism and its results.
- 354 **History of Spain (3) (V)**  
Prerequisite: Junior standing or consent of the instructor. A survey of Spanish history from the fifteenth century to the present, emphasizing its period of imperial greatness and examining the effects of empire on national development.
- 355a **History of Russia to Peter I (1725) (3) (F)**  
Prerequisite: Junior standing or consent of the instructor. The social-economic, political and cultural development of Russia from pre-Kievan times to 1725. Includes treatment of the rise, fall and importance of the 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.
- 355c **History of the U.S.S.R. (3) (W)**  
Prerequisite: Junior standing or consent of the instructor. Political, social and cultural development in Russia from 1917 to the present. Major topics will include: the Revolution of 1917, stabilization of Communist power under Lenin, Stalin's "Great Change," and the organization and testing of the Communist state, post-Stalinist developments.
- 355d **Intellectual History of Russia, 1790-1920 (3) (V)**  
Prerequisite: Junior standing or consent of the instructor. Philosophical, religious, social and political thought in nineteenth century Russia; development of radical intelligentsia up to and including Lenin.
- 361 **Modern Japan: 1850 to Present (3) (W)**  
Prerequisite: Junior standing or consent of the instructor. The economic, social and political development of modern Japan.
- 362 **Modern China: 1800 to Present (3) (F&W)**  
Prerequisite: Junior standing or consent of the instructor. The economic, social and political development of modern China.
- 371a **Latin America to the 1750's (3) (F)**  
Prerequisite: Junior standing or consent of the instructor. 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 (credit arranged) (F&W)**  
Prerequisite: Consent of the instructor. Independent study through readings, reports and conferences.
- 399 **Quantitative Methods in Historical Research (3) (F)**  
Prerequisite: Junior standing or consent of the instructor. This course deals primarily with how one can use quantitative analysis to improve the validity of generalizations and inferences one may draw from various types of historical data. We

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

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

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

INTERDISCIPLINARY COURSES

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

- 45 Race (3) (V) (See Anthropology 45, History 45, Psychology 45 or Sociology 45.)
- 50 Women (3) (Social Science Credit)  
Prerequisite: None. An interdisciplinary study of the role of women in the family and in society. Areas of coverage will include the biological, psychological, anthropological, economical, social, political-legal and historical.
- 65 The University (3) (V) (Social Science credit)  
Prerequisite: None. An interdisciplinary course on the principles, development, and organizational structure of the University. Special emphasis will be placed on the role of the University of modern society and upon forces affecting the direction of the University and its potential for change. Methods include outside speakers, discussion groups and laboratory research on UMSL.
- 70 Issues in Contemporary Religious Thought (3) (W) (Humanities credit)  
An examination of selected current social, moral and ethical problems as viewed by representatives of major schools of religious thought.
- 99 The City (3) (F&W) (See Administration of Justice 99, Economics 99, History 99, Political Science 99, Psychology 99 or Sociology 99.)  
This course primarily for freshman and sophomores. It is open to juniors and seniors only with the instructor's permission.



DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

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

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.

ITALIAN

Prerequisites may be waived by consent of department.

- 1 Elementary Italian (5) (F)  
Fundamentals of Italian grammar, pronunciation and diction for students with no previous acquaintance with the language. One hour laboratory required.
- 2 Elementary Italian (5) (W)  
Prerequisite: Italian 1 or equivalent. Continuation of grammar and conversation with introductory readings centering on Italian contributions to art, literature and music. One hour laboratory required.
- 10 Italian for music majors (3) (V)  
Prerequisites: None. A one semester course designed primarily for music majors. Emphasis will be placed on pronunciation, diction, and reading. This course may not be used to fulfill the language requirement of the College of Arts and Sciences. (This course may not be taken for credit by language majors).
- 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 (credit arranged)  
Prerequisites: Italian 101 or equivalent. Readings on literary topics mutually acceptable to student and instructor.

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

LITERATURE IN TRANSLATION

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

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

- 110 Masterpieces of French Literature in Translation (3) (See French 110)
- 110 Masterpieces of German Literature in Translation (See German 110)
- 110 Russian Literature in Translation (See Russian 110)
- 110 Masterpieces of Spanish Literature in Translation (See Spanish 110)
- 111 Masterpieces of Spanish American Literature in Translation (See Spanish 111)
- 112 Twentieth Century Russian Soviet Literature in Translation (See Russian 112)
- 120 Classical Literature in Translation (See English 120)
- 125 Literature of the Old Testament (See English 125)

LATIN

Prerequisites may be waived by consent of department.

- 1 Elementary Latin (4) (V)  
Fundamentals of grammar and syntax,

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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)

MATHEMATICS

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

Prerequisites may be waived by consent of department.

- 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) (F&W)  
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 3 units of high school mathematics and a satisfactory score on the mathematics placement examination. Topics in algebra and probability, polynomial functions, the binomial theorem, logarithms, exponentials, solutions to systems of equations. Credit not granted for both Mathematics 30 and 40. Mathematics 40 is recommended for science majors.
- 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 the mathematics placement exam. Topics from algebra and trigonometry for the student who plans to take further work in mathematics. Polynomial functions, the binomial theorem, mathematical induction, the logarithmic, exponential, trigonometric and inverse trigonometric functions.
- 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. Credit not granted for both Mathematics 15 and 50. 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. Course 80, 175 and 210 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

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- mathematics majors. Credit not granted for both Mathematics 80 and 101.
- 102 Finite Mathematics (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.
- 250 Introduction to Modern Mathematics (3)  
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. Credit not granted for both Mathematics 301 and Mathematics 302.
- 302 Applied Mathematics I (3) (F&W)  
Prerequisite: Mathematics 201. A course designed for the student who will use differential equations. Emphasis is upon methods of solution. Linear differential equations with constant coefficients, systems of differential equations, power series. Credit not granted for both Mathematics 301 and Mathematics 302.
- 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) (W)  
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.
- 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.
- 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.



DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- Continuation of Mathematics 320. Continuous sample spaces, stochastic processes, statistical inference and statistical models.
- 323 **Numerical Analysis I (3) (F&W)**  
Prerequisite: Mathematics 201 and knowledge of Fortran, Solutions of equations, interpolation and approximation, numerical differentiation and integration, and numerical solution of initial value problems in ordinary differential equations. Selected algorithms will be programmed for solution on computers.
- 324 **Numerical Analysis II (3) (W)**  
Prerequisite: Mathematics 323. The solution of linear systems by direct and iterative methods, matrix inversion, the evaluation of determinants, and the calculation of eigenvalues and eigenvectors of matrices. Application to boundary value problems in ordinary differential equations. Introduction to the solution of partial differential equations. Selected algorithms will be programmed for solution on computers.
- 327 **The Calculus of Variations (3) (V)**  
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.
- 350 **Special Readings (credit arranged) (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. Projective properties of conics.
- 364 **Introduction to Differential Geometry (3) (V)**  
Prerequisite: Mathematics 310. Geometry of curves and surfaces in Euclidean 3-space. Calculus on a surface. Intrinsic geometry of surfaces.
- 366 **Foundations of Geometry (3) (F)**  
Prerequisite: Mathematics 250 or consent of the department. A development of portions of Euclidean geometry from a selected set of axioms, including a discussion of consistency, independence, categoricity and completeness of the axioms.
- 367 **Introduction to Non-Euclidean Geometry (3) (Alt. W)**  
Prerequisite: Mathematics 250 or consent of the department. A summary of the history of the non-Euclidean geometries and a study of hyperbolic plane geometry.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 380 **Introduction to Topology (3) (F)**  
Prerequisite: Mathematics 250 or consent of the department. A study of topological spaces, including the concepts of limit, continuity, connectedness, compactness, etc. Special emphasis placed on, and examples taken from, the space of real numbers.
- areas as game playing, theorem proving, formula manipulation, symbolic differentiation, pattern recognition and question answering. Class and individual projects to illustrate basic concepts.

MUSIC

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

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 **Data Structures (3) (W)**  
Prerequisites: Mathematics 122 or Business 104 and consent of instructor. Algebraic structures including semigroups and groups. Elements of graph theory. Boolean algebra and propositional logic. Linear lists, strings, arrays, and orthogonal lists. Representation of trees and graphs. Storage systems and structures. Searching and sorting techniques. Data structures in programming languages.
- 322 **Programming Languages (3) (F)**  
Prerequisite: Mathematics 222. Formal definition of programming languages including specification of syntax and semantics. Global properties of algorithmic languages including scope of declarations, storage allocation, grouping of statements, subroutines, and coroutines. List processing, string manipulation and simulation languages.
- 332 **Artificial Intelligence (3) (V)**  
Prerequisite: Mathematics 250, Mathematics 322. Definition of heuristic versus algorithmic methods. Uses of heuristic methods in such

APPLIED MUSIC

- 44, 45, 115, 135, 155, 255 (2) (F&W)  
Registration by audition and permission of the department. Courses may be repeated for credit. Courses are offered in the following areas: bassoon, clarinet, classical guitar, euphonium, flute, french horn, oboe, harp, organ, percussion, piano, saxophone, string bass, trombone, trumpet, tuba, viola, violin, violoncello and voice.
- 14, 15, Piano Proficiency (2) (F&W)  
Prerequisite: Permission of department. Group instruction for music majors who do not meet beginning keyboard requirements.
- 17 **Beginning Instrumental Techniques (1) (F&W)**  
Prerequisite: Permission of department. Performance, teaching techniques and materials for the various media.
- |                |                |
|----------------|----------------|
| a. Bassoon     | i. String Bass |
| b. Clarinet    | j. Trumpet     |
| c. Flute       | k. Trombone    |
| d. French Horn | l. Tuba        |
| e. Oboe        | m. Viola       |
| f. Percussion  | n. Violin      |
| h. Saxophone   | o. Violoncello |
|                | p. Voice       |
- 40 **University Chorus (1) (F&W)**  
Prerequisite: Consent of instructor. Preparation and performance of choral literature.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 41 **The Missouri Singers (1) (F&W)**  
Prerequisite: Consent of instructor. The study and performance of music for vocal chamber ensemble.
- 50 **University Orchestra (1) (F&W)**  
Prerequisite: Consent of instructor. Study, preparation and performance of orchestral repertory.
- 52 **University Band (1) (F&W)**  
Prerequisite: Consent of instructor. Study, preparation and performance of music for the wind ensemble and band.
- 54 **Chamber Ensemble (1) (F&W)**  
Prerequisite: Permission of department. Study, preparation and performance of music for small ensembles.  
a. Brass            d. Strings  
b. Jazz Band      e. Voice  
c. Percussion     f. Woodwinds
- 56 **Opera Workshop (1) (F&W)**  
Prerequisite: Consent of instructor. Opera from its inception to the present day through lectures, recordings, demonstrations, readings and participation in performance and production.
- 60 **Collegium Musicum (1) (V)**  
Prerequisite: Consent of instructor. Performance of music for chamber ensemble with particular emphasis on the Renaissance and Baroque Periods.
- 116, 118, 119, 120 **Intermediate Piano Proficiency (1) (F&W)**  
Prerequisite: Music 15 or permission of department. Continuation of piano proficiency study.
- 123, 124, 125 **Intermediate Vocal Techniques (1) (V)**  
Prerequisite: Permission of department. Instruction for non-voice majors in the choral option of the music education curriculum.
- 1 **Introduction to Music (3) (F,W,S)**  
A historically oriented study of art music, its styles and forms from the Baroque Period to the present day. This course will not apply toward requirements for a music major.
- 2 **Introduction to Symphonic Music (3) (V)**  
Orchestral music from the Baroque era to the present time; concerto grosso and suite; program music; the symphony. This course will not apply toward requirements for a music major.
- 3 **Theory of Music (3) (F)**  
The basic materials and their use in analyzing and writing music. Systematic instruction in ear training and sight-singing. Primarily for music majors.
- 4 **Theory of Music (3) (W)**  
Prerequisite: Music 3 or consent of department. Continuation of Music 3.
- 5 **Introduction to Non-Western Music (3) (W)**  
A survey of the music of the Asia, Oceania and Africa, with emphasis upon the function of music in the various cultures. This course will not apply toward requirements for a music major.
- 6 **Introduction to the Afro-American Arts (3) (V)**  
A survey of the cultural contributions of African music, dance and sculpture to contemporary America. This course will not apply toward requirements for a music major.
- 7 **Introduction to Jazz (3) (V)**  
A survey course which examines the musical, historical and social aspects of the subject. This course will not count toward requirements for a music major.
- 90 **Freshman Seminar (3) (V)**  
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.

