

bulletin
university
of
missouri-
st. louis
1972-1973
general
undergraduate
catalog



Including description of undergraduate courses and announcement of undergraduate programs*

Revised to January 1, 1972

*Courses offered only on the campus at St. Louis. For information concerning the University of Missouri-Columbia, the University of Missouri-Rolla and the University of Missouri-Kansas City, write directly to the Director of Admissions at the campus concerned. All statements in this publication are announcements of present policies only and are subject to change at any time without prior notice. They are not to be regarded as offers to contract.

The University of Missouri-St. Louis

GENERAL UNDERGRADUATE CATALOG 1972-1973





*C. Brice Ratchford
President
University of Missouri*



*Glen R. Driscoll
Chancellor
University of Missouri-St. Louis*

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THE UNIVERSITY OF MISSOURI-ST. LOUIS PURPOSE AND PHILOSOPHY

A major development of twentieth century higher education has been the establishment of the publicly supported urban university. This trend is an educational benchmark comparable to the creation of the land-grant institutions of the nineteenth century. It rests upon the premise that the university should be taken to the people rather than forcing the people to go to the university. The people of Missouri have subscribed to this concept with the creation of the University of Missouri-St. Louis—an institution located in the midst of the metropolitan area, readily accessible to those who desire its services, sensitive to the needs and problems of the urban laboratory which is its environment, and eager for that kind of interaction which will mutually benefit the urban community and the University.

The University believes that education is an experience which will enhance the worth and dignity of its participants, and which will liberate society from ignorance, superstition, and prejudice. To this end it will promote and defend free inquiry and open debate among its students and faculty.

The University accepts its responsibility for the preservation, discovery, creation and dissemination of knowledge. In order

to perform its assignment at that level of quality which the people of Missouri deserve, the University will constantly and aggressively strive to achieve the kind of national prominence and visibility which can derive only from excellence of program and faculty.

The University of Missouri-St. Louis exists: 1) To provide moderate cost education for those students who evidence an ability to meet the requirements established for the baccalaureate and higher education degrees; 2) To bring quality graduate and professional education to St. Louis for those who cannot or do not wish to leave the urban area; 3) To encourage that research which is the necessary adjunct of such education, and which responds to the problems, needs, and opportunities of an urban setting; 4) To provide an opportunity for advanced and continuing education for the citizens of the metropolitan community.

The University will engage in continuous self scrutiny to ensure that it accomplishes these objectives through efficient, economical and innovative avenues. It will join with any individuals, groups, or institutions whose interests and purposes are complementary to those of the University. It is this ambition of the University of Missouri-St. Louis that the people of Missouri will be challenged by its presence, pleased with its service, and willing to provide that support which is the necessary concomitant of academic excellence.

The Administration

The Board of Curators

Terms Expire January 1, 1973

Robert G. Brady
St. Louis, Missouri

G. Fred Kling, Jr.
Albany, Missouri

Theodore D. McNeal
St. Louis, Missouri

Terms Expire January 1, 1975

William C. Myers, Jr.
Webb City, Missouri

Mrs. William C. Tucker
Warrensburg, Missouri

John Sam Williamson
Columbia, Missouri

Terms Expire January 1, 1977

William H. Billings
Kennett, Missouri

Irvin Fane
Kansas City, Missouri

Pleasant R. Smith
Mexico, Missouri

Officers of the Board

Mrs. William C. Tucker, president
Robert G. Brady, vice president
Mary Robnett, secretary

General Counsel

Jackson A. Wright
Columbia, Missouri

University of Missouri Administration

Dr. C. Brice Ratchford
President

Dr. Elmer Ellis
President Emeritus

Dr. A. G. Unklesbay
Vice President for Administration

Mr. R. H. Bezoni
Vice President for Finance and
Comptroller

Mr. Dale O. Bowling
Vice President for Business
Management

Dr. Ardath Emmons
Vice President for Research

Mr. G. H. Entsminger
Vice President for Development
and Alumni Activities

Dr. Carl N. Scheneman
Vice President for Extension

Dr. Paul Nagel
Vice President for Academic Affairs

Mr. Phil E. Connell
Assistant to the President

Dr. Stirling Kyd
Assistant to the President

Mr. Tom Richter
Director, University Information
Services

Dr. Joe Saupe
 Director, Institutional Research

Mr. A. Lee Belcher
 Director of Employee Relations

Mr. William D. Poore
 Director of Personnel Services

Mr. Thomas H. Lloyd
 Director of the University Press

Mr. Ralph Havener
 Director of University Archives

Dr. Paul R. Schratz
 Director of International Studies

Mr. Allan W. Purdy
 Director of University Student
 Financial Aid Services Office

Mr. Jackson A. Wright
 General Counsel to Board of Curators

Mrs. Mary Robnett
 Secretary of Board of Curators

Chancellors

Dr. Merl Baker
 University of Missouri-Rolla

Dr. Glen R. Driscoll
 University of Missouri-St. Louis

Dr. James C. Olson
 University of Missouri-Kansas City

Dr. Herbert W. Schooling
 University of Missouri-Columbia

University of Missouri-St. Louis

Administrative Officers

Glen R. Driscoll, Ph.D.
 Chancellor

Richard E. Dunlap, M.A.
 Assistant to the Chancellor

Donald A. Murry, Ph.D.
 Assistant to the Chancellor

Everett Walters, Ph.D.
 Dean of Faculties

Administrative Staff

Mark M. Gormley, M.S.L.S.
 Director of Libraries

William P. Heinbecker, M.S.
 Acting Director, Computer Center

Samuel J. Marwit, Ph.D.
 Director of Counseling

Hilbert E. Mueller, Ed.D.
 Director of Admissions and Registrar

John P. Perry, M.S.
 Business Officer

Charles G. Smith, M.A.
 Athletic Director

Robert E. Smith, B.J.
 Assistant to the Chancellor and
 Director of Public Information

Robert W. Thomas, M.A.
 General Manager, KWMU Radio

College of Arts and Sciences

Robert S. Bader, Ph.D.
 Dean

Edward Costello, Ph.D.
 Associate Dean

David L. Allen, M.A.
 Assistant Dean

Frank R. Gross, M.A.
 Assistant to the Dean

School of Business Administration

Emery C. Turner, D.B.A.
 Dean

Donald H. Driemeier, D.B.A.
 Associate Dean

School of Education

William L. Franzen, Ph.D.
 Dean

Arthur E. Smith, Ph.D.
 Associate Dean

Hans C. Olsen, Ed.D.
 Assistant Dean

Evening College

Joy E. Whitener, Ed.D.
 Dean

Harry Gaffney, Ph.D.
 Assistant Dean

Donald G. Bowling, M.A.
 Assistant Dean

Graduate School

Robert S. Sullivant, Ph.D.
 Dean and Director of Research

Extension Division

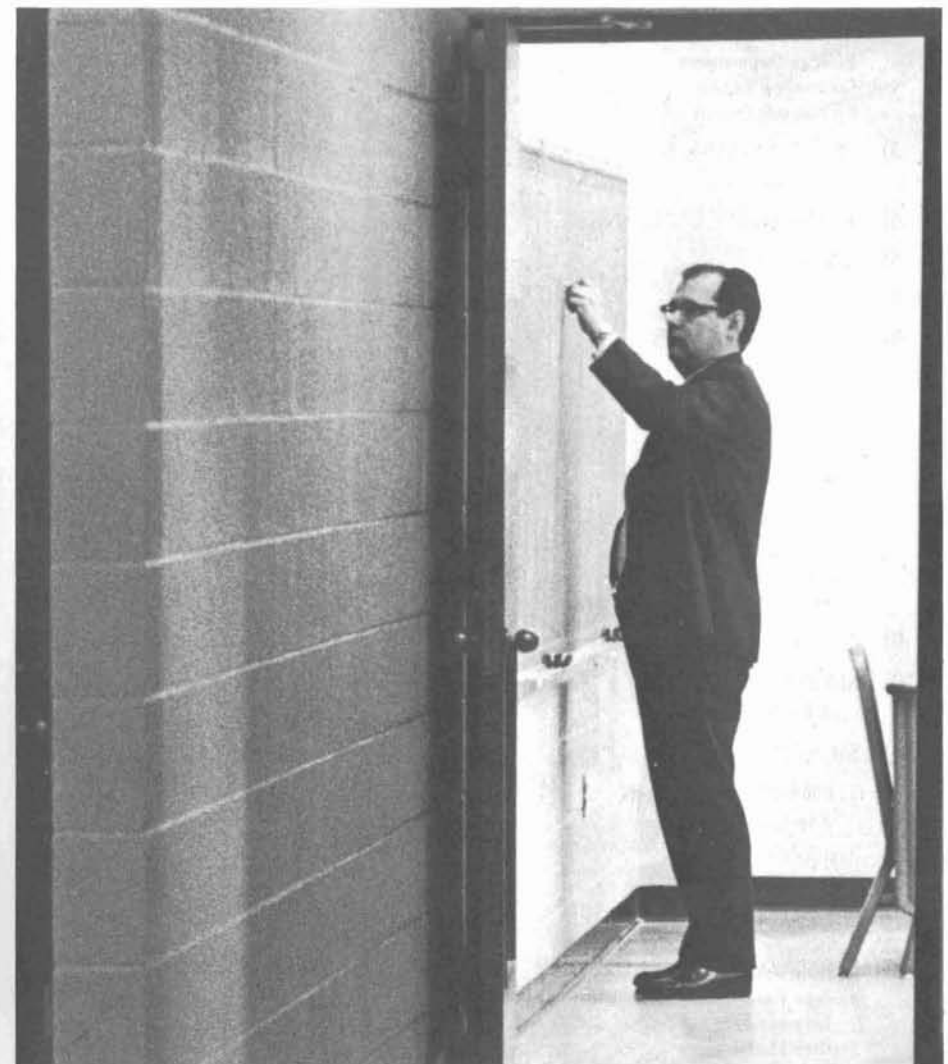
Virgil N. Sapp, B.S.
 Dean

Clive Veri, Ph.D.
 Assistant Dean

Student Affairs

David R. Ganz, M.S. in C.
 Dean

J. Todd Dudley, M.Ed.
 Assistant Dean



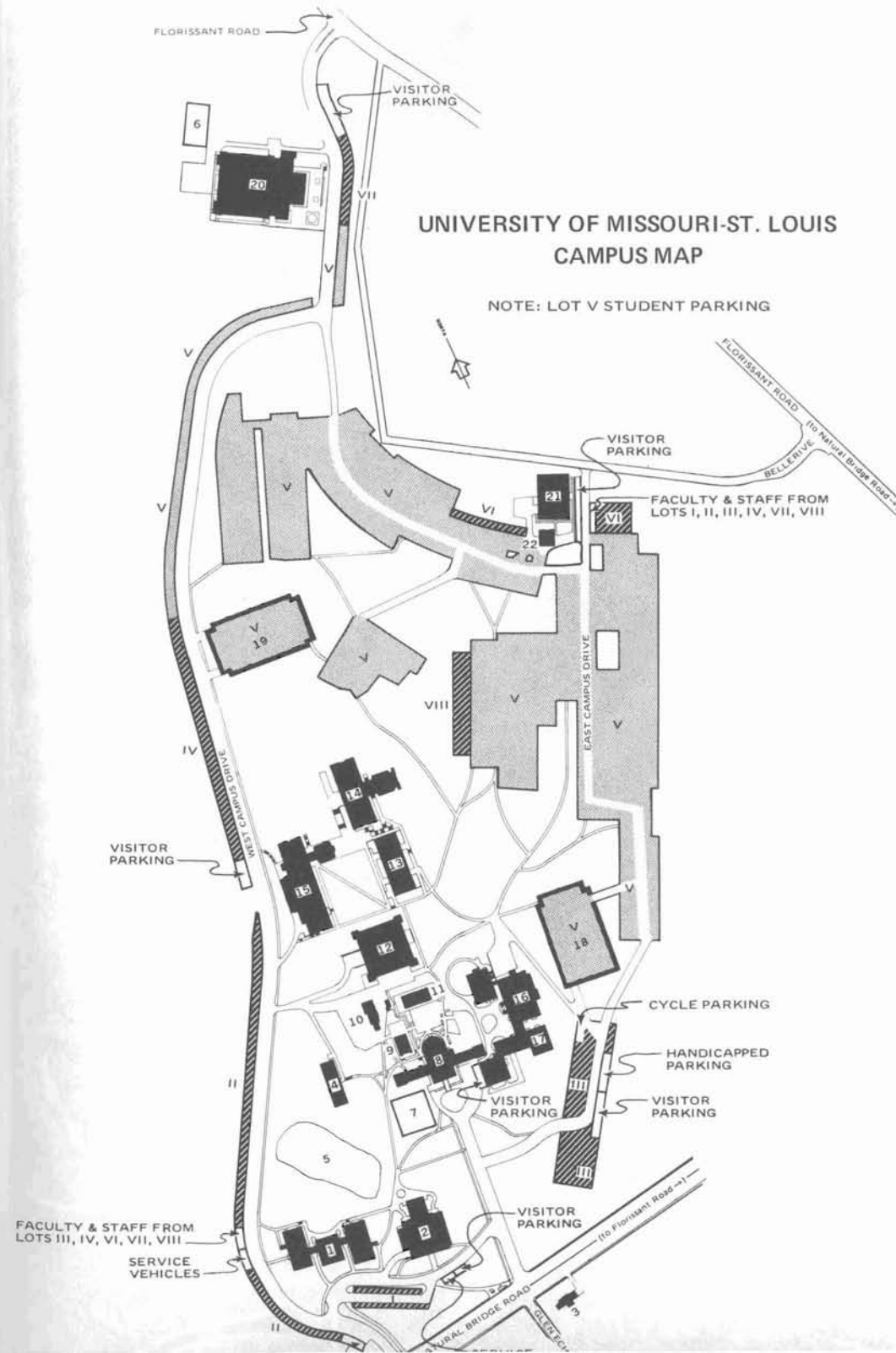
CAMPUS KEY

Office and Department Index

Office assignments are subject to change.

- 1) **BENTON HALL**
Audio-Visual Department
Business Office
Chancellor's Office
Chemistry Department
Faculties, Office of the Dean of Graduate School
Physics Department
Physics Multi-Media Laboratory
Public Information, Director of Research Administration, Office of Switchboard
- 2) **STADLER HALL**
Biology Department
Counseling Service
Psychology Department
- 3) **7956 NATURAL BRIDGE ROAD**
- 4) **TEMPORARY BUILDING**
- 5) **LAKE**
- 6,7) **TENNIS COURTS**
- 8) **ADMINISTRATION BUILDING**
Admissions Office
Alumni Activities
Cashier
Financial Aids Department
Physical Plant
Placement Office
Project UNITED
Student Affairs Office
Traffic, Safety and Security Office
- 9) **TEMPORARY BUILDING**
- 10) **MAINTENANCE DEPARTMENT**
- 11) **SWIMMING POOL**
- 12) **THOMAS JEFFERSON LIBRARY**
Archives
Library Office
- 13) **WILLIAM CLARK HALL**
Language Laboratory
Mathematics Department
Modern Foreign Languages and Literatures Department
Statistics Laboratory

- 14) **LUCAS HALL**
Administration of Justice Program
Arts and Sciences, College of Evening College
English Department
Fine Arts Department
History Department
Philosophy Department
Radio Station KWMU
Speech Department
- 15) **SOCIAL SCIENCES, BUSINESS AND EDUCATION BUILDING AND TOWER**
Business Administration, School of Community and Metropolitan Studies, Center of Computer Center
Economics Department
Education, School of (all departments)
International Studies, Center for Political Science Department
Sociology-Anthropology Department
- 16) **UNIVERSITY CENTER**
Bookstore, University Cafeteria
Student Activities Office
Student Newspaper Office
- 17) **J. C. PENNEY BUILDING**
Extension Division
- 18,19) **PARKING GARAGES**
- 20) **MULTI-PURPOSE BUILDING**
Athletic Department
- 21) **OFFICE BUILDING**
Accounting Department
International Studies, Office of Mail Room and Receiving
Payroll Department
Personnel Office
Print Shop
Publications, Office of Campus Public Information, Office of Purchasing Department
Student Loan Department
- 22) **UMR ENGINEERING BUILDING**
Graduate Engineering Center, St. Louis





University of Missouri

A single university with four campuses, the University of Missouri is the leading force in public education in the state. With campuses at Columbia, Kansas City, Rolla and St. Louis, the university covers the state, educating thousands of students in a catalog of disciplines ranging from accounting to zoology. Each year its professional schools graduate an increasing number of engineers, physicians, educators, businessmen, lawyers, journalists and other highly trained specialists.

Founded in 1839 at Columbia, the University of Missouri is governed by a Board of Curators whose members are appointed by the governor and confirmed by the Missouri Senate. The president of the university directs and coordinates the programs of all four campuses with the assistance of a professional staff of university-wide administrators.

Each campus is supervised by a chancellor who directs campus affairs within policies laid down by the Board of Curators and the president.

THE 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 a moderate cost, the University is living up to that continuing challenge.

The 128-acre campus in St. Louis county is developing rapidly. The year 1972 brings a 102 per cent increase in the physical capacity of the campus which serves more than 10,000 students. In addition to the four previously existing buildings housing classrooms, laboratories, offices and library facilities, a University Center (student union) and a continuing education building have been added providing complete bookstore, cafeteria, snack bar, meeting and lounge facilities. New facilities recently completed are an arts and sciences building, a combination social sciences, business and education complex and a multi-purpose building (including gymnasium, swimming pool and physical conditioning facilities). Two parking garages and surface parking serve the commuter campus.

The start of the 1971-72 academic year marked the full-time employment of over 400 faculty members with more than 70 per cent holding doctoral degrees.

Over 4400 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, will be on the air in the spring of 1972. Instructional programming geared to special audiences is another service to be offered by KWMU.

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

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

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

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

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



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. However, there is a possibility that all available spaces may be filled before the deadlines.

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, scores from a standardized college aptitude test, and upon acceptance, a

satisfactory medical history and physical examination 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, satisfactory reports of medical history and physical examination forms 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 and physical examination report. All credentials submitted for admission become the property of the University of Missouri-St. Louis.

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

MISSOURI FRESHMEN

Missouri Freshmen Policy The freshman admissions policy listed below is effective

for those students applying for admission for the fall of 1972.

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.
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 to the fall 1972 semester or succeeding freshman classes 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 for the fall of 1972 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 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 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 report of medical history and physical examination form. 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.

* 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 the Advanced tests of the Graduate Record Examination, except in the field of business where the Admissions Test for Graduate Study in Business is required.

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

STUDENTS FROM OTHER COUNTRIES

Abroad 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 through 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 do 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.





Degrees

The university offers a 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 university also offers the bachelor of science (B.S.) degree in administration of justice, business administration, chemistry, economics, education, physics, and applied physics (with a concentration in astrophysics possible), and a bachelor of music (B.M.) degree.

A student may pursue work toward the bachelor of arts degree, the bachelor of music degree, and the bachelor of science degree in the College of Arts and Sciences.

The following advanced degrees are conferred by the university: master of arts, with concentrations in economics, history, political science, and sociology; master of education; master of business administration, and the doctor of philosophy degree in chemistry and psychology.

UNIVERSITY GENERAL EDUCATION REQUIREMENTS FOR ALL BACCALAUREATE DEGREES

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

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.

II. Each student must complete at least forty-two hours chosen from the following three areas, with a minimum of at least three courses from each area: Humanities—literature; music history, literature, theory or appreciation; art history or appreciation (applied art and music courses will not count toward the humanities requirement); philosophy and logic; Science and Mathematics; Social Science—administration of justice, geography, political science, history, economics, sociology, anthropology and psychology.

III. Each student must complete a course in either American History or American Government which will satisfy the requirement of the state of Missouri.

IV. Each student seeking a degree must be accepted into an area of specialization within the College of Arts

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

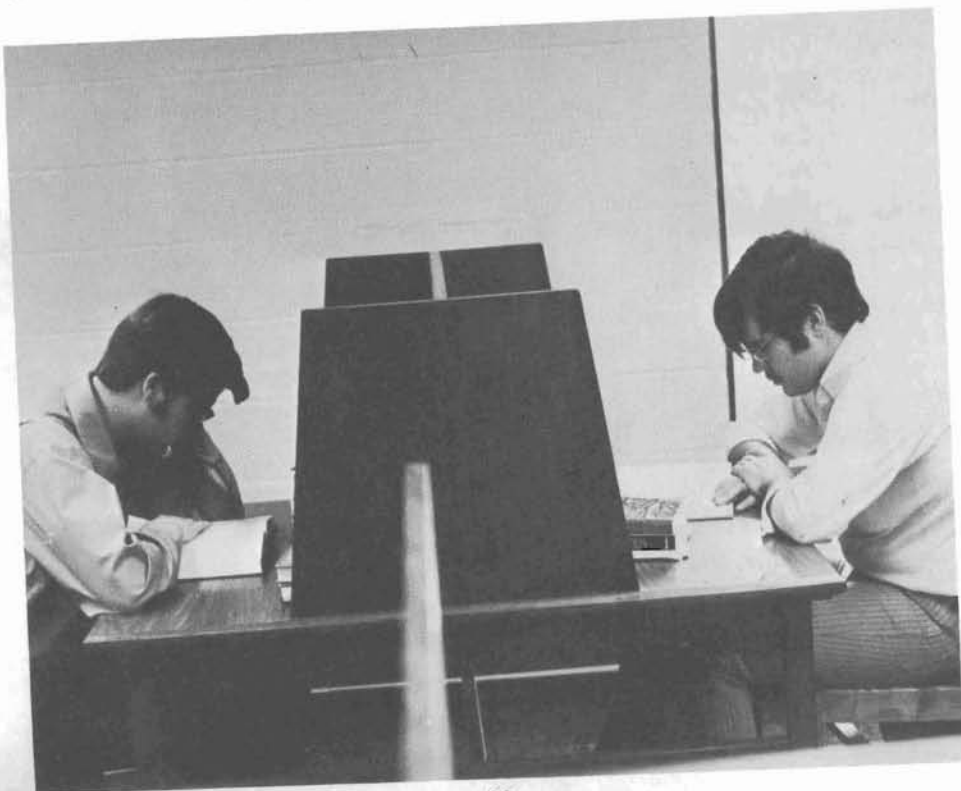
V. Each student must successfully complete those general requirements of the school or college to which he has been admitted, meet the requirements for specialization prescribed within that

school or college and the specific requirements of his area of specialization.

