

BULLETIN

1970/71 General Catalog
University of Missouri—St. Louis
St. Louis, Missouri

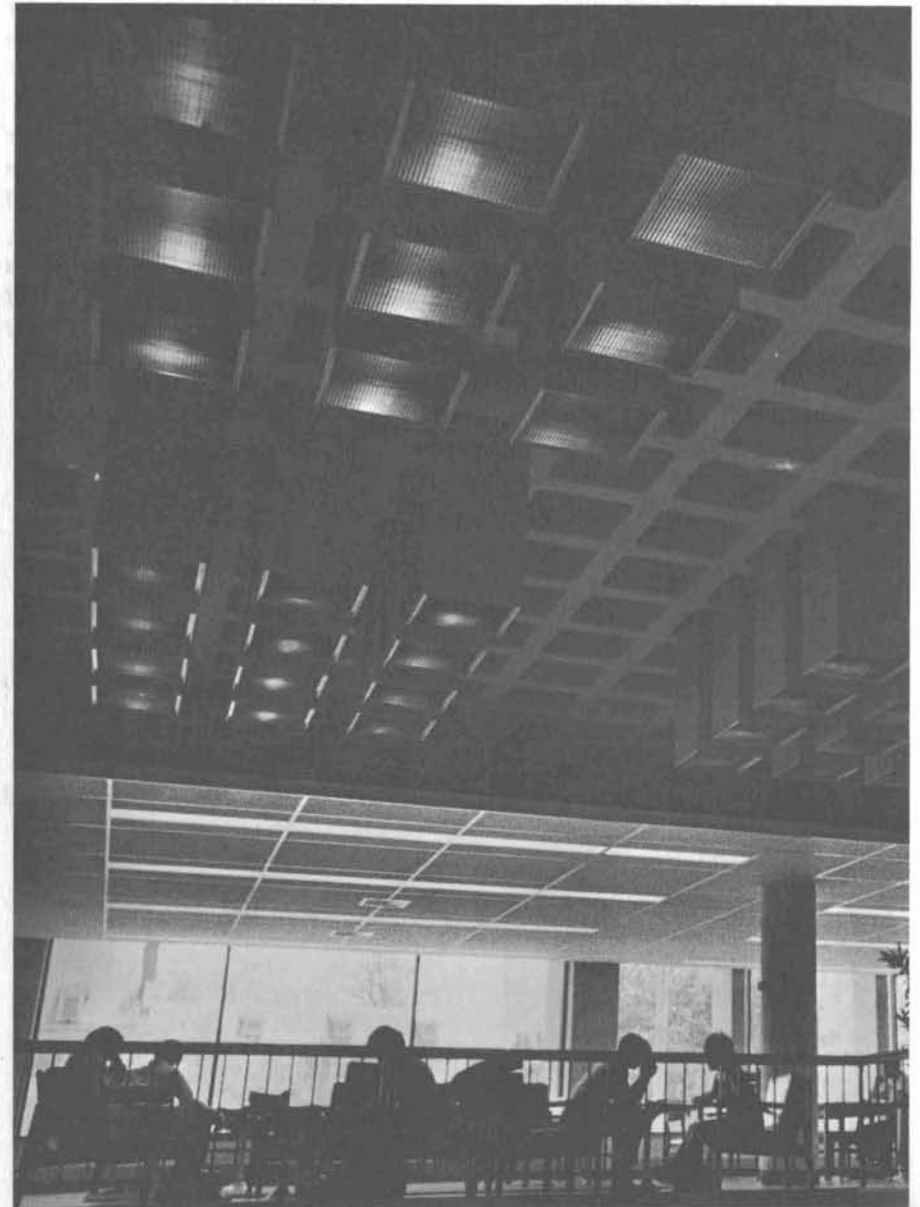


THE UNIVERSITY OF MISSOURI — ST. LOUIS 1970-1971 GENERAL CATALOG
INCLUDING DESCRIPTION OF COURSES*

Revised to January 1, 1970



*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.



"I want to build up a people's institution, a great free university, eventually open and accessible to the poorest boy in the land, who may come and receive an education practical and suitable for any business or profession in life. I want to cheapen this whole matter of education, so that, under the broad and expansive influences of our republican institutions, and our advancing civilization, it may run free, as our great rivers, and bless the coming millions.

"Hitherto, our colleges and universities have been accessible only to the few, such are the expenses attending them. We therefore want a university with all the colleges attached, giving education of the highest order to all classes. We want ample grounds and buildings and libraries, and apparatus, and museums and endowments, and prize funds, and professors of great heads and hearts, men of faith and energy. Indeed, we want everything which will make this institution eventually equal to any on this continent. Why should we not have them? I think we can."

*John B. Bowman
President
University of Kentucky
(1865)*

President John C. Weaver



Chancellor Glen R. Driscoll



Table of Contents

The Administration	4	88	Evening College
University of Missouri	9	89	Description of Courses
Admission	11	90	Administration of Justice
Campus Map	20	91	Anthropology
Degrees	22	93	Art History, Theory
Fees and Expenses	24	94	Biology
Student Financial Aid	28	99	Business Administration
Student Affairs	30	104	Chemistry
Special Programs	32	108	Economics
General Regulations		112	Education
and Requirements	40	118	English
College of Arts and Sciences	43	122	French
Administration of Justice	44	125	Geography
Department of Biology	45	125	German
Department of Chemistry	47	127	Greek
Department of Economics	49	127	History
Department of English	50	132	Latin
Department of Fine Arts	52	133	Mathematics
Department of History	55	137	Military Science
Department of Mathematics	56	139	Music
Department of Modern Foreign		140	Music History
Languages and Literatures	58		and Literature
Department of Philosophy	60	143	Philosophy
Department of Physics	62	146	Physics
Department of Political Science	65	150	Astronomy
Department of Psychology	67	151	Political Science
Department of Sociology		157	Psychology
and Anthropology	68	160	Russian
School of Business Administration	71	161	Sociology
School of Education	78	165	Spanish
Graduate School	88	168	Speech
Calendar of Events	- Inside Back Cover		

The Board of Curators**Terms Expire January 1, 1971**

William H. Billings Kennett, Missouri
 Doyle Patterson Kansas City, Missouri
 Pleasant R. Smith Mexico, Missouri

Terms Expire January 1, 1973

Robert G. Brady St. Louis, Missouri
 Oliver B. Ferguson Fredericktown, Missouri
 G. Fred Kling, Jr. Albany, Missouri

Terms Expire January 1, 1975

William C. Myers, Jr. Webb City, Missouri
 Mrs. William C. Tucker Warrensburg, Missouri
 John Sam Williamson Columbia, Missouri

Officers of the Board

William H. Billings *President*, Kennett, Missouri
 Pleasant R. Smith *Vice President*, Mexico, Missouri
 Mary Robnett *Secretary*, Columbia, Missouri

The Executive Committee

Oliver B. Ferguson Chairman, Fredericktown, Missouri
 Robert G. Brady St. Louis, Missouri
 William C. Myers, Jr. Webb City, Missouri

General Counsel

Jackson A. Wright Columbia, Missouri

University of Missouri Administration

John C. Weaver Ph.D., president
 A. G. Unklesbay Ph.D., vice president for administration
 Vernon E. Wilson M.D., vice president for academic affairs
 C. B. Ratchford Ph.D., vice president for extension
 G. H. Entsminger M.Ed., vice president for development
 R. H. Bezoni B.S.B.A., comptroller
 Dale O. Bowling B.S.B.A., business manager

The Administration**University of Missouri Administration**

Tom Richter B.J., director, university information services
 Stirling Kyd Ph.D., assistant to the president
 A. Lee Belcher director, employee relations
 William D. Poore M.A., director, personnel services
 Thomas H. Lloyd B.A., director, university press