MUSIC EDUCATION, HISTORY,  
LITERATURE, THEORY

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 101 **History of Western Music (3) (F)**  
Prerequisite: Music 3 or consent of department. A general survey of the history of Western Music. Includes the evolution and development of styles, forms and their social setting.
- 102 **History of Western Music (3) (W)**  
Prerequisite: Music 3 or consent of department. Continuation of Music 101.
- 111 **Theory of Music (3) (F)**  
Prerequisite: Music 4 or consent of department. Altered chords and modulation. Application of vocabulary and techniques to music of the eighteenth and nineteenth centuries. Composition in simple form.
- 112 **Theory of Music (3) (W)**  
Prerequisite: Music 111 or consent of department. Continuation of Music 111.
- 121 **Form and Analysis (2) (V)**  
Prerequisite: Music 112. Study of basic musical forms and structures.
- 122 **Form and Analysis (2) (V)**  
Prerequisite: Music 121. Emphasis upon the larger musical forms. Introduction of contemporary structure.
- 134 **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 (Same as Education 137) (2) (F,W,S)**  
Prerequisite: Music 134 or consent of department. The role of the classroom teacher in the development of the elementary school general music program; selection of music, demonstration and practice of methods, study of resources. This course will not apply toward requirements for a music major.
- 141 **Orchestration (2) (W)**  
Prerequisite: Music 112. Study of the instruments of the orchestra; scoring for various instrumental ensembles and orchestra.
- 151 **Conducting (2) (F)**  
Prerequisite: Music 112 or consent of department. Techniques and problems in conducting. Discussion and study of musical terminology. Rehearsal procedures for vocal and instrumental organizations.
- 192 **Senior Readings (2) (F&W)**  
Prerequisite: Consent of department. Required of all senior music majors. Directed readings and research in an area mutually acceptable to the student and instructor.
- 251 **Advanced Conducting (2) (W)**  
Prerequisite: Music 151 or consent of department. Advanced study of conducting and rehearsal techniques, score reading and interpretation.  
a. Instrumental  
b. Choral
- 257 **Curriculum and Methods of Teaching Elementary School Music (3) (F)**  
Prerequisite: Music 112 and Education 101. For the Music Education major. A study of the elementary school music curriculum, emphasizing the objectives, correct approaches and methods of teaching and staffing music classes, analysis of instructional materials and resources. The class is divided when appropriate according to the vocal or instrumental programs of the students.
- 267 **Curriculum and Methods of Teaching Secondary School Music (3) (W)**  
Prerequisite: Music 112 and Education 101. For the Music Education major. The secondary school music curriculum including choral and instrumental performance organizations, non-performance classes, related arts courses, administrative procedures, evaluation of literature. The class is divided when appropriate according to the choral or instrumental programs of the students.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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 Arts Antiqua and the Ars Nova.
- 322 **Music of the Renaissance (3) (V)**  
Prerequisite: Music 101 or consent of department. A study of the theoretical and practical impact of humanism on music, musicians, and musical thought from 1450 to 1600. Sacred and secular music; the rise of an instrumental idiom.
- 323 **Music of the Baroque (3) (V)**  
Prerequisite: Music 101 or consent of department. A detailed study of musical style from 1600 to 1750. The rise of the new style, national styles in the seventeenth century and the culmination of the baroque period.
- 324 **Music of the Classic Period (3) (V)**  
Prerequisite: Music 102 or consent of department. A study of the growth of classical style; galant and expressive styles; Mozart, Haydn and Beethoven.
- 325 **Music of the Romantic Period (3) (V)**  
Prerequisite: Music 102 or consent of department. Composers, forms and styles in nineteenth century music. The literary and social background of musical romanticism.
- 326 **Music of the Twentieth Century (3) (V)**  
Prerequisite: Music 102 or consent of department. A detailed study of trends in modern music and of influential composers; Impressionism, serial composition, electronic music, and other recent techniques.

PHILOSOPHY

*Prerequisites may be waived by consent of department.*

- 50 **Major Questions in Philosophy (3) (F&W)**  
A study and discussion of representative topics in philosophy such as free will and determinism, concepts of mind and body, the basis of value judgments, knowledge and belief, and the possibility of constructing a world view.
- 60 **Logic and Language (3) (F&W)**  
An introduction to the language and logical structure of arguments, the principles of sound reasoning, and application of these principles in a variety of contexts.
- 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.
- 101 **Approaches to Ethics (3) (F&W)**  
Freshmen admitted by consent of department. A study and discussion of representative topics in moral philosophy such as moral skepticism, moral objectivity, theories of obligation and value, evaluation of social institutions and the relation between morality and science. Traditional and contemporary writers will be considered.
- 102 **Philosophy of Religion (3) (F&W)**  
Freshmen admitted by consent of department. A philosophical investigation of such problems as the nature of religious faith and experience, the relation of faith and reason, alternative concepts of deity and the problem of evil.
- 105 **Philosophy and Literature (3) (F or W)**  
Freshmen admitted by consent of department. Critical reading and discussion of selected literary works in terms of the philosophical problems they present.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 160 **Formal Logic (3) (F&W)**  
Freshmen admitted by consent of department. An introductory study of logical truth and deductive inference, with emphasis on the development and mastery of a formal system.
- 170 **Asian Philosophy (3) (F&W)**  
Freshmen admitted by consent of department. Critical study of selected philosophical classics of India and China.
- 201 **Ancient Philosophy (3) (V)**  
Freshmen admitted by consent of department. The principal philosophical doctrines of the ancient world, with special emphasis on the philosophies of Plato and Aristotle.
- 202 **Medieval Philosophy (3) (Alt. W)**  
A critical study of the important philosophies of the period from Augustine to the Renaissance.
- 203 **Early Modern Philosophy (3) (Alt. F)**  
Principal figures in the development of rationalism, empiricism and skepticism in early modern Europe, from Descartes to Kant.
- 204 **Nineteenth Century Philosophy (3) (Alt. F)**  
A study of such major figures of the period as Hegel and Nietzsche, Mill and Pierce.
- 205 **Twentieth Century Philosophy (3) (Alt. W)**  
Representative topics in contemporary philosophy, with readings selected from pragmatism, logical positivism, linguistic analysis and existentialism.
- 207 **The British Tradition (3) (V)**  
An examination of major trends in the development of contemporary British philosophy, including the philosophies of Russell and Moore, logical positivism, Oxford philosophy and the later Wittgenstein.
- 220 **Philosophical Issues In Education (3) (Alt. W)**  
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 organizations.
- 235 **Classical Ethical Theories (3) (Alt. F)**  
Significant contributions to moral philosophy, from Plato and Aristotle to Bentham and Mill.
- 240 **Philosophy of History (3) (V)**  
Discussion and analysis of some philosophical problems raised by historical inquiry such as subjectivity, relativism, the role of value judgments and the nature of historical explanation.
- 250 **Philosophy of Science (3) (F)**  
An examination of logical and methodological problems related to the sciences, including the structure of scientific explanations, laws and theories; methods of concept formation; and confirmation and the problem of induction.
- 260 **Methods of Logic (3) (V)**  
Prerequisite: Philosophy 160. A variable content course in which techniques of modern logic are used to explore one or more 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



DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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 and Economics 269)**  
An interdisciplinary study of Marx and leading Marxists, designed to evaluate their influence on recent political, economic, and social thought and institutions.
- 291 **Senior Thesis (3-6) (V)**  
Prerequisite: Consent of department. Directed individual research for qualified senior majors. At least six hours are required for departmental honors in philosophy. May be repeated, but no more than nine hours may be credited toward a degree.
- 301 **Plato (3) (W)**  
Prerequisite: Nine hours of philosophy or consent of instructor. A study of selected Platonic dialogues.
- 302 **Aristotle (3) (Alt. W)**  
Prerequisite: Nine hours of philosophy or consent of instructor. A selective study of Aristotle's major works.
- 304 **Medieval Philosophers (3) (V)**  
Prerequisite: Nine hours of philosophy or consent of instructor. Emphasis on the works of Augustine, Aquinas and Ockham.
- 305 **The Rationalists (3) (Alt. F)**  
Prerequisite: Nine 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: Nine 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: Nine hours of philosophy or consent of instructor. A systematic study of the *Critique of Pure Reason*.
- 308 **Hegel (3) (V)**  
Prerequisite: Nine hours of philosophy or consent of instructor. A critical study of the writing and influence of Hegel.
- 310 **American Philosophy (3) (V)**  
Prerequisite: Nine hours of philosophy or consent of instructor. A study of selected American philosophers.
- 315 **Existentialism and Phenomenology (3) (V)**  
A study of some major representatives of these schools from Kierkegaard to the present.
- 318 **Philosophy of Mind (3) (Alt. F)**  
Prerequisite: Nine hours of philosophy or consent of instructor. A study of concepts and problems in the philosophy of mind such as the identity theory, minds and machines, thinking, will, emotion, action, and intention.
- 320 **Theories of Knowledge (3) (Alt. F)**  
Prerequisite: Nine hours of philosophy or consent of instructor. An examination of concepts and problems involved in the characterization of knowledge. Specific topics will vary, but will usually include knowledge, belief, skepticism, evidence, certainty, perception, truth and necessity.
- 321 **Metaphysics (3) (Alt. W)**  
Prerequisite: Nine hours of philosophy or consent of instructor. An examination of selected metaphysical topics such as substance, universals, causality, necessity, space and time, free will, being and identity.
- 323 **Problems in Philosophical Theology (3) (V)**  
Prerequisite: Nine hours of philosophy or consent of instructor. An intensive study of problems arising out of traditional and contemporary philosophical theology.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 325 **Recent Ethical Theory (3) (V)**  
Prerequisite: Nine hours of philosophy or consent of instructor. A study of major contributions to twentieth century ethics, including works by such writers as Moore, Dewey, Ross, Stevenson, Hare and Rawls.
- 330 **Philosophy of Language (3) (V)**  
A study of the nature and structure of language and its relationship to selected philosophical problems. Included will be such topics as ordinary language philosophy, significant developments in twentieth century linguistics, prospects for semantic theory, and a discussion of traditional problems of meaning, reference and synonymy.
- 335 **Philosophical Issues in the Social Sciences (3) (V)**  
A detailed analysis of issues raised by the social sciences, including the logical characterization of explanations, predictions, laws and theories; types of reductionism; objectivity, values; and the empirical basis of the social sciences.
- 340 **Special Topics in the Philosophy of Science (3) (V)**  
Prerequisite: Consent of instructor. An examination of a selected area or topic within the philosophy of science. Topics to be considered will be announced prior to registration and may vary from year to year. This course may be repeated for credit on approval by the department.
- 350 **Special Readings (credit arranged) (V)**  
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.
- 360 **Advanced Formal Logic (3) (V)**  
Prerequisite: Philosophy 160 or consent of instructor. Rigorous study of 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: Nine hours of philosophy or consent of instructor. A 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: Nine 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.