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

VII. All candidates for a baccalaureate degree must complete one hundred and twenty semester hours. At least forty-five of the one hundred and twenty hours must be above the introductory level. Each student must maintain a minimum 2.0 overall grade point average, and a minimum 2.0 grade point average in his area of specialization.

Two degrees shall not be granted to a student until he has completed at least the equivalent of two semesters' work with at least twenty-four credit hours in addition to the requirements for one of the degrees.



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.

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
8 or more	\$230.00
Summer Session	
4 or more	\$115.00

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 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	\$140.00
8	\$280.00
9	\$370.00
10 or more	\$460.00

Summer Session	
Hours Credit	Non-Resident Fee
1-3	No Fee
4	\$120.00
5 or more	\$230.00

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 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	
Withdrawals	Refund
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





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 the high school graduating class, one student is designated as a Scholar.

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

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

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 write for the publication, **Financial Aid For Students.**

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

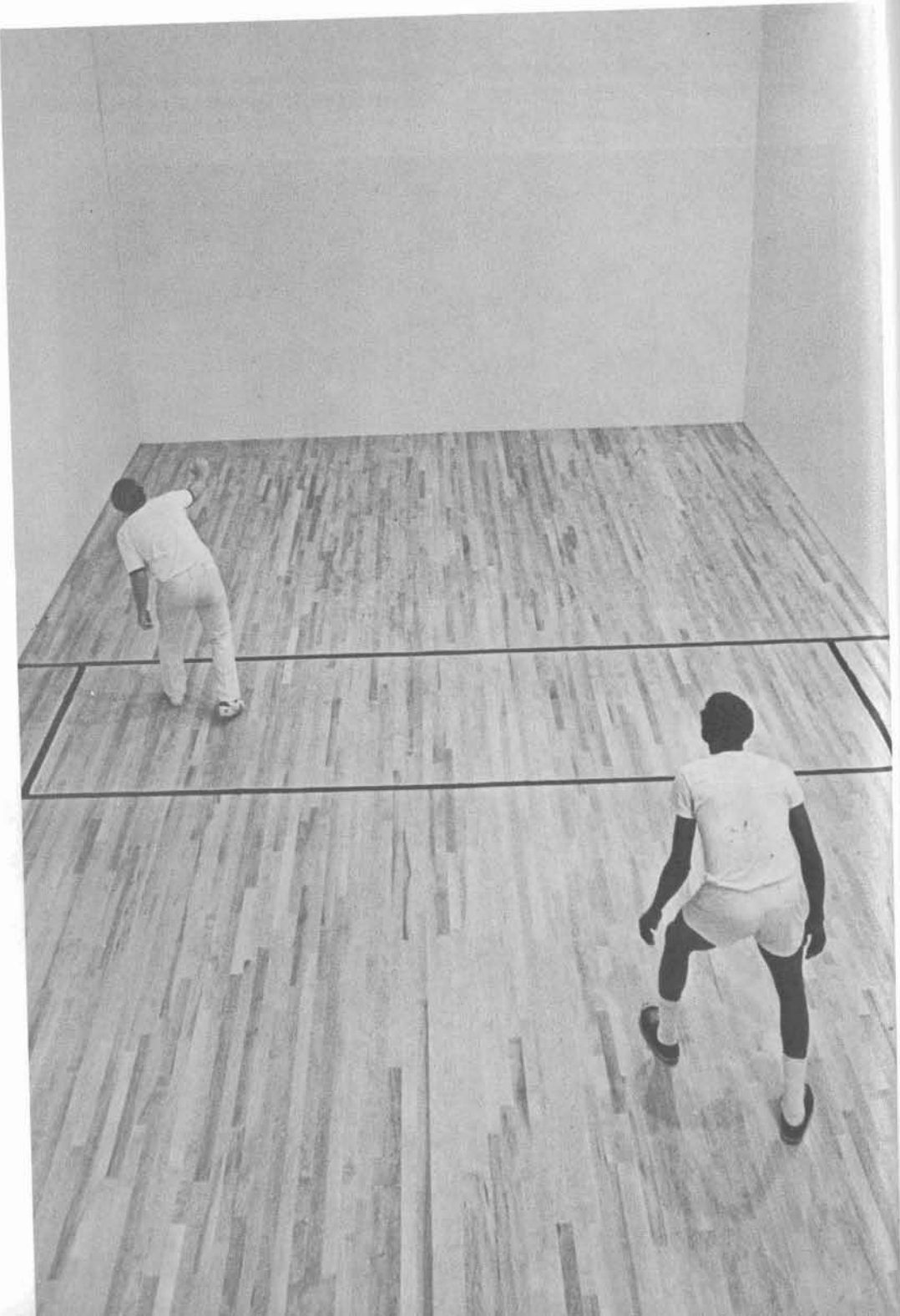
AFROTC College Scholarships are awarded to highly qualified cadets in the four-year Air Force Reserve Officer Training Corps program. The scholarships include tuition, fees, and laboratory expenses incurred during the regular session of the school year during which the cadet is enrolled in the AFROTC program. Scholarship recipients also receive monthly subsistence payments for the period and an annual book allowance. Applications for the four-year scholarship are submitted to Headquarters AFROTC, Maxwell Air Force Base, Alabama, prior to mid-November by high school seniors. Cadets in the four-year program who do not receive the four-year scholarship may continue to compete annually under the program locally administered by the Aerospace Studies Program, Saint Louis University.

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

Army ROTC College 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 already enrolled in Army ROTC. These scholarships pay full tuition and books and lab fees plus \$50 per month subsistence allowance. Selection for the three-year and two-year scholarships is based on the comparative over-all performance of all applicants in the same military science year level. One-year scholarships are also available.

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 their 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. As a service, the Office of the Dean of Student Affairs maintains a list of rooms, apartments and houses for rent to students.

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 are many; they include departmental clubs, fine arts groups, fraternities and sororities, religious organizations, and a variety of special interest groups.

These recognized student 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.

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, a Saturday night Coffee House which features both student and professional entertainment, 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 Performing Arts and Cultural Events Committee (PACE) of the University Senate. The poster collection which is displayed in the public areas of the buildings on campus is the result of one such cooperative effort.

In addition to working with the University Program Board, the director of programming is responsible for the administration of the car pool service.

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 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.

Two St. Louis physicians are available on a part-time basis at the center, and are assisted by a permanent staff including a full-time registered nurse, part-time registered nurse, licensed practical nurse and secretarial staff.

Services offered at the Health Center include the treatment of illnesses and the maintenance of confidential student medical history forms and health records. A minimal amount of laboratory testing is done, and equipment and supplies are continually being acquired to make services more complete. Patients are referred to health facilities in the St. Louis area when needed care is beyond the limitations of the Center. The Campus Security Office assists in the event of medical emergencies.

The Student Health Center is open to serve both the day and evening student population with hours from 7:30 a.m. to 9:30 p.m. Monday-Thursday, and from 7:30 a.m. to 5:30 p.m. on Friday.

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

Career planning counseling is available for students who are uncertain of what career to choose.

The Placement Office also maintains lists of part-time employment opportunities to assist the student in financing his education.

Representatives from businesses, government agencies and school districts conduct on-campus interviews each year for students who will be seeking full-time employment after graduation.

All graduating students and alumni interested in full-time employment may complete a computer card for job matching with job opportunities stored in the university computer.

For those alumni seeking employment, the University Placement Office maintains a continual listing of full-time positions. Also available is the GRAD program, a computerized resume referral system operated by the College Placement Council for those seeking positions in business and industry. This program gives nationwide scope to the registrant's job search.

The Placement Office also maintains listings of school and college vacancies of interest to holders of graduate degrees.

STUDENT GOVERNMENT

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

The Council consists of president and vice president elected at large by the student body in an annual general election. The secretary and treasurer are appointed by the president with the consent of the total membership. A chairman is chosen by the membership of the group with sole responsibility of presiding over the meetings of the Council; the parliamentarian is chosen from the membership of the Council for the purpose of arbitrating questions of procedure.

Representatives are elected at large from among the day students, students

of the Evening College and Graduate School students on the basis of one representative for every 500 students enrolled in each respective division. In addition, each student organization with full university recognition is allowed to send one representative to the Council.

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

UNIVERSITY SENATE

Twenty-five students serve on the University Senate, which is composed of faculty and staff members as well as students. The Senate exercises the functions of the faculty and student body, reporting its actions to all members of the university faculty and to appropriate officers of the student body.

The Bylaws of the University of Missouri-St. Louis provide for standing committees to make recommendations to the Senate and to the appropriate administrative officers. Students, both members of the Senate and non-members, serve on such committees as Curriculum and Instruction, Admissions and Student Aid, Library, Welfare and Grievances, Student Affairs, Student Publications, Athletics, Fiscal Resources and Long-Range Planning, Urban Affairs and International Studies.

STUDENT COURT

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

The Court also conducts impeachment proceedings under provisions of the Central Council constitution.

ATHLETIC PROGRAMS

Intercollegiate Athletics The University of Missouri-St. Louis offers a comprehensive program in intercollegiate sports. These sports include soccer, cross country, basketball, wrestling, swimming, baseball, golf, and tennis. Undergraduate male students are encouraged to try out for a team, and can do so by reporting to the head coach of the sport in which they are interested.

Since the university is an active member of the National Collegiate Athletic Association, Rivermen teams can qualify to represent the district in NCAA playoffs.

The new Rivermen athletic facilities provide for good spectator seating. All enrolled students are admitted to athletic contests free of charge by showing a currently validated identification card.

Intramurals The intramural program offers a wide variety of physical activities for both men and women. The intramural program for men includes competition in such activities as flag football, soccer, cross country, golf, bowling, basketball, softball, handball, racquet ball, volleyball and swimming. The intramural program for women includes such offerings as tennis, basketball, soccer, racquet ball, volleyball, swimming, gymnastics, dance, badminton, bowling, and table tennis. 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 a shelf capacity of 240,000 volumes and will seat approximately 1,000 students. Some 7,836 reels of microfilm, 500,000 microfiche and microcards, and 81,144 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 for faculty and students engaged in research, and materials for thesis and faculty research can be requested from other libraries in the country.

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

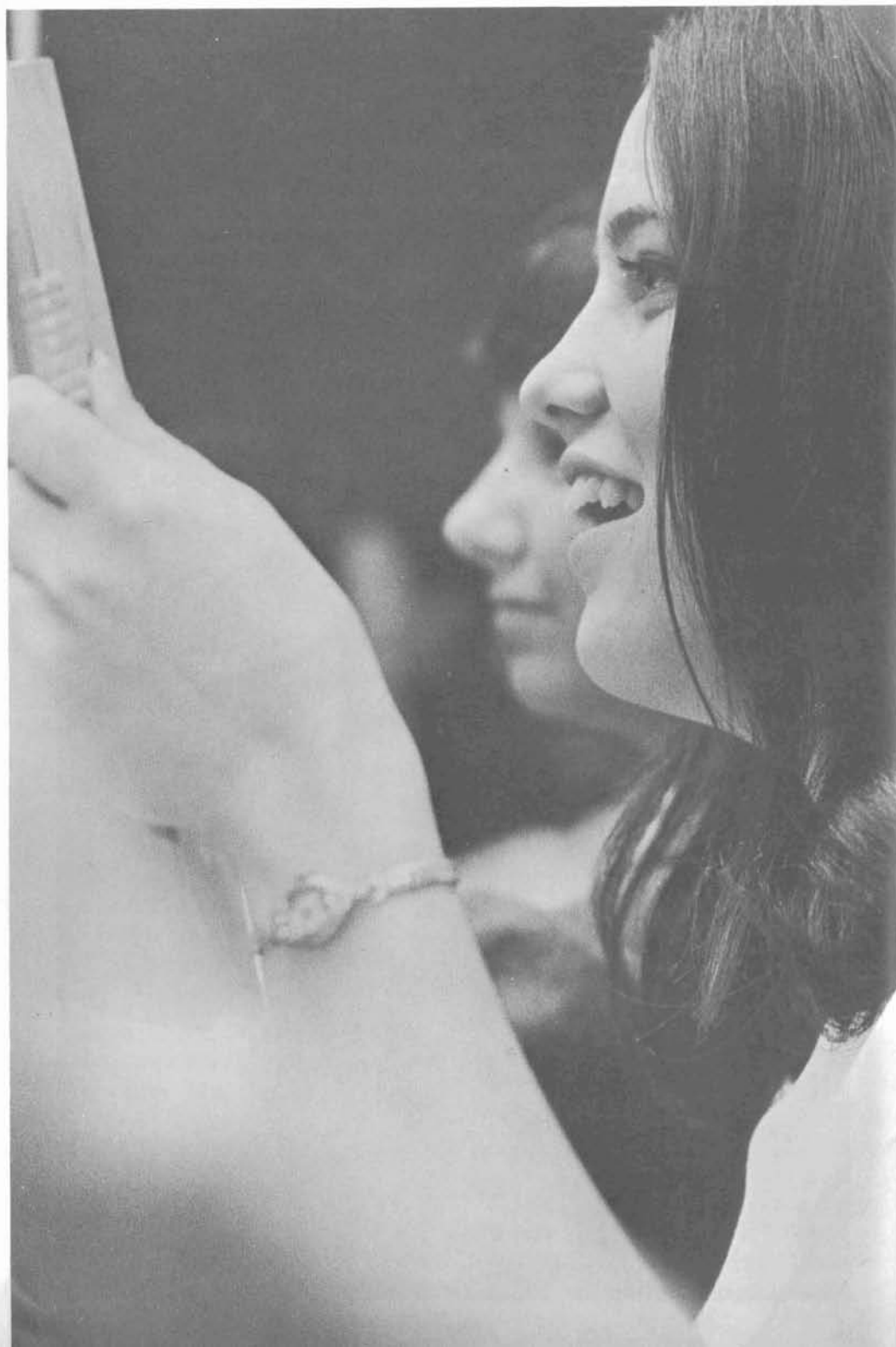
The Bookstore is self-supporting and is operated solely as an educational facility, subsidiary to and integrated with the academic program. A part

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.





Special Programs

PROGRAMS FOR MISSOURI RESIDENTS AT OTHER UNIVERSITIES

The University of Nebraska in Lincoln offers a program for Missouri residents in Architecture (quota 12) where students may pursue a Bachelor of Architecture degree.

Programs for Nebraska Residents at the University of Missouri The following programs are offered to Nebraska residents at the University of Missouri (All programs are offered on the Columbia campus.): Forestry (quota 7) with a B.S. in Forestry; Wildlife Management (quota 4) with a B.S. in Agriculture or an A.B. in Zoology; Physical Therapy (quota 2) with a B.S. in Physical Therapy; Occupational Therapy (quota 2) with a B.S. in Occupational Therapy; and Veterinary Medicine (quota 5) with a degree of Doctor of Veterinary Medicine.

Programs for Missouri Residents at the University of Kansas The following programs are offered to Missouri residents at the Kansas campus indicated: Aeronautical Engineering at Wichita State University, Wichita with a B.S. in Aeronautical Engineering; Architecture at the University of Kansas, Lawrence with a Bachelor of Architecture or a B.S. in Architectural Engineering; Architecture at Kansas State University, Manhattan with a Bachelor of Architecture, B.S. in Building Construction or B.S. in Landscape Architecture; Grain Milling & Technology at Kansas State University, Manhattan with a B.S. in Feed Science and Management, Milling Science and Management, Bakery Science and

Management, or Engineering Management; and Nuclear Engineering at Kansas State University, Manhattan with a B.S. in Nuclear Engineering.

Programs for Kansas Residents at the University of Missouri The following programs are offered to Kansas residents at the University of Missouri: On the Kansas City campus, Dentistry with a Doctor of Dental Surgery, and Dental Hygiene with a B.S. in Dental Hygiene. On the Columbia campus programs available include Forestry with a B.S. in Forestry, and Wildlife Management with a B.S. in Agriculture or an A.B. in Zoology. On the Rolla campus a program in Mining Engineering is available with a B.S. in Mining Engineering, Petroleum Engineering, Geophysical Engineering, Ceramic Engineering, Metallurgical Engineering, Geological Engineering or Engineering Management.

PRE-LAW PROGRAM

The official statement of the American Association of Law Schools emphasizes the preference of law schools for students who are well-rounded in their educational backgrounds—capable of critical and creative thinking with an ability to express themselves. No specific undergraduate major is required or recommended.

Pre-law students generally major in an area of breadth rather than one of specialization. Elective courses may include accounting (six hours), corporate finance, English and American history, (especially constitutional history), jurisprudence, logic, political parties and at least one course in English composition beyond the freshman level.

Pre-law advisers and the Office of the Dean of the College of Arts and Sciences maintain information on the Law School Admission Test and a collection of law school catalogs. These materials are available for study by individual students.

PRE-MEDICAL SCIENCES PROGRAM

The University of Missouri-St. Louis does not award an A.B. degree with a major in pre-medical sciences. Students desiring to enter medical schools, dental schools or schools of veterinary medicine should pursue A.B. degrees with majors in the discipline of their choice, but they should elect to take whatever additional courses may be necessary for admission.

Many medical and dental schools recommend the following undergraduate courses:

- Biology 10 and additional courses in development and genetics
- Chemistry 11, 12, 261, 262 and 263
- Mathematics through calculus
- Physics 1 and 2 (total 8 hours)

There is considerable variation in the admission requirements of professional schools and prospective applicants are urged to consult the catalogs of the institutions to which they intend to apply.

Updated information may be found in the bulletin *Medical School Admission Requirements* for the current year (United States and Canada) through the Association of American Medical Colleges, One Dupont Circle, N.W., Washington D.C. 20036 at \$4.00 per copy. The Office of the Dean, College of Arts and Sciences has an examination copy for use within the office.

Since students will normally apply to professional schools during their junior year, and since admission to professional schools will not be confirmed until after successful completion of the science requirement for admission, students are encouraged to fulfill their science requirements before the end of their junior year. In order to complete the

requirements by this time, pre-medical students will normally take Chemistry 11 and 12 during their freshman year.

PRE-PHARMACY PROGRAM

Admission to a school of pharmacy usually requires one or two years of college work in specified areas. Most colleges of pharmacy recommend the so-called 2-3 plan which includes two years of college work followed by three years of professional courses in the college of pharmacy. Entrance requirements vary somewhat from college to college, and students taking pre-professional courses on this campus are advised to consult the catalog of the college of pharmacy to which they expect to apply.

The following is a typical two-year sequence in pre-pharmacy and meets the requirements for admission to the School of Pharmacy of the University of Missouri-Kansas City:

Freshman Year	
Chemistry 11	5
Physics 1	3
Physics 3	2
Mathematics 10	3
English 10	3
	16
Chemistry 12	5
Physics 2	3
Mathematics 11	3
English 12	3
	14
Sophomore Year	
Chemistry 261	3
Chemistry 263	2
Biology 10	5
Economics 50	3
History 3 or Political Science 11	3
	16
Elementary Accounting	3
Chemistry	5
Biology <i>elective</i>	5
Elective	3
	16

RESERVE OFFICERS TRAINING CORPS PROGRAMS

Those students interested in officer education programs may enroll in the Army ROTC program hosted by Washington University and the Air Force ROTC program sponsored by St. Louis University. They provide undergraduate students with the opportunity to combine academic study with a military officer's educational program. The two services conduct courses on those campuses leading to regular or reserve commissions. Scholarships and stipends are available. (See Financial Aids Section, page 28.)

For further information concerning these programs, write or call the following: Professor, Military Science, Washington University, telephone 863-0100, extension 4662, or Director, Aerospace Studies Program, St. Louis University, telephone 652-1022.

CENTER OF COMMUNITY AND METROPOLITAN STUDIES

The Center of Community and Metropolitan Studies was created by the Board of Curators of the University of Missouri in the spring of 1965 to fulfill a threefold function of teaching, research and community service. It contributes to the basic teaching of the university by assisting the departments on campus to gather a group of scholars in such fields as political science, sociology, economics, education and business, who can teach urban-related courses in their respective disciplines and cooperate in the development of interdisciplinary courses in urban studies. In addition to teaching responsibilities, these scholars are assigned to the Center on a one-half or one-third time basis.