Chancellors

Merl Baker Ph.D., Rolla Campus
 Glen R. Driscoll Ph.D., St. Louis Campus
 James C. Olson Ph.D., Kansas City Campus
 John W. Schwada Ph.D., Columbia Campus

University of Missouri - St. Louis**Administrative Officers**

Glen R. Driscoll Ph.D., chancellor
 Susan Freegard M.S., Lib.Sc., librarian
 Hilbert E. Mueller Ed.D., director of admissions and registrar
 Donald A. Murry Ph.D., assistant to the chancellor and
 director of research
 Raymond E. Peck Ph.D., special assistant to the chancellor
 John P. Perry M.S., business officer
 Lewis J. Sherman Ph.D., director of counseling
 Robert E. Smith B.J., director of public information

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
 Dorothy Dawkins B.A., academic adviser
 Ethel Zucker academic adviser
 Prudence Sander senior secretary

School of Business Administration

Emery C. Turner D.B.A., dean
 Donald H. Driemeier D.B.A., assistant dean
 Maxine Stokes B.A., academic adviser
 Elaine Botkin senior secretary

School of Education

George E. Mowrer	Ed.D., dean
Arthur E. Smith	Ph.D., associate dean
Hans C. Olsen	Ed.D., assistant dean
Charlotte A. McDowell	B.A., academic adviser
Rosa Lee Mullins	senior secretary

Evening College

Joy E. Whitener	Ed.D., dean
Harry Gaffney	Ph.D., assistant dean
Donald G. Bowling	M.A., assistant to the dean
George Minkevich	M.Ed., counselor
Mary Pogue	senior secretary

Graduate School

Robert S. Sullivant	Ph.D., dean
---------------------	-------------

Extension Division

Virgil N. Sapp	B.S., dean
Clive Veri	Ph.D., assistant dean
Frederick Brechler	Ph.D., director, programs for continuing education of professionals
Margaret C. Fagin	Ed.D., director, programs for women, family and youth
Harry Mellman	Ph.D., director, governmental and community programs
Stanley Sokolik	Ph.D., director, organization development programs (serving business, industry and labor)
D. Everett Thomas	M.Ed., director, credit and non-credit programs
Elizabeth Greenleaf	administrative secretary
Richard Beatty	M.B.A., instructor of management
Carol Brun	B.S., assistant to director, continuing education of professionals
Spencer Jordan	M.A., instructor in management
Martin Lake	M.A., youth specialist
Marilyn Lammert	M.S.W., assistant to director, continuing education of programs
J. C. McCurdy	B.S., extension education coordinator
Robert Narmont	M.S.C., instructor in accounting
Tom Pavlak	M.A., instructor in political science

The Administration**Extension Division**

Jerry Pulley	Ed.D., assistant professor of education
Sharon Schuchardt	B.S., administrative assistant, urban programs
Eugene Schwartz	M.S.W., program coordinator, administration of justice program
James Solem	M.A.P.A., associate director, urban programs—governmental and community programs
George Witteried	M.B.A., J.D., associate professor of management

Student Affairs

David R. Ganz	M.S. in C., dean
Robert L. Davenport	Ph.L., assistant dean
Bernice Miner	senior secretary

Members of the Administrative Staff

Glenn R. Allen	M.S., assistant director of Admissions and registrar
Dianne Baker	senior secretary to the director of Public Information
Larry Berres	M.S., director, Intramural Athletics
Larry Bogue	B.S., personnel officer
Lois Brockmeier	B.A., executive secretary, Alumni Activities
Paul Cervinski	B.A., personnel assistant
Melba Chism	chief switchboard operator
Donald L. Constantine	B.J., associate director of Public Information
Jack Coombs	B.A., storeroom manager
Arnold Copeland	M.S., assistant supervisor, Intramural Athletics
George M. Dickerson	B.S., manager, Campus Bookstore
Annette Doyle	administrative secretary, Graduate Office
Richard E. Dunlap	M.A., assistant to the chancellor
Edwin Fedder	Ph.D., director, Center for International Studies
Joseph T. Finnigan	B.A., assistant director of Public Information
Joseph E. Fischer, Jr.	B.A., assistant to the director of Research
Bonnielynn Gabriel	senior secretary to the director of Research
John F. Galvin	M.L.S., assistant librarian
Robert E. Goodman	assistant superintendent, Physical Plant
Myrna L. Harper	administrative secretary, Chancellor's Office
William Heinbecker	M.S., interim director, Computer Center
Joan Hewitt	M.L.S., assistant librarian

Members of the Administration Staff

Emory A. Jackson	B.S., assistant director of Admissions and Financial Aids
Stephanie Kries	M.S., director, Student Activities
Ellen Lueking	A.A., senior cashier
Dorothy McKinney	senior secretary to business officer
Gordon Misner	D.Crim., director, Administration of Justice Program
Bill Moody	B.S., chief accountant
Linda M. Mottin	B.S., editor, Campus Publications
Steven E. Musen	M.A., assistant editor, publications (sports)
Herman J. Nebel, Jr.	B.A., purchasing assistant
James Nelson	chief, Traffic, Safety and Security
Joseph Palmer	M.B.A., director, University Placement Office
Frank F. Pershe	Ph.D., associate librarian
John D. Phillippe	assistant business officer
Richard M. Potter	B.S.B.A., accountant
Earl J. Reeves	Ph.D., associate director, Center of Community and Metropolitan Studies
Beverly Schrader	B.A., assistant to the director, University Placement Office
Paul Schratz	M.A., director, Office of International Studies
Charles Smith	M.A., athletic director
Kenneth A. Smith	superintendent, Physical Plant
Robert E. Spitzfaden	supervisor, Print Shop
Larry Ward	B.S., foreman, Print Shop
Betty Wilbanks	Th.D., assistant librarian

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

In just seven years as a member of the University of Missouri four-campus community, the University of Missouri – St. Louis is already playing 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, UMSL is living up to that continuing challenge.

The 128-acre campus in St. Louis County is developing rapidly. Four fully-equipped buildings house classrooms, laboratories, offices and library facilities to serve the more than 9500 students enrolled in the fall of 1969. An administration building, office building, and cafeteria annex further expand academic, administration and recreational facilities.

Construction is underway for five additional structures including a University Center (student union)-continuing education building, a multi-purpose building (including gymnasium, swimming pool and physical conditioning facilities), a combination social sciences, business-education complex, and an arts and sciences classroom building. Two parking garages will be available by January, 1970.

The start of the 1969 academic year marked the full-time employment of some 325 faculty members with more than 70% holding doctoral degrees. Another 15% of the full-time faculty is working toward completion of the terminal degree.

With over 1700 alumni graduated from its baccalaureate programs, UMSL has expanded its offerings into graduate studies with the formal

establishment of a Graduate School. In the fall of 1968 the School of Education began offering the master's degree in education. Five additional graduate programs in business administration, political science, economics, history and sociology were inaugurated in the fall of 1969.

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

Out of UMSL's natural concern for the urban area has evolved the Center of Community and Metropolitan Studies which fulfills a three-fold 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. (See page 32.)

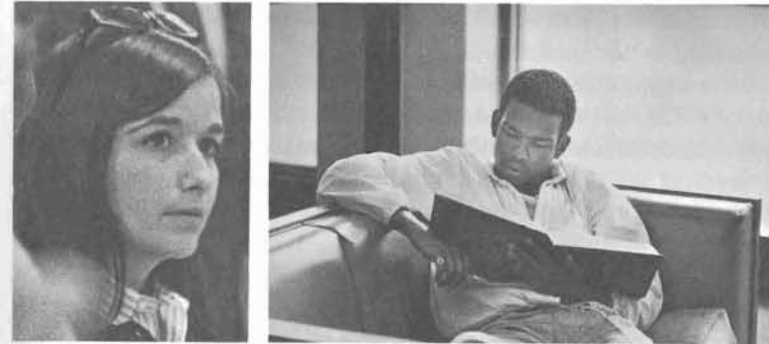
The Board of Curators of the University of Missouri has approved establishment of International Studies Centers on all four campuses, with a university-wide Office of International Studies to coordinate activities of each, located on the St. Louis campus.