PHYSICS

Prerequisites may be waived by consent of department.

- 1 **Foundations of Modern Physical Theory I (4) (F,W,S)**  
Prerequisite: Mathematics 02 or equivalent. An introduction to some of the major ideas, principles, and basic laws directing the development of contemporary physics. The course work consists of two general lectures each week in which the material is introduced, one discussion session, and one two-hour multi-media laboratory.
- 2 **Foundations of Modern Physical Theory II (4) (W)**  
Prerequisite: Physics 1. A continuation of Physics 1. This course, together with Physics 1, meets medical school requirements. No credit for students majoring in physics or chemistry. Two hour lectures, one hour discussion, and two hours multi-media laboratory.
- 3 **Demonstration Experiments in Physical Theory (2) (F,W,S)**  
Prerequisite: Physics 1 (may be taken concurrently). Laboratory course designed to acquaint the non-science student with the experimental methods and classic experiments of physics. No credit for students majoring in physics or chemistry. Four hours laboratory

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 10 **Experimentation in Physics (2) (F,W,S)**  
Prerequisite: Mathematics 40 (may be taken concurrently) or equivalent. A laboratory course designed to introduce the student to electrical circuits and elementary electronics. No prior knowledge of circuits or electronics will be assumed. Four hours laboratory per week.
- 111 **Physics: Mechanics and Heat (3) (F&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 and Music 4 or permission of department. Primarily for students majoring in music. A study of physical concepts particularly as they relate to music theory, musical instruments, and the electrical-mechanical reproduction of sounds. Emphasis will also be directed toward reflection, absorption, interference and detection of musical sounds.
- 171 **Applications of the Physics of Music (2) (F)**  
Prerequisite: Mathematics 2 or equivalent and Music 4 or permission of department. Primarily for students majoring in music. Demonstrations and experiments leading to a physical understanding of the production, synthesis, transmission, reflection interference and detection of musical sounds.
- 172 **Light and Color (3) (V)**  
Prerequisite: Math 02. A study of the physical concepts as they relate to light, color, and visual phenomena. Models of light applied to reflection, refraction, diffraction, and interference. Optical devices such as the eye and the camera will be studied. Visual and color perception.
- 173 **Applications of Light and Color (2) (V)**  
Prerequisite: Math 02. Demonstrations and experiments leading to a physical understanding of the behavior of light from source to detector whether that be the eye or a camera. Phenomena such as reflection, refraction, 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.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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 (Mathematics 302 may be taken concurrently). Advanced course covering rigid body dynamics, damped and undamped oscillatory motion, with an introduction of Lagrange's equations and variational principles. Three hours lecture and one hour discussion per week.
- 223 **Electricity and Magnetism (3) (F)**  
Prerequisite: Physics 200 and Mathematics 302 (Mathematics 302 may be taken concurrently). Electromagnetic fields, including electrostatics, dielectric materials, currents to Laplace's equation, currents and magnetic fields, motion to charged particles, introduction to electromagnetic waves. Three hours lecture and one hour discussion per week.
- 225 **Physical Optics (3) (W)**  
Prerequisite: Physics 223. A basic study of light; interference, diffraction, crystal optics, reflection, scattering and light quanta. Three hours lecture and one hour discussion per week.
- 241 **Thermal and Statistical Physics (3) (W)**  
Prerequisite: Physics 221. Introduction to statistical mechanics, laws of thermodynamics, kinetic theory. Three hours lecture and one hour discussion per week.
- 280 **Methods of Teaching Physics in Secondary Schools (3) (W) (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 (Credit Arranged) (F,W,S)**  
Prerequisite: Consent of instructor. A study of the literature of physics. A paper is required on an approved topic. Hours arranged.
- 282 **History of Physics (3) (F)**  
Prerequisite: Physics 1 or Astronomy 1. A study of the historical evolution of physics. Three hours lecture per week.
- 289 **Seminar (1) (F&W)**  
Presentation of selected papers by students and faculty members at weekly meetings. May be taken twice for credit.
- 290 **Research (Credit Arranged) (F,W,S)**  
Prerequisite: Consent of department. Independent physics research projects arranged between student and instructor. Hours arranged.
- 295 **Selected Topics in Physics for the Secondary School Teacher I (2) (F)**  
A basis for understanding the current developments in science is provided for the secondary school science teacher. The content of the course will be generally directed towards macroscopic phenomena.
- 296 **Selected Topics in Physics for the Secondary School Teacher II (2) (W)**  
Prerequisite: Physics 295. A basis for understanding the current developments in science is provided for the secondary school science teacher. The content of the course will be generally directed toward macroscopic phenomena.
- 297 **Selected Topics in Physics for the Secondary School Teacher III (2) (F)**  
A basis for understanding the current developments in science is provided for the secondary school science teacher. The content of the course will be generally directed 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 science

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- teacher. The content of the course will be generally directed toward microscopic phenomena.
- 301 **Introduction to Mathematical Physics (3) (F)**  
Prerequisite: 16 hours of Physics. A course covering mathematical techniques as applied to the equations of theoretical physics; calculus of variations, Green's functions; linear vector spaces, integral equations. Three hours lecture and one hour discussion per week.
- 305 **Physical Application of Group Theory (3) (W)**  
Prerequisite: Physics 113. Elements of group theory and group representations. Point symmetry groups and applications to the physics of crystals. The rotation group in two and three dimensions with application to atomic and nuclear spectroscopy. Three hours lecture and one hour discussion per week.
- 311 **Advanced Physics Laboratory I (2) (F)**  
Prerequisite: Physics 113, 201, 221 and Mathematics 122. Physics majors are introduced to the experimental techniques used in research. A student will choose and do several special problems during the semester. Six hours laboratory per week.
- 312 **Advanced Physics Laboratory II (2) (W)**  
Prerequisite: Physics 113, 201, 221 and Mathematics 122. Continuation of Physics 311. Six hours laboratory per week.
- 325 **Linear Analysis of Physical Systems (3) (V)**  
Prerequisite: Physics 201, Math 302. Signals and Systems, Fourier and Laplace analysis, transform methods, amplitude phase and delay, transfer functions and filters. Three hours lecture and one hour discussion per week.
- 331 **Introduction to Quantum Mechanics (3) (F)**  
Prerequisite: Physics 113, 221, 223, 241. Elementary treatment of quantized mechanical systems, methods of Schrodinger's wave mechanics, operator techniques, and perturbation theory. Three hours lecture and one hour discussion per week.
- 333 **Astrophysics I (3) (F)**  
Prerequisite: Physics 113, 221, 223. Applications of basic physical principles to investigation of sun, planetary systems, stars, galaxies and interstellar matter. Three hours lecture and one hour discussion per week.
- 334 **Astrophysics II (3) (W)**  
Prerequisite: Physics 333. Continuation of Physics 333. Three hours lecture and one hour discussion per week.
- 335 **Atomic and Nuclear Physics (3) (W)**  
Prerequisite: Physics 331. Application of Schrodinger's equation to hydrogen-like atoms; atomic structure and spectra; nuclear masses, energy levels; alpha, beta, and gamma radiation, nuclear reactions, models of the nucleus. Three hours lecture and one hour discussion per week.
- 343 **Selected Topics in Physics I (3) (F)**  
Prerequisite: Physics 113, 221, 223, 225, 241 and Mathematics 304. (Mathematics 304 may be taken concurrently.) Topics include special phenomena such as scattering of waves, thermal motion in gases, atmospheric disturbances, treated by methods of advanced mechanics electromagnetism and quantum mechanics. Three hours lecture and one hour discussion per week.
- 344 **Selected Topics in Physics II (3) (W)**  
Prerequisite: Physics 343. Continuation of Physics 343. Three hours lecture and one hour discussion per week.
- 351 **Elementary Solid State Physics (3) (W)**  
Prerequisite: Physics 331. Theoretical and experimental aspects of solid state physics, including one-dimensional band theory of solids; electron emission from metals and semiconductors; electrical and thermal conductivity of solids. Three hours

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- lecture and one hour discussion per week.
- 353 **Physics of Fluids (3) (V)**  
Prerequisite: Physics 221, 223, and 241, or consent of instructor. Topics from the theory of gases, liquids, or plasmas. Dynamical properties of one of these forms of matter will be developed with contemporary applications stressed.
- 354 **Atmospheric Physics (3) (V)**  
Prerequisite: Physics 241. Topics from dynamic and physical meteorology including the ionosphere. Application of thermodynamics, optics, radiation, and mechanics to atmospheric phenomena.
- 355 **Topics in Space Physics (3) (V)**  
Prerequisite: Physics 221, Corequisite: Physics 223. The two body central force problem, satellite orbits, comets and asteroids, Lagrangian points and the Anti Earth, the Trojans of Jupiter, artificial satellites, transfer orbits and missions, rocket dynamics. The solar environment, trapping of charged particles in magnetic fields, Earth's radiation belts, the solar wind aurorae and whistlers, sailing on the solar wind, the cosmic ray problem. Introduction to magnetohydrodynamics, MHD waves, sun spot movement, applications of MHD: generation of electric power, the ion rocket engine.
- 356 **Quantum Optics (3) (V)**  
Prerequisite: Physics 113 and 200. Math 302. Review of atomic theory and spectroscopy. Selected applications to modern optical phenomena such as optical pumping, lasers, masers, Mössbauer effect, and holography.
- 357 **Applied Solid State Physics (3) (V)**  
Prerequisite: Physics 113 and 241. Quantum theory needed for solids. Survey of solid state topics such as conductors, semiconductors, insulators with applications to transistors, solid state lasers, and other contemporary devices.

POLITICAL SCIENCE

*Prerequisites may be waived by consent of department.*

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.
- 90 **Freshman Seminar (3) (V)**  
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 99 **The City (3) (F&W) (Same as Administration of Justice 99, Economics 99, History 99, Psychology 99 and Sociology 99)**  
Prerequisite: 12 hours of college credit. An interdisciplinary course. Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburbia and the metropolitan area, ethnic groups, stratification and psychological implications of urban living. This course primarily for freshman and sophomores.
- 190 **Political Science Readings (credit arranged) (V)**  
Prerequisite: Political Science 11 or 12, consent of instructor and junior standing. Readings on topics mutually acceptable to student and instructor. May be repeated.



DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

295 **Internship (1-6) (F&W)**  
Prerequisite: Junior standing and consent of instructor. Independent study involving work with an appropriate public or private agency. A maximum of six credit hours may be earned.

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

GROUP I: PUBLIC LAW

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.

325 **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.