In pursuit of the research function, members of the Center are involved in both basic and applied research and have an opportunity to develop their own particular fields of interest as well as to

work cooperatively on interdisciplinary research projects. Through its emphasis on interdisciplinary cooperation the Center seeks to promote a more complete and more coordinated approach to urban problems.

The Center is involved in research which relates to the pressing problems of urban areas, and to the development of new, pioneering methods of information gathering and retrieval which will enable the university to cooperate with local governments, private industry and citizen groups in developing problem solving techniques.

Members of the staff of the Center of Community and Metropolitan Studies also cooperate with the Extension Division and members of the various academic departments in developing means by which the information generated by scholars on campus can be transmitted to citizens and policy makers in the urban community.

The focus of the Center is on urban problems generally and is not necessarily limited to the St. Louis metropolitan area.

COMPUTER CENTER

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

Computer facilities on the St. Louis campus include an IBM 1130 computing system, which is linked to an IBM 360-65 computer on the Columbia campus. The IBM 360 has three million bytes of core storage.

Computer Center staff members are available for consulting and assistance in programming. Information on computer facilities available through the other University of Missouri campuses may be obtained at the St. Louis campus Computer Center.

CENTER FOR INTERNATIONAL STUDIES

The Center for International Studies of the University of Missouri-St. Louis pursues the teaching, research and public service activities to which the university is committed. Organized in the fall of 1968, the Center sponsors research, courses, seminars and conferences which seek:

- 1) to expand understanding of international interactions
- 2) to investigate domestic sources of externally directed national policy
- 3) to improve methods and techniques of research in international affairs
- 4) to improve methods and techniques of teaching international studies.

Throughout its programs, the Center for International Studies reports faculty and student research into topics that promise to yield greater understanding of the international environment. Research facilities available to the Center include complete computer systems (IBM360/65 IBM 1130) and laboratories for small group studies.

The Center sponsors interdisciplinary and multidisciplinary courses and assists in staffing courses within individual departments. Under Center aegis, students can elect a "concentration" in international studies to complement departmental majors. The teaching program contributes to achieving the humanistic values of liberal arts training while contributing to preparation for careers in teaching, business, journalism and public service.

Ad hoc seminars are arranged to meet specific needs or desires of undergraduate and graduate students. Such seminars offer a useful and stimulating flexibility, providing at the same time sufficient structure and guidance to prevent their becoming superficial exercises.

The Center sponsors a variety of conferences and seminars designed to

enrich and reinforce campus programs, to relate to the community and to contribute substantively to making of public policy.

The Center sponsors an interdisciplinary Faculty Seminar in International Studies which meets frequently to discuss on-going research methods and findings.

The Center issues two types of publications, a Monograph Series and Occasional Papers Series.

OFFICE OF INTERNATIONAL STUDIES

The Office of International Studies oversees the Centers for International Studies on the four campuses of the University of Missouri. Located on the St. Louis campus, the office supports expanding involvement in the promotion of international education, specifically including: faculty improvement programs; sponsorship of state, national and international conferences; cooperative membership on consortia in the field of international study; exchange of faculty and students with universities abroad; and cooperation with institutions having related interests in the U.S.A. and abroad.

The office offers statewide program assistance via the four campus Centers for International Studies, including support of such efforts as the Distinguished Visitor Program, publication of a newsletter, and extensive investigation of study-abroad programs and student travel opportunities.

EXTENSION DIVISION

As a land grant university, the University of Missouri-St. Louis serves several 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 research, credit and non-credit programs involving the greater St. Louis area and the State of Missouri. In fulfilling this mission, the Extension Division (1) administers seminars for consumers of research where the latest research findings of the university's faculty are disseminated; (2) manages conferences and meetings of professional and learned societies in which the faculty hold membership; (3) conducts workshops and institutes for diverse organizations, agencies and associations in which the teaching resources of the university can be used; (4) provides consulting services to businesses, industries, governmental agencies and organized groups; (5) administers, for academic departments, graduate and undergraduate courses for credit at off-campus locations, and (6) cooperates with other institutions in conducting jointly sponsored adult and continuing education programs and action research projects to meet the needs of Missouri's citizens.

The Extension Division is organized to be responsive to the continuing education needs of broad clientele groups, and includes the following areas:

Programs for Continuing Education of Professionals The goal of the area of Continuing Education of Professionals is the improvement of the quality of the delivery of social, health, legal, and educational services to the people of the State of Missouri. Programs serve professional persons in private practice, those in institutional settings such as school systems and public hospitals, professionals on college and university faculties, and the clients ("consumers" or "residents") of these professional people.

Programs for Women, Family and Youth The major thrust of Programs for Women,

Family and Youth is the development and implementation of educational experiences variously suited to clientele identified as women, family members and young people. This area provides individual counseling, certain kinds of standardized testing, a variety of credit and non-credit educational experiences to Missourians of both sexes and all ages in urban, suburban and out-state locations.

Business, Industry and Labor Programs Business, Industry and Labor Programs work in cooperation with the School of Business Administration, School of Education and the College of Arts and Sciences to serve the educational needs of the business community.

Governmental and Community Programs A major thrust of the area of Governmental and Community Programs is to meet the continuing education needs of officials and employees of governmental and quasi-governmental agencies.

In addition to educational programs, the work of Governmental and Community Programs includes consultation and action oriented research aimed at improving the efficiency, effectiveness, responsibility and responsiveness of government.

Credit and Non-Credit Programs This program area coordinates the non-credit continuing education courses generated by the other four program areas of the Extension Division and, when occasions demand, gives leadership to the development of such courses. In addition, this area administers undergraduate and graduate courses offered by academic departments at off-campus locations.

JUNIOR COLLEGE DISTRICT

If you do not find the courses in which you are interested in this catalog, the Junior College District of St. Louis offers credit and non-credit courses at the freshman and sophomore levels.

Some of their programs are oriented toward terminal vocational training.

For further information, contact the central office at 726-4686, or one of the three campuses: Florissant Valley Community College, 534-2020; Forest Park Community College, 644-3300, or Meramec Community College, 966-3402.

COUNSELING SERVICE

The Counseling Service is organized to offer free professional assistance to students, faculty, and staff of the University of Missouri-St. Louis with any concerns they may have of a personal, social, educational, or vocational nature.

Among the services provided are individual and group psychological counseling and consultation, sensitivity training, vocational testing, career choice guidance and assistance with reading and study skills problems. In addition, a well-stocked library of materials pertaining to career choice and educational opportunities is housed within the Service. The Miller Analogies Test, when part of a graduate entrance requirement, is given upon request. Appointments for counseling services may be made by calling 453-5711 or by walking into room 229 Stadler Hall between 8:30 a.m. and 5:00 p.m., weekdays.



General Regulations and Requirements

Requirements in American History, Institutions and National and State Constitutions Each student who expects to complete an undergraduate degree in the University of Missouri must present as a requirement for graduation a course or courses in this area, taken at the University of Missouri or at other colleges or universities within the state of Missouri.

This requirement will be satisfied by credit in one of the following courses: History 3, 4, 5, 230, 351, 352, 353, 354, 355, 356, 357, 358, 359, 367; Political Science 11, 170, 320, 335, 376.

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

Program of Studies and Credit Hours

Unless enrolled in the Evening College, no undergraduate student is permitted to carry, in any semester, courses aggregating less than 10 credit hours, exclusive of the required work in physical education which may hereafter be required, without the special permission of his dean. The normal registration is 15 credit hours. A student who has demonstrated by achieving a superior academic record an ability to carry more than 17 hours may, with approval of his adviser and dean, enroll for additional hours. However, in no case shall his enrollment exceed 20 hours in a regular semester or 10 hours in a summer session.

The unit of credit given in the university, the semester or credit hour,

is the equivalent of a subject pursued one period per week for one semester of approximately 16 weeks. Thus a course valued at two credit hours will meet two periods per week for a semester; a five-hour course will meet five periods per week for a semester. The lecture or recitation period is normally 50 minutes in length and the usual laboratory period one hour and 50 minutes.

Graduation The last year of work, (24 credit hours in one academic year), must be done in residence, except by special permission of the dean.

All candidates for a baccalaureate degree must complete 120 semester hours. At least 45 of the 120 hours must be above the introductory level. Each student must maintain a minimum 2.0 overall grade point average and a minimum 2.0 grade point average in his major discipline.

Each student is requested to file a degree application form in the Office of the Dean of the school or college from which he intends to graduate at least one calendar year before the expected graduation date.

Prerequisites A minimum grade of "C" is required in courses used as a prerequisite for a next course, except with permission of the department in which the next course is to be taught.

Scholastic Deficiencies Those students who do not maintain satisfactory scholastic averages may be required to withdraw from the university.

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

Attendance Students are expected to attend classes regularly. Permission to make up class work missed as a result of absences is granted at the discretion of the individual instructor.

Petitioning to Change Classes or Withdraw from a Course To change his original enrollment a student must secure the approval of his adviser and the Office of the Dean. No student may enter a course after the first two weeks of the semester or the first week of a summer session. A student may withdraw from a course without a grade until the end of the first four weeks of the semester or the first two weeks of the summer session.

Normally the Office of the Dean will not approve the withdrawal from the following:

1. Courses which should be completed in a chronological or sequential development (especially foreign languages).
2. English composition.

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

to attend classes but who fails to drop officially shall receive a grade of "F."

Academic Dishonesty Academic dishonesty is considered one of the most serious offenses which can be committed by a student at the university, for it defies the academic integrity of the university and indicates that the student is unworthy of further association with the university. Those guilty of dishonesty may be dismissed from the university. Plagiarism is considered a dishonest act.

New Student Orientation All new students are required to attend an orientation program scheduled before the opening of classes each semester.

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

Under the system students may take elective courses or courses which satisfy the general education requirements. "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 three-hour course in either Asian or African studies, 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.

The college requirement in Asian or African Studies may be met by taking any one of the following courses: Anthropology 303, 305, Art 145, History 210, 211, 315, 318, 319, 370, Political Science 255, 352, Music 5 or Philosophy 170. The state requirement (see page 43) of one course in American History or American Government may be met by taking History 3, 4, 230, 351, 352, 353, 354, 355, 356, 357, 358, 359, 367 or by taking Political Science 11, 170, 320, 335 or 376.

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.

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 101 meet this requirement.) Placement into the appropriate course for students with no previous college work in a foreign language is determined by the number of high school units presented at the time of admission. Students who have been absent from academic work for a significant period may consult the department for appropriate placement.

A student entering with no high school units must enroll in Language 1 and take the following sequence: Language 1, 2, 101.

A student entering with one high school unit may continue the same language by enrolling in Language 2. If necessary, he may take Language 1 for credit.

A student entering with two high school units should enroll for Language 101. If necessary, he may step back to Language 2 and take that course for

credit. No credit will be given for Language 1.

A student with three high school units in one language may take Language 101 or, with departmental approval, a more advanced course to fulfill his requirement. He may not take 1 or 2 for credit.

A student with four high school units in one language is exempt from the language requirement. If he desires to take further language courses, he should consult with the Department of Modern Foreign Languages and Literatures for appropriate placement.

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 for 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 teacher certification.

Arts and Sciences as Preliminary to Business and Education Students planning to take a degree in the School of Business Administration or 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
 Eugene J. Kissling, Ph.D. (St. Louis University), assistant professor
 Hon. Theodore McMillian, J.D. (St. Louis University), assistant professor
 Ben Brashears, M.A., instructor
 Noel Criscuola, M.A., M. Crim., instructor
 Donald E. Ganoung, M.Th., lecturer
 Harry Mellman, Ph.D. (University of Illinois), lecturer*
 Eugene P. Schwartz, M.S.W., coordinator, Extension Division
 *Primary appointment, Department of Political Science

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 B.S. degree and the requirements of the administration of justice program.

The 13 hours of foreign language required for the A.B. degree is optional for the B.S. candidate. Students may 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 different options: 1) The American Policing System; 2) Etiology and Treatment of Offenders; and 3) Criminal Justice Planning. Every candidate for the B.S. degree in administration of justice must complete a core curriculum consisting of the following courses: Sociology 20, 120, 208, and 214, and Administration of Justice 99, 100, 200, 201, 202, 220, 380, and 399. As many as 18 units of administration of justice or police science courses may be transferred from Missouri junior colleges.

In addition to the core curriculum, students must select courses required from one of the three program options. These are, as follows: Option 1: Economics 51, Administration of Justice 221, 250, 260, 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.

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
 Ellen G. Archer, Ph.D. (University of Arkansas), assistant 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
Joan W. Nowicke, Ph.D. (Washington University), visiting assistant professor
John E. Ridgway, Ph.D. (University of Texas-Austin), assistant professor
Bedford M. Vestal, Ph.D. (Michigan State University), assistant professor
Larry J. Lee, M.A., instructor
Ann A. Wilke, M.S., instructor
Deborah A. Dey, A.B., assistant instructor
Martha L. Dodson, A.B., assistant 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 45. 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, 317, 334;
- II (Organismal Area) Biology 213, 235, 250, 280, 334;
- III (Population and Ecology Area) Biology 242, 246, 280, 295, 322, 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. (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
Carole J. Courson, Ph.D. (Washington University), visiting assistant professor
Marcel L. Halberstadt, Ph.D. (Yale University), assistant professor
Harold H. Harris, Ph.D. (Michigan State University), assistant professor
William Hirzy, Ph.D. (University of Missouri-Columbia), visiting assistant professor*
Marilyn Holtzer, Ph.D. (Washington University), visiting assistant professor
Barry L. Kalman, Ph.D. (Purdue University), visiting assistant professor
Jane A. Miller, Ph.D. (Tulane University), assistant professor
John I. Reynolds, Ph.D. (University of Washington), visiting assistant professor
Robert A. Rouse, Ph.D. (Northwestern University), assistant professor
Sohan L. Jindal, Ph.D. (University of Bombay, India), research associate
Myron Komarynsky, Ph.D. (Washington University), research associate

Akio Suzui, Ph.D. (Osaka City University, Japan), research associate
Robert Cabaniss, glassblower
Jack L. Coombs, B.A., laboratory stores manager
William Garrison, electronic technician
Norman Windsor, electronic technician
 * Principle duties: Extension Division

The Department of Chemistry offers a bachelor of arts degree (A.B.) and a bachelor of science degree (B.S.) in chemistry.

General Education Requirements Each chemistry 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 45. Courses in chemistry may be used to meet the university's science and mathematics area requirement. The College of Arts and Sciences' foreign language requirement should be met in German or Russian. German is preferred. In rare instances French may be substituted, but only with prior departmental approval, and only for A.B. candidates. Chemistry majors will normally include Language 100. The non-Western requirement may be met by taking any non-Western course.

Related Area Requirements The candidate for the A.B. 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.

The candidate for the B.S. degree with a major in chemistry is required to complete the same related area requirements as the A.B. candidate, including the foreign language requirement.

Departmental Requirements 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, 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.

The candidate for the B.S. degree with a major in chemistry 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. A minimum of 47 credit hours and a maximum of 50 credit hours of chemistry may be applied toward the B.S. degree in chemistry.

Each chemistry major must present a seminar and pass a comprehensive examination during his 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 82. Candidates for this degree with a major in chemistry must complete 32 hours of credit in chemistry following the same program as for the A.B. degree in chemistry with the following exceptions: Physics 1, 10, 111 and 112 are required; Chemistry 280 is required instead of Chemistry 202 and 289; Chemistry 371 may be substituted for Chemistry 262.

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 a pass-fail basis by any freshman student.

DEPARTMENT OF ECONOMICS

Faculty

Robert Loring Allen, Ph.D. (Harvard University), chairman, professor

Joseph P. McKenna, Ph.D. (Harvard University), professor

Hugh O. Nourse, Ph.D. (University of Chicago), professor

Elizabeth M. Clayton, Ph.D. (University of Washington), 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 H. Hand, Ph.D. (Massachusetts Institute of Technology), assistant professor

John F. Hanieski, Ph.D. (Purdue University), assistant professor*

Robert J. Kirk, Ph.D. (Iowa State University), assistant professor

Marvin S. Margolis, Ph.D. (Purdue University), assistant professor

Donald Phares, Ph.D. (Syracuse University), assistant professor

Robert L. Sorensen, Ph.D. (Virginia Polytechnic Institute), assistant professor

Emil Pagoulatos, M.A., instructor

Geography Faculty

Eldon S. Miller, Ph.D. (George Washington University), assistant professor

*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 45. 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, 160, 190, 250 and 251. During the senior year the candidate must complete satisfactorily Economics 190.

Candidates for the B.S. degree in secondary education with a major in economics should refer to page 82 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 45. 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 mathematics course numbered 175 or higher.

Departmental Requirements Candidates for the B.S. degree in economics are required to take at least 42 hours in the major field, including all of the following courses: Economics 50, 51, 160, 190, 250, 251, 351 and 365. During the senior year, the B.S. candidate must satisfactorily complete Economics 190.

Departmental Recommendations Same as for bachelor of arts in economics.

GEOGRAPHY COURSES

The Department of Economics offers two courses in Geography. These courses 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.

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

DEPARTMENT OF ENGLISH

Faculty

John Edward Hardy, Ph.D. (Johns Hopkins University), chairman, 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
Valerie Lagorio, Ph.D. (Stanford University), associate professor
Eugene Murray, Ph.D. (Columbia University), associate professor
Jane Williamson, Ph.D. (Bryn Mawr College), associate professor
Peter Wolfe, Ph.D. (University of Wisconsin), associate professor
David Allen, M.A., assistant dean, College of Arts and Sciences, assistant professor
Curt H. Hartog, Ph.D. (University of Illinois), assistant professor
Charles Larson, Ph.D. (Indiana University), assistant professor
Bruce Liles, Ph.D. (Stanford University), assistant professor
John T. Onuska, Ph.D. (Harvard University), assistant professor
Winslow S. Rogers, Ph.D. (Harvard University), assistant professor
James E. Tierney, Ph.D. (New York University), assistant professor
George 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
Eric Chaet, M.A., 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

Barbara Heimberger, M.A. instructor
Sally Jackoway, M.A., instructor
Margaret Jeffries, M.A., instructor speech
Diane Kurtz, M.A., instructor
Jane Parks, M.A., instructor
Judith Pearson, M.A., instructor
LaVerne Peters, M.A., instructor speech
James Pfaff, M.A., instructor
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
Kim Sindel, M.A., instructor
James Staudt, M.A., instructor
Herb Zarov, 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 09, 10, 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.

Departmental Requirements Each English major must complete 36 hours of English exclusive of English 9 and 10. These courses must include English 131 and 132, one course in American literature, and one course in any four of the following areas:

- 1) Medieval (English 324, 325, 326)
- 2) 16th-century (English 332, 337, 338, 339*, 341*)
- 3) 17th-century (English 339*, 341*, 342, 345, 346**)
- 4) 18th-century (English 346**, 352, 353, 364)

- 5) 19th-century (English 365, 368, 369, 371 or 372)
 - 6) 20th-century (English 376, 383, 384 or 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.
- The requirement in American literature can be met with one of the following courses: English 171, 172, 373, 374, 375. Requirements for the B.S. in secondary education are the same as those for the A.B. Anyone who wishes to qualify for secondary certification must take English 262, one additional course in American literature, and a minimum of 12 hours in composition, rhetoric, grammar and linguistics. These 12 hours must include a course in advanced composition.

Departmental Recommendations English 160B, 220 and 221 are strongly recommended for anyone who wishes to qualify for secondary certification. The student should take English 131 and 132 during the freshman or sophomore year.

DEPARTMENT OF FINE ARTS

Faculty

Arnold Perris, Ph.D. (Northwestern University), chairman, assistant professor music
Marie Larkin, Ed.D. (University of Missouri-Columbia), professor art
Kenneth E. Miller, Ph.D. (Northwestern University), professor music
Ronald Arnatt, D.M. (Westminster Choir College), associate professor music
Warren T. Bellis, D.M.A. (University of Michigan), associate professor music
Neil Bjurstrom, Ph.D. (University of Iowa), assistant professor music
Willard Cobb, M.M., assistant professor music
Clarence Drichta, M.M., assistant professor music
Irvin King, Ph.D. (Washington University), assistant professor music
Evelyn Mitchell, (Concert Pianist), assistant professor music
Leonard Ott, Ph.D. (Michigan State University), assistant professor music
Franklin Perkins, Ph.D. (Washington University), assistant professor music
Gertrude Ribla, (Metropolitan Opera), assistant professor music
Sylvia Walters, M.F.A. (University of Wisconsin), assistant professor art
George Berry, Jr., instructor music (bassoon)
Kenneth Billups, M.M., instructor music
William Epton, M.A., instructor art
Laura Hearne, B.M., instructor music (harp)
Patricia Kieft, M.A., instructor art
Henry Loew, instructor music (string bass)
John MacEnulty, instructor music (tuba)
James Meyer, B.S., instructor music (saxophone)
Linda Moss, M.M., instructor music (viola)
Richard O'Donnell, instructor music (percussion)
Roland Pandolfi, instructor music (horn)
Nancy Pate, M.A., instructor art
Delores Riley, M.A., instructor music
Alan Rosenkoetter, instructor music (guitar)
Evelyn Rubenstein, instructor music (piano)
Marie Schmitz, M.A., instructor art
Bernard Schneider, B.M., instructor music (trombone)
Gary Smith, M.M., instructor music (trumpet)

Mary Kay Stamper, M.A., instructor music
 Thomas Stubbs, B.S., instructor music (percussion)
 Jean Tucker, M.A., instructor art
 Linda Warren, M.M., instructor music
 Richard Woodhams, instructor music (oboe)

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 34 hours of art history courses. A list of complete requirements is available in the Fine Arts Department office.