Under the direction of the university-wide office, the four campus centers will expand and improve the teaching of international studies on all educational levels, undertake and make available research results, and aid the public in understanding world affairs. (See page 32.)

Above all is the university's concentration on the student and the quality of education he must receive. UMSL 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 readings courses and courses emphasizing undergraduate research. The curriculum is supplemented by a university-sponsored concert and lecture series and a wide range of extracurricular activities.

UMSL 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.

Directions to New Students New students must submit credentials before July 1 for the fall semester, January 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. Because available facilities are inadequate to provide for all qualified applicants for admission, processing periods and priorities have been established (see page 12). Admission can be determined only after all credentials are on file. 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.

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.

Entering Freshmen The entering freshman must submit a high school transcript certified by the proper official of the school in which the credits were earned, and a medical history report.

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

Pre-registration Fee All students upon notification of acceptance to the fall or winter semester will be requested to submit a non-refundable advance payment of their registration fee. This amount is credited to the student's incidental fee when he enrolls in the university.

FRESHMAN STUDENTS

Admission High school graduates *with satisfactory records* may be admitted into regular standing in the University of Missouri – St. Louis.

Plan A: Graduates of fully accredited high schools may be admitted by certificate or transcript of record without examination. 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.

Plan B: A student who is not a graduate of a four-year high school and who is 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. Adults, military personnel and veterans may qualify for admission by satisfactorily passing the high school level General Education Development tests prepared for the United States Armed Forces Institute.

MISSOURI FRESHMEN

Processing Periods and Priorities Because available facilities are inadequate to provide for all qualified applicants for admission, top priority is given to the best qualified students or those most likely to succeed and graduate. Consequently, applications are processed according to the periods listed below. In evaluating the credentials of students below the top third, ACT test scores, high school grades and college preparation, in terms of type of high school units completed, are considered in determining the admission of the applicant. Qualified applicants from the St. Louis metropolitan area are given first priority. Second priority is given to other Missouri residents; if space is available, students from out-of-state and from other countries may be admitted.

Top Third: Applicants who rank in the upper third of their high

school graduating class at the end of the sixth semester will be admitted between October 15 and January 1.

Upper Half: Applicants who rank in the upper one-half of their high school graduating class at the end of seven semesters of work may be admitted from January 1 until such time as the freshman class is filled.

Upper Two-Thirds to Upper Half: Applicants who rank between the upper two-thirds and the upper one-half of their graduating class at the end of seven semesters of work will be admitted from March 1 until such time as the freshman class is filled.

Applicants who rank in the lower one-third of their graduating class cannot be accepted. The university recommends that students who rank in the lower one-third of their graduating class enroll in summer school. If the student earns six hours of "C," he may submit an application after the close of the summer session, and if space is available, his application will be reviewed.

OUT-OF-STATE FRESHMEN

Residents of the Kansas City and St. Louis metropolitan areas, or applicants approved by the Committee on Admissions, are admitted on the same basis as Missouri residents.

Out-of-state students must rank in the upper half of their graduating classes in order to be eligible for admission by certificate. Out-of-state applicants may be considered for admission with the completion of seven semesters of work, provided the space is available.

A non-refundable transcript 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 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. All non-resident students are subject to the non-resident tuition fees.

Freshman Placement Tests Freshman placement tests are required of all students enrolling in the university with fewer than 24 hours of college credit. 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 objective.

It is recommended that every freshman entering for the first time present scores from the American Colleges Tests (ACT). The ACT is administered at approximately forty-four testing centers, ten of which

are in the St. Louis area. There are testing centers in other states as well.

An applicant will not be denied admission if he does not present the ACT scores. In lieu of the ACT, the university may accept scores of the Missouri Colleges' Cooperative Testing Program or the College Board Achievement Tests of the College Entrance Examination Board.

The ACT or College Boards 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.

The Modern Languages Achievement Test is required of all students who plan to pursue a bachelor of arts degree and who plan to continue the same foreign language pursued in high school.

Advanced placement and credit will be granted to students who meet the standards established by the Modern Foreign Languages and Literatures Department.

Preparation for College Applicants must present 15 acceptable high school units, excluding physical education and military science. The minimal recommended pattern is: English-4 units; mathematics-2 units, excluding general mathematics; science-1 unit of laboratory science; social studies-1 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 years 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. Code Number 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, on the basis of performance on

nationally standardized tests and with the approval and recommendation of their principals, may enroll in a college course for credit. This credit may be applied as advanced standing after the student has been admitted to the University of Missouri – St. Louis.

TRANSFER STUDENTS

Transfer students from other colleges and universities must submit official transcripts of high school and college work, and an application for admission and a report of medical history form. Official transcripts should be sent directly to the Office of Admissions from each institution previously attended. Out-of-state applicants must submit a \$10 non-refundable transcript evaluation fee with their application for admission. Students whose grade point average is 3.0 or higher will be admitted at any time. (Based upon the University of Missouri – St. Louis 4 point system.) 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 January 1; and for the summer session by May 1.

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.

Graduates of accredited junior colleges will be admitted without examination to junior standing in the colleges of the university, provided, upon examination of official transcripts, they have satisfied the entrance requirements and have paralleled the work of the first two years of the particular college.

Except as indicated below, no junior college student shall receive credit for more than 16 hours in one semester exclusive of the required practical work in physical education. The maximum credit the student may earn in a junior college is 64 semester hours. After a student's credits, wherever earned and counted in the order earned, amount to a

total of 64 hours, no additional credits may be allowed for work completed in a junior college. Exceptions to these limitations may be permitted under the following conditions:

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

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

GRADUATE STUDENTS

Application for admission to the Graduate School should be made to the Director of Admissions, 108 Administration Bldg. Students applying for admission are required to submit a transcript of their undergraduate record and of any graduate work completed. These transcripts should show the grades earned in all courses attempted. Transcripts and a medical history form are to be sent directly to the director of admissions. Hand carried credentials or credentials submitted by the student are not acceptable. A requirement for admission is graduation with a satisfactory record from a college or university accredited by the Missouri College Union, the North Central Association of Colleges and Secondary Schools, or other similar regional accrediting associations.

STUDENTS FROM OTHER COUNTRIES

Abroad: Because available facilities are inadequate to provide for all qualified applicants for admission, processing periods and priorities have been established. (See page 12)

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.

In the United States: Foreign students 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 the school whose letter of admission was the basis for issuance of the student's visa. To complete his credential file, he must furnish original and official transcripts from each school attended, both in this country and abroad. No student should consider himself admitted to the university until an official letter has been received stating that he has been admitted.

THE EVENING PROGRAM

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

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

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

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

Non-Degree Student: Students who rank in the lowest third of their graduating class may be admitted on a probationary status provided they can, by satisfactory evidence on approved tests, demonstrate they have the potential to complete successfully a college course. Such students may be reclassified as regular students when they have demonstrated by one year of satisfactory work in the university their ability to obtain a degree.

An applicant who desires to increase his proficiency in certain areas may be admitted to a specific course, subject to prerequisites, as a non-degree student.

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 College Student admission is limited to the summer session. Classroom space limitations do not permit the admission of Visiting College Students to the regular day program. Application forms for certification can be obtained from the Admissions Office.

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 credit toward a degree. 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.

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.