329 **Studies in Public Law (3) (V)**  
Prerequisite: Political Science 11. Selected topics in Constitutional law, administrative law, legal philosophy, history of the Supreme Court and judicial process. May be repeated.

GROUP II: POLITICAL PROCESS

215 **The Black American in United States Politics (3) (V)**  
The position and political behavior of Black Americans in both rural and urban environments, with emphasis on styles of leadership, organization, strategy and ideology.

234 **Political Sociology (3) (V) (Same as Sociology 234)**  
Prerequisite: Political Science 11, Sociology 10 or 20. The analysis of power as a social phenomenon. The processes of legitimizing power and instituting authoritative structures. Stabilizing of social control and social integration at various levels of social and political organization.

330 **The American Presidency (3) (W)**  
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.

331 **Legislative Process (3) (F)**  
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.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

333 **Studies in Policy Formation (3) (V)**  
Prerequisite: Political Science 11 or 12. Selected topics such as science and public policy, environmental policy, and other domestic policy domains. May be repeated.

335 **Political Parties (3) (F)**  
Prerequisite: Political Science 11. Development, organization, functions, activities of major and minor political parties, pressure groups, elections administration, especially in the United States. Course fulfills the state requirement.

GROUP III: PUBLIC ADMINISTRATION

340 **Public Administration (3) (F)**  
Prerequisite: Political Science 11. Survey of public administration, with reference to organization, financial administration, personnel management, judicial control of the administrative process.

341 **Comparative Public Administration (3) (V) (See Group IV)**

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 socioeconomic-cultural

environments of the governmental process of South America. Course fulfills the non-Euro-American requirement.

254 **Political Systems of Mexico, Central America and the Caribbean (3) (V)**  
The political systems, international problems and socioeconomic-cultural environments of the governmental process in Mexico, Central America, and the Caribbean. Course fulfills 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) (F)**  
Prerequisite: Political Science 11 or 12. Examination of government and politics in the Soviet Union dealing with themes such as the role of the party, recruitment and socialization of elites, the role of ideology and interest groups, the formulation of policy, bureaucratization of social, economic and cultural life.

359 **Studies in Comparative Politics (3) (V)**  
Prerequisite: Political Science 11 or 12. Studies of political processes in specific geographic areas and related concepts in comparative analysis. May be repeated.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

GROUP V: THEORY AND METHODOLOGY

- 100 **Research Methods in Political Science (3) (V)**  
Prerequisite: Political Science 11 or 12. Methods of testing causal statements about politics, including research design and data measurement, collection and analysis.
- 160 **Contemporary Political Ideologies (3) (V)**  
An introduction to the major political ideologies of the world today. Emphasis on communism, democracy, and nationalism.
- 261 **History of Political Thought (3) (V)**  
Study of political philosophy from Plato to Machiavelli.
- 262 **History of Political Thought (3) (V)**  
Study of political philosophy from Machiavelli to the present.
- 269 **The Marxist Heritage (3) (W) (Same as Philosophy 269)**  
An interdisciplinary study of Marx and leading Marxists, designed to evaluate their influence on recent political, economic and social thought and institutions.
- 300 **Empirical Political Theory (3) (V)**  
Prerequisite: Political Science 11 or 12. Consideration of the elements of scientific method; scientific method and social phenomena; critics of the scientific approach in political science, nature and logic of explanatory theories, such as systems theory, structural-functional analysis and deductive theories.
- 301 **Positive Models and Theories of Strategy (3) (V)**  
Prerequisite: Political Science 11. An introduction to utility theory, model building, game theory and political man as a rational decision-maker. Special emphasis is given to the consideration of work dealing with strategies of bargaining and voting procedures.
- 365 **Normative Political Philosophy (3) (V)**  
Prerequisite: Political Science 11 or 12. Analysis of the concepts of justice, liberty, equality, power and authority in political philosophy. Theories of revolution. General consideration of problems in normative political philosophy.
- 368 **Studies in Political Theory (3) (V)**  
Prerequisite: Political Science 11 or 12. Selected topics such as American political thought, utopian political thought and theories of revolution. May be repeated.

GROUP VI: URBAN AND REGIONAL POLITICS

- 170 **State and Local Government (3) (V)**  
Prerequisite: Political Science 11 or consent of instructor. Origin, development and problems of state and local government in the American Federal system, including the role of the United States Constitution as the framework for the Federal system. Survey of the organization, functions and operation of state and local governments in the United States. Course fulfills the state requirement.
- 176 **Community Politics (3) (V)**  
Examination of the structure and process of politics in the urban community, with emphasis on their relationships to community power structures. Course fulfills the state requirement.
- 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.
- 379 **The Socio-Political Nature of Urban Regions (3) (V) (Same as Sociology 379)**  
Prerequisite: Political Science 170 or

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

376 or Sociology 302. An interdisciplinary seminar providing the student with an opportunity to develop an understanding of the modern metropolis through the perspectives of sociology and political science.

- 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.

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

- 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

Prerequisites may be waived by consent of instructor.

- 1 **General Psychology (3) (F&W)**  
A survey of the facts, principles and methods in the study of human behavior.
- 2 **General Psychology (3) (F&W)**  
Prerequisite: Psychology 1. Continuation of Psychology 1.
- 45 **Race (3) (V) (Same as History 45 and Sociology 45)**  
Prerequisite: 12 hours of college course credit. Origins and functions of conceptions of race. Biological and social definitions of race; the function of racial ideologies for societies; social, historical and psychological bases of racism in the U.S.; the consequences of racism for the individual and societies.
- 99 **The City (3) (F&W) (Same as History 99, Political Science 99, Sociology 99 and Economics 99)**  
Prerequisite: 12 hours of college

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- credit. An interdisciplinary course. Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburbia and the metropolitan area, ethnic groups, stratification and psychological implications of urban living.
- 101 **Psychological Statistics (4) (F&W) (with laboratory)**  
Prerequisite: Psychology 2, Mathematics 30 (may be taken concurrently) or equivalent. Statistical methods in psychological measurement, analysis of psychological data. Frequency distribution analysis, sampling, tests of significance, correlational methods.
- 105 **Group Prejudice and Minority Identity (3) (V) (Same as Sociology 105)**  
Prerequisite: Psychology 1 and 2 or Sociology 10 and 20. The psychological study of determinants of identity formation and transformation among minority groups.
- 111 **Human Motivation (3) (V)**  
Prerequisite: 6 hours of psychology. A survey and comparison of current types of human motivation theory and research, with some consideration of future trends in motivation theory and of implications of motivation theory and research to other areas in psychology.
- 112 **Principles of Learning (3) (V)**  
Prerequisite: Psychology 2. A consideration of critical findings in learning.
- 114 **Physiological Psychology (3) (V)**  
Prerequisite: Psychology 1 & 2 and Biology 1. A survey of the major areas of physiological psychology with an emphasis on their historical development.
- 145 **Abnormal Psychology (3) (F&W)**  
Prerequisite: Psychology 2. Introduction to major symptom complexes, theories of etiology and treatment of behavior disorders. Credit not granted for both Psychology 145 and Psychology 245.
- 150 **The Psychology of Individual Differences (3) (F)**  
Prerequisite: Psychology 2. Analysis of major dimensions of individual differences in behavior and the roles of genetic, constitutional and experiential factors in the development of psychological differences. While emphasis is placed on human behavior, relevant information from infra-human species will be considered.
- 155 **Community Psychology (3) (W)**  
Prerequisite: Psychology 1 and 2. The analysis of psychological problems in terms of the social and situational forces that produce them. Community psychology analyzes the situational problems in living. Epidemiology of mental illness; group, family, and crisis intervention; mental health care delivery; program evaluation and demonstration project research; role of psychologist as consultant and change agent; utilization of non-professional manpower.
- 156 **Environmental Psychology (3) (F)**  
Prerequisite: Psychology 2 and 1 quantitative or methods course. Analysis of environmental influences on behavior and man's influence, in turn, on the environment. Projects relating to these problems will be required.
- 160 **Social Psychology (3) (F&W) (Same as Sociology 160)**  
Prerequisite: Psychology 2 or Sociology 10 or 20. Study of the interaction between the individual and his social environment. Examination of basic principles, concepts, methods.
- 170 **Child Psychology (3) (F&W)**  
Prerequisite: Psychology 2. Principles of biological, behavioral and personality development from conception to puberty.
- 171 **Adolescent Psychology (3) (F&W)**  
Prerequisite: Psychology 2. Principles of biological, behavioral and personality development from puberty to maturity.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 267 **Analysis of the Learning Process (3) (V)**  
Prerequisite: Psychology 1 and the consent of the instructor. Discussion and analysis of the major phenomena and theories of learning (especially organization and growth theories) that are of significance for an understanding of human learning. Primary emphasis will be on non-rote processes in learning including imitation, incidental memory, and their relation to the creative process.
- 290 **Psychology Readings (3) (V)**  
Prerequisite: Psychology 2 and consent of instructor. Readings on a topic mutually acceptable to student and instructor.
- 301 **Advanced Statistics and Experimental Design (3) (W)**  
Prerequisite: 12 hours of psychology, including Psychology 101. Statistical methods particularly useful in psychological research and the design of experiments appropriate to these methods.
- 350 **Special Readings (credit arranged) (F&W)**  
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences
- 366 **Mathematical Psychology (3) (V)**  
Prerequisite: Psychology 219. The use of mathematical models in psychology.
- 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 Russian 102 after consultation with instructor.
- 110 **Russian Literature in Translation (3) (V)**  
Readings of representative works drawn from nineteenth century Russian literature. Course will focus upon works of Pushkin, Lermontov, Gogol and Turgenev. 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.
- 200 **Syntax of the Russian Language (3) (V)**  
Prerequisite: Russian 108 or equivalent. Synchronic analysis of and upon the acquisition of the fundamentals of grammar and syntax. Five hours of class and one hour language laboratory required.
- 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

RUSSIAN

Prerequisites may be waived by consent of department.



DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

the phonemic, morphological, syntactic and semantic system of present-day Russian; dialectical variations.

**SOCIOLOGY**

*Prerequisites may be waived by consent of instructor.*

- 10 **Introduction to Sociology (3) (F&W)**  
Prerequisite: None. Sociology as an approach to social phenomena. Lecture and laboratory discussion format used for presentation of classic and contemporary models of social structure and processes.
- 45 **Race (3) (Same as Psychology 45 and History 45 and Anthropology 45) (V)**  
Prerequisite: 12 hours of college course credit. Origins and functions of conceptions of race. Biological and social definitions of race; the function of racial ideologies for societies; social, historical and psychological bases of racism in the U.S.; the consequences of racism for the individual and societies.
- 65 **The University (3) (V)**  
(See Interdisciplinary Course 65.)
- 90 **Freshman Seminar (3) (V)**  
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 99 **The City (3) (Same as Administration of Justice 99, History 99, Political Science 99, and Economics 99) (V)**  
Prerequisite: 12 hours of college credit. An interdisciplinary course. Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, 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) (V)**  
Prerequisite: Psychology 1 and 2 or Sociology 10. The psychological and sociological study of determinants of identity formation and transformation among minority groups.
- 106 **Development of Social Thought (3) (V)**  
Prerequisite: Sociology 10. The antecedents of sociological theory, as traced through social thought traditions until the time of Comte.
- 110 **Sociological Theory (3) (F&W)**  
Prerequisite: Sociology 10. The nature of sociological theory. An investigation of theory from Comte through contemporary developments. Contributions made by theorists in related disciplines.
- 120 **Quantitative Techniques in Sociology (with Laboratory) (4) (F&W)**  
Prerequisite: Sociology 10 and satisfaction of math proficiency requirement. Issues and techniques of statistical analyses, e.g., probability theory, measurements of central tendency and dispersion, techniques of statistical inference, hypothesis testing, chi square test, F-ratio correlation and multiple regression analyses, non-parametric statistics.
- 130 **Research Methods (4) (F&W)**  
Prerequisite: Sociology 10. Research planning; the collection, analysis and presentation of data. Course includes practical experience in the conduct of a research project.
- 160 **Social Psychology (3) (Same as Psychology 160) (F&W)**  
Prerequisite: Sociology 10 or Psychology 2. Study of the interaction between the individual and his social environment. Examination of basic principles, concepts, methods.