MUSIC

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

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.

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 (6 hours)
 Advanced Music Theory 141, 151 (6 hours)
 Music History and Literature, 300 level (3 hours)
 Principal Applied Area and Ensemble (18 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 (12 hours)
 Music History and Literature 101, 102 (6 hours)
 Advanced Music Theory (2 hours)
 Music History and Literature, 300 level (3 hours)
 Principal Applied Music (16 hours)
 Beginning Instrumental Techniques (10-13 hours)
 Conducting 151, 351 (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)

DEPARTMENT OF HISTORY

Faculty

James D. Norris, Ph.D. (University of Missouri-Columbia), chairman, professor
 Glen R. Driscoll, Ph.D. (University of Minnesota), chancellor, professor
 Everett Walters, Ph.D. (Columbia University), dean of faculties, professor
 James Neal Primm, Ph.D. (University of Missouri-Columbia), 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
 William Maltby, Ph.D. (Duke University), associate professor
 Howard 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
 Mark Foster, Ph.D. (University of Southern California), assistant professor
 Louis Gerteis, Ph.D. (University of Wisconsin), assistant professor
 Steven Hause, Ph.D. (Washington 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
 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
 James D. Gardner, M.A., instructor
 David Kathka, M.A., instructor
 Robert Nelson, M.A., instructor
 James Roark, M.A., instructor
 William Wycoff, 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 45. 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. No grade below "C" in any history course may be counted toward a major in history and the student must achieve an overall grade point average of 2.0 in all courses attempted in his major department. Majors are required to take two courses from sequence History 10, 11, 12, or 200; two courses from sequence History 3, 4, 230 or 240; one course at the 190-level; two 300-level European History courses; two 300-level United States History courses; two 300-level other areas courses; one elective. 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.

SAMPLE MINIMUM MAJOR	36 hours
Two courses from History 10, 11, 12, 200	6 hours
Two courses from History 3 4, 230, 240	6 hours
One 190-level course	3 hours
Two courses 300-level European	6 hours
Two courses 300-level U.S.	6 hours
Two courses 300-level other areas	6 hours
One elective	3 hours
	36 hours
SAMPLE MAXIMUM MAJOR	45 hours
Two courses from 10, 11, 12, 200	6 hours
Two courses from 3, 4, 230, 240	6 hours
One 190-level course	3 hours
Two courses 300-level European	6 hours
Two courses 300-level U.S.	6 hours
Two courses 300-level other areas	6 hours
*Three elective European	9 hours
* One elective U.S.	3 hours
	45 hours

*Any other combination of electives, as long as the maximum of 21 hours (combined Introductory and 300-level) in one area is not exceeded. (190-level not to count against the 21 hours.)

DEPARTMENT OF MATHEMATICS

Faculty

Deborah Tepper Haimo, Ph.D. (Harvard University), chairman, professor
Edward Z. Andalaft, Ph.D. (University of Missouri-Columbia), associate professor
Raymond Balbes, Ph.D. (University of California, Los Angeles), associate professor
David London, D.Sc. (Israel Institute of Technology), visiting associate professor

Gerald Peterson, Ph.D. (University of Utah), associate professor
Aluru R. Reddy, Ph.D. (Madras University), visiting 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
Wayne L. McDaniel, Ph.D. (St. Louis University), associate chairman, assistant professor
Stephen E. Newman, Ph.D. (University of Utah), assistant professor
Alan L. Schwartz, Ph.D. (University of Wisconsin), assistant professor
Frederick Wilke, Ph.D. (University of Missouri-Columbia), assistant professor
Edward Dyck, M.Ed., visiting assistant professor of mathematics and education
Kathleen S. Aubrey, M.S., instructor
Thelma Balbes, M.A., instructor
Robert Bowden, A.M., instructor
Jonathan Cohen, M.A., instructor
Ta-Chuan Hsu, M.S., instructor
Arthur Kuehn, M.S., instructor
Jean Kuntz, M.A., instructor
Harold Law, M.S.E., instructor
Barbara Matthei, M.A., instructor
Richard Matthei, M.A., instructor
Mark Nugent, M.S., instructor, assistant to the chairman
Sookja Nugent, M.S., instructor
Sanjiv Rangachari, M.Sc., instructor
Cynthia Siegel, M.S., instructor
Mary Ann Smola, A.M., instructor
David Stevens, M.A., instructor

General Education Requirements All courses in mathematics except Mathematics 2 and 3 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 45 or the requirements of the School of Education, on page 75. 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, 225, 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 2 and 3, 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 51 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 I. Cloos, Ed.D. (Rutgers University), assistant professor of German and education
Kay Cushman, Ph.D. (Indiana University), assistant professor of French
Ingeborg Goessl, Ph.D. (University of Kansas), assistant professor of German
Paul Hoffman, M.A., assistant professor of German
Michael L. Rowland, Ph.D. (University of North Carolina), assistant professor of French
John Antosh, M.A., instructor of German
Alexandra Butkoff, B.A., instructor of Russian
Luis Clay, M.A., instructor of Spanish
Francoise Coiffet, D.U.E.L., assistant instructor of French
Julianne Dueber, M.A., instructor of Spanish
Jeanne Fast, M.A., instructor of French
Martha Heard, M.A., instructor of Spanish
Anne Hintz, M.A., instructor of French
Michael Hurley, M.A., instructor of Spanish
Albert Kalmar, M.A., instructor of German
Zayda Jung, M.A., instructor of Spanish
William Little, M.A., instructor of Spanish
Michael J. Mahler, M.A., director of language laboratories

Willem H. Marda, M.A., instructor of German
Carol Merrick, M.A., instructor of Spanish
Rolf Mueller, M.A., instructor of German
Roger Noel, M.A., instructor of French
Anne Perry, 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 or secondary school teacher in education. 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 45. Courses in foreign language literature 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. The non-Western area requirement may be met in any non-Western course.

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.

Each major in French or Spanish must complete 33 hours of the language and literature courses above the introductory level, including 101, 102, 108, 200, 280, 281 or the equivalent, and four courses on the 300 level, one of which must be 399. German majors must take 101, 102, 108, 201, 202,

208, 308 or the equivalent, and four other courses on the 300 level, one of which must be 399. A grade point average of 2.0 or better must be maintained in the major language.

All students seeking the A.B. degree in foreign language who desire a teaching certificate, must meet the departmental requirements (33 hours) for a major in language. In addition, they must take course 264 (Curriculum and Methods), and fulfill the Professional Secondary Education Requirements of the School of Education. Course 220 (Introduction to Linguistics) is also recommended. Those students seeking the B.S. degree in education with a concentration in foreign language, are required to complete 30 hours of work above the elementary level within the department, 6 of which must be on the 300 level. Students obtaining a degree in elementary education with related work in language, should consult the School of Education concerning their program.

Departmental Recommendations It is recommended that majors also take additional work in language and literature courses on the 200 and 300 level, up to a maximum of 45 hours. Majors are strongly urged to take the civilization courses in the appropriate language. Demonstration of a level of proficiency may reduce the number of credit hours required for a foreign language major. Students with prior language experience should consult the department concerning appropriate placement.

It is strongly recommended that a language major take a minimum of 24 hours of a second language. It is also recommended that the language major take as many courses as possible in the related areas of history, literature, philosophy, art and music. Students planning to do graduate work should confer with their advisers in the department.

The language major is encouraged to investigate the various programs which will enable him to study abroad his junior year or during the summer preceding the senior year. Appropriate credit toward the major will be granted if written approval is obtained in advance from the department.

DEPARTMENT OF PHILOSOPHY

Faculty

Henry L. Shapiro, Ph.D. (Columbia University), chairman, assistant professor
Edward B. Costello, Ph.D. (Northwestern University), associate dean, College of Arts and Sciences, 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), visiting assistant professor
David A. Conway, Ph.D. (Princeton University), assistant professor
Marlene G. Fried, Ph.D. (Brown University), assistant professor
Stephen E. Norris, Ph.D. (University of Pittsburgh) assistant professor
James H. Walters, Ph.D. (University of Wisconsin) assistant professor
Paul R. Gombert, A.B. (University of California, Berkeley), instructor
David J. Griesedieck, M.A. (Princeton University), 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 45. Students may take any course in philosophy to meet the university's humanities area requirement.

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

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

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

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

for a major in philosophy will include the credit earned in Philosophy 291.

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

Departmental Recommendations Students who expect to apply for graduate study in philosophy should consult their departmental 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

- William W. Eidson, Ph.D. (Indiana University), chairman, professor
 Corneliu Eftimiu, Ph.D. (University of Bucharest), 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
 Jacob J. Leventhal, Ph.D. (University of Florida), associate professor
 Frank E. Moss, Ph.D. (University of Virginia), associate professor
 John S. Rigden, Ph.D. (Johns Hopkins University), associate professor***
 Charles C. Foster, Ph.D. (Indiana University), assistant professor**
 Philip B. James, Ph.D. (University of Wisconsin), assistant professor
 Gerald R. North, Ph.D. (University of Wisconsin), assistant professor
 Wilmer Grant, M.S. (Indiana University), visiting assistant professor, director of Project UNITED
 Charles N. Inskeep, Ph.D. (University of Tennessee), research associate

Nancy M. O'Fallon, Ph.D. (University of Illinois), visiting assistant professor

Louis Deall, M.S., instructor*

Jerry Fuller, B.S., instructor*

Suzanne Gronemeyer, A.M., instructor
 Robert E. Hubbard, director of physics laboratories

Leonard Piskorski, machine shop foreman

Walter Hofheinz, electronics technician
 *Primary appointment, Evening College

**Joint appointment with Extension Division

***Joint appointment with School of Education

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

I Bachelor of Arts 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 45). 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. 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. All 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.

II. Bachelor of Science 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.

A. 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. A minimum of eight hours of foreign language is required. French, Russian or German are recommended, but other languages are acceptable. 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. (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. All students are urged to begin the calculus sequence (Mathematics 80) as soon as possible.

Departmental Requirements A minimum of forty-nine hours of physics including Physics 1, 10, 111, 112, 113, 200, 201, 221, 223, 225, 241, 311, 312, 331, 335, 353 and 354.

B. 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. (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 A minimum of forty-nine 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.

C. 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. (Students with experience in digital computer programming may be excused from Mathematics 122.) Additional hours of mathematics are recommended. Chemistry 11 and 12 or equivalent are 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-nine hours of physics including Physics 1, 10, 111, 112, 113, 200, 201, 202, 215, 221, 223, 225, 241, 311, 312, 343 and 344.

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.

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

bachelor of science in education degree with a major in physics are stated below.

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

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

Related Areas of Study Requirements Psychology 1, 2 and 271 (9 hours total). 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. 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

Harrell R. Rodgers, Jr., Ph.D. (University of Iowa), associate professor

Lyman T. Sargent, Ph.D. (University of Minnesota), associate professor

Hampton T. Davey, Ph.D. (University of California, Los Angeles), assistant professor

Stephen E. C. Hintz, (Yale University), assistant professor

Ruth S. Jones, Ph.D. (Georgetown University), assistant professor

Joyce R. Lillie, Ph.D. (Johns Hopkins University), assistant professor

Stuart A. Lillie, Ph.D. (Johns Hopkins University), assistant professor

Lynn S. Miller, Ph.D. (University of Southern California), assistant professor

Thomas J. Pavlak, Ph.D. (University of Illinois), assistant professor

Frederic S. Pearson, Ph.D. (University of Michigan), assistant professor

Mark Stern, Ph.D. (University of Rochester), 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 45. 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-Western requirement in any approved non-Western course.

Related Area Requirements Each political science major must complete a minimum of 18 hours of 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, 12 and 262. 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 (course 262 satisfies this requirement)
- 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 72. 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

- Edmund S. Howe**, Ph.D. (University of London), chairman, professor
Arthur L. Irion, Ph.D. (State University of Iowa), professor
Alan G. Krasnoff, Ph.D. (University of Texas), professor
Lewis J. Sherman, Ph.D. (University of Illinois), professor
Frederick J. Thumin, Ph.D. (Washington University), professor*
Theresa S. Howe, Ph.D. (University of California, Berkeley), associate professor
Robert F. Priest, Ph.D. (University of Chicago), 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 Center, assistant professor
Robert P. McGilligan, Ph.D. (St. Louis University), visiting assistant professor, 1971-72
Miles L. Patterson, Ph.D. (Northwestern University), assistant professor
Denton J. Stewart, Ph.D. (Temple University), assistant professor
James T. Walker, Ph.D. (University of Colorado), assistant professor
David R. Ziff, Ph.D. (University of Texas), assistant professor

*Primary appointment, School of Business Administration

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 45. 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 natural 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 Each psychology major must complete 32 hours of psychology including Psychology 1 and 2 (preferably in the freshman year), 101 (preferably in the sophomore year), 219 and one of the following: 214, 254, 255, 257, 258 or 265 (preferably in the junior year), 261 (preferably in the senior year), and 192 and 193 (for seniors only).

Departmental Recommendations Psychology majors are urged to follow the Chemistry 11-12 sequence and the Biology 11 - 12 sequence, but other general education requirements are acceptable instead. Psychology majors are encouraged to elect courses in anthropology, biology, chemistry, literature, mathematics, philosophy and sociology rather than to take an excessive number of hours in psychology.

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY

Sociology Faculty

- K. Peter Etzkorn**, Ph.D. (Princeton University), chairman, 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
Sara Smith Sutker, Ph.D. (University of North Carolina), associate professor sociology
Harry H. Bash, Ph.D. (University of Pennsylvania), assistant professor sociology
Michael K. Carlie, Ph.D. (Washington University), assistant professor sociology
Henrietta Cox, Ph.D. (Washington University), assistant professor sociology
William Erickson, Ph.D. (University of Illinois), assistant professor sociology
Richard A. Ferrigno, Ph.D. (St. Louis University), assistant professor sociology
Richard C. Gilman, Ph.D. (University of Chicago), assistant professor sociology
Herman W. Smith, Ph.D. (Northwestern University), assistant professor sociology
William Arkin, M.A. instructor sociology
Mae E. Gordon, M.A. instructor sociology
Judith Handel, M.A. instructor sociology

Anthropology Faculty

- Lloyd Collins**, Ph.D. (University of Arizona), associate professor anthropology
Mridula A. Durbin, Ph.D. (State University of New York at Buffalo), assistant professor anthropology (on leave)
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), visiting assistant professor anthropology

Social Service Faculty

Muriel Pumphrey, D.S.W. (Columbia University), associate professor

The Department of Sociology and Anthropology offers the A.B. degree with the threefold 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. The selection of courses and program emphases within the departmental offering would vary with the particular interests of each student. A program of graduate studies leading to the M.A. in sociology is also offered by the department.

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 45. 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 46). 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.

The Sociology Major

Specialized curricula are available for majors in the following areas of sociology: the sociology of deviance (including criminology), law and society, urban sociology (including urban race relations), and social psychology. Students wishing to pursue a specialized course of studies should plan their major program early with the assistance of a departmental adviser.

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:

Sociology 20 Sociological Inquiry (3)
 Sociology 110 Sociological Theory (3)
 Sociology 120 Quantitative

Techniques (4)*

Sociology 130 Research Methods (3)

Eighteen (18) hours of credit selected from departmental courses.**

It is recommended that majors have completed Sociology 20 and Sociology 130 before enrolling in 200 level and all Core Requirements before enrolling in 300 level sociology courses.

Undergraduate Social Service Major

Related Area Requirements Same as for Sociology Majors.

Undergraduate Social Service Major Requirements:

Sociology 20 Sociological Inquiry (3)
 Sociology 110 Sociological Theory (3)
 Sociology 120 Quantitative

Techniques (4)*

Sociology 130 Research Methods (3)

Sociology 142 Sociological Aspects of Social Work (3)
 Sociology 298 Practicum in Field and Lab 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.

Emphasis III: The Anthropology Major

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 adviser.

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 390, Senior Seminar.

Anthropology Requirements:

Anthropology 5 Human Origins (4)
 Anthropology 11 Man, Culture & Society (3)

Sociology 20 Sociological Inquiry (3)

Sociology 130 Research Methods (3)
 Anthropology 325 Comparative Social Organization (3)
 Anthropology 381 Theories of Anthropology (3)
 Anthropology 390 Senior Seminar (3)
 Nine (9) hours of credit selected from the offerings in anthropology and/or sociology.*** It is recommended that majors take at least one course in anthropological linguistics.

**Mathematics 102 Finite Mathematics may be substituted for this course.*

***Only three credit hours of lower division sociology courses and three credit hours of lower division anthropology courses for a maximum of six credit hours may be counted in satisfaction of these requirements.*

****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 accounting
- Donald H. Driemeier, D.B.A.** (Washington University), associate dean, associate professor finance
- Sioma Kagan, Diplom-Ingenieur, Ph.D.** (Columbia University), professor international business
- Frederick E. May, Ph.D.** (University of Michigan), professor marketing
- Fred J. Thumin, Ph.D.** (Washington University) professor management and psychology
- Robert S. Stich, Ph.D.** (New York University) professor of finance and business policy
- Albert P. Ameiss, Ph.D.** (St. Louis University), associate professor accounting
- Howard Baltz, Ph.D.** (Oklahoma State University) associate professor quantitative management science
- Philip Brumbaugh, Ph.D.** (Washington University), associate professor quantitative management science
- Vincent B. D'Antoni, D.B.A.** (Washington University), associate professor finance
- David P. Gustafson, Ph.D.** (Stanford University), associate professor management
- Robert E. Markland, D.B.A.** (Washington University) associate professor quantitative management science
- R. Frank Page, Ph.D.** (University of Illinois), C.P.A., associate professor accounting
- Donald Rogoff, D.B.A.** (Michigan State University) associate professor finance
- Robert A. Schuchardt, D.B.A.** (Washington University) associate professor accounting
- Norbert C. Terre, D.B.A.** (Washington University), C.P.A. associate professor accounting
- James P. Tushaus, Ph.D.** (University of Illinois) associate professor marketing
- George C. Witteried, M.B.A., J.D.** (Northwestern University) associate professor industrial relations
- Lee Young, M.B.A., J.D.** (St. Louis University), L.L.M. (Washington University), C.P.A., associate professor accounting and taxation
- Richard W. Beatty, Ph.D.** (Washington University) assistant professor management (on leave)
- Andre B. Corbeau, Ph.D.** (Tulane University), assistant professor quantitative management science
- Nicholas DiMarco, Ph.D.** (Case-Western Reserve University) assistant professor of management
- Luis V. Dominguez, Ph.D.** (Northwestern University) assistant professor marketing
- 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

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

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

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

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

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

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

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

Albert E. Avery, M.S., instructor of finance

Lindell P. Chew, M.B.A., instructor marketing

Douglas E. Durand, M.B.A., instructor management

Robert Frese, M.S., instructor quantitative management science

David R. Ganz, M.S. in C., dean Student Affairs, instructor accounting

William P. Heinbecker, M.A., acting director Computer Center instructor quantitative management science

Marie Adele Humphreys, M.A., instructor quantitative management science

Nicholas A. Kargas, M.S., C.P.A., instructor accounting

Sam R. Lloyd, M.B.A., director, Organizational Development Programs, instructor marketing

Robert A. Narmont, M.S. in C., instructor accounting

Earl Salsman, M.S. in C., C.P.A., instructor accounting

David F. Schmidt, M.S., instructor quantitative management science

Elbert A. Walton, M.B.A., instructor accounting

The School of Business Administration offers work leading to the bachelor of science in business administration (B.S.) degree. 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 or graduate work in business and economics.

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 University of Missouri-St. Louis is required at the time of admission.