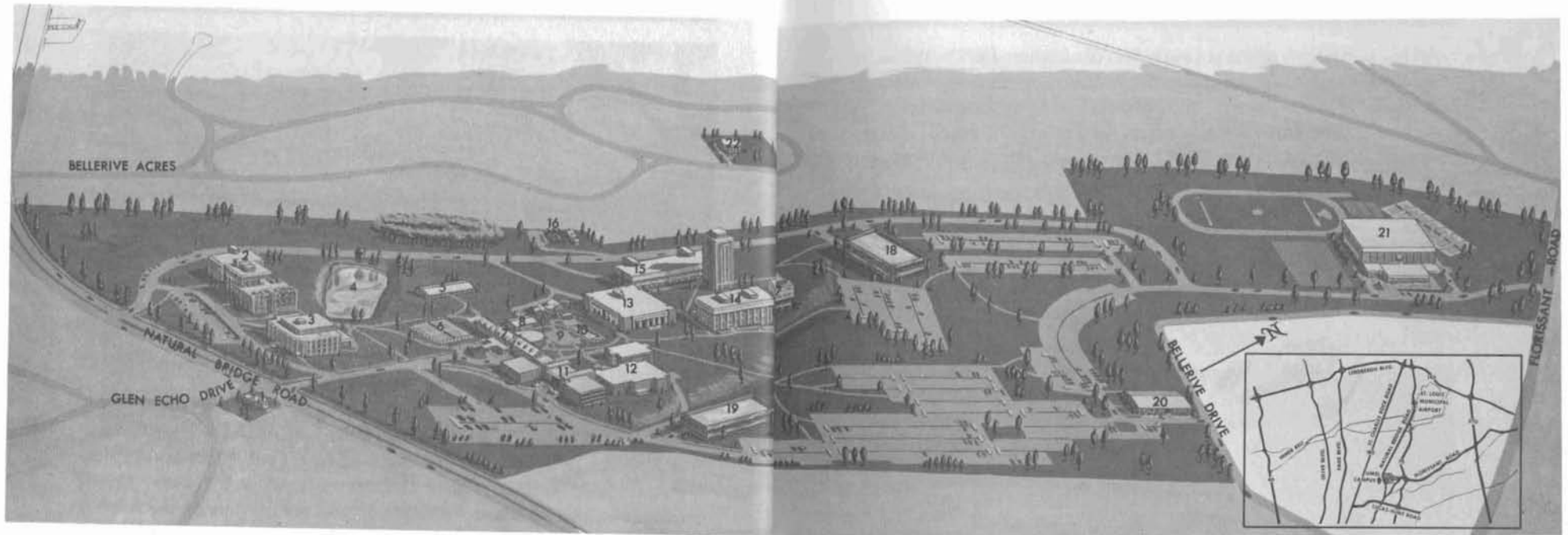
REGISTRATION

Former students (not currently enrolled) should file requests for permits to enroll with the director of admissions at least thirty days in advance of the registration period.



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 (See inside back cover).

Students entering the fall semester 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.



THE UNIVERSITY OF

MISSOURI — ST. LOUIS CAMPUS

OFFICE AND DEPARTMENT INDEX

- (1) SCHOOL OF EDUCATION
- (2) BENTON HALL
- (3) LIFE SCIENCES BUILDING
- (4) CAMPUS LAKE
- (5) CAFETERIA ANNEX
- (6) TENNIS COURTS
- (7) ADMINISTRATION BUILDING
- (8) STUDENT ACTIVITIES BUILDING
- (9) BASKETBALL/VOLLEYBALL COURTS
- (10) SWIMMING POOL
- (11) J. C. PENNEY EDUCATION BUILDING*
- (12) UNIVERSITY CENTER*
- (13) THOMAS JEFFERSON LIBRARY
- (14) WILLIAM CLARK HALL
- (15) SOCIAL SCIENCES, BUSINESS AND EDUCATION COMPLEX*
- (16) COOLING TOWER
- (17) ARTS AND SCIENCES BUILDING*
- (18) PARKING GARAGE*
- (19) PARKING GARAGE*
- (20) OFFICE BUILDING
- (21) MULTI-PURPOSE BUILDING*
- (22) CHANCELLOR'S RESIDENCE

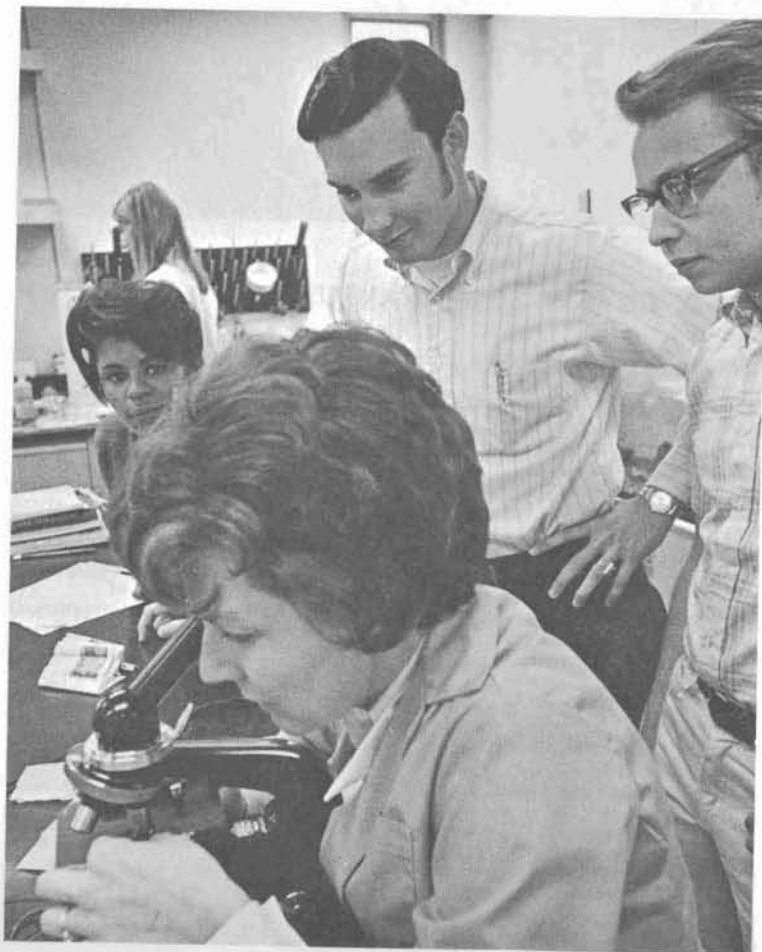
*Under Construction

- (20) Accounting Department
- (3) Administration of Justice Program
- (1) Administration, Philosophy and Secondary Education Department
- (7) Admissions Office
- (2) Arts and Sciences, College of
- (7) Alumni Activities
- (20) Athletic Department
- (2) Audio-Visual Department
- (3) Biology Department
- (7) Bookstore
- (7) Business Administration, School of
- (2) Business Office
- (7) Cashier
- (2) Chancellor's Office
- (2) Chemistry Department
- (20) Community and Metropolitan Studies, Center of
- (7) Computer Center
- (3) Counseling Service
- (14) Counselor Education, Evaluation, Research and Educational Psychology Department

- (7) Economics Department
- (14) Education, School of
- (14) Elementary Education, Department of
- (14) English Department
- (2) Evening College
- (20) Extension Division
- (2) Faculties, Office of the Dean of
- (7) Financial Aids Department
- (2) Fine Arts Department
- (7) Graduate Engineering Center, St. Louis
- (2) History Department
- (2) International Studies, Center for
- (20) International Studies, Office of
- (14) Language Laboratory
- (13) Library Office
- (20) Mail Room and Receiving
- (14) Mathematics Department
- (14) Modern Foreign Languages and Literatures Department
- (20) Payroll Department
- (20) Personnel Office
- (2) Philosophy Department
- (2) Physical Plant (8525 Natural Bridge)
- (2) Physics Department
- (7) Placement Office
- (2) Political Science Department
- (20) Print Shop
- (3) Psychology Department
- (20) Publications Office
- (2) Public Information, Director of
- (20) Public Information, Office of
- (20) Purchasing Department
- (20) Research Administration, Office of
- (7) Sociology-Anthropology Department
- (14) Statistics Laboratory
- (7) Student Activities Office
- (7) Student Affairs, Office of the Dean of
- (7) Student Health Center
- (20) Student Loan Department
- (7) Student Newspaper Office
- (1) Student Teaching Office
- (2) Switchboard
- (7) Traffic and Security Office

The university offers a bachelor of science (B.S.) degree in administration of justice, business administration, chemistry, economics, education, applied physics and physics with a concentration in astrophysics. The university also offers the bachelor of music, concentration in music education (B.M.) degree, and the bachelor of arts (A.B.) 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. He may select a major in administration of justice, biology, chemistry, economics, English, German, history, mathematics, music history and literature, philosophy, physics, political science, psychology, sociology or Spanish.