NOTE: Any 200 level course taken for major elective credit requires prior completion of a 100 level course. If the 100 level course is 110, 120 or 130 it may be taken concurrently with a 200 level course.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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.
- 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) (V)**  
Prerequisite: Sociology 10 or Political Science 11. The analysis of power as a social phenomenon. The processes of legitimatizing power and instituting authoritative structures. Stabilizing of social control and social integration at various levels of social and political organization.
- 238 **Medical Sociology (3) (V)**  
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.
- 242 **Sociological Aspects of Social Work (3) (F&W)**  
Prerequisite: Sociology 10 and Sociology 160 or Psychology 2 with sophomore standing. Introduction to social work and social welfare organizations. Socio-cultural factors affecting the methods and delivery of social services; the emergence of social work as a profession.
- 246 **Social Issues and Community Organization (3) (V)**  
Prerequisite: Sociology 110; Sociology 242 or 234. Public issues in their relations to society, as distinct from private troubles of individuals, with a view toward alternative strategies for social action. Students may elect to develop a sociological perspective through working in the community.
- 256 **Sociology of Education (3) (F&W)**  
Prerequisite: Sociology 10. Education as a social institution, its role as an agent of socialization and its effect upon the processes of social change and social mobility. The relationship between the school and its community.
- 260 **Social Interaction in Small Groups (3) (V)**  
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) (V)**  
Prerequisite: Sociology 10. Religion as a universal phenomenon. The effect of religion upon the individual and society. The organization of religious enterprises.
- 270 **Sociology of Socialization (3) (V)**  
Prerequisite: Sociology 10. Analysis of the structural and social psychological aspects of roles and the self as a product of social interaction.
- 278 **Sociology of Law (3) (V)**  
Prerequisite: Sociology 10. A study of law and society with emphasis on the sociological analysis of specific problems of legal doctrines and legal institutions. The law is examined as an instrument of social control through study of the courts, the legal

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 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 **Undergraduate Seminar in Sociological Issues (3) (V)**  
290b  
290c Prerequisite: Sociology 10 and consent of instructor. Consideration of an issue or area of the instructor's choice, not already covered by other undergraduate courses. May be taken up to three times for nine hours credit, provided the subject matter is different each time the seminar is taken.
- 296 **Practicum in Supervised Field Experience and Operational Research (3) (F&W)**  
Prerequisite: Sociology 142 or 242 and junior standing. Observation and participation in the social service programs at hospitals, community centers and social agencies. May be taken twice for credit.
- 298 **Practicum in Field and Laboratory Research (1-3) (V)**  
Prerequisite: Sociology 130. Intensive field or laboratory research to be taken subsequent to or concurrent with a specific substantive course. May be taken twice for credit.
- NOTE: Any 300 level course taken for *major* elective credit requires prior completion of *two* of the following: Sociology 110, 120 or 130.
- 312 **Social Stratification (3) (F)**  
Prerequisite: Sociology 10; junior standing or consent of instructor. Theories of social stratification and an examination of current research. Changes in the occupational and hierarchical structure of contemporary society.
- 314 **Social Change (3) (F)**  
Prerequisite: Sociology 10; junior standing or consent of instructor. The relationship between structural changes and alterations in culture. The individual, the group and the collectivity as agents of change.
- 316 **Ideology and Social Movements (3) (V)**  
Prerequisite: Either Sociology 146, 234 or 314. Effect of events and social processes on thought and action in the twentieth century. Social functions of ideologies as expressed in movements and formal and informal organizations seeking social change.
- 322 **Advanced Quantitative Techniques (3) (F)**  
Prerequisite: Sociology 120 or consent of instructor. A study of advanced quantitative analysis of sociological data, focusing on problems of multivariate analysis, sampling theory and techniques and the use of electronic data processing in approaching these problems.
- 326 **Criminology (3) (F&W)**  
Prerequisite: Sociology 200, 214 or 6 hours of Sociology/Anthropology. Crime as a social phenomenon. Theory and research concerning the causes of crime.
- 327 **Fieldwork in Anthropology (3) (Same as Anthropology 327 and Sociology 327) (V)**  
Prerequisite: 9 hours of Anthropology or Sociology or consent of instructor. An introduction to anthropological fieldwork in complex societies emphasizing participant observation, interviewing and use of key-informants. Attention will be given to theoretical considerations and problems of method as well as to the application of these techniques in actual fieldwork. Current issues in the ethics of field research and action anthropology will be discussed.
- 328 **Institutions and the Control of Crime & Delinquency (3) (W)**  
Prerequisite: Sociology 214 or 326. Institutional responses to crime and delinquency. Theories and programs of rehabilitation and punishment. Organizational conditions affecting behavior of correctional personnel.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 332 **Advanced Methodology (3) (W)**  
Prerequisite: Sociology 130 or consent of instructor. A study of methodological problems on an advanced level, focusing on contemporary issues in the processes of inquiry with particular emphasis on the applicability of different modes of research to various types of theoretical problems. Consideration of ethical problems in social research.
- 336 **Complex Organizations (3) (V)**  
Prerequisite: Sociology 10; junior standing or consent of instructor. The structural characteristics of complex organizations and the informal substructures that evolve within. Rational and natural-system models. Pressures toward equilibrium and change.
- 342 **Demography (3) (V)**  
Prerequisite: Sociology 10; junior standing or consent of instructor. 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) (V)**  
Prerequisite: Sociology 10; junior standing or consent of instructor. The urban community as an area of social action and problem-solving with emphasis on the sociological aspects of urban problems.
- 350 **Special Study (credit arranged) (F&W)**  
Prerequisite: Consent of the instructor. Independent study through readings, reports or field research.
- 352 **Advanced Principles of Sociology (3) (V)**  
Prerequisite: Sociology 10; junior standing or consent of instructor. Analysis of the main concepts and principles of sociology and survey of sociology as a social science.
- 360 **Sociology of Minority Groups (3) (W)**  
Prerequisite: Sociology 10; junior standing or consent of instructor. The study of dominant-subordinate group relations. Religion, ethnicity and race as factors affecting conflict, competition, accommodation and assimilation.
- 377 **Personality and Culture (3) (V)**  
Prerequisite: Sociology 10; junior standing or consent of instructor. Analysis of behavior from the standpoint of interaction between psychological systems, sociological systems and cultural systems.
- 378a **Selected Topics in Social Psychology (3) (V)**  
378b Prerequisite: Sociology 160 or Psychology 160 and consent of instructor. Focused examination of selected issues, concepts and methods in the study of social interaction. May be taken twice for credit.
- 379 **The Socio-Political Nature of Urban Regions (3) (Same as Political Science 379) (V)**  
Prerequisite: Sociology 302 or Political Science 170 or 376. An interdisciplinary seminar providing the student with an opportunity to develop an understanding of the modern metropolis through the perspectives of sociology and political science.
- 392 **Advanced Sociological Theory (3) (F)**  
Prerequisite: Sociology 110 or consent of instructor. Recent and current developments in sociological theory in light of its tradition and methodological issues. The state of modern theory with regard to specific conceptual, substantive and methodological concerns.
- 394 **Methods in Theory Construction (3) (V)**  
Prerequisite: Sociology 110 or consent of instructor. An in-depth comparison of selected techniques of theory building and testing. Verbal and/or mathematical formalization of selected sociological examples of theory will be the central activity.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

SPANISH

*Prerequisites may be waived by consent of department.*

- 1 **Elementary Spanish (5) (F&W)**  
Emphasis will be placed upon the speaking and understanding of Spanish and upon the acquisition of the fundamentals of grammar and syntax. One hour language laboratory required.
- 2 **Elementary Spanish (5) (F&W)**  
Prerequisite: Spanish 1 or equivalent. Emphasis will be placed upon the speaking and understanding of Spanish and upon the acquisition of the fundamentals of grammar and syntax. One hour language laboratory required.
- 101 **Intermediate Spanish (3) (F&W)**  
Prerequisite: Spanish 2 or equivalent. Grammar review and cultivation of language skills through the study of selected modern works.
- 102 **Intermediate Spanish (3) (F&W)**  
Prerequisite: Spanish 101 or equivalent. Further development of language skills through the reading and discussion of literary texts. May be taken concurrently with Spanish 108 after consultation with instructor.
- 108 **Oral and Written Composition (3) (F&W)**  
Prerequisite: Spanish 102 or equivalent. Emphasis will be placed upon the development of oral and writing skills. May be taken concurrently with Spanish 102 after consultation with instructor.
- 110 **Spanish Literature in Translation (3) (V)**  
Prerequisite: Sophomore standing. Lectures on the literature and culture of Spain from the Middle Ages to the contemporary period. Reading and discussion of works of representative Spanish writers: Cervantes, Calderón, Galdós, Unamuno, Garcia Lorca, Buero Vallejo and others. May be taken to fulfill humanities requirement. Not open to Spanish majors.
- 111 **Spanish American Literature in Translation (3) (V)**  
Prerequisite: Sophomore standing. Lectures on the literature and culture of Spanish America. Reading and discussion of works of representative poets, novelists and essayists of the contemporary period. May be taken to fulfill humanities requirement. Not open to Spanish majors.
- 150 **European Literature in Translation: Special Topics (3) (V)**  
Major figures, works, or movements in the literature of Europe and their relevance to our own age. Topic is announced in advance by the department. Does not count toward major in Spanish. May be taken to fulfill the humanities requirement.
- 200 **Syntax of the Spanish Language (3) (W)**  
Prerequisite: Spanish 108. Study of the syntactical and morphological characteristics of the Spanish language as seen in representative selections from Hispanic literature. Designed primarily for students majoring in Spanish. May be taken concurrently with any 200 level course.
- 210 **Hispanic Culture and Civilization: Spain (3) (F)**  
Prerequisite: Spanish 102 or equivalent. The development of Spanish peninsula civilization from its Romanic beginnings to the present.
- 211 **Hispanic Culture and Civilization: Spanish America (3) (W)**  
Prerequisite: Spanish 102 or equivalent. The development of the cultures and civilization of the Spanish-speaking nations of the Western hemisphere.
- 220 **Introduction to Linguistics (3) (F&W) (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 contrastive linguistics in foreign language teaching.

DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 264 **Curriculum and Methods of Teaching Foreign Languages (3) (F&W) (Same as Education 264)**  
Prerequisite: Education 163, Spanish 200, 201, 202. A study of the scope and sequence of the foreign language courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward the techniques and research tools of the scholar in the field of foreign languages.
- 280 **Introduction to Hispanic Literature: Spain (3) (F)**  
Prerequisite: Spanish 102. Study of selected texts of Spanish writers from the Middle Ages to the present and the historical, cultural and political factors which influenced their writings. Required for Spanish majors.
- 281 **Introduction to Hispanic Literature: Spanish America (3) (W)**  
Prerequisite: Spanish 102. Study of selected texts of Spanish American writers from the Colonial period to the present and the historical, cultural and political factors which influenced their writings. Required for Spanish majors.
- 299 **Seminar on Hispanic Literature (3) (W)**  
Required of major students in the senior year. Subject to be announced every year by the instructor in charge of the seminar. Senior standing required.
- 310 **Spanish Literature from 1898 to 1939 (3) (Alt F not 72)**  
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 incl 72)**  
Prerequisite: Spanish 280. A study of cultural and literary developments since the Spanish Civil War. Emphasis on leading novelists and dramatists.
- 320 **Poetry, Drama and Fiction of the Nineteenth Century (3) (V)**  
Prerequisite: Spanish 280. A study of the culture and literature of Spain in the nineteenth century with emphasis on the leading figures of Romanticism and Realism.
- 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, Gongora, Lope de Vega, Quevedo.
- 330 **Cervantes (3) (V)**  
Prerequisite: Spanish 280. A study of Don Quixote in relation with 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 incl 71)**  
Prerequisite: Spanish 280. Designed to acquaint students with the cultural background of Medieval and Renaissance Spanish traditions. Critical reading and discussion of representative works of these periods: Poema del Cid; El Conde Lucanor; Libro de Buen Amor; El Romancero; La Celestina; the picaresque novel, and Don Quixote.
- 340 **Spanish American Literature of the Nineteenth Century (3) (Alt W)**  
Prerequisite: Spanish 281. A study of the culture and literature of Spanish America in the nineteenth century with emphasis on the leading figures of Modernismo and representative novelists and essayists of this period.
- 345 **Spanish American Literature of the Twentieth Century (3) (V)**  
Prerequisite: Spanish 281. A study of the leading Spanish American poets, essayists and novelists of this period as interpreters of contemporary man's dilemma and the "pathos" and "ethos" of their culture.



DESCRIPTION OF COURSES: COLLEGE OF ARTS AND SCIENCES

- 351 **Spanish American Fiction of the 20th Century (3) (V)**  
Prerequisite: Spanish 281. The role of prose fiction in Spanish American literary and cultural history from World War I to the present.
- 360 **Spanish American Poetry from Modernismo to the present (3) (V)**  
Prerequisite: Spanish 281. A study of poetry and its role in the literary and cultural history of Spanish American society from Modernismo to the present.

**SPEECH**

*Prerequisites may be waived by consent of instructor. For further information, consult the Speech Office.*

- 10 **Basic Communication (3) (F&W)**  
Prerequisite: Interview with and consent of instructor before enrolling in course. Development of basic communication skills. Includes small group interaction, non-verbal communication, role playing, audience awareness and theatre improvisation.
- 101 **Effective Speaking (3) (F&W)**  
Prerequisite: Sophomore standing. Emphasis on effective oral communication, formal and informal. Theories and techniques of argument and persuasion, organization, evidence, delivery.
- 110 **Introduction to Radio and Television Broadcasting (3) (F)**  
An introduction to broadcasting, including the areas of history, government regulations, station operation and program development.
- 120 **Introduction to the Theatre (3) (F)**  
A study of theatre as an art form, emphasizing the audience's appreciation of the art of the playwright, actor, director and designer. Study of major periods, genres and plays from classical to modern times.
- 121 **Theory and Practice in the Fundamentals of Acting (3) (F&W)**

- 140 **Introduction to Argumentation and Debate (3) (F&W)**  
Fundamentals of argumentation and debate. Application of logic and audience analysis. Preparing briefs. Some debating.
- 199 **Special Projects in Communication (1) (F&W) (repeatable to a maximum of four hours)**  
Prerequisite: Consent of instructor. Work on special projects in the students field of interest, with conferences adjusted to needs of the student.
- 203 **Introduction to Communication Theory and Research (3) (F&W)**  
A survey of communication theories and research techniques. Use of several research techniques and application of one or more in a communication research project.
- 205 **Communication in American Politics (3) (Alt. F)**  
Analysis of audience response and media preferences in political campaigns, campaign communications



DESCRIPTION OF COURSES: SCHOOL OF BUSINESS ADMINISTRATION

- strategy, campaign speeches, candidate's uses of television and other mass media and measuring effectiveness of campaign communications.
- 211 **The Broadcast Audience (3) (W)**  
A survey of techniques of audience analysis, including practical application to program development, with emphasis on the role of the audience in the communication process.
- 212 **Writing for Radio and Television (3) (W)**  
Prerequisite: Speech 110 or permission of Instructor. Fundamentals of writing for the broadcast media. Includes format development and writing of news, public affairs, drama and commercials.
- 230 **Small Group Communication (3) (W)**  
Development of communication skills needed in small group decision-making. Application of these skills to contemporary problems, with special emphasis on urban problems.
- 240 **Persuasive Communication (3) (F&W)**  
A study of persuasive communication including theories, techniques, forms, functions, applications, potential and limitations for individuals and organizations. Insights from both classical rhetoric and contemporary communications theory.
- 250 **Mass Media and Society (3) (F&W)**  
Nature and functions of mass communication with appraisal of the performance of the mass media in society.
- 104 **Fundamentals of Digital Computer Programming (3)**  
A study of the principles of programming digital computers with emphasis on a specific algebraic-oriented language.
- 106 **Basic Marketing (3)**  
Prerequisite: Fundamentals of Accounting 140, Economics 51, and \*Elementary Statistics 31. An examination of the character and importance of the marketing process, its essential functions and the institutions performing them. Attention is focused on the major policies (such as distribution, product, price, promotion) which underlie the multifarious activities of marketing institutions and the managerial, economic, societal implications of such policies.
- 109 **COBOL/Business Systems (3)**  
Fundamentals of computer programming for business use with the COBOL language. Presentation, analysis, and discussion of common business applications of data processing, to include administrative and accounting practices.
- 131 **Elementary Statistics (3)\*\***  
Prerequisite: Mathematics 102 and sophomore standing. An introduction to statistical methods and concepts used in the decision processes of business problems. Statistical measures and estimators are examined in relation to the estimation and testing problems of statistical inference.

**BUSINESS ADMINISTRATION**

*Prerequisites may be waived by consent of department.*

*\*Starred prerequisites may be taken concurrently with listed offering.*

- 31 **Elementary Statistics (3)\*\***  
Prerequisite: Sophomore standing. An introduction to statistical methods and concepts used in the decision processes of business problems.
- 140 **Fundamentals of Financial Accounting (3)**  
Prerequisite: Sophomore standing. Fundamental accounting principles and procedures; their application and

DESCRIPTION OF COURSES: SCHOOL OF BUSINESS ADMINISTRATION

- interpretation emphasizing corporate financial reports. Topics include: the accounting cycle and the preparation of financial statements, including proprietary, partnership and corporate equities; also included is an introduction to the computer as an accounting tool.
- 145 Fundamentals of Managerial Accounting (3)**  
Prerequisite: Fundamentals of Financial Accounting 140. Development, interpretation and uses of accounting reports and supplementary information for management decision-making. Topics include: operational and capital budgeting, analysis of financial statements, and the application of relevant cost behavior, control, and traceability concepts in the preparation of internal accounting reports.
- 156 Legal Environment of Business (3)**  
Prerequisite: Economics 51, Fundamentals of Financial Accounting 140. An introduction to the nature and meaning of law, sources of law, legal process and institutions. The legal environment of business is defined as: the attitude of the government toward business, the historical development of this attitude; current trends of public control in taxation, regulation of commerce and competition; freedom of contract, antitrust legislation and its relationship to marketing, mergers and acquisitions; and labor management relations.
- 202 Fundamentals of Production (3)**  
Prerequisite: Economics 51, Elementary Statistics 31 and Fundamentals of Managerial Accounting 145. An examination of the concepts, processes, and institutions which are fundamental to an understanding of the production function in business enterprise. Emphasis is on the management and organization of production operations, and upon the application of scientific and quantitative
- methods to the solution of production problems.
- 204 Financial Management (3)**  
Prerequisite: Fundamentals of Managerial Accounting 145, Economics 51 and \*Elementary Statistics 31. The study of a firm's need for funds; the institutions, instruments and markets concerned with raising such funds; and the techniques of analysis used to determine how effectively these funds, once raised, are invested within the firm.
- 224 Introduction to Systems Programming (3)**  
Prerequisite: Grade of "A" or "B" in Fundamentals of Digital Computer Programming 104 or consent of instructor. Development and interpretation of machine languages, addressing techniques, symbolic coding and assembly systems. A particular computer and programming system will be used extensively to illustrate concepts and to give students actual experience in programming.
- 231 Intermediate Statistics (3)**  
Prerequisite: Elementary Statistics 31, Mathematics 101 and Mathematics 102. A study of advanced statistical concepts as applied to the methods of statistical designs and models.
- 253 Managerial Economics (3) (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,

DESCRIPTION OF COURSES: SCHOOL OF BUSINESS ADMINISTRATION

- 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.
- 295 Business Administration Problems (variable credit)**  
Prerequisites: To be determined each time the course is offered. Study of selected special problems in business and administration. May be repeated for credit.
- 296 Independent Study (variable credit)**  
Prerequisites: Permission of the professor and the Dean. Occasional special individual study topics under the guidance of a specific professor.
- 301 Buyer Behavior (3)**  
Prerequisite: Business Administration 106 and three hours of psychology or sociology, or consent of instructor. A study of consumer functions and concepts in economics, marketing and related subjects such as decision-making, attitude formation, cognition, perception and learning as related to marketing 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 heavily to enhance decision-making in marketing, especially the selection, allocation, budgeting and forecasting of marketing resources.
- 308 Production and Operations Management (3)**  
Prerequisite: Fundamentals of Production 202, Mathematics 101 and Mathematics 102. Application of the tools and techniques of statistical decision theory and operations research to production and operating problems. Emphasis is on the use of mathematical modeling and simulation techniques to analyze complex and ill-structured problems in large scale systems.
- 310 Management as a Behavioral Science I (3)**  
Prerequisite: Economics 51 and Elementary Statistics 31. Management from a historical perspective. Nature, meaning and psychological significance of work. Functions and responsibilities of managers. Contributions of the behavioral sciences. Measurement and analysis of human behavior. Matching the man to the job. Managerial styles and types of authority. Employee satisfaction, motivation and productivity.