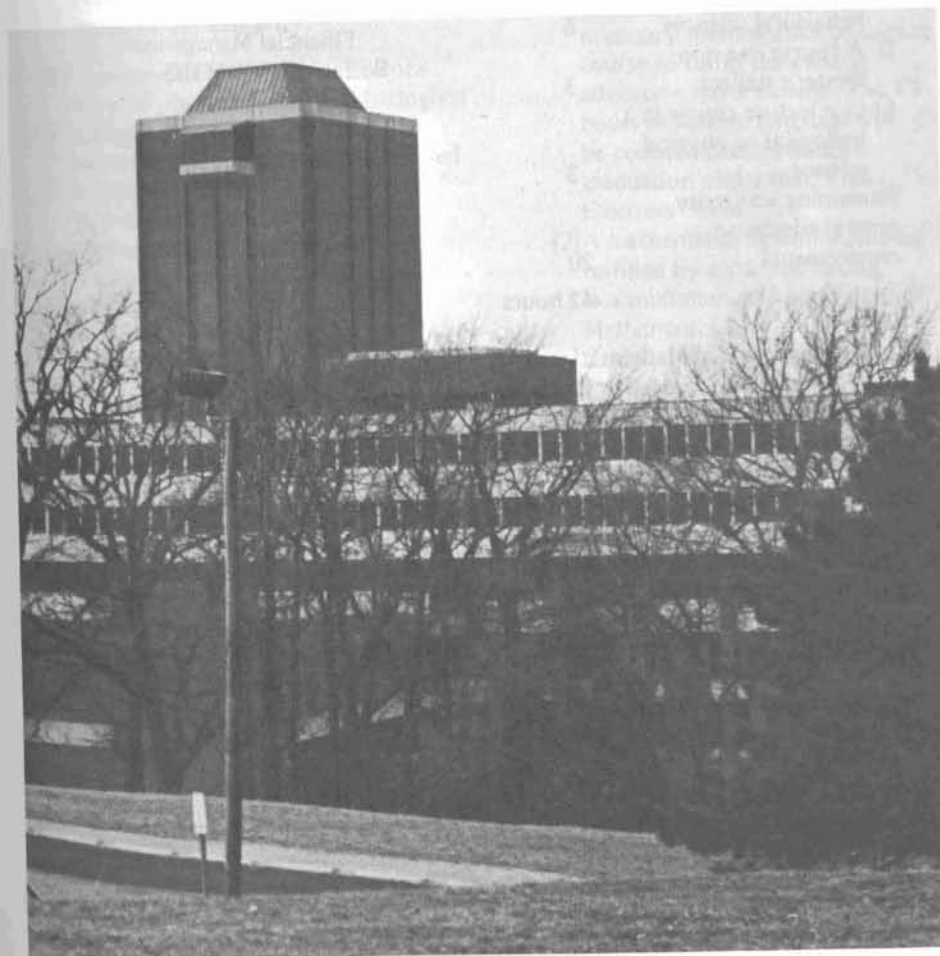
Qualifying courses generally include all courses from the Arts and Sciences and such other courses as may be considered to be supportive to the study of management. No more than fifteen hours of introductory courses in Business Administration (courses numbered below 200) may be counted as qualifying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

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

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 encouraged to include a required science lecture a non-Western course, two behavioral science courses, and required mathematics course work within his first sixty hours. These are referred to specifically because they are requirements of the School of Business Administration.

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



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

I. Non-Business Course Requirements

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

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

II. Requirements in Mathematics or Foreign Language Each student is required to present either:

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

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

III. Required Business Courses

Business Admin. 140— Fundamentals of Financial Accounting	3 hours
Business Admin. 145— Fundamentals of Managerial Accounting	3
Business Admin. 31— 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
	45 hours

IV. Free electives

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

	33 hours
	120 hours

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.

A. Humanities includes all courses in philosophy; any appreciation-type course, such as Masterpieces of Art or Introduction to Music Literature, 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 I—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 outside of the School of Business Administration 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—General Economics; 2) Mathematics courses taken in meeting the general mathematics proficiency or courses taken in the mathematics option and, 3) Courses taken meeting the 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 in 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 the academic adviser in the School of Business Administration at the beginning of their sophomore year.



School of Education

The curricula of the three departments of the School of Education includes 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 requirements of the curriculum area for which the student is applying must be met.

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.

Application 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 better (Note: this requirement will be in effect starting with all students who do their student teaching during the 1973-74 academic year. Until then the minimum acceptable grade point average will continue to be 2.0).
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; others involve specific preparation in more than one discipline. Students should seek advice from the Office of Teacher Education Advisement and Certification as early in their preparation as possible; in planning their junior and senior years, they should consult with their assigned advisers regularly.

Certification In cooperation with the Missouri State Department of Education, the School of Education, University of Missouri-St. Louis is responsible for issuing teaching certificates to students

who have completed the requirements for the degree bachelor of science in education. 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. 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. These clinical experiences include those that precede and follow student teaching as well as student teaching itself. The former are arranged through the instructors of the classes of which they are a part. 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.

When students have been admitted to student teaching, the Office of Clinical Experiences will work out assignments with the appropriate school district officials. Students must not contact school administrators or teachers about possible student teaching assignments.

Student teaching is not offered during the summer.

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

Teacher Education Resource Center The Teacher Education Resource Center is an instructional facility open to teacher education students and faculty. It has three major components, each with its own staff, that together constitute an integral part of the Teacher Education Program.

The Instructional Materials Laboratory in which is housed a large collection of instructional materials including basic textbook series, children's books, trade books, school reference books, models, maps, globes, filmstrips, and charts.

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

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

Teacher education students will find themselves using the Teacher Education Resource Center continuously throughout the program. Question 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.

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
Marjorie A. Banks, M.A., visiting associate professor
Walter J. Cegelka, Ed.D., (Syracuse University), associate professor
Robert E. Rea, Ph.D. (Southern Illinois University), associate professor
Elizabeth P. Watson, Ed.D. (Indiana University), associate professor
Donald R. Greer, Ph.D. (University of Missouri-Columbia), coordinator, Teacher Education Resource Center, assistant professor
Enno S. Lietz, Ph.D. (Southern Illinois University), assistant professor
Dick Miller, Ed.D. (Utah State University), assistant professor
John L. Morris, Ph.D. (St. Louis University), assistant professor
Leo V. Rodenborn, Ed.D. (Oklahoma State University), assistant professor
Doris A. Trojcek, Ed.D. (Indiana University), assistant professor
Arnold Copeland, M.S., instructor
Aline Crawford, M.A., instructor
Dixon Emswiler, M.A., instructor
Ellen R. Green, B.A., instructor
Judy Kupersmith, M.S., instructor
Edith S. McKinnon, M.A.T., instructor
Donna Jo Vandagriff, M.S., coordinator, Office of Teacher Education, Advisement and Records, 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

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

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

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

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

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
 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
Electives 26 hours
 26
 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

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

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

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

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

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

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. 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

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

Electives 18 hours
 18
 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 80.

Related Area Requirements in Elementary Education

See page 80.

Departmental Requirements in Elementary Education

See page 80.
 (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. 369 Analysis and Correction of Reading Disabilities 3 hours
 Ed. 312 Speech and Language Problems of the Mentally Retarded 3 hours
 Ed. 310 Interpretation of Educational Tests and Measurements 3 hours
 Ed. 252 Elementary School Student Teaching in Special Education 6 hours
 120 hours

Electives 15 hours
 15
 120 hours

DEPARTMENT OF ADMINISTRATION, PHILOSOPHY AND SECONDARY EDUCATION

Faculty

- Robert R. Gard, Ed.D. (Arizona State University), chairman, associate professor
- Ward E. Barnes, M.A., Honorary Doctorate of Laws (University of Missouri-Columbia), visiting 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
- John S. Rigden, Ph.D. (Johns Hopkins University), associate professor
- Charles G. Smith, M.S. 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), assistant dean, Extension Division, associate professor
 Jane Williamson, Ph.D. (Bryn Mawr College), associate professor
 Marvin M. Beckerman, Ph.D. (Syracuse University), assistant professor
 Frederick C. Brechler, Ph.D. (Ohio State University), assistant professor
 Robert I. Cloos, Ed.D. (Rutgers University), assistant professor
 Clarence Drichta, M.M., assistant professor
 Edward Dyck, Ph.D. (University of Minnesota), visiting assistant professor
 Dennis Fallon, Ph.D. (University of Minnesota), assistant professor
 Charles Fazzaro, Ed.D. (West Virginia University), assistant professor
 Charles Granger, Ph.D. (University of Iowa), assistant professor
 Jane A. Miller, Ph.D. (Tulane University), 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 Wood, Ed.D. (University of Florida), coordinator of clinical experiences, School of Education, assistant professor
 Dorothy Doyle, M.A., instructor
 Karol George, Ed. Spec., instructor
 Barbara Heimburger, M.A.T., instructor
 Edith Young, M.Ed., instructor (on leave)

The Secondary Education curriculum prepares teachers for junior and senior

high school positions. The program culminates in a bachelor of science in education degree. It is possible for students pursuing other degrees to meet requirements for a teaching certificate in secondary education by being admitted to the Teacher Education Program and completing the necessary sequence of courses and experiences offered by the department. Post-degree students who are admitted to the Teacher Education Program for the purpose of seeking teacher certification in secondary education may enroll in courses provided by the department. Besides the undergraduate offerings, the department offers graduate programs leading to the master of education degree in the areas of secondary education, elementary administration and secondary administration.

Secondary Education The Secondary Education program is designed for those who wish to teach in grades seven through twelve.

University General Education Requirements

See page 21.

Departmental Requirements

- Ed. 101 The School in Contemporary Society . . . 3 hours
- Ed. 163 Techniques of Secondary School Teaching 3 hours
- Psych. 271 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

Teaching Fields

Students in this program must prepare to teach in a secondary school teaching field. Fields require 30 to 40 hours. Specific subject concentrations are specified within these general requirements. Early advisement is essential. At present, the following teaching fields are offered: business education, English, foreign language (French, German, Spanish), mathematics, music, science (biology, chemistry, physics), social studies (history, economics, sociology, political science, psychology). Development of physical education as a teaching field is underway 30-40 hours

Electives 17-27 hours
120 hours

DEPARTMENT OF BEHAVIORAL STUDIES AND RESEARCH

Faculty

King M. Wientge, Ed.D. (Washington University), interim chairman, professor
 William L. Franzen, Ph.D. (University of Wisconsin), dean, School of Education, professor
 Thomas E. Jordan, Ed.D. (Indiana University), 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
 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
 E. Richard Dustin, Ph.D. (University of Minnesota), assistant professor

Barbara Fulton, Ph.D. (University of Missouri-Columbia), assistant professor
 Rickey L. George, Ph.D. (Northwestern University), assistant professor
 Rosanne Gmuer, Ph.D. (University of South Carolina), assistant professor
 Alice E. Klein, Ph.D. (New York 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

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.



and advisers 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 adviser

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.



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 degree are offered by the economics, history, political science and sociology departments. In the School of Education, a master of education degree is offered with specializations in the area of elementary or secondary education, elementary school administration, secondary school administration, elementary guidance and counseling, and 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 | carry no college 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>). |

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 1 (a grade of "C" or better in chemistry course 1). GPA refers to grade point average.

College of Arts and Sciences

ADMINISTRATION OF JUSTICE

Prerequisites may be waived by consent of instructor.

- | | |
|-----|---|
| 99 | The City (3) (FWS) (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) (FWS)
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). |

Administration of Justice (Continued)

- 201 **The Criminal Justice System: Conflicting Perspectives I (3) (F)**
Prerequisite: AOJ 200. An examination of the conflicting and converging needs and skills of three social roles necessary for a sound criminal justice system in a democratic society. The objectives, activities, and skills of the citizen, criminal justice professional, and social scientist will be identified and analyzed.
- 202 **The Criminal Justice System: Conflicting Perspectives II (3) (W)**
Prerequisite: AOJ 201 or consent of instructor. An examination of competing social interests served by the criminal justice system, past and present. Attention will focus on the need for and the nature of a criminal law that serves the public interest and not private interests.
- 205 **The Juvenile Justice System (3) (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) (FWS)**
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.
- 227 **Poverty and the Justice System (3) (W)**
Prerequisite: AOJ 220 or equivalent, or consent of instructor. Examination of administrative regulations and the 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 other public agencies; control and responsibility of police departments. In general, the application of generalizations from public administration to police systems.
- 260 **Police-Community Relations (3) (W)**
Prerequisite: AOJ 100 or consent of instructor. 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.
- 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 powers. Basic concepts of criminal law, their origin and development in Anglo-American jurisdictions.
- 330 **Correctional Institutions (3) (F)**
Prerequisite: AOJ 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: AOJ 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 **Senior Seminar—Special Problems in the Administration of Justice (3) (F&W)**
Prerequisite: Soc. 120, AOJ 200 and 220, senior standing, or consent of instructor. Study of selected special problems in the administration of justice. (May be repeated once for credit.)
- 399 **Independent Study and Research (3) (F&W)**
Prerequisite: Soc. 120, AOJ 200 and 220 and 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.)
- 51 **Introduction to Anthropological Linguistics (3) (F)**
Relation between man and language in synchronic and historical perspective. The design features of language equality, diversity, and relativity in structures and functions of language, including non-western languages.
- 90 **Freshman Seminar (3) (V)**
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 243 **Economic Anthropology (3) (V)**
Prerequisite: Anthropology 11 or consent of instructor. An introduction to the range of economic organizations found in the world. Anthropological models of production and exchange. The notion of "rationality" as applied to non-Western economic systems. The contribution of anthropology to the understanding of economic development.
- 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.
- 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.
- 301 **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.
- 303 **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.
- 305 **Cultures of Southeast Asia (3) (V)**
Prerequisite: Anthropology 11 or

ANTHROPOLOGY

Prerequisites may be waived by consent of instructor.

Anthropology (Continued)

- 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.
- 307 **Cultures of Native North America (3) (V)**
Prerequisite: Anthropology 11 or consent of the instructor. A survey of the aboriginal cultures of North America including prehistory of the area, the ethnographic and linguistic groupings, and the social organization and cultural systems of these groups.
- 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 **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 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.
- 335 **Culture Change (3) (F)**
Prerequisite: Anthropology 11 or consent of instructor. An intensive investigation into the elements and processes of culture change with regard to specific theories of culture change. The course examines the relationship between microchange in primitive and modern complex societies.
- 337 **Applied Anthropology (3) (W)**
Prerequisite: Anthropology 335 or 381. A description and analysis of the methods, principles and use of practical problems associated with the changing conditions of our times. A wide variety of cross-cultural case studies will be examined.
- 345 **Language and Culture (3) (V)**
Prerequisite: Anthropology 11 or consent of instructor. The relationship between language and culture. Works of Sapir, Whorf, Lee and others will be considered.
- 346 **Grammatical Theory (3) (V)**
Prerequisite: One course in linguistics or consent of instructor. Linguistic analysis of syntax including introduction into formal structures of symbolic, social and cultural behavior.
- 350 **Special Study (credit arranged) (F&W)**
Prerequisite: Consent of instructor. Independent study through readings, reports, or field research.
- 355 **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.
- 365 **Comparative Religions (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.
- 377 **Culture and Personality (3) (W)**
Prerequisite: Sociology 10 or 20, 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.
- 390 **Senior Seminar (3) (W)**
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.
- 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.
- 201 **Art History Media Lab (1) (V)**
Prerequisite: Art I and II. Technical research into the various materials and media used by the artist.
- 305 **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.
- 310 **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.
- 321 **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.
- 322 **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.
- 326 **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.
- 327 **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.
- 330 **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.
- 341 **Nineteenth Century Art (3) (V)**
Prerequisite: Art II. The study of European Art from Neoclassicism and Romanticism through Post-Impressionism.

ART

For additional information, consult
Fine Arts Department.

Prerequisites may be waived by consent
of instructor.

- 1 **Introduction to Art I (3) (F&W)**
Illustrated discussion with examples from varied historic and contemporary art fields on the nature of art, functions and methods of creative expression.
- 2 **Introduction to Art II (3) (V)**
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) (F&W)**
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.
- 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 and expands our cultural inheritance. Fulfills Asian-African requirement.

Art (Continued)

- 342 **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.
- 345 **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.

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.
- 2 **General Astronomy II (3) (W)**
Prerequisite: Mathematics 02 or equivalent (General Astronomy I is not a prerequisite). A further study of general astronomy. Topics include multiple stars, variable stars, star clusters and associations, interstellar media, galaxies, cosmologies, the evolution of stars and the probability of life in the galaxy. Four 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. Designed to allow a student to continue a study of astronomy.
- 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 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 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.
- 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.

Biology (Continued)

- 242 **Population Biology (3) (W)**
Prerequisite: Biology 224. The structure, operation and evolution of populations. Three hours lecture per week.
- 244 **Population Biology Laboratory (2) (W)**
Prerequisite: Biology 242 (May be taken concurrently). Laboratory to accompany Biology 242. Three and one-half hours laboratory per week and/or field studies to be arranged.
- 246 **Evolution (3) (V)**
Prerequisite: Biology 224. The course and mechanisms of organic evolution. Three hours lecture per week.
- 250 **Plant Form and Function (3) (F)**
Prerequisite: Biology 10. A general survey of the plant groups from algae through angiosperms. Morphology, reproduction, and central physiological concepts unique to the plant kingdom will be discussed. Three hours lecture per week.
- 252 **Plant Form and Function Laboratory (2) (F)**
Prerequisite: Biology 250 (May be taken concurrently). Examination of representatives of the plant kingdom and experimentation in plant physiology. Three and one-half hours laboratory per week.
- 276 **Biological Chemistry (3) (W)**
Prerequisite: Chemistry 261, 263 and Biology 10. The chemistry and 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) (W)**
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 relationships between the groups. Field studies and phytocology 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.
- 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

Biology (Continued)

- 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.

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 requirement in science. However, it does not satisfy the prerequisites of any course except Chemistry 3. Three hours lecture per week.
- 3 **General Chemistry Laboratory (2) (F&W)**
Prerequisite: Chemistry 1 (May be taken concurrently) or Chemistry 10 (may be taken concurrently). Experiments are designed to acquaint the students with chemistry in the laboratory.
- 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.
- 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.
- 11 **Introductory Chemistry I (5) (F&W)**
Prerequisite: Mathematics 40 or equivalent (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. Three hours lecture and one hour discussion per week; three-and-one-half hours laboratory 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.
- 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: Mathematics 201 (May be taken concurrently), and Physics 111 (or equivalent). Principles of physical chemistry including thermodynamics, theory of gases, phase equilibria, kinetics, crystal structure, spectroscopy and quantum mechanics. Three hours lecture per week.
- 232 **Physical Chemistry II (3) (F&W)**
Prerequisite: Chemistry 231. Continuation of Chemistry 231. Three hours lecture per week.
- 233 **Laboratory in Physical Chemistry I (2) (F&W)**
Prerequisite: Chemistry 231 (may be taken concurrently). Experiments designed to illustrate principles introduced in Chemistry 231. One hour lecture and four and one-half hours laboratory per week.
- 234 **Laboratory in Physical Chemistry II (2) (F&W)**
Prerequisite: Chemistry 232 (may be taken concurrently), Chemistry 233. Experiments designed to illustrate principles introduced in Chemistry 232. One hour lecture and four and one-half hours laboratory per week.
- 261 **Structural Organic Chemistry (3) (F&W)**
Prerequisite: Chemistry 12. An introduction to the structure, properties, synthesis and reactions of aliphatic and aromatic carbon compounds. Three hours lecture per week.
- 262 **Organic Reactions (3) (F&W)**
Prerequisite: Chemistry 261. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours lecture per week.
- 263 **Techniques of Organic Chemistry (2) (F&W)**
Prerequisite: Chemistry 261 (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.

Chemistry (Continued)

- 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.
- 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 and Universities (3) (F)**
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.
- 51 **Principles of Economics II (3) (F&W)**
Prerequisite: Mathematics 40 or Mathematics 15 or one and one-half high school units in algebra. 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) (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.
- 160 **The Measurement of Economic Activity (3) (F)**
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.

ECONOMICS

Prerequisites may be waived by consent of department.

- 40 **Introduction to the American Economy (3) (F&W)**
No credit for students majoring in Economics. Introduction to economic analysis and problems through an examination of the development and operations of the American economy; study of its evolution, institutions and principal problems.
- 50 **Principles of Economics I (3) (F&W)**
Prerequisite: Mathematics 40 or Mathematics 15 or one and one-half high school units in algebra. Introduction to the subject of economics with emphasis on the operation of the national economy, money and banking, and international economic relations.
- 190 **Current Issues in Economics (3) (F&W)**
Prerequisite: At least 15 hours of college credit in economics and senior standing. A comprehensive survey of current theoretical, empirical and policy issues in the field of economics. Emphasis on the relevance of economic analysis for public-policy decision-making.
- 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.

Economics (Continued)

- 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.
- 220 **Money and Banking (3) (F&W)**
Prerequisite: Economics 50. Factors influencing bank reserves and the money supply. Ability of the Federal Reserve System and the Treasury to control these factors. Introduction to monetary theory: integration of monetary phenomena with national income theory. Analysis of current policy issues.
- 240 **Economic Development (3) (W)**
Prerequisite: Economics 50. Survey of economic growth as applied to under-developed countries. Analysis of development policies with emphasis on specific case studies.
- 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) (F&W)**
(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 50. 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.
- 269 **The Marxist Heritage (3) (W) (Same as Philosophy 269 and Political Science 269)**
An interdisciplinary study of Marx and leading Marxists, designed to evaluate their influence on recent political, economic and social thought and institutions.
- 270 **Urban and Regional Economics (3) (F&W)**
Prerequisite: Economics 50 and Economics 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) (W)**
Prerequisite: Junior standing or 12 hours in social sciences. A survey of the development of urban America and the associated crises and of the origins and early practice of planning, role of the profession in modern society, Federal and State programs that affect urban development through the planning profession, and current changes in the practice of planning.
- 302 **Systems Analysis for Urban Planning Problems (3) (F)**
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.
- 316 **Public Finance: Federal (3) (F)**
Prerequisite: Economics 50 and Economics 51. The nature and scope of public finance. Analysis of expenditure, revenue and financial administration of the Federal government, with emphasis on current problems.
- 317 **Public Finance: State and Local (3) (W)**
Prerequisite: Economics 50 and Economics 51. A study of expenditure, taxation and financial administration of state and local governments, with emphasis on problems of current interest. Special attention given to research methods, as well as financial relations between various levels of government.
- 321 **Money (3) (F)**
Prerequisite: Economics 220. Demand for money; determination of interest rates, prices and income; decision-making under conditions of uncertainty; term structure and interest rates. Other topics of mutual interest.
- 330 **International Economic Analysis: Trade (3) (F)**
Prerequisite: Economics 51. The theory of international trade, the theory of commercial policy, economic integration and economic development. Emphasis is on the theoretical framework of analysis.
- 331 **International Economic Analysis: Finance (3) (W)**
Prerequisite: Economics 50. The balance of payments, the theory of foreign exchange, monetary standards and international liquidity. Emphasis is on the payments adjustment mechanism, international monetary institutions and alternative monetary systems.
- 338 **Comparative Economic Systems (3) (W)**
Prerequisite: Economics 50 and Economics 51. Comparative study of economic organization, growth and welfare in different national economies such as the United States, the Soviet Union and France.
- 339 **The Soviet Economy (3) (F)**
Prerequisite: Economics 50 and Economics 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.
- 340 **The Development of Industrial Economies (3) (W)**
An examination of economic growth hypotheses in the context of the experience of high-income countries. Analysis of the factors affecting economic growth; labor, capital and technology.
- 341 **The Development of Less-Developed Economies (3) (F)**
Application of the theory of economic growth to developing countries. Emphasis on problems of capital formation, education and economic relations with other countries.
- 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) (W)**
Prerequisite: Economics 51. Analysis of the allocation of human resources with emphasis on the economic theory of labor markets in both the short and the long run. Discussion of the operation of the labor market in specific occupations.
- 365 **Economic Statistics and Econometrics (3) (F&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) (W)**
Prerequisite: Economics 365. Continuation of Economics 365.