Degrees

The following advanced degrees are conferred by the university: master of arts, master of education, master of business administration.

UNIVERSITY GENERAL EDUCATION REQUIREMENTS FOR ALL BACCALAUREATE DEGREES

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

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, Science and Mathematics, Social Science.

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 expected 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 of 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.



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 Residence 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.

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 zero credit courses are required to pay fees according to the equivalent credit of the course.

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

The most common fees are:

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	\$200.00
Summer Semester	
4 or more	\$100.00

For any other sessions not specified above and for partial enrollments the Incidental Fee shall be calculated at the rate of \$25.00 per credit hour.

Pre-Payment on Incidental Fee Students accepted for admission are required to make an advance deposit on the Incidental Fee. This payment is nonrefundable, but may be used as part 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.

It is the duty of each student to register under the proper residence and 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	\$120.00
8	240.00
9	320.00
10 or more	400.00

Summer Session

Hours Credit	Non-Resident Fee
1-3	No Fee
4	\$105.00
5 or more	200.00

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

Regular Semester

Hours Credit	Fee
10 or more	\$20.00

Summer Session

Hours Credit	Fees
5 or more	\$10.00

For any other sessions not specified above and for partial enrollments the Student Union and Activities Fee shall be calculated at the rate of \$2.00 per credit hour or fraction thereof.

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

1. For Music Majors: A single fee of \$45 per semester to cover all required applied music.
2. For Non-Music Majors: A fee of \$45 per semester for each area in which the student enrolls for applied music, 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, adding or adding and dropping 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 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 drive regularly is \$.50.

Fees and Expenses

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	Refund
Withdrawals		
Before the day classwork begins		Full refund less \$10 for cost of handling registration
Within two calendar weeks from and including the day classwork begins		70% refund
After two calendar weeks and including six calendar weeks		50% refund
After six calendar weeks		No refund
	Summer Session	
Before the day classwork begins		Full refund less \$10 for cost of handling registration
Within one calendar week from and including the day classwork begins		70% refund
After one calendar week and up to and including three calendar weeks		50% refund
After three calendar weeks		No refund

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 at the University of Missouri has established a system of grants in 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 where 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 outstanding academic achievement 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 ten 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 Curator 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 not fewer than 28 acceptable hours excluding summer session. Students transferring to the university from other institutions of higher education are eligible for

Student Financial Aid

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 scholar. 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 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 not fewer than 28 acceptable hours excluding summer session. Students transferring from other institutions of higher education will be considered on the same basis as continuing students. The upperclass student's eligibility for waiver of incidental fees 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. Blanks 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

Designed to assist UMSL in attaining its educational objectives, a well-rounded program of activities encourages students to become participating and integral members of the academic community.

Students are given opportunities to share in the development of a new and exciting university. This program of participation and responsibility is directed toward providing intellectually stimulating experiences outside the classroom.

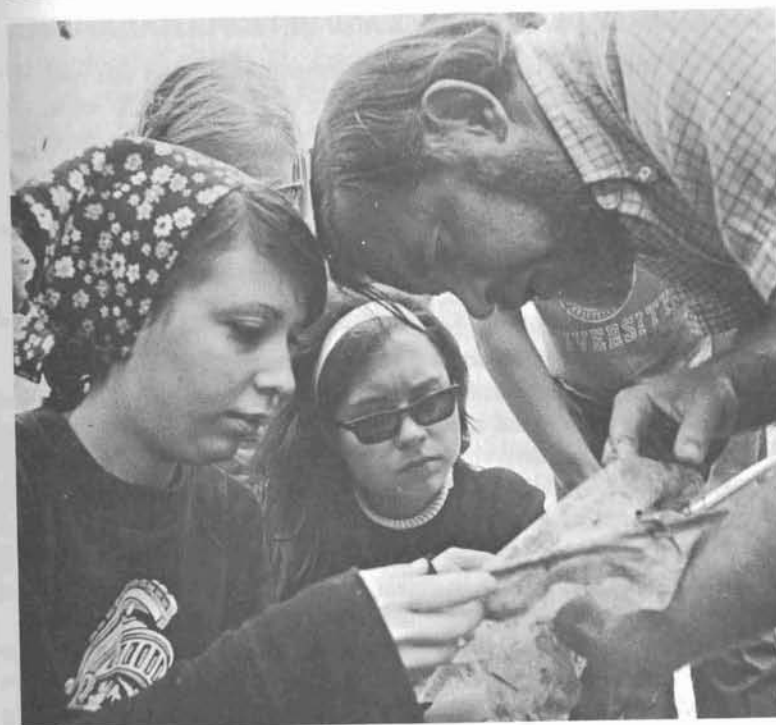
Student Government In the spring of 1969, by a general referendum of the student body, a new constitution was adopted for student government at UMSL. The new government is known as the Central Council. The Council works for full student participation in all aspects of university life, university affairs and policy making, and to carry out the philosophy that all students be encouraged to govern themselves and be responsible for their government. In addition, the Council works with the faculty and administration towards the objective of coordinating and maintaining an institution of increasing service to the students, alumni, the metropolitan community and the state.

The Central Council consists of a president and a vice president elected at large by the student body in an annual general election; a secretary and a treasurer appointed by the president with the advice and consent of the total membership of the Council; a chairman chosen by the membership of the Council with the sole responsibility of presiding over the meetings of the Council; and a parliamentarian 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.

Student Organizations A variety of student organizations offers an excellent opportunity for students to shape university life. Student organizations are many and varied; they include several service organizations, musical organizations, social fraternities and sororities, community action groups, political organizations, departmental clubs and religious organizations.

Alumni Association Membership in the Alumni Association is open to all graduates and former students of UMSL. The Alumni Association was formed to promote the interests of UMSL and to establish mutually beneficial relations between UMSL and its alumni. Social activities during Homecoming weekend provide an opportunity



for alumni to meet again and return to the campus to see the newest developments. The Association also encourages alumni to participate in continuing education programs offered by the Extension Division.

Athletics and Recreation UMSL is in its fourth year of intercollegiate sports competition against four-year institutions. Varsity competition is offered in basketball, cross country, golf, tennis, soccer and baseball.

UMSL is not affiliated with a conference, but is an active member of the National Association of Intercollegiate Athletics and is an associate member of the National Collegiate Athletic Association.

Intramurals The intramural program offers a variety of physical activities for all who desire to participate. The program of activities includes flag football, soccer, cross country, basketball, tennis, softball and volleyball. League competition is featured in the team sports and championship elimination competition is used with individual sports competition.

Recreation Present facilities allow students, faculty and staff to work out during leisure time in activities such as tennis, volleyball, basketball, and, during the summer, swimming.

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 function 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 inter-disciplinary 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 other 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.

CENTER FOR INTERNATIONAL STUDIES

The Center for International Studies is much involved in the three-fold task confronting the university as a whole—teaching, research and public service. In cooperation with the various departments of the university, the Center works to develop interdisciplinary studies which expand understanding of international interaction, investigate domestic sources of externally-directed national policy, and improve methods and techniques of research and teaching in international studies.

The Center also seeks to promote courses which will provide a solid foundation for students preparing for careers in journalism, international business, foreign service, national and/or international civil service, etc.