DESCRIPTION OF COURSES: SCHOOL OF BUSINESS ADMINISTRATION

- 311 **Management as a Behavioral Science II (3)**  
Prerequisite: Business Administration 310. The organization as a social system. Interpersonal relations and social exchange. Modification of human behavior. Methods of change and their dysfunctional consequences in the organization. Technology as a determinant of work behavior. Labor relations and human relations. Major organizational concepts and theories.
- 312 **Industrial and Labor Relations (3)**  
Prerequisite: Business Administration 310. Emphasis on labor unions and their relationship with management. Labor laws, trade union structure and government, collective bargaining, arbitration and grievance procedures are studied.
- 315 **Marketing Management (3)**  
Prerequisite: Senior standing and nine (9) hours in marketing, including Business Administration 106 or consent of instructor. An intensive analysis of major marketing decisions facing the firm, such as level, mix, allocation and strategy of marketing efforts. Specific decision areas investigated include market determination, pricing, physical distribution, product policy, promotion, channel management and buyer behavior. Competitive, political, legal and social factors that may affect such areas of decision are discussed. Cases, models and problems are used heavily.
- 318 **Industrial Psychology (3) (Same as Psychology 218)**  
Prerequisite: Psychology 201 or Management as a Behavioral Science 310. Activities of the applied psychologist. Selection and placement, testing and interviewing, personnel research. Morale, motivation and job satisfaction. Leadership skills and styles, creative management, industrial mental health. Psychology in advertising and marketing.
- 331 **Multivariate Analysis (3)**  
Prerequisite: Elementary Statistics 31, Mathematics 101 and Mathematics 102.

A study of statistical techniques applicable to multi-variable relationships.

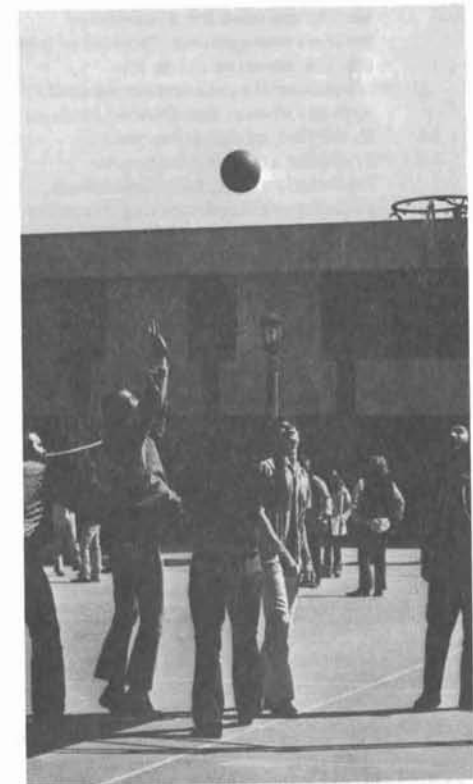
- 334 **Investments (3)**  
Prerequisite: Financial Management 204. Financial analysis of debt and equity instruments available on organized exchanges and in less tangible "over the counter markets." Techniques of such analysis being presented in context with economic and management circumstances within the company, industry and economy.
- 340 **Intermediate Accounting Theory (3)**  
Prerequisite: Fundamentals of Financial Accounting 140 and Fundamentals of Managerial Accounting 145 with a minimum grade of "C" in each (or consent of department) and \*Elementary Statistics 31. The development of a structure of financial accounting theory and an analysis of asset valuation methods emphasizing their effect on income determination.
- 341 **Advanced Accounting (3)**  
(Includes a continuation of the intermediate text, and topics from the advanced text.) Prerequisite: Intermediate Accounting Theory 340, minimum grade of "C" (or consent of department). Application of accounting theory to equity valuation and the related effects on income determination. Other topics include accounting for price level changes, partnerships and fiduciaries.
- 342 **Consolidation and Specialized Accounting Problems (3)**  
Prerequisite: Advanced Accounting 341, minimum grade of "C" (or consent of department). Accounting theory and practice relating to: consolidated financial statements, business combinations, foreign subsidiaries, corporate liquidation and reorganization and non-profit organizations.
- 345 **Cost Accounting (3)**  
Prerequisite: Fundamentals of Managerial Accounting 145, minimum grade of "C" (or consent of department). Basic principles of cost determination and control of manufacturing and distribution

DESCRIPTION OF COURSES: SCHOOL OF BUSINESS ADMINISTRATION

- activities; emphasizes the accumulation and tracing of cost to products, processes and responsibility centers for purposes of financial accounting and management control. Topics include: job-order and process costing and the development and use of standard costs within a system of absorption costing.
- 347 **Income Taxes (3)**  
Prerequisites: Fundamentals of Financial Accounting 140 and Fundamentals of Managerial Accounting 145, minimum grade of "C" in each (or consent of department). Fundamentals of Federal income tax accounting with emphasis on individuals and corporations. Topics covered include: determination of income, exclusions, exemptions, personal and business deductions and tax credits.
- 348 **Auditing (3)**  
Prerequisite: Advanced Accounting 341, minimum grade of "C" (or consent of department). Examination of fundamental audit objectives and techniques employed in the verification, analysis and interpretation of accounting records and financial statements. The work of the independent public accountant is emphasized to include the standards of professional performance.
- 349 **Managerial Aspects of Taxation (3)**  
Prerequisite: Income Taxes 347. A study of taxation and tax issues, including the planning, in the managerial decision making process. Research directed to the solution of business tax problems.
- 350 **Financial Policies (3)**  
Prerequisite: Financial Management 204. The intensification and application of the concepts developed in Finance 204. Special emphasis is given to the development of top management policies and their application toward complex problems of finance. Techniques for identifying and dealing with these problems before they become acute will be

investigated. Cases will be integrated with appropriate outside reading.

- 368 **Business Fluctuations and Forecasting (3) (Same as Economics 368)**  
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 31, Mathematics 101 and Mathematics 102. Application of the theories and techniques of operations and research to problems of business, government and industry; with emphasis on the construction and utilization of quantitative decision models.





## DESCRIPTION OF COURSES: SCHOOL OF EDUCATION

- 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 31, Mathematics 101 and Mathematics 102. A study of mathematical programming theory and algorithmic developments. Consideration is given to linear programming, integer programming, quadratic programming, dynamic programming and other related techniques.
- 391 **Business Policy and Administration (3)**  
Prerequisite: Senior standing, Basic Marketing 106, Financial Management 204 and Management as a Behavioral Science 310. Comprehensive cases are used to examine the dynamics of business management. The role of high echelon management in the administrative process is integrated with the diverse functions of business to develop an 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 (Variable credit)**  
Prerequisite: To be determined each time the course is offered. May be repeated for credit.
- 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 Child (3) (V)** Prerequisite: Education 315 and completion of social science requirements in general education. A study of and experiences 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.

## EDUCATION

### ELEMENTARY EDUCATION

#### Early Childhood Education

- 315 **Principles of Early Childhood Education (3) (F,W,S)**  
Prerequisite: Education 101 and

#### 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

## DESCRIPTION OF COURSES: SCHOOL OF EDUCATION

- demonstrations. No credit toward a degree.
- 137 **Elementary School Music (2) (F&W) (Same as Music 137)**  
Prerequisite: Music 134 or consent of department. The role of the classroom teacher in the development of the elementary school general music program; selection of music, demonstration and practice of methods, study of resources. This course will not apply toward requirements for a music major.
- 139 **Art Activities for Elementary Schools (3) (F&W) (Same as Art 139)**  
A study of art principles; provides laboratory experiences with various media and materials. Stresses curriculum planning and developments of the elementary school program in art.
- 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 of school music instruction, correct approaches and methods of teaching and staffing music classes, analysis of instructional materials and resources. The class is divided when appropriate according to the vocal or instrumental programs of the students.
- 325 **Teaching Reading in the Elementary School (3) (F,W,S)**  
Prerequisite: Education 140, Educational Psychology and junior standing. Methods and materials of improving word perception, vocabulary,

## DESCRIPTION OF COURSES: SCHOOL OF EDUCATION

- comprehension and interests in independent reading.
- 327 **Teaching Reading in the Inner City (3) (F&S)**  
Prerequisite: Education 140 and senior standing. A systematic study of the problems of teaching reading and related language arts in ghetto schools. Attention is given to the ways in which the selection of materials and methodology of teaching reading to inner city children is influenced by their physical and psychological needs, their experience backgrounds, their spoken language patterns, their cultural heritage, and the sociology of their environment.
- 340 **Selection and Utilization of Educational Media (3) (F,W,S)**  
Introduction to the selection, use, and evaluation of audio visual materials and equipment including films, slides, transparencies, projectors, globes, charts, maps, bulletin boards, plus programmed materials, information retrieval systems, and instructional television.
- 350 **Elementary School Curriculum (3) (V)**  
Prerequisite: Education 140. Study of modern education with regard to objectives, content, methods in elementary school curriculum.
- 369 **The Analysis and Correction of Reading Problems in the Classroom (3) (F,W,S)**  
Prerequisite: Education 326, 365 or equivalent. A study of causes of reading difficulties and procedures that may be used to analyze and correct them in the group setting.

### Special Education

- 240 **Education of the Mentally Retarded (3) (F,W,S)**  
Prerequisite: Psychology 170, Education 101 and admission to the School of Education. Methods and techniques of use in the education of children with mental retardation. Required of all who are preparing for certification in special education for mentally retarded.

- 252 **Elementary Student Teaching in Special Education (6) (F&W)**  
Prerequisite: Education 240, Education 313 and admission to student teaching. Clinical experience in teaching special education classes in the elementary school under university and school supervision. Seminar accompanies classroom teaching experience.
- 272 **Secondary School Student Teaching in Special Education (6) (V)**  
Prerequisite: Education 240 and Education 313 and admission to student teaching. Clinical experience in teaching special education classes in the secondary school under university and school supervision. Seminar accompanies classroom teaching experience.
- 311 **Introduction to Mental Retardation (3) (F)**  
Prerequisite: Education 101, Education 313, and admission to the School of Education. An introductory course dealing with the characteristics, classification and causes of the mentally retarded.
- 312 **Speech and Language Problems of the Mentally Retarded (3) (F)**  
Study of the problems associated with speech and language development and the techniques employed by classroom teachers to lessen these problems for children. Required for all majors in Special Education.

### ADMINISTRATION, PHILOSOPHY AND SECONDARY EDUCATION

*Prerequisites may be waived by consent of department.*

#### Secondary Education

- 102 **Analysis and Teaching of Aquatic Sports (3) (F)**  
Prerequisite: Consent of Instructor. Study and Performance of aquatic skills. Particular emphasis on safety and instructional techniques leading to the Water Safety Instructor's Certificate.