Economics (Continued)

- 368 **Analysis of Business Conditions (3) (F&W)** (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) (F)**
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) (W)**
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) (W)**
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.
- 65GH **Honors Exposition (3) (V)**
Prerequisite: Honors qualification on placement examinations. Expository theory and practice for freshmen. Students who pass English 65GH with a "B" or better receive three hours additional credit for a total of six hours in composition and literature.
- 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.
- 115 **Commercial Writing (3) (F&W)**
Prerequisite: English 10 or equivalent. Emphasis upon news writing, newspaper feature writing, magazine article writing and book reviewing.
- 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.
- 220 **Growth and Structure of the English Language (3) (F&W)**
The historical, comparative, and modern linguistic analysis of the English language, from its origin to present day American English, with special emphasis on the relationship of language to literature.
- 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 **Transformational Syntax (3) (W)**
Prerequisite: English 221. A detailed study of Modern English sentence structure in terms of current theories of

ENGLISH

Prerequisites may be waived by consent of department.

COMPOSITION AND LANGUAGE

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

linguistic description: transformational theory, individual transformations, case grammar, language universals and applications to the teaching of English.

LITERATURE

- 12 **Literary Types (3) (F&W)**
The student is introduced to the various literary types, including poetry, drama, fiction and the essay.
- 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) (F)**
A survey of masterworks of the early and later Middle Ages, to include the *Divine Comedy*, *Nibelungenlied*, *Song of Roland*, *El Mio Cid*, selections from Chretien de Troyes, Boccaccio's *Decameron*, and Machiavelli's *The Prince*.
- 128 **The Contemporary World in Literature (3) (F)**
Selected American, British and Continental literature since the Second World War.
- 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.
- 131 **English Literature I (3) (F&W)**
Reading and analysis of representative selections from about ten English writers of the Middle Ages, the Renaissance and the eighteenth century. Special emphasis on close critical reading of a limited number of texts. Required for English majors.
- 132 **English Literature II (3) (F&W)**
Reading and analysis of representative selections from about ten English writers of the nineteenth and twentieth
- centuries. Special emphasis on close critical reading of a limited number of texts. Required for English majors.
- 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.
- 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) (W)**
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.

English (Continued)

- 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 theaters in 1642, with particular attention to the plays of Marlowe, Jonson, Webster and Ford. Though Shakespeare will not be studied in this course, connections between his works and those of his contemporaries will be discussed.
- 341 **English Renaissance Prose (3) (Alt. F)**
The full variety of sixteenth and seventeenth-century prose. Prose fiction, the essay, the diary and philosophical and religious writing. Analysis of both thematic and stylistic developments.
- 342 **Early Seventeenth-Century Poetry (3) (F)**
Non-dramatic poetry from the accession of James I to the Restoration, exclusive of Milton.
- 345 **Milton (3) (W)**
All the minor poems and the three longer poems with some attention to the major prose. Milton and his relation to the politics, theology and literature of the seventeenth century.
- 346 **Restoration and Eighteenth Century Drama (3) (W)**
The principal tragedies and comedies from Dryden to Sheridan, including the plays of Congreve, Farquhar, Rowe, Gay, Fielding, Goldsmith, among others.
- 352 **Age of Dryden and Pope (3) (F)**
The 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&W)**
Poetry, drama and fiction of the period between 1870 and the First World War. Hardy, Hopkins, Conrad, Shaw, Wilde, Yeats and others.
- 373 **Major American Writers I (3) (F&W)**
American literature of the nineteenth and twentieth centuries centering around such figures as Emerson, Hawthorne, Melville, Poe and Whitman.
- 374 **Major American Writers II (3) (F&W)**
American literature of the late nineteenth and twentieth centuries centering around such figures as James, Dickinson, Crane, Jeffers, Faulkner and others.
- 375 **American Fiction to World War I (3) (F&W)**
Development of the novel and short story in America through World War I. Emphasis is upon fiction representative of Romanticism, Realism and Naturalism.
- 376 **American Fiction After World War I (3) (F&W)**
Development of the novel and short story in America since World War I.
- 383 **Modern Fiction (3) (F)**
Critical reading and analysis of selected British and American fiction of the twentieth century.
- 384 **Modern Poetry (3) (F&W)**
Critical reading and analysis of selected British and American poetry of the twentieth century.
- 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.
- SPECIAL OFFERINGS**
- 250 **Special Readings (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.
- 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.
- 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.
- 100 **Scientific French (3) (V)**
Prerequisite: French 2 or equivalent. Reading of selected French texts in the natural and social sciences. Designed primarily for the majors in these areas.
- 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.
- 102 **Intermediate French (3) (F&W)**
Prerequisite: French 101 or equivalent. Further development of language skills through the reading and discussion of literary texts. May be taken concurrently with French 108 after consultation with instructor.
- 108 **Oral and Written Composition (3) (F&W)**
Prerequisite: French 102 or equivalent. Emphasis will be placed upon the development of oral and writing skills. May be taken concurrently with French 102 after consultation with instructor.
- 110 **Masterpieces of French Literature in Translation (3) (Alt. F incl 72)**
Prerequisite: Sophomore standing. Reading and discussion of selected masterpieces in French literature. May be taken to fulfill 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.

French (Continued)

- 200 **Advanced Grammar and Stylistics (3) (W)**
Prerequisite: French 108. Problems in grammatical analysis. Techniques of translation including *thème* and *version*.
- 210 **French Civilization (3) (F)**
Prerequisite: French 102 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 102 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 to second language learning.
- 250 **Phonetics: French (3) (F)**
Prerequisite: French 108 or equivalent. An analytic and practical study of contemporary French sound structure.
- 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 **Introduction to French Literature (3) (F)**
Prerequisite: French 102 or equivalent. Designed to acquaint the student with the development of French Literature from the Romantic period to the present. Critical reading of representative texts.
- 281 **Introduction to French Literature (3) (W)**
Prerequisite: French 102 or equivalent. Designed to acquaint the student with the development of French literature from the *Chanson de Roland* to the Enlightenment. Critical reading of representative texts.
- 331 **Medieval and Renaissance Literature (3) (V incl W 72)**
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) (Alt F incl 72)**
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) (V not 72)**
Prerequisite: French 280 or 281. A critical study of representative poets and prose writers including novelists and philosophers.
- 353 **Eighteenth Century French Literature (3) (Alt F incl 72)**
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 not 72)**
Prerequisite: French 280 or 281. Critical reading and discussion of representative novels and plays of the eighteenth century.
- 361 **Nineteenth Century French Poetry and Theatre (3) (Alt W not 72)**
Prerequisite: French 280 or 281. A study of literary movements and trends in the nineteenth century through the critical reading of selected works by the major poets and dramatists.
- 362 **Nineteenth Century French Novel (3) (Alt W not 72)**
Prerequisite: French 280 or 281. Critical reading of selected works by the major novelists of the period. Discussion of realism and naturalism.
- 371 **Twentieth Century French Novel (3) (Alt F not 72)**
Prerequisite: French 280 or 281. A study of selected works by the principal novelists of the modern period.

- 372 **Twentieth Century French Theatre and Poetry (3) (Alt F incl 72)**
Prerequisite: French 280 or 281. Critical reading and discussion of selected works by the leading dramatists and poets of the modern period.
- 399 **French Seminar (3) (W)**
Prerequisite: Senior standing. Required of all French majors. Subject to be announced each year by the instructor in charge of the seminar.
- 2 **Elementary German (5) (F&W)**
Prerequisite: German 1 or equivalent. Emphasis will be placed upon the speaking and understanding of German and upon the acquisition of the fundamentals of grammar and syntax. One hour language laboratory required.
- 100 **Scientific German (3) (F&W)**
Prerequisite: German 2 or equivalent. Reading of selected German texts in the natural and social sciences. Designed primarily for majors in these areas.

GEOGRAPHY

For additional information, consult the Economics Department.

Prerequisites may be waived by consent of department.

- 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) (W)**
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.
- 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 Expository Prose (3) (F&W)**
Prerequisite: German 101 or equivalent. Reading of essays, newspaper articles and short stories. May be taken concurrently with German 108.
- 108 **Composition and Conversation (3) (F)**
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 requirements. Not open to German majors.

GEOLOGY

For additional information, consult the Biology Department.

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

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.
- 201 **Masterpieces of German Literature (3) (F)**
Prerequisite: Two years of college German or equivalent. Introduction to German Literature-its subjects, forms and ideals.

German (Continued)

- 202 **The German Novelle and Drama (3) (W)**
Prerequisite: German 201 or equivalent.
Reading and critical analysis of selected German *novellen* and dramas.
- 208 **Intermediate Composition and Conversation (3) (W)**
Prerequisite: German 108 or equivalent.
Continuation of German 108. Emphasis on speaking and writing German.
- 210 **German Culture and Civilization (3) (F)**
Prerequisite: German 102 or equivalent.
A survey of the development of German culture and civilization. All reading and classwork in German.
- 220 **Introduction to Linguistics (3) (F&W)**
(Same as French 220 and Spanish 220)
Prerequisite: German 1 and 2 or equivalent and sophomore standing. The historical development of languages, their description and classification, with emphasis on the practical application of contrastive linguistics to second language learning.
- 264 **Curriculum and Methods of Teaching Foreign Languages (3) (F&W)** (Same as Education 264)
Prerequisite: Education 163, German 200, 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.
- 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.
- 399 **German Seminar (3) (W)**
Prerequisite: Senior standing and two 300 level courses. Required of all German majors. Topic to be selected by instructor.

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.

HISTORY

Prerequisites may be waived by consent of instructor.

- 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.
- 10 **Topics in Western Civilization: Prehistory to 1300 (3) (F&W)**
Prerequisites: None. Lectures and discussions on topics concerning the emergence of sedentary societies in the Neolithic Age, advanced civilizations of the Fertile Crescent (particularly Egypt); the polis-civilization of Greece; Hellenism and the Roman Empire; the Germanic invasions; the foundation and flourishing of Western European society in the Middle Ages.
- 11 **Topics in Western Civilization: 1300 to 1789 (3) (F&W)**
Prerequisites: None. Lectures and discussion groups on topics concerning the breakdown of medieval society and the growth of the Renaissance; the Reformation and the destruction of the unity of Christendom; the development of science, and political theory; the rise of the centralized state; the international implications of the growth of the sovereign state; the Enlightenment and the origins of the French Revolution.
- 12 **Topics in Western Civilization: 1789 to 1914 (3) (F&W)**
Prerequisites: None. Lectures, readings and discussions of topics in European history including the French Revolution, Napoleonic Europe, the Metternichian reaction, the Industrial Revolution and the rise of liberalism, nationalism, socialism and imperialism, and the road to World War I.
- 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.
- 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.
- 192 **Senior Readings (3) (F)**
Prerequisite: Consent of department. The development of the historical profession, the nature of history and the problems of historical writing.
- 193 **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 and research, one product of which shall be a formal paper.
- 200 **Contemporary Europe (3) (W)**
Prerequisite: History 10, 11, or 12 or consent of department. The development of the contemporary world since the outbreak of World War II in 1939, with some consideration of the period from 1914 to 1939. Emphasis on war and diplomacy; Communism, Fascism, and the failures of democracy; anti-colonialism and nationalism; social, cultural and economic trends.
- 210 **Asian Civilization (3) (F)**
Prerequisite: Sophomore standing. The development of Asian Civilization from earliest times to the Manchu conquest.

History (Continued)

- 211 **Asian Civilization (3) (W)**
Prerequisite: Sophomore standing. Either 210 or 211 may be taken separately. Continuation of History 210, with emphasis on the Asian response to the Western incursion.
- 230 **Black History in the United States (3) (F&W)**
The experiences of Black people in America from the period of the slave trade to the twentieth century, beginning with areas and cultures of West Africa. The development and importance of the slave trade, the institutionalization of slavery; Black resistance to bondage; the role of Blacks during the Civil War and Reconstruction Period; the rise of segregation and disfranchisement of Blacks; the testing of laws and the protest and revolutionary movements of today.
- 240 **Latin American Civilization (3) (F)**
The development of Latin America from pre-Columbian societies to contemporary national states.
- 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.
- 311 **History of Spain (3) (V)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. 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.
- 315 **Twentieth Century Southeast Asia (3) (V)**
Prerequisite: Junior standing or consent of instructor. Emphasis on the decline of colonialism, the wars of national liberation, and the new nations of Southeast Asia today.
- 318 **Modern China: 1800 to Present (3) (F&W)**
Prerequisite: Junior standing or consent of instructor. The economic, social and political development of modern China.
- 319 **Modern Japan: 1850 to Present (3) (W)**
Prerequisite: Junior standing or consent of instructor. The economic, social and political development of modern Japan.
- 321 **Medieval England (3) (W)**
Prerequisite: Junior standing or consent of department. 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.
- 322 **Yorkist and Tudor England (3) (F)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. 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.
- 323 **Stuart England (3) (W)**
Prerequisite: Junior standing or consent of department. 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.
- 324 **Hanoverian England (3) (F)**
Prerequisite: Junior standing or consent of department. A study of English politics, economics and culture during the Hanoverian period (1714-1837).
- 325 **Victorian England (3) (W)**
Prerequisite: Junior standing or consent of department. A political, social and economic study of Great Britain during the reign of Queen Victoria (1837-1901).
- 326 **Modern Britain (3) (F)**
Prerequisite: Junior standing or consent of department. An economic, political and social study of Great Britain during the twentieth century.
- 328 **Modern France: The Nineteenth Century (3) (Alt. F)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. The search for a stable form of government in attempts with monarchy, empire and republic; political, institutional, socio-economic and diplomatic problems of this search.
- 329 **Modern France: The Twentieth Century (3) (Alt. W)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. The problems of maintaining the republic and great power status in the twentieth century; political, institutional, socio-economic and diplomatic aspects of this problem.
- 330 **Europe in the Seventeenth Century (3) (F)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. The growth of the modern state system; the origins of modern science.
- 331 **Europe in the Eighteenth Century (3) (W)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. The Old Regime, the Enlightenment, the French Revolution and Napoleon.
- 332 **Europe in the Nineteenth Century (3) (Alt. F)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. The major political, economic and intellectual developments in Europe from the Congress of Vienna to the outbreak of World War I.
- 333 **Europe in the Twentieth Century (3) (F)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. The impact of World Wars I and II; the search for equilibrium.
- 334 **Europe in the Early Middle Ages (3) (F)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. Fall of the Roman Empire, the Byzantine Empire and reconstruction in the West.
- 335 **Europe in the High and Late Middle Ages (3) (W)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. Continuation of History 334 up to the Renaissance.
- 336 **The Ancient Near East and Greece (3) (V)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. A cultural survey of the civilizations of the Near East and Greece up to the fourth century B.C., with emphasis on social and economic trends.
- 337 **The Hellenistic World and the Roman Empire (3) (W)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. Major political events and social and economic survey analyzing the rise, decline and fall of the Roman Empire.
- 338 **The Age of the Renaissance (3) (F)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. 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.
- 339 **The Age of Reformation (3) (W)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. Religious, intellectual, political and socio-economic developments of the sixteenth century.
- 340 **History of Science (3) (V)**
Prerequisite: One laboratory science and six hours of history. The origins of science and scientific methodology. The interactions of science and non-science, with emphasis upon the Greeks, the Renaissance, the seventeenth century and the nineteenth century.
- 342 **European Intellectual History (3) (V)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. Main currents of European intellectual thought from the late

History (Continued)

- seventeenth through the mid-nineteenth century. From Locke to Hegel.
- 344 **European Diplomacy from 1815 to Present (3) (Alt. W)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. A survey of European international relations. The relationship between diplomacy and warfare, plans for collective security, the theory of "the balance of power", systems of alliances, and the domestic and ideological origins of foreign policy.
- 345 **Modern Germany: To 1917 (3) (F)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. The development of modern Germany. Attention will focus on nationalism, unification, industrialization and the coming of the Great War.
- 346 **Modern Germany: Since 1917 (3) (W)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. Weimar Republic, Nazi Reich and the postwar division. Attention will focus on the failure of democracy, totalitarianism and its results.
- 347 **Intellectual History of Russia, 1790-1920 (3) (W)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. Philosophical, religious, social and political thought in nineteenth century Russia; development of radical intelligentsia up to and including Lenin.
- 348 **History of Russia, 1500-1894 (3) (F)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. The Moscovite and Romanov periods ending with the accession of the last Romanov.
- 349 **History of the U.S.S.R. (3) (W)**
Prerequisite: Any two courses from History 10, 11, 12 or 200 or consent of department. 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.
- 350 **Special Readings (credit arranged) (F&W)**
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.
- 351 **American Intellectual History (3) (F)**
Early American intellectual development.
- 352 **American Intellectual History (3) (W)**
Modern American intellectual development.
- 353 **United States History: Colonial America to 1763 (3) (F)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. English background of colonization; rise of distinctive New England and Southern societies; English colonial policy to the Peace of Paris.
- 354 **United States History: Revolution and the New Nation, 1763-1815 (3) (W)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. The colonial policy of Britain; Revolution and the new nation; Hamiltonians and Jeffersonians.
- 355 **United States History: Jacksonian Democracy 1815-1848 (3) (W)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. The Era of Good Feelings; the Age of Jackson; Manifest Destiny; sectional and cultural conflict.
- 356 **United States History 1877 to 1929 (3) (F)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. Economic, social and political development of the United States, 1877-1929.
- 357 **United States History 1929 to Present (3) (W)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. Economic, social and political development of the United States, 1929 to present.
- 358 **Civil War and Reconstruction (3) (W)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. The sectional and ideological differences leading to the American Civil War, the Civil War itself and the period of reconstruction. U.S. History 1848-1877.
- 359 **Sectionalism and Slavery (3) (F)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. The political and social developments of the ante-bellum period relating to the growth of sectionalism and the developing anti-slavery crusade.
- 360 **American Frontier History (3) (W)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. The frontier considered as a factor in the development of American institutions. Frederick Jackson Turner and his critics. The westward course of settlement; the passing of the frontier.
- 361 **Constitutional History of the U.S. to 1865 (3) (V)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. 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.
- 362 **Constitutional History of the U.S. Since 1865 (3) (V)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. The Constitutional issues of the Reconstruction era, how they 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.
- 363 **History of Women in the United States (3) (F)**
Prerequisite: Junior standing or consent of department. 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.
- 364 **Immigration in United States History (3) (F)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. This course explores the background of immigration, general immigration trends and distribution patterns, ethnic communities in America, some comparisons of different immigrant groups, the immigrant's influence on the United States and the assimilation and acculturation of immigrants into American life.
- 365 **American Urban History (3) (F)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. The rise of the city, and the transformation of ideas and institutions in the American city from colonial times to the present.
- 366 **Black History in the United States 1890 to Present (3) (W)**
Prerequisite: Junior standing or consent of department. An intensive examination of immigration patterns, the role of the Supreme Court and protest organizations from the NAACP to the Black Panthers.
- 367 **Growth of the American Economy (3) (F)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. Economic factors in the development of American institutions, from the colonial period to the present. Emphasis is on banking, transportation, agriculture and international trade.
- 368 **Rise of Industrial America (3) (V)**
Prerequisite: Any two courses from History 3, 4, 5, 230 or 240 or consent of department. History of American business, industry and labor.

History (Continued)

- 370 Asian-American Relations (3) (F)
Prerequisite: Junior standing or permission of instructor. A study of relations between American and Asian peoples from the early years of the China traders to the present.
- 375 History of Latin America To 1808 (3) (F)
Prerequisite: Junior standing. Latin America from the Amerindian civilizations to 1808, stressing social, political, and economic institutions in the Spanish colonies.
- 376 History of Latin America Since 1808 (3) (W)
Prerequisite: Junior standing. Emphasis on the attainment of political independence, social, political and economic developments of the nineteenth century and the struggle for modernity.
- 377 U.S. and Wars of National Liberation (3) (W)
Prerequisite: Junior standing or permission of instructor. A comparative study of the American response to selected revolutionary movements in Asia, Latin America and Africa.
- 399 Quantitative Methods in Historical Research (3) (F)
Prerequisite: Junior standing or consent of department. This course deals primarily with how one can use quantitative analysis to improve the validity of generalizations and inferences one may draw from various types of historical data. We will explore a number of basic methods for analyzing social and political data, as well as the rationale for using such quantitative methods in historical research.