Special Programs

In cooperation with the university-wide Office of International Studies located on the St. Louis campus, the Center is seeking to establish relationships with foreign universities to facilitate faculty and student exchanges.

The Center conducts institutes, conferences and seminars for college, university, secondary and primary school teachers, and develops data banks for use by interested institutions and individuals in the metropolitan area.

EXTENSION DIVISION

The Extension Division extends the academic resources of UMSL to the people of Missouri through credit classes held off campus, non-credit continuing education programs on campus as well as throughout Missouri, and through consultation services offered to agencies, organizations and groups of people. The main thrust of Extension is to provide opportunities to Missouri citizens so they might continue their education regardless of educational level, competency, area of interest or profession.

The Extension Division is organized to be responsive to the continuing education needs of broad clientele groups, and includes the offices of Programs for Continuing Education of Professionals; Programs for Women, Family and Youth; Programs for Business, Industry and Labor; and Governmental and Community Programs. An office of specialists facilitating credit and non-credit programs is also a major part of the division.

LIBRARY SERVICES

Thomas Jefferson Library on the UMSL campus has a shelf capacity of more than 240,000 volumes and will seat approximately 1,000 students. Some 6,000 reels of microfilm and 200,000 microfiche and microcards, and 50,000 government documents augment a reference and research collection of 100,000 volumes.

Twenty-five 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 and vacation periods.

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.

The University of Missouri – St. Louis assists its students in pre-legal preparation through a Pre-Law Committee consisting of representatives from the School of Business and the departments of economics, history, philosophy and political science. The members of this committee are prepared to advise and assist individual students in planning their personal curricula commensurate with their academic major.

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.

The Pre-Law Committee maintains information on the Law School Admission Test and a collection of law school catalogs in the Department of Political Science. 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.

Admission requirements of professional schools vary, and students are cautioned to consult the catalogs of the institutions to which they intend to apply. Chemistry, biology or psychology are recommended major disciplines for students interested in the healing arts. An A.B. degree, regardless of major, will usually meet the admission requirements of medical schools if the curriculum is chosen to include:

- Chemistry 11, 12, 222, 261, 262 and 263 (total 23 hours)
- Physics 1, 2 and 3 (total 8 hours)
- Biology 11, 12, 224 and five additional hours of advanced course work

Since students will normally apply to professional schools during their junior year, and since admission to professional schools will not be

Special Programs

confirmed until after successful completion of the science requirement for admission, students are encouraged to fulfill this requirement 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 certain 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	Chemistry 12	5
Physics 1	3	Physics 2	3
Physics 3	2	Mathematics 11	3
Mathematics 10	3	English 12	3
English 10	3		14
	16		

Sophomore Year

Chemistry 261	3	Elementary Accounting ...	3
Chemistry 263	2	Chemistry	5
Biology 11	5	Biology 12	5
Economics 50	3	Elective	3
History 3 or Political			16
Science 11	3		
	16		

RESERVE OFFICERS TRAINING CORPS PROGRAM

The University of Missouri – St. Louis offers courses in military training through the cooperation of Washington University in St. Louis. Students interested in an officer training program may enroll with the Department of Military Science (Army ROTC) or the Department of Air Force Aerospace Studies (Air Force ROTC) at Washington University.

Students may enroll on the UMSL campus during regular registration periods. All military training classes are held on the Washington University campus or as directed by the ROTC instructors.

A student who successfully completes Army or Air Force ROTC will receive a reserve commission in the respective service, and will serve an active duty tour as an officer. Also, cadets may compete for regular commissions in the Army or Air Force. Active duty may be deferred until graduate work is completed.

The University of Missouri - St. Louis accepts 12 hours of advanced ROTC work as elective credit toward a degree. No credit is accepted for the basic ROTC courses normally completed during the freshman and sophomore years.

The Four-Year Program This program is conducted at Washington University by the Army ROTC only. It requires four semesters of basic ROTC (MS 101-102, 201-202—see page 137), four semesters of advanced ROTC (MS 301-302, 401-402—see page 137), and one six-week summer camp. Under certain conditions, cadets in the basic ROTC may receive an ROTC draft deferment. All cadets in the advanced course are placed in the ROTC deferment category of the draft.

The Two-Year Program This program is offered by both Army ROTC and Air Force ROTC. It requires the student to attend a six-week summer camp, which is prerequisite for admission to the advanced course, and to take four semesters of advanced ROTC. Additionally, Army cadets must attend a six-week summer camp after their junior year. The on-campus phase of the Army ROTC two-year program and the advanced course summer camp are identical to the final two years of the four-year program. Veterans or students who have completed the first two years of the four-year program of Army, Navy, or Air Force ROTC are eligible to enter the two-year program and are not required to attend the prerequisite six-week summer camp. Cadets in the two-year program are placed in the ROTC deferment category of the draft.

Both Programs All ROTC students are furnished ROTC textbooks, uniforms and equipment. In addition, all advanced course students receive pay which totals approximately \$1,200 during the two-year period.

There are mental, physical, age, citizenship and character criteria which must be met by those students who enter an advanced program of either Army or Air Force ROTC. The education received in ROTC is

Special Programs

designed to develop leadership and management ability and an understanding of military history, military policies and problems. Participation on rifle teams and drill teams, visits to military bases, and flight training are among the many voluntary features.

For further information students should contact the Department of Military Science or the Department of Air Force Aerospace Studies at Washington University (telephone 863-0100, extension 4662 for Army ROTC or 4567 for Air Force ROTC.)

INTERSTATE AGREEMENTS WITH KANSAS AND NEBRASKA FOR EXCHANGE OF STUDENTS ON RESIDENT FEE BASIS

By joint agreement of the Board of Curators of the University of Missouri, and the Boards of Regents of the Universities of Nebraska and Kansas, qualified students who would be eligible to pay only resident fees at the University of Missouri may enroll in certain programs in Kansas and Nebraska and be charged at the rate paid by students residing in this state. Conversely, qualified students who would be eligible to pay only resident fees in Kansas and Nebraska may enroll in certain programs on one of the campuses of the University of Missouri and be charged fees at the rate paid by Missouri residents.

Programs for Missouri Residents at the University of Nebraska

Program	Institution	Degree
Architecture (quota of 12)	University of Nebraska Lincoln	Bachelor of Architecture

Programs for Nebraska Residents at the University of Missouri

Program	Institution	Degree
Forestry (quota, 7)	University of Missouri Columbia	BS in Forestry
Wildlife Management (quota, 4)	University of Missouri Columbia	BS in Agriculture, or AB in Zoology
Physical Therapy (quota, 2)	University of Missouri Columbia	BS in Physical Therapy
Occupational Therapy (quota, 2)	University of Missouri Columbia	BS in Occupational Therapy
Veterinary Medicine (quota, 5)	University of Missouri Columbia	Doctor of Veterinary Medicine



Programs for Missouri Residents at the University of Kansas

Program	Institution	Degree
Aeronautical Engineering	Wichita State University	BS in Aeronautical Engineering
Architecture	University of Kansas Lawrence	Bachelor of Architecture BS in Architectural Engineering
Architecture	Kansas State University Manhattan	Bachelor of Architecture BS in Building Construction BS in Landscape Architecture
Grain Milling & Technology	Kansas State University Manhattan	BS in Feed Science and Management BS in Milling Science and Management BS in Bakery Science and Management BS in Engineering Management
Nuclear Engineering	Kansas State University Manhattan	BS in Nuclear Engineering



Programs for Kansas Residents at the University of Missouri

Program	Institution	Degree
Dentistry	University of Missouri Kansas City	Doctor of Dental Surgery
Dental Hygiene	University of Missouri Kansas City	BS in Dental Hygiene
Forestry	University of Missouri Columbia	BS in Forestry
Wildlife Management	University of Missouri Columbia	BS in Agriculture or AB in Zoology
Mining Engineering	University of Missouri Rolla	BS in Mining Engineering BS in Petroleum Engineering BS in Geophysical Engineering BS in Ceramic Engineering BS in Metallurgical Engineering BS in Geological Engineering BS in Engineering Management



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 college or universities within the state of Missouri.