## DESCRIPTION OF COURSES: SCHOOL OF EDUCATION

- 103 **Analysis and Teaching of Social Dance (3) (F)**  
Prerequisite: Consent of Instructor  
The study and performance of social dance forms. Particular emphasis will be given to contemporary American square dance, international folk dance, and American and Latin ballroom dances.
- 104 **Analysis and Teaching of Gymnastics (3) (W)**  
Prerequisite: Consent of Instructor.  
The study and performance of selected gymnastic movement. Emphasis will be given to teaching skills and techniques.
- 105 **Analysis and Teaching of Team Sports (3) (W)**  
Prerequisite: Consent of Instructor.  
The study and performance of selected team sports. Particular emphasis will be given to skill analysis, strategy and teaching of basketball, soccer, volleyball, field hockey, baseball-softball, and flag football.
- 106 **Analysis and Teaching of 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 physical education programs. Seminar precedes and accompanies clinical experience.
- 110 **Elements of Health Education (3) (F,W,S)**  
Prerequisite: Education 101 and admission to the School of Education.  
Basic school health for teachers.
- 155 **Physical Education Activities in the Elementary School (3) (F,W,S)**  
Objectives of physical education for the elementary school child with applications of choice of activities, organization of program, theory, practices.
- 159 **Clinical Experience in Youth Sport Programs (3) (F)**  
Prerequisite: Consent of Instructor.  
Supervised clinical experience in youth sport programs. Seminar precedes and accompanies clinical experience.
- 163 **Techniques of Secondary School Teaching (3) (F,W,S)**  
Prerequisite: Education 101 and admission to the School of Education.  
Activities and interaction of teachers and pupils in development of conditions for learning in secondary schools. Analysis of teaching-learning process and examination of studies of teaching.
- 200 **Human Anatomy and Physiology (4) (F)**  
Prerequisite: Biology 1 & 3, Chemistry 1. Study of the basic aspects of human anatomy and physiology and their relationship to concepts in sport and physical activity. Two hours laboratory per week.
- 202 **Sports Medicine (3) (F)**  
Prerequisite: Ed. 200  
A study of the medical supervision of sports participants, training, prevention and care of injuries. Course grants Red Cross First Aid Certification.
- 203 **Kinesiology (3) (W)**  
Prerequisite: Ed. 200.  
A study of the biomechanics of human motion with particular application to performance in sport activities.
- 204 **Physiology of Human Exercise (3) (W)**  
Prerequisite: Ed. 200. A study of the physiological effects of human exercise and sport activities upon the human body; exercise metabolism, work and fatigue; development of

DESCRIPTION OF COURSES: SCHOOL OF EDUCATION

- 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 interest 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.
- 216 **Rhythm and Movement (3) (W)**  
Prerequisite: Ed. 155. Exploration into locomotor, non-locomotor forms and expressive movement through rhythm for children. Implications for methodology in concept teaching for elementary educators.
- 231 **Methods of Teaching Typewriting I (3) (F)**  
Prerequisite: Intermediate Typewriting or equivalent. Instruction in the methods and techniques used to develop job-level competency. Laboratory required.
- 232 **Methods of Teaching Typewriting II (3) (W)**  
Prerequisite: Education 231. Instruction in the preparation of various business and technical papers, duplicating equipment, etc. Laboratory required.
- 235 **Methods of Teaching Shorthand I (3) (F)**  
Prerequisite: Intermediate shorthand and transcription or equivalent. Instruction in the methods and techniques used to teach Gregg shorthand, with emphasis on how to build speed and accuracy to meet job-level competency. Laboratory required.
- 236 **Methods of Teaching Shorthand II (3) (W)**  
Prerequisite: Education 232 and Education 235. Instruction in the methods and techniques used to teach transcription. Laboratory required.
- 237 **Secretarial Practice (3) (W)**  
Prerequisite: Education 235 and Education 231 or consent of instructor. Instruction in methods and techniques used to teach office procedures and practices.
- 261 **The Curriculum and Methods of Teaching Business Subjects (3) (F)**  
Prerequisite: Education 163, 232 and near-major in the subject matter. Study of the scope and sequence of business education courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of business education. To be taken concurrently with student teaching.
- 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.

DESCRIPTION OF COURSES: SCHOOL OF EDUCATION

- 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 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. A study of the secondary school music curriculum including choral and instrumental performance organization, instrumental performance organization, extra-curricular music activities, administrative procedures, evaluation of literature and instrumental material, program preparation and curriculum development. The class is divided when appropriate according to the choral or instrumental programs of the student.
- 268 **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.
- 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) (W) (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



## DESCRIPTION OF COURSES: SCHOOL OF EDUCATION

- 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.
- 336 **Field Experience and Seminar in Secretarial Practice (3) (V)**  
Prerequisite: Education 101, 236, 237 and admission to the School of Education. Practical experience in office procedures. To be taken before 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 (credit arranged) (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.
- 371 **Preparation of Materials for Audio-Visual Education (3) (V)**  
For classroom teachers. Evaluation of audio-visual education procedures and classroom instruction, including the preparation of audio-visual education materials.
- 376 **Instructional Television and Other Audio-Visual Media (3) (V)**  
Prerequisite: Consent of instructor. A consideration of the planning, writing, producing, and directing of educational programs for television. Study of fundamentals of lighting, camera operation, and audio and video recording. Each student is expected to produce and direct educational television programs.

### OTHER OFFERINGS

- 3 **Beginning Shorthand (3) (F)**  
Prerequisite: Typewriting. Study of Gregg shorthand theory with emphasis on reading, writing and taking dictation at moderate rates. No credit toward a degree.
- 4 **Intermediate Shorthand (3) (W)**  
Prerequisite: Beginning Shorthand and Typewriting. Development of speed and accuracy in taking dictation; emphasis on transcribing techniques. No credit toward degree.
- 65 **The University (3) (V)**  
Prerequisite: None. An interdisciplinary course on the principles, development, and organized structure of the university. Special emphasis will be placed on the role of the university in modern society and upon forces affecting the direction of the university and its potential for change. Methods include outside speakers, discussion groups and laboratory research on UMSL.
- 101 **The School in Contemporary Society (3) (F,W,S)**  
Prerequisite: Sophomore standing. The introductory course in teacher preparation. An examination of the structure and function of the school in

## The Administration

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# Index

## A

- Academic Dishonesty 44
- Administration of Justice Program
  - requirements 50
  - courses in 107
- Administration, Philosophy and Secondary Education, Dept. of 94
  - courses in 178
- Administration, University 187
- Admission 11
  - with advance standing 15
- Admission Procedures
  - beginning freshmen 12
  - foreign students 17
  - graduate students 16
  - out-of-state students 14
  - readmission 19
  - transfer students 15
  - visiting students 19
- Admission Requirements
  - processing periods and priorities 13
- Advanced Placement Tests 14
- Air Force Aerospace Studies 40, 184
- Alumni Activities 32
- Anthropology 75, 109
- Art 59, 111
- Arts and Sciences, College of
  - communicative requirements 48
  - course listings 107
  - degree requirements 48
  - extension 101
  - general education requirements 47
  - mathematics requirements 48
- Astronomy 112
- Astrophysics 70, 154
- Athletic Programs
  - intercollegiate 34
  - intramurals 34
  - recreation 35
- Atmospheric Science 113
- Attendance 44

## B

- Behavioral Studies and Research, Dept. of
  - courses in 183
  - requirements 97
- Biology, Dept. of
  - courses in 43
  - requirements 50
- Bookstore, University 35
- Business Administration, School of
  - admission 81
  - courses in 171
  - extension 101
  - requirements 81

## C

- Chemistry, Dept. of
  - courses in 117
  - requirements 52
- Community Education Center 41
- Community and Metropolitan Studies, Center of 40
- Computer Center 40
- Computer Science
  - courses in 145
- Counseling Service 42
- Court, Student 34
- Credit Programs 102

## D

- Degrees offered 21

## E

- Early Childhood Education, programs in
  - courses in 176
  - requirements 92
- Economics, Dept. of
  - courses in 120
  - requirements 54
- Education, School of
  - admission 87
  - extension 101
- Elementary Education, Dept. of
  - courses in 176
  - requirements 91
- English, Dept. of
  - courses in 124
  - requirements 56
- Evening College
  - admission 99
- Extension Division 101
  - enrollment 102

## F

### Fees

- activities 24
- diploma 25
- incidental 23
- insurance 25
- late registration 24
- music 24
- non-resident 24
- parking 24
- petition 24
- pre-payment 23
- refund 25
- regular semester 23
- summer session 23
- transcript 25

### Financial Aid

- Curators Freshman Scholarship 27
- University Scholars 27

Waiver of fees program 28

ROTC Scholarships 28

### Fine Arts, Dept. of

- courses in 111, 145
- requirements 58

### Foreign Languages and Literature, Dept. of

- Modern
  - courses in 128, 131, 163, 168
  - requirements 63

### French

- courses in 128
- requirements 64

### Freshman Admission Tests 13

## G

General Regulations 43

Geography 56

- courses in 130

Geology 130

German

- courses in 131
- requirements 64

Graduate School 103

Graduation 43

Greek 132

## H

Health Center 32

Hearer 19

History, Dept. of

- courses in 133
- requirements 60

## I

Interdisciplinary Courses 140

International Studies, Center for 41

Italian 141

## J

Journalism Center, Urban 42

Junior College District 42

## L

Latin 141

Library Services 35

Literature in Translation 141

## M

Mathematics, Dept. of

- courses in 142
- requirements 61

Military Science 40, 185

Military Service, credit for 19

Modern Foreign Languages, Dept. of, see

Foreign

Motor Vehicle Registration 44

Music 58, 145

## N

Non-credit Programs 102

## O

Orientation 44

## P

Pass/Fail Option 44

Petitioning 44

Philosophy, Dept. of

- courses in 148
- requirements 67

Physics, Dept. of

- courses in 151
- requirements 68

Placement Office 32

Political Science, Dept. of

- courses in 155
- requirements 71

Pre-Engineering Program 38

Pre-Law Program 38

Pre-Medical Program 38

Pre-Pharmacy Program 39

Prerequisites 44

Programs at Other Universities 37

Psychology, Dept. of

- courses in 159
- requirements 72

## R

ROTC Program 40,

Russian 163

## S

Scholastic Deficiencies 44

Secondary Education

- courses in 102
- requirements 95

Senate, University 34

Sociology and Anthropology, Dept. of

- courses in 164
- requirements 75

Spanish

- courses in 168
- requirements 64

Special Education

- courses in 178
- requirements 94

Speech 170

Student Activities 31

Student Government 33

Student Programming 32

Student Teaching 90

## T

Teacher Certification 89

## U

University Center 35

## W

Withdrawal 44

Women, Programs for 102



# Calendar 73-74

## *1973 First Semester*

August 23, 24	Thursday, Friday, Regular Registration, Day Students
August 27, 28	Monday, Tuesday, Evening College and Graduate Registration, 4:00 p.m. - 9:00 p.m.
August 30	Thursday, Classwork begins 7:40 a.m.
September 3	Labor Day Holiday
November 21	Wednesday, Thanksgiving Recess begins, 5:30 p.m.
November 26	Monday, Classwork resumes 7:40 a.m.
December 10	Monday, Classwork ends 10:30 p.m.
December 11, 12	Tuesday, Wednesday, Intensive study days (No classes scheduled)
December 13	Thursday, Final Examinations begin
December 21	Friday, First semester closes, 5:00 p.m.

## *1974 Second Semester*

January 10	Thursday, Registration, Day Students
January 14, 15	Monday, Tuesday, Evening College and Graduate Registration, 4:00 p.m. - 9:00 p.m.
January 21	Monday, Classwork begins 7:40 a.m.
March 15	Friday, Spring Recess begins 5:30 p.m.
March 25	Monday, Classwork resumes 7:40 a.m.
April 12	University Holiday
May 6	Monday, Classwork ends 5:30 p.m.
May 7, 8	Tuesday, Wednesday, Intensive Study Days (no classes scheduled)
May 9	Thursday, Final Examinations begin
May 17	Friday, Second Semester closes, 5:00 p.m.
May 21	Tuesday, Annual Commencement

## *Summer Sessions (8 weeks)*

June 10, 11	Monday, Tuesday, Evening College and Graduate Registration, 4:00 p.m. - 8:30 p.m. (8 week session and 6 week session)
June 13	Thursday, Regular Registration
June 14	Friday, Classwork begins 7:40 a.m.
July 4	Thursday, Independence Day Holiday
August 1, 2	Thursday, Friday Final Examinations
August 2	Friday, Summer Session closes, end of day