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.)

- 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 in modern society, and upon forces affecting the direction of the University and its potential for change, Methods include outside speakers, discussion groups and laboratory research on UMSL.
- 70 Issues in Contemporary Religious Thought (3) (W) (Humanities credit)
An examination of selected current social, moral and ethical problems as viewed by representatives of major schools of religious thought.
- 99 The City (3) (W) (See Administration of Justice 99, Economics 99, History 99, Political Science 99, Psychology 99 or Sociology 99)
- 269 The Marxist Heritage (3) (W) (See Philosophy 269, Political Science 269, Economics 269.)

ITALIAN

Prerequisites may be waived by consent of department.

- 1 Elementary Italian (5) (F)
Fundamentals of Italian grammar, pronunciation and diction for students with no previous acquaintance with the language. One hour laboratory required.
- 2 Elementary Italian (5) (W)
Prerequisite: Italian 1 or equivalent. Continuation of grammar and conversation with introductory readings centering on Italian contributions to art, literature and music. One hour laboratory required.
- 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.

LATIN

Prerequisites may be waived by consent of department.

- 1 Elementary Latin (4) (V)
Fundamentals of grammar and syntax, for students with no previous acquaintance with the language.
- 2 Elementary Latin (4) (V)
Prerequisite: Latin 1 or equivalent. A continuation of Latin 1. Completion of the survey of grammar and syntax, accompanied by the reading of a short major text or texts.
- 100 Medieval Latin and Paleography (3) (V)
Prerequisite: An elementary knowledge of classical Latin. Medieval Latin grammar, acquired through the study of medieval tracts in manuscript.

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) (Alt. F. not '71) (See French 110)
- 110 Masterpieces of German Literature in Translation (3) (V) (See German 110)
- 110 Russian Literature in Translation (3) (V) (See Russian 110)
- 110 Masterpieces of Spanish Literature in Translation (3) (V) (See Spanish 110)
- 111 Masterpieces of Spanish American Literature in Translation (3) (V) (See Spanish 111)
- 112 Twentieth Century Russian Soviet Literature in Translation (3) (V) (See Russian 112)
- 120 Classical Literature in Translation (3) (F&W) (See English 120)

- 125 Literature of the Old Testament (3) (F&W) (See English 125)
- 126 Continental Medieval Masterpieces (3) (F) (See English 126)
- 128 The Contemporary World in Literature (3) (F) (See English 128)
- 150 European Literature in Translation: Special Topics (3) (V) (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.

- 2 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.
- 3 Trigonometry (2) (F&W)
Prerequisite: One and one half units of high school algebra or Mathematics 2. 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 2; 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. Credit not granted for both Mathematics 15 and 50.
- 30 College Algebra (4) (F&W)
Prerequisite: Mathematics 2; or 3 units of high school mathematical and a satisfactory score on the mathematics placement examination. Topics in algebra and probability, polynomial

Mathematics (Continued)

- 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 2; 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: Mathematics 2 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.
- 51 **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.
- 80 **Analytic Geometry and Calculus I (5) (F&W)**
Prerequisite: Mathematics 40; or a knowledge of trigonometry and either Mathematics 30 or a satisfactory score on the mathematics placement examination. Introduction to analytic geometry, differential calculus and integral calculus. Courses 80, 175 and 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 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.
- 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 Linear Algebra (3) (F&W)**
Prerequisite: Mathematics 201. An introduction to rigorous mathematical thought by means of a study of elementary linear algebra. Topics covered will include sets, functions, vector spaces, linear transformations, matrices, and change of bases.
- 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 vector analysis, Fourier series, special functions, partial differential equations, boundary value problems.
- 304 **Applied Mathematics III (3) (W)**
Prerequisite: Mathematics 303. Complex analysis; analytic functions, Cauchy integral theorem, Taylor's theorem, Laurent expansions, calculus of residues, conformal mapping; matrices and linear algebra, manipulation of matrices, characteristic values; integral transforms, Fourier and Laplace transforms and applications.
- 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: Mathematics 310. 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. 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

Mathematics (Continued)

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.

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.

410 **Theory of Functions of a Real Variable (3) (V)**
Prerequisite: Mathematics 310. The real number system, properties of functions of one or more real variables, mapping theorems. Introduction to measure and integration theory.

448 **Topics in Algebra (3) (V)**
Prerequisite: Mathematics 340 and 341 and consent of the department. Topics selected from the theory of groups, rings, fields, algebras and other algebraic systems. May be taken more than once for credit with consent of department.

COMPUTER SCIENCE

104 **Fundamentals of Digital Computer Programming (3) (F&W) (same as**

Business Administration 104)
Prerequisite: Mathematics 30 or 40 or equivalent. Principles of programming digital computers in machine, symbolic and algebraic languages. Does not count toward a major in mathematics.

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.

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

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

332 **Artificial Intelligence (3) (V)**
Prerequisite: Mathematics 250, Mathematics 322. Definition of heuristic versus algorithmic methods. Uses of heuristic methods in such areas as game playing, theorem proving, 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.*

APPLIED MUSIC

44, 45, 115, 135, 155, 345 (2) (F&W)
Registration by permission of the instructor or 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, 16 **Piano Proficiency (1) (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.

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.

118, 119, 120 **Intermediate Piano Proficiency (1) (F&W)**
Prerequisite: Music 16 or permission of department. Continuation of piano proficiency study.

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

MUSIC EDUCATION, HISTORY, LITERATURE, THEORY

1 **Introduction to Music (3) (F,W,S)**
A historically oriented study of art music, its styles and forms from the Baroque Period to the present day. This course will not apply toward requirements for a music major.

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

3 **Theory of Music (3) (F)**
Basic vocabulary: scales, intervals, triads and seventh chords. Techniques of analyzing and writing music. Systematic instruction in ear training, sight-singing and melodic, rhythmic and harmonic aspects of music-reading.

4 **Theory of Music (3) (W)**
Prerequisite: Music 3 or consent of department. Continuation of Music 3.

5 **Introduction to Non-Western Music (3) (F&W)**
A survey of the music of the Asian and African continents, with emphasis upon

Music (Continued)

- 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.
- 90 Freshman Seminar (3) (V)
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 101 History of Western Music (3) (F)
Prerequisite: Music 3 or consent of department. A general survey of the history of Western Music. Includes the evolution and development of styles, forms and their social setting.
- 102 History of Western Music (3) (W)
Prerequisite: Music 3 or consent of department. Continuation of Music 101.
- 111 Theory of Music (3) (F)
Prerequisite: Music 4 or consent of department. Altered chords and modulation. Application of vocabulary and techniques to music of the eighteenth and nineteenth centuries. Composition in simple form.
- 112 Theory of Music (3) (W)
Prerequisite: Music 111 or consent of department. Continuation of Music 111.
- 121 Form and Analysis (2) (V)
Prerequisite: Music 112. Study of basic musical forms and 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. Scoring for various instrumental ensembles including orchestra; score analysis.
- 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.
- 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. (Formerly Music 160.)
- 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, program preparation. The class is divided when appropriate according to the choral or instrumental programs of the students. (Formerly Music 162.)
- 300 Advanced Techniques in Music Education (1-2) (V)
Prerequisite: A 200-level music education course or permission of the department. Intensive study for advanced music education students and music teachers, emphasizing specialized techniques and innovative concepts. Topics to be announced. May be repeated for credit.
- 321 Music of the Middle Ages (3) (V)
Prerequisite: Music 101 or consent of department. A study of music and musical thought from the beginning of Christianity to 1450. Gregorian chant, polyphonic music, the Ars Antiqua and the Ars Nova.
- 322 Music of the Renaissance (3) (V)
Prerequisite: Music 101 or consent of department. A study of the theoretical and practical impact of humanism on music, musicians, and musical thought from 1450 to 1600. Sacred and secular music; the rise of an instrumental idiom.
- 323 Music of the Baroque (3) (V)
Prerequisite: Music 101 or consent of department. A detailed study of musical style from 1600 to 1750. The rise of the new style, national styles in the seventeenth century and the culmination of the baroque period.
- 324 Music of the Classic Period (3) (V)
Prerequisite: Music 102 or consent of department. A study of the growth of classical style; galant and expressive styles; Mozart, Haydn and Beethoven.
- 325 Music of the Romantic Period (3) (V)
Prerequisite: Music 102 or consent of department. Composers, forms and styles in nineteenth century music. The literary and social background of musical romanticism.
- 326 Music of the Twentieth Century (3) (V)
Prerequisite: Music 102 or consent of department. A detailed study of trends in modern music and of influential composers; Impressionism, serial composition, electronic music, and other recent techniques.
- 351 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

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.

Philosophy (Continued)

- 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 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.
- 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 (30) (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.

Philosophy (Continued)

- 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. 2
- 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. 3
- 350 **Special Readings (credit arranged) (V)**
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences. 3
- 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. 10
- 370 **Significant Figures in Philosophy (3) (V)**
Prerequisite: Nine hours of philosophy or consent of instructor. A critical study of the work of an important philosopher. The philosopher to be considered will be announced prior to registration. This course may be repeated for credit on approval by the department. 111
- 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. 112

PHYSICS

Prerequisites may be waived by consent of department.

- 1 **Foundations of Modern Physical Theory I (4) (F,W,S)**
Prerequisite: Mathematics 2 or

equivalent. An introduction to some of the major ideas, principles, and basic laws directing the development of contemporary physics. The course work consists of two general lectures each week in which the material is introduced, one discussion session, and one two-hour multi-media laboratory.

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 per week.

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 2 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.

200 **Survey of Theoretical Physics (3) (W)**
Prerequisite: Physics 111 and Mathematics 201. Mathematical techniques specifically used in the study of mechanics, electricity and magnetism, and atomic physics, are developed in the context of various physical problems. The major areas covered are vector analysis, solutions of Laplace's equation, coordinate systems and numerical techniques.

201 **Elementary Electronics I (3) (F,W,S)**
Prerequisite: Physics 112. Primarily a laboratory study of characteristics of standard circuit elements, amplifier circuits, power supplies, operational amplifiers, digital and switching circuits, servo systems, shielding and noise problems, transducers and oscilloscopes. Six hours of laboratory per week.

202 **Elementary Electronics II (3) (F,W,S)**
Prerequisite: Physics 201. Continuation of Physics 201. Six hours laboratory per week.

215 **Electronic Instrumentation I (1-3) (F)**
Prerequisite: Physics 202 and consent of department. Special topics in electronic instrumentation selected through consultation between student and instructor. Hours arranged.

216 **Electronic Instrumentation II (1-3) (W)**
Prerequisite: Physics 202 and consent of department. Special topics in electronic instrumentation selected through consultation between student and instructor. Hours arranged.

221 **Mechanics (3) (F)**
Prerequisite: 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, solution to Laplace's equation, currents and magnetic fields, motion to charged particles, introduction to electromagnetic waves. Three hours lecture and one hour discussion per week.

225 **Physical Optics (3) (W)**
Prerequisite: Physics 223. A basic study of light; interference, diffraction, crystal optics, reflection, scattering and light quanta. Three hours lecture and one hour discussion per week.

241 **Thermal and Statistical Physics (3) (W)**
Prerequisite: Physics 221. Introduction to statistical mechanics, laws of thermodynamics, kinetic theory. Three hours lecture and one hour discussion per week.

280 **Methods of Teaching Physics in Secondary Schools (3) (W) (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

Physics (Continued)

- 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 I 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 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.
- 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 lecture and one hour discussion per week.
- 353 Selected Topics in Applied Physics I (3) (F)
Prerequisite: Physics 113, 221, 223, 225, 241, and Mathematics 304. (Mathematics 304 may be taken concurrently.) Topics will be selected from areas of current interest including plasma physics, solid state, atmospheric physics, fluid dynamics, quantum optics, nuclear power. Three hours lecture and one hour discussion per week.
- 354 Selected Topics in Applied Physics II (3) (W)
Prerequisite: Physics 353. Continuation of Physics 353. Three hours lecture and one hour discussion per week.

POLITICAL SCIENCE

Prerequisites may be waived by consent of department.

UNGROUPED COURSES

- 11 Government in Modern Society (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 (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) (W) (Same as Administration of Justice 99, Economics 99, History 99, Psychology 99 and Sociology 99)
Prerequisite: 12 hours of college credit. An interdisciplinary course. Consideration of economic factors, urban institutions, historical developments in urbanization, problems of the inner city, suburbia and the metropolitan area, ethnic groups, stratification and psychological implications of urban living.
- 190 Political Science Readings (credit arranged) (V)
Prerequisite: Political Science 11 or 12, consent of instructor and junior standing. Readings on topics mutually acceptable to student and instructor. May be repeated.
- 192 Senior Readings (3) (V)
Prerequisite: Consent of department. Directed readings of selected contemporary literature in the discipline.
- 193 Senior Seminar (3) (V)
Prerequisite: Consent of department. Directed readings and research, one

Political Science (Continued)

product of which shall be a formal paper.

- 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.

- 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

- 255 **Asian Comparative Politics (3) (F&W)**
Study of the political systems of Asia including China, Japan, India and Southeast Asia. Emphasis on the non-Western political process. Course fulfills the non-Western 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-Western 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.

- 354 **Political Systems of Mexico, Central America and the Caribbean (3) (V)**
Prerequisite: Political Science 11 or 12. The political systems, international problems and socioeconomic-cultural environments of the governmental process in Mexico, Central America, and the Caribbean.

- 355 **Political Systems of South America (3) (V)**
Prerequisite: Political Science 11 or 12. The political systems, international problems, and socioeconomic-cultural environments of the governmental process in South America.

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

GROUP V: THEORY AND METHODOLOGY

- 100 **Research Methods in Political Science (3) (V)**
Prerequisite: Political Science 11 or 12. Methods of testing causal statements about politics, including research design and data measurement, collection and analysis.

- 261 **History of Political Thought (3) (V)**
Study of political philosophy from Plato to Machiavelli.

- 262 **History of Political Thought (3) (F&W)**
Study of political philosophy from Machiavelli to the present.

- 269 **The Marxist Heritage (3) (W) (Same as Philosophy 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.

- 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.

Political Science (Continued)

- 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.
- 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.
- 376 **Community Politics (3) (V)**
Prerequisite: Political Science 11. 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.
- 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 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.

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) (W)**
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.
- 380 **International Politics: Theory and Process (3) (V)**
Prerequisite: Political Science 12. Examination of the principal theories of international politics, focusing especially upon the processes of international political behavior, including coalition-formation, negotiation and bargaining and integration and community-building.
- 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.

- 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 social 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) (W) (Same as History 99, Political Science 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.
- 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.
- 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.
- 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.
- 192 **Senior Readings (3) (F)**
Prerequisite: Consent of department. Required for all senior psychology majors. Directed readings and research, one product of which shall be a formal paper.

Psychology (Continued)

- 193 **Senior Seminar (3) (W)**
Prerequisite: Consent of department. Required for all senior psychology majors. Directed readings and research, one product of which shall be a formal paper.
- 210 **Motivation Theory (3) (V)**
Prerequisite: 12 hours of psychology. Survey of current theoretical material in the area of motivation.
- 214 **Physiological Psychology (3) (V) (with laboratory)**
Prerequisite: Psychology 219 and Biology 1 and 3 or consent of instructor. The biological and physiological correlates of behavior. Special emphasis placed on the neural and endocrine systems.
- 216 **Personality Theory (3) (V)**
Prerequisite: 12 hours of psychology. Structural and dynamic aspects of the human personality considered in the context of selected theoretical systems.
- 218 **Industrial Psychology (3) (V) (Same as Business Administration 318)**
Prerequisite: Psychology 101 or equivalent, or Business Administration 310. Activities of the applied psychologist. Selection and placement, testing and interviewing, personnel research. Morale, motivation, and job satisfaction. Leadership skills and styles; creative management; industrial mental health. Psychology in advertising and marketing.
- 219 **General Experimental Psychology (3) (F&W) (with laboratory)**
Prerequisite: Psychology 101. Research methods and analysis techniques used in psychological inquiry. Special emphasis placed on the logic of research design. Includes laboratory study of and analysis of selected methods.
- 245 **Psychopathology (3) (V)**
Prerequisite: Psychology 219. Analysis of contemporary theories of behavior disorders, treatment and their empirical bases. Credit not granted for both Psychology 145 and Psychology 245.
- 254 **Experimental Social Psychology (3) (V)**
Prerequisite: Psychology 219. Social psychological processes both inside and
- outside of the laboratory including an emphasis on experimental and quasiexperimental methods in research. Two hours of lecture and two hours of laboratory.
- 255 **Psychology of Perception (3) (V) (with laboratory)**
Prerequisite: Psychology 219. Classical and current problems in psychophysics, sensory physiology and the developmental and comparative psychology of sensory processes. Includes laboratory study of selected sensory and perceptual phenomena.
- 256 **Cognitive Processes (3) (V)**
Prerequisite: 12 hours of psychology. Evolution of contemporary approaches to the higher mental functions. Analyses of some of the psychological processes involved in association, memory, meaning, language and conceptual behavior.
- 257 **Psychology of Learning (3) (V) (with laboratory)**
Prerequisite: Psychology 219. Major theoretical positions and experimental conditions of learning. Includes laboratory study of selected problems.
- 258 **Comparative Psychology (3) (V) (with laboratory)**
Prerequisite: Psychology 219 and Biology 1 and 3 or consent of instructor. Methods and techniques in the study of human and infra-human organisms. Laboratory study of selected behavioral processes.
- 260 **Attitude Structure and Change (3) (V)**
Prerequisite: Psychology 201 or equivalent, plus 6 hours in either psychology or sociology. Theories of attitude structure and attitude change; measurement; current research.
- 261 **History and Systems of Psychology (3) (F)**
Prerequisite: 12 hours of psychology. Historical antecedents of contemporary scientific psychology, including a survey of systems and schools of psychology.
- 265 **Psychological Tests and Measurements (3) (V) (with laboratory)**
Prerequisite: Psychology 101; Psychology 219 or consent of instructor. Survey of psychological testing and principles of test construction and

evaluation. Laboratory experience in construction, administration and interpretation of selected tests.

- 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.

RUSSIAN

Prerequisites may be waived by consent of department.

- 1 **Elementary Russian (5) (F&W)**
Emphasis will be placed upon the speaking and understanding of Russian and upon the acquisition of the fundamentals of grammar and syntax. Five hours of class and one hour language laboratory.
- 2 **Elementary Russian (5) (F&W)**
Prerequisite: Russian 1 or equivalent. Emphasis will be placed upon the speaking and understanding of Russian and upon the acquisition of the fundamentals of grammar and syntax. Five hours of class and one hour language laboratory required.
- 100 **Scientific Russian (3) (V)**
Prerequisite: Russian 2 or equivalent. Introduction to reading of selected Russian texts in the natural and social sciences. Designed primarily for majors in these areas.
- 101 **Intermediate Russian (3) (F&W)**
Prerequisite: Russian 2 or equivalent. Further presentation of the structure of Russian; development of oral and aural skills; elementary composition; readings of simplified texts.
- 102 **Intermediate Russian (3) (V)**
Prerequisite: Russian 101 or equivalent. Further development of language skills through the reading and discussion of literary texts. May be taken concurrently with 108 after consultation with instructor.
- 108 **Oral and Written Composition (3) (V)**
Prerequisite: Russian 102 or equivalent. Emphasis will be placed upon the development of oral and written skills. May be taken concurrently with 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 requirements.
- 200 **Syntax of the Russian Language (3) (V)**
Prerequisite: Russian 108 or equivalent. Synchronic analysis of the phonemic, morphological, syntactic and semantic system of present-day Russian; 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

Sociology (Continued)

- for presentation of classic and contemporary models of social structure and processes.
- 20 **Sociological Inquiry (3) (F&W)**
Prerequisite: None. Introduction to the process of sociological inquiry in the broadest sense, e.g., identifying and formulating sociological problems, the process of sociological explanation, and the utility of various conceptual models used in sociology. Examines the interplay between theory construction and empirical observation, matters of social policy and social action. (Only for departmental majors or other majors requiring this particular course.)
- 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 and 20. 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 or 20. 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 or 20. 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 or 20 and Mathematics 30 or 40 or a passing score on the mathematics placement examination. 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 (3) (F&W)**
Prerequisite: Sociology 10 or 20. Research planning; the collection, analysis and presentation of data. Course includes practical experience in the conduct of a research project.
- 142 **Sociological Aspects of Social Work (3) (V)**
Prerequisite: Sociology 10 or 20. An introduction to social work for students of sociology. Social-cultural factors affecting the methods and delivery of social services; the emergence of social work as a profession.
- 146 **Social Issues and Community Organization (3) (V)**
Prerequisite: Sociology 10 or 20. 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.
- 160 **Social Psychology (3) (Same as Psychology 160) (F&W)**
Prerequisite: Sociology 10 or 20 or Psychology 2. Study of the interaction between the individual and his social environment. Examination of basic principles, concepts, methods.
- 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. (Previously 368.)
- 214 **Juvenile Delinquency (3) (F&W)**
Prerequisite: 3 hours of 100 level Sociology or Anthropology or consent of instructor. A theoretical and research-oriented approach to delinquency and youth crime. The causes, extent, and trends in such crime.
- 224 **Sociology of the Family (3) (F&W)**
Prerequisite: Sociology 10 or 20. 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 20, 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 or 20. 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 **Formal Organizations (3) (V)**
Prerequisite: Sociology 10 or 20. The structural characteristics of complex organizations and the informal substructures that evolve within. Rational and natural-system models. Pressures toward equilibrium and change.
- 256 **Sociology of Education (3) (F&W)**
Prerequisite: Sociology 10 or 20. 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.
- 270 **Sociology of Socialization (3) (V)**
Prerequisite: 3 hours sociology. 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 or 20. A study of law and society with emphasis on the sociological analysis of specific problems of legal doctrines and legal institutions. The law is examined as an instrument of social control through study of the courts, the legal profession, the police and various social institutions. Consideration is given to law as an instrument of social change.
- 286 **The Sociology of Art and Literature (3) (W)**
Prerequisite: Sociology 10 or 20. The creative individual, his work, and his public. Social pressures and rewards.
- 298 **Practicum in Field and Laboratory Research (1-3) (V)**
Prerequisite: Sociology 10 or 20 and consent of the instructor. Intensive field or laboratory research to be taken subsequent to or concurrent with a specific substantive course. May be taken twice for credit.
- 302 **Urban Sociology (3) (F&W)**
Prerequisite: Sociology 10 or 20; junior standing or consent of instructor. Urbanization as a world phenomenon; ecological, demographic, and social structural approaches to the urban community.
- 304 **Industrial Sociology (3) (W)**
Prerequisite: Sociology 10 or 20; junior standing or consent of instructor. The work setting as a social system. Types of occupations and their sociological relevance.
- 312 **Social Stratification (3) (F)**
Prerequisite: Sociology 10 or 20; 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.