This requirement will be satisfied by credit in one of the following courses: History 3, 4, 351, 354, 355, 356, 357; Political Science 11, 12, 170, 320, 335, 376.

The transfer student should inquire at the Admissions Office to determine whether he has satisfied this requirement.

Program of Studies and Credit Hours 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

General Regulations and Requirements

carry more than 17 hours may, with the 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 under unusual circumstances to be decided by 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 two semesters 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 a 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 enrolled at the University of Missouri - St. Louis and 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.

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 Admissions Office before the end of the first four weeks of the term. Only the Admissions Office will know which students are taking courses on the pass-fail system. Instructors are not informed.

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.) and the bachelor of science degree (B.S.) with academic majors in the following areas: the administration of justice, biology, chemistry, economics, English, French, German, history, mathematics, music and music history, philosophy, physics, political science, psychology, Spanish and sociology. The bachelor of music degree (B.M.) is offered with a major in music education.

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, every freshman is 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 23.) 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 for either the A.B., the B.S. or the B.M. degree and must meet 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, History 210, 211, 315, 316, 370, Political Science 255, 352, Music 5 or Philosophy 170. The state requirement (see page 40) of one course in American History or American Government may be met by taking History 3, 4, 351, 354, 355, 356, or 357 or by taking Political Science 11, 12, 170, 320, 335, or 376.

Requirements for the A.B. Degree Every A.B. degree candidate must accumulate 13 credit hours or the equivalent in proficiency in one

foreign language and 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.

Requirements for the B.S. Degree The college offers the B.S. degree in chemistry, physics and the administration of justice. 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. 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, visiting professor
Hon. Theodore McMillian	L.L.B., instructor
Eugene P. Schwartz	M.S.W., coordinator, Extension Division

General Education Requirements Each administration of justice major must satisfy the general education requirements of the university listed on page 23, 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 14 hours of foreign language required for the A.B. degree is optional for the B.S. candidate. Students may take a foreign language.

College of Arts and Sciences

For those not wishing to take a foreign language, 14 hours in social sciences above those in the general education requirements is required. The three-hour non-Western requirement may be met by taking any Asian or African studies course.

Related Area of Study Requirements Each major must complete, upon attaining upper division standing, sociology courses in criminology and juvenile delinquency.

Program Requirements In general, every candidate for the B.S. degree in administration of justice must complete 33 credits in administration of justice in a total of 120 semester hours including Administration of Justice 200, 220, 250, 280 and 290. The student must maintain a 2.0 grade point average overall and a 2.0 in the major and must pass a comprehensive examination measuring competence in the field of administration of justice.

Program Recommendations In addition to the required courses above, it is recommended that the student, in close consultation with his adviser, select courses in sociology, political science, mathematics, economics, business administration and psychology.

DEPARTMENT OF BIOLOGY

Faculty

Frank H. Moyer	Ph.D. (Johns Hopkins University), chairman, professor
Robert S. Bader	Ph.D. (University of Chicago), dean, College of Arts and Sciences, professor
Lawrence D. Friedman	Ph.D. (University of Wisconsin), associate professor
Monroe Strickberger	Ph.D. (Columbia University), associate professor
Ellen G. Archer	Ph.D. (University of Arkansas), assistant professor
Muriel B. Babcock	Ph.D. (University of Virginia), assistant professor
R. George Babcock	Ph.D. (University of Virginia), assistant professor
Jacques J. Delente	Ph.D. (University of Caen), visiting assistant professor
Theodore Fleming	Ph.D. (University of Michigan), assistant professor
Harvey P. Friedman	Ph.D. (University of Kansas), assistant professor

Biology Faculty (Continued)

Donald E. Grogan	Ph.D. (University of Missouri-Columbia), assistant professor
Frank Hertelendy	Ph.D. (University of Reading, England), visiting assistant professor
Ronald D. MacLeod	Ph.D. (University of St. Andrews, Scotland), assistant professor
John E. Ridgway	Ph.D. (University of Texas-Austin), visiting assistant professor
Bedford M. Vestal	Ph.D. (Michigan State University), assistant professor
Janice M. Anderson	A.B., instructor
Steven Halterman	A.B., instructor
Dennis R. Hathaway	A.B., instructor
Dimple Jud	A.B., instructor
Jerry L. Thurman	A.B., instructor

General Education Requirements Each biology major must satisfy the general education requirements of the university listed on page 23 and the general education requirements of the College of Arts and Sciences listed on page 43. 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. The non-Western requirements may be met by taking any non-Western course.

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 36 hours of biology including Biology 11, 12, 213, 224, 235, 242, 276, any two of the five courses 215, 226, 237, 244 and 278. He must take Biology Seminar 289 in both semesters of the senior year and two elective courses in biology.

The general requirements for the B.S. degree in secondary education are given on page 86. Candidates for this degree with a major in biology must complete 37 hours of biology credit, with work in the same courses as candidates for the A.B. degree in biology. Candidates for the B.S. degree in secondary education must take Biology 180 rather than Biology 289.

College of Arts and Sciences

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
Robert W. Murray	Ph.D. (Yale University), professor
Alan F. Berndt	Ph.D. (California Institute of Technology), associate professor
Eugene R. Corey	Ph.D. (University of Wisconsin), associate professor
Joseph Feder	Ph.D. (Illinois Institute of Technology), visiting associate professor
M. Thomas Jones	Ph.D. (Washington University), associate professor
David W. Larsen	Ph.D. (Northwestern University), associate professor
Thomas L. Westman	Ph.D. (University of California, Berkeley), visiting associate professor
Rudolph E. K. Winter	Ph.D. (Johns Hopkins University), associate professor
Lawrence Barton	Ph.D. (University of Liverpool), 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
David L. Garin	Ph.D. (Iowa State University), assistant professor
Warren Groves	Ph.D. (Ohio State University), visiting assistant professor
Marcel L. Halberstadt	Ph.D. (Yale University), assistant professor

Chemistry Faculty (Continued)

William Hirzy	Ph.D. (University of Missouri-Columbia), 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
Robert L. Stearns	Ph.D. (Tulane University), visiting assistant professor
Alex Wolberg	Ph.D. (Washington University), visiting assistant professor
Said I. Razig	M.S., instructor
Vivian Cody	Ph.D. (University of Cincinnati), research associate
John W. P. Lin	Ph.D. (University of California, Los Angeles), research associate
Richard D. Smetana	Ph.D. (Pennsylvania State University), research associate
Charles C. Yao	Ph.D. (Ohio State University), research associate
Jack L. Coombs	B.A., laboratory stores manager

*Principle duties: Extension Division.

General Education Requirements Each chemistry major must satisfy the general education requirements of the university listed on page 23 and the general education requirements of the College of Arts and Sciences listed on page 43. Courses in chemistry may be used to meet the university's science and mathematics area requirement. The College of Arts and Sciences' 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 104. The non-Western requirement may be met by taking any non-Western course.

Related Area Requirement 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 10 hours of physics, including at least one laboratory course and Physics 111 and 112.

College of Arts and Sciences

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. (See also the comments under departmental requirements.)

Departmental Requirements The candidate for the A.B. degree with a major in chemistry must complete 32 hours of chemistry including Chemistry 11, 12, 202, 222, 231, 232, 233, 261, 262, 263 and 289. A minimum of 32 credit hours and a maximum of 45 credit hours of chemistry may be applied towards 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 10 hours in chemistry including Chemistry 234, 264, 324 and 341. The B.S. candidate must also select eight 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 45 credit hours and a maximum of 50 credit hours of chemistry may be applied towards the B.S. degree in chemistry.

Each chemistry major must present a seminar and pass a comprehensive examination during his senior year.

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 eight 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

Ingo Walter	Ph.D. (New York University), chairman, associate professor
Robert Loring Allen	Ph.D. (Harvard University), professor
Joseph P. McKenna	Ph.D. (Harvard University), professor
Donald A. Murry	Ph.D. (University of Missouri-Columbia), director of research, associate professor
Herbert D. Werner	Ph.D. (University of California, Berkeley), associate professor
Elizabeth M. Clayton	Ph.D. (University of Washington), assistant professor
John H. Hand	Ph.D. (Massachusetts Institute of Technology), assistant professor
Robert Kirk	Ph.D. (Iowa State University), assistant professor

Economics Faculty (Continued)

Marvin S. Margolis	Ph.D. (Purdue University), assistant professor
William E. Mitchell	Ph.D. (Duke University), assistant professor
John F. Hanieski	M.S., instructor
Donald Phares	M.S., instructor

Bachelor of Arts in Economics

General Education Requirements Each economics major must satisfy the general education requirements of the university listed on page 23 and the general education requirements of the College of Arts and Sciences listed on page 43. Courses in economics 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 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. Economics majors may take any course outside the major field, as well as Economics 50 and 51, on a pass-fail basis.

Related Area Requirements Each economics major is 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 complete at least 33 hours in the major field, including all of the following courses: Economics 50, 51, 220, 250, 251 and 190. During the senior year, the economics major must satisfactorily complete Economics 190. The seminar, taught by the entire department staff, is designed to draw together the student's knowledge of the field in a comprehensive survey of current research and policy questions. At the end of his senior year, the economics major must pass a written comprehensive examination designed to test his competence in general economic theory, policy and institutions.

Candidates for the B.S. degree in secondary education with a major in economics should refer to page 86 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.

College of Arts and Sciences

DEPARTMENT OF ENGLISH

Faculty

B. Bernard Cohen	Ph.D. (Indiana University), chairman, professor
Charles T. Dougherty	Ph.D. (University of Toronto), professor
William C. Hamlin	Ph.D. (University of Missouri-Columbia), 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
James Hazen	Ph.D. (University of Wisconsin), assistant professor
Mary Jackson	Ph.D. (Washington University), assistant professor
Valerie Lagorio	Ph.D. (Stanford University), assistant professor
John T. Onuska	Ph.D. (Harvard University), assistant professor
James E. Tierney	Ph.D. (New York University), assistant professor
Jerome Grollman	M.H.L., visiting assistant professor
George Coulter	M.A., instructor speech
Don Crinklaw	M.A., instructor
Janet Cuenca	M.A., instructor
Nancy Duncan	M.A., instructor
Daniel Firestone	M.A., instructor
James Flynn	M.A., instructor speech
Katherine Goerss	M.Ed., instructor
Peter Harris	M.A., instructor
Sally Jackoway	M.A., instructor
Margaret Jeffries	M.A., instructor speech
Virginia Jellech	M.A., instructor
Ralph Mastriani	M.A., instructor
Jane Parks	M.A., instructor
Barbara Relyea	M.A., instructor
April Schwartz	M.A., instructor
James Staudt	M.A., instructor
Edward Sullivan	M.A., instructor
Dwight Williams	M.A., instructor speech
Mary Dolan	M.A., assistant instructor
Marsha Healy	B.A., assistant instructor
Terrie Liberman	B.A., assistant instructor
Marilyn McConachie	M.A., assistant instructor

General Education Requirements Each English major must satisfy the general education requirements of the university listed on page 23 and the general education requirements of the school or college from which he expects to receive his degree. Courses in English—except English 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 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 331, 337, 338)
3. 17th-century (English 344 or 345)
4. 18th-century (English 354)
5. 19th-century (English 370, 371 or 372)
6. 20th-century (English 376, 383, 384 or 385)

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 and one additional course in American literature (besides the courses listed above, English 376 also fulfills this requirement).

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
Kenneth E. Miller	Ph.D., (Northwestern University), chairman, professor music
Marie Larkin	Ed.D., (University of Missouri-Columbia), professor art
Ronald Arnatt	B.Mus., associate professor music
Warren T. Bellis	D.M.A., (University of Michigan), assistant professor music
Evelyn Mitchell	(Concert Pianist), assistant professor music

College of Arts and Sciences

Fine Arts Faculty (Continued)

Franklin Perkins	Ph.D., (Washington University), assistant professor music
Arnold Perris	Ph.D., (Northwestern University), assistant professor music
Gertrude Ribla	(Metropolitan Opera), assistant professor music
Kenneth Billups	M.M., instructor music
Neil Bjurstrom	M.M., instructor music
Elizabeth Fischer	instructor music
Laura Hearne	B.M., instructor music
Sara Jenkins	M.A., instructor art
Patricia Kieft	M.A., instructor art
Henry Loew	instructor music
John MacEnulty	instructor music
Richard O'Donnell	instructor music
Leonard Ott	M.M., instructor music
Roland Pandolfi	instructor music
Delores Riley	M.A., instructor music
Alan Rosenketter	instructor music
Bernard Schneider	B.M., instructor music
Janet Scott	B.A., instructor music
Leslie Scott	B.S., instructor music
Gary Smith	M.M., instructor music
Mary Kay Stamper	M.A., instructor music
Takaoki Sugitani	instructor music
Jean Tucker	M.A., instructor art
Sylvia Walters	M.F.A., (University of Wisconsin) instructor art
Linda Warren	M.M., instructor music

The Department of Fine Arts offers a bachelor of arts (B.A.) with a major in music or music history and literature and a bachelor of music (B.M.) with a major in music education.

General Education Requirements Each major must satisfy the general education requirements of the university (see page 23). For the B.A. programs each major must complete 12 hours of science-mathematics, 18 hours of social sciences and 21 hours of humanities. (These exceed the requirements of the College of Arts and Sciences.) The college's foreign language requirement should be met in French or German. The B.M. program requires, in addition to the university general education requirements, a non-Western course and courses in music and education leading to teacher certification.

Departmental Requirements 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 during the period of undergraduate study.

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

MUSIC

Music Theory 3, 4, 111, 112
 Music History and Literature 101, 102
 Advanced Music Theory (2 hours)
 Music History and Literature, 300 level (3 hours)
 Conducting 151
 Principal Applied Area and Ensemble (16 hours)
 Senior Year Requirements

MUSIC HISTORY AND LITERATURE

Music Theory 3, 4, 111, 112
 Music History and Literature 101, 102
 Advanced Music Theory (4 hours)
 Music History and Literature, 300 level (9 hours)
 Piano (10 hours)
 Senior Year Requirements

MUSIC EDUCATION

Music Theory 3, 4, 111, 112
 Music History and Literature 101, 102
 Advanced Music Theory (2 hours)
 Music History and Literature, 300 level (3 hours)
 Principal Applied Music (14 hours)
 Secondary Applied Music (7-10 hours)
 Conducting 151, 351
 Ensemble (4 hours)
 Music in the Elementary and Secondary School (6 hours)
 Senior Year Requirements

Standards of achievement in applied music, piano proficiency and entrance requirements are on file in the Fine Arts Department office and the music major should familiarize himself with this information. Teacher certification requirements consist of a minimum of 18 credits in professional education including practice teaching.

College of Arts and Sciences

DEPARTMENT OF HISTORY

Faculty

James Neal Primm	Ph.D. (University of Missouri-Columbia), chairman, professor
Glen R. Driscoll	Ph.D. (University of Minnesota), chancellor, professor
James D. Norris	Ph.D. (University of Missouri-Columbia), professor
Gilman Ostrander	Ph.D. (University of California, Berkeley), professor
Roy Gene Burns, Jr.	Ph.D. (University of Missouri-Columbia), associate professor
Lyle W. Dorsett	Ph.D. (University