Sociology (Continued)

- 314 **Social Change (3) (F)**
Prerequisite: Sociology 10 or 20; 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: 3 hours sociology or anthropology or consent of instructor. Crime as a social phenomenon. Theory and research concerning the causes of crime.
- 328 **Institutions and the Control of Crime and 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 or related personnel.
- 332 **Advanced Methodology (3) (W)**
Prerequisite: Sociology 130 or consent of instructor. A study of methodological problems on an advanced level, focusing on contemporary issues in the processes of inquiry with particular emphasis on the applicability of different modes of research to various types of theoretical problems. Consideration of ethical problems in social research.
- 342 **Demography (3) (V)**
Prerequisite: Sociology 10 or 20; 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 or 20; 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 or 20; junior standing or consent of instructor. Analysis of the main concepts and principles of sociology, and survey of sociology as a social science.
- 354 **Occupational Sociology (3) (V)**
Prerequisite: Sociology 10 or 20; junior standing or consent of instructor. The social nature of work. Role behaviors by occupational types. Occupations and the social structure. The socialization of the worker. Professionalization as a social process. The patterns and determinants of occupational achievement in American and other societies. Deviant occupations and their social significance.
- 360 **Sociology of Minority Groups (3) (W)**
Prerequisite: Sociology 10 or 20; junior standing or consent of the instructor. The study of dominant-subordinate group relations. Religion, ethnicity and race as factors affecting conflict, competition, accommodation and assimilation.
- 364 **The Sociology of Religion (3) (V)**
Prerequisite: Sociology 10 or 20; junior standing or consent of instructor. Religion as a universal phenomenon. The effect of religion upon the individual and society. The organization of religious enterprises.
- 366 **Drugs and Socialization (3) (V)**
Prerequisite: Sociology 210 or 6 hours of Sociology and consent of the instructor. Mood drugs, their use and abuse in contemporary society; their effect on society and the socialization
- process as a system of values and as a means of social control and social change
- 377 **Personality and Culture (3) (V)**
Prerequisite: Sociology 10 or 20; junior standing or consent of instructor. Analysis of behavior from the standpoint of interaction between psychological systems, sociological systems and cultural systems.
- 378 **Advanced Social Psychology (3) (W)**
Prerequisite: Sociology 160 or Psychology 160, junior standing or consent of instructor. Intensive concentration on selected topics and issues; model building, interaction analysis, group process and structure.
- 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.
- 390 **Senior Seminar (3) (W)**
Prerequisite: Sociology 110, 120 and 130; senior standing. Completion of a major report dealing with a subject chosen through student-staff consultation. Periodic conferences with designated faculty.
- 392 **Advanced Sociological Theory (3) (F)**
Prerequisite: Sociology 110 or consent of instructor. Recent and current developments in sociological theory in the light of its traditions and issues. The state of modern theory with regard to specific conceptual and substantive concerns.
- 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, García Lorca, Buero Vallejo and others. May be taken to fulfill humanities requirements. 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.

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.

Spanish (Continued)

- 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 and required 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 to second language learning.
- 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.
- 310 **Spanish Literature from 1898 to 1939 (3) (Alt F not 72)**
Prerequisite: Spanish 201. 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 201. 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 201. 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 201. 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 201. A study of *Don Quixote* in relation with the author's life and with the cultural background of the Spanish Golden Age. Independent reading of other works of Cervantes.
- 335 **Masterpieces of Spanish Medieval & Renaissance Literature (3) (Alt F incl 71)**
Prerequisite: Spanish 201. 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 202. 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 202. 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.
- 399 **Seminar on Hispanic Literature (3) (W)**
Required of major students in the senior year. Subject to be announced every year by the instructor in charge of the seminar. Senior standing required.

SPEECH

Prerequisites may be waived by consent of instructor.

For further information, consult the English Department.

- 10 **Basic Communication (3) (F&W)**
Prerequisite: Consent of instructor. Development of basic communication skills. Includes small group interaction, non-verbal communication, role playing, audience awareness and theater 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) (W)**
- 140 **Introduction to Argumentation and Debate (3) (F)**
Fundamentals of argumentation and debate. Application of logic and audience analysis. Preparing briefs. Some debating.
- 203 **Introduction to Communication Theory and Research (3) (F&W)**
A survey of communication theories and research techniques. Use of several research techniques and application of one or more in a communication research project.
- 205 **Communication in American Politics (3) (Alt.F)**
Analysis of audience response and media preferences in political campaigns, campaign communications strategy, campaign speeches, candidate's uses of television and other mass media and measuring effectiveness of campaign communications.
- 211 **The Broadcast Audience (3) (W)**
A survey of techniques of audience analysis, including practical application to program development, with emphasis on the role of the audience in the communication process.
- 212 **Writing for Radio and Television (3) (W)**
Prerequisite: Speech 210 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) (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.

School of Business Administration

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. Statistical measures and estimators are examined in relation to the estimation and testing problems of statistical inference.
- 104 **Fundamentals of Digital Computer Programming (3) (Same as Mathematics 104)**
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.
- 140 **Fundamentals of Financial Accounting (3)**
Prerequisite: Sophomore standing. Fundamental accounting principles and procedures; their application and interpretation emphasizing corporate financial reports. Topics include: the accounting cycle and the preparation of financial statements, including proprietary, partnership and corporate
- 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) (Formerly Business Administration) 202—Industrial Management)**
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, 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.
- 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 are 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 and 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.

Business Administration (Continued)

- 310 Management as a Behavioral Science I (3) (Formerly Business Administration 310—Personnel Management)
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.
- 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 Consolidations and Specialized Accounting Problems (3)
Prerequisite: Advanced Accounting 341, minimum grade of "C" (or consent of department). Accounting theory and practice relating to: consolidated financial statements, business combinations, foreign subsidiaries, corporate liquidation and reorganization and non-profit organizations.
- 345 Cost Accounting (3)
Prerequisite: Fundamentals of Managerial Accounting 145, minimum grade of "C" (or consent of department). Basic principles of cost determination and control of manufacturing and distribution activities; emphasizes the accumulation and tracing of cost to products, processes and responsibility centers for purposes of financial accounting and management control. Topics include: job-order and process costing and the development and use of standard costs within a system of absorption costing.
- 347 Income Taxes (3)
Prerequisites: Fundamentals of Financial Accounting 140 and Fundamentals of Managerial Accounting 145, minimum grade of "C" in each (or consent of department). Fundamentals of Federal income tax accounting with emphasis on individuals and corporations. Topics covered include: determination of income, exclusions, exemptions, personal and business deductions and tax credits.
- 348 Auditing (3)
Prerequisite: Advanced Accounting 341, minimum grade of "C" (or consent of department). Examination of fundamental audit objectives and techniques employed in the verification, analysis and interpretation of accounting records and financial statements. The work of the independent public accountant is emphasized to include the standards of professional performance.
- 349 Managerial Aspects of Taxation (3)
Prerequisite: Income Taxes 347. A study of taxation and tax issues, including the planning, in the managerial decision making process. Research directed to the solution of business tax problems.
- 350 Financial Policies (3)
Prerequisite: Financial Management 204. The intensification and application of the concepts developed in Finance 204. Special emphasis is given to the development of top management policies and their application toward complex problems of finance. Techniques for identifying and dealing with these problems before they become acute will be investigated. Cases will be integrated with appropriate outside reading.
- 368 Business Fluctuations and Forecasting (3) (Same as Economics 368)
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.
- 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.
- 395 Business Administration Seminar (Variable credit)
Prerequisite: To be determined each time the course is offered. May be repeated for credit.

School of Education

ELEMENTARY EDUCATION

Prerequisites may be waived by consent of department.

EARLY CHILDHOOD EDUCATION

- 315 **Principles of Early Childhood Education (3) (F,W,S)**
Prerequisite: Education 101 and Education 302. A study of values and basic principles underlying good schools for young children. Intensive examination of planning daily programs, organizing the learning environment, developing the curriculum and units of work. An investigation of good learning situations for pre-school and primary children.
- 316 **Creative Experiences for Young Children (3) (F,W,S)**
Prerequisite: Education 315 and completion of humanities requirements in general education. A study of and experiences with materials, techniques and resources for promoting effective cognitive and motor development through the use of art media, songs and rhythms, play and creative dramatics.
- 317 **Exploring the Physical World with Young Children (3) (V)**
Prerequisite: Education 315 and completion of social 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.

GENERAL ELEMENTARY EDUCATION

- 2 **Effective Reading and Study Skills (2) (F&W)**
Designed to increase reading rate and comprehension and to develop study

techniques appropriate to the purpose and difficulty of materials. Use is made of mechanical pacer, comprehension tests, vocabulary materials and lecture demonstrations. No credit toward a degree.

- 110 **Elements of Health Education (3) (F,W,S)**
Prerequisite: Education 101 and admission to the School of Education. Basic school health for teachers. Considers health as it relates to the school and the child.
- 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 teaching-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.
- 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.
- 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, 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) (V)**
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 325, 365 or equivalent. A study of causes of reading difficulties and procedures that may be used to analyze and correct them in the group setting.

SPECIAL EDUCATION

- 240 **Education of the Mentally Retarded (3) (F,W,S)**
Prerequisite: Psychology 270, Education 101 and admission to the School of Education. Methods and techniques for use in the education of children with mental retardation. Required of all who are preparing for certification in special education for mentally retarded.

Elementary Education (Continued)

- 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.
- 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.

ADMINISTRATION, PHILOSOPHY AND SECONDARY EDUCATION

Prerequisites may be waived by consent of department.

SECONDARY EDUCATION

- 163 **Techniques of Secondary School Teaching (3) (F,W,S)**
Prerequisite: Education 101 and admission to the School of Education. Activities and interaction of teachers and pupils in development of conditions for learning in secondary schools. Analysis of teaching-learning process and examination of studies of teaching.
- 262 **The Curriculum and Methods of Teaching English (3) (F&W) (Same as English 262)**
Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the English course in the school curriculum with emphasis on the selection and organization of materials and methods

of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of English. To be taken concurrently with student teaching.

- 263 **The Curriculum and Methods of Teaching Art (3) (V)**
Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of art courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of art. To be taken concurrently with student teaching.
- 264 **The Curriculum and Methods of Teaching Foreign Language (3) (F&W) (Same as French 264, German 264, Spanish 264)**
Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the foreign language courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of foreign language. To be taken concurrently with student teaching.
- 265 **The Curriculum and Methods of Teaching History and Social Studies (3) (F&W) (Same as History 265)**
Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the history and social studies courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of history and social studies (not counted as credit for a major in history). To be taken concurrently with student teaching.
- 266 **The Curriculum and Methods of Teaching Mathematics (3) (W)**
Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of
- the mathematics courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the 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 groups, non-performance classes, related arts courses, 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.
- 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 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

Elementary Education (Continued)

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.

BEHAVIORAL STUDIES AND RESEARCH

Prerequisites may be waived by consent of department.

- 302 **The Psychology of Teaching and Learning (3) (F,W,S)**
Prerequisite: Education 101, Psychology 270 or 271, and admission to the School of Education. Application of the principles of psychology to an understanding of the dynamics of teaching behavior and learning behavior. Involves both theoretical and practical approaches to analysis of the learning environment of the school. Required of all who are preparing to teaching.
- 310 **Interpretation of Educational Tests and Measurements (3) (F,W,S)**
A study of the principles of psychometrics with emphasis upon the classroom interpretation of group tests of intelligence and achievement. Required of all majors in Special Education.
- 313 **The Psychology of Exceptional Children (3) (F,W,S)**
Prerequisite: Psychology 270. A study of the unique psychological problems of children who deviate from the normal. Required of all majors in Special Education.
- 330 **Educational Statistics (3) (V)**
Statistical methods for teachers, supervisors, superintendents and beginning graduate students. Frequency distributions, measures of central tendency, variability, sampling and correlation.
- 331 **Classroom Measurement and Evaluation I (3) (F,W)**
Tests and measurements for the classroom. Basic measurement principles; test planning; construction and use of selection type tests, supply type tests, and performance tests; item analysis procedures, methods of summarizing test scores, determining derived scores and norms; and pupil evaluation.
- 360 **Principles and Procedures for Student Personnel Work (3) (V)**
Student personnel work in educational institutions, objectives of student personnel work, certain pertinent techniques.
- 362 **Occupational and Education Information (3) (V)**
Nature, use of occupational and educational information. Characteristics, requirements of occupations and training opportunities.

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.
- 101 **The School in Contemporary Society (3) (F,W,S)**
Prerequisite: Sophomore standing. The introductory course in teacher preparation. An examination of the structure and function of the school in today's society, exploration of the social and anthropological factors related to current educational problems. Cognitive and affective objectives of education are the content for examining educational practices and for exploring each student's personal attributes as they relate to the teaching act. Required of students admitted to the School of Education. Prerequisite to other professional courses.
- 201 **Black Americans in Education (3) (V)**
An examination and analysis of conditions affecting the education of Black Americans and their schools, with emphasis on relationships between schools and the Black Community, and needed changes in education.
- 320 **Comparative Education (3) (V)**
A comparative study of representative systems of education in South America, Europe and Asia in contrast with the American System.
- 322 **History of American Education (3) (F,W,S)**
Prerequisite: A course in American history or consent of instructor. A comprehensive study of development of American education. Stresses American and other educational ideas, educational theory, American school system and social and intellectual forces affecting American education.

Military Science

For enrollment information, see page 39. Additional information on Army ROTC is available from the Professor of Military Science, Washington University, 863-0100, extension 4662. Information on Air Force Aerospace Studies is available from the Director, Aerospace Studies Program, St. Louis University, 652-1022.

AIR FORCE AEROSPACE STUDIES

- AS 101 - 102 **United States Military Forces in the Contemporary World**
A study of the doctrine, mission, and organization of the United States Air Force, U.S. strategic offensive and defensive forces: their mission, function and employment of weapon systems; civil defense; aerospace defense; operation of tactical air forces, with special attention to limited war; review of Army, Navy, and Marine general purpose forces. One class hour per week. A leadership and management laboratory is required one hour per week.
- AS 201 - 202 **United States Military Forces in the Contemporary World**
Defense policies; theories of general war; nature and context of limited war; policies and strategies of the Soviet Union and China; the role of alliances in U.S. national objectives; organization, function, and decision-making within the Department of Defense; role of the military in the United States' national policies. One class hour per week. A leadership and management laboratory required one hour per week.
- AS 301 - 302 **Growth and Development of Aerospace Power (3)**
Prerequisite: Completion of field training. A full year course devoted to

Air Force Aerospace Studies (Continued)

a critical analysis of the development of air power and aerospace power in the United States. This includes contemporary aerospace power, astronautics and space operations. Within this study, attention is devoted to developing the communicative skills needed by junior officers. Three class hours per week. A leadership and management laboratory provides advanced leadership experiences in officer-type activities, requiring an additional class hour per week.

AS 401 - 402 The Professional Officer (6)
A study of Air Force leadership, including its theoretical, professional, and techniques with special emphasis on problem solving and application of individual communicative skills. Three class hours per week. Leadership and management laboratory consists of advanced leadership experiences in officer-type activities, requiring an additional class hour per week.

As 101L - 102L, As 201L - 202L
As 301L - 302L, As 401L - 402L - Leadership and Management Laboratory
Involves a study of Air Force customs and courtesies; drill and ceremonies; career opportunities in the Air Force; and the life and work of an Air Force junior officer. Students develop their leadership potential in a practical, supervised training laboratory, which typically includes field trips to Air Force installations throughout the United States.

MILITARY SCIENCE

For enrollment information see page 39. Prerequisites may be waived by consent of professor of military science. Course credit is for two semesters or one full year enrollment in the course.

MS 101 - 102 Introduction to Military Science (2)
Acquaints the student with the ROTC program and the career opportunities afforded ROTC graduates; provides a knowledge of the customs and traditions of the military service; familiarizes the

student with the service weapon; develops a basic understanding of the organization and management of the U.S. Army and the Army's place in the world affairs. One and one-half class hours per week.

MS 201 - 202 Applied Military Leadership and Management (2)
Prerequisite: MS 101 - 102 or equivalent. Surveys American Military History from colonial times to the present, emphasizing the central importance of leadership in the growth and development of the Army; fundamentals of leadership; operations of the basic military team including missions, organization, communication and control; introduces military topography including the use of terrain maps and serial photos. One and one-half class hours per week.

MS 301 - 302 Advanced Leadership and Management (6)
Prerequisite: Completion of the basic course or equivalent and selection by the professor of military science. Case studies in leadership, management and decision making; development of ability to communicate with emphasis on military situations, advanced offensive and defensive tactical operations (to include military geography, weapons systems and communication systems) and the role of the various branches of the Army, discussion of the military environment; preparing, presenting and evaluating military instruction. Three class hours per week.

MS 401 - 402 Theory and Dynamics of the Military Team and Seminar in Leadership and Management (6)
Prerequisite: MS 301 - 302. Studies of military operations and the military teams to include military geography and the coordination and planning between elements of the team; analysis of selected leadership and management problems involved in unit administration, military justice, and the Army readiness program; the position of the U.S. in the contemporary world scene discussed in the light of its impact on leadership and management problems of the military service; obligations and responsibilities of an officer on active duty. Three class hours per week.

MS Military Science Leadership Laboratory

Progressive development of leadership abilities through participation in leadership activities including command and staff action, familiarization with the service weapon, drill and ceremonies, field training exercises, and civilian and

military guest speakers. Purpose of leadership laboratory is to develop leadership through demonstrated teamwork, esprit de corps, and unity of effort toward a common goal, emphasizing duties and responsibilities of junior leaders. Required of all students.

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UNIVERSITY OF MISSOURI-ST. LOUIS
CALENDAR 1972 - 1973

1972 First Semester

August 21	Monday, Regular Registration, Day Students
22	Tuesday, Regular Registration, Day Students
23	Wednesday, Evening College and Graduate Registration, 4:00-9:00 p.m.
24	Thursday, Evening College and Graduate Registration, 4:00-9:00 p.m.
30	Wednesday, Classwork begins 7:40 a.m.
September 4	Monday, Labor Day Recess
November 22	Wednesday, Thanksgiving Recess begins, 5:30 p.m.
27	Monday, Classwork resumes 7:40 a.m.
December 12	Tuesday, Intensive study day
13	Wednesday, Intensive study day
13	Wednesday, Classwork ends 10:30 p.m.
14	Thursday, Final Examinations begin
22	Friday, First semester closes, 5:00 p.m.

1973 Second Semester

January 9	Tuesday, Registration, Day Students
10	Wednesday, Evening College and Graduate Registration, 4:00-9:00 p.m.
11	Thursday, Evening College and Graduate Registration, 4:00-9:00 p.m.
17	Wednesday, Classwork begins 7:40 a.m.
March 23	Friday, Spring Recess begins 5:30 p.m.
April 2	Monday, Classwork resumes 7:40 a.m.
May 3	Thursday, Intensive study day
4	Friday, Intensive study day
4	Friday, Classwork ends 5:30 p.m.
7	Monday, Final Examinations begin
15	Tuesday, Second Semester closes 5:00 p.m.
17	Thursday, Annual Commencement

Summer Session

June 6	Wednesday, Evening College and Graduate Registration, 4:00-9:00 p.m.
7	Thursday, Evening College and Graduate Registration, 4:00-9:00 p.m.
11	Regular Registration
12	Tuesday, Classwork begins 7:40 a.m.
July 4	Wednesday, Independence Day Recess
August 2	Thursday, Final Examinations
3	Friday, Final Examinations
3	Friday, Summer Session closes end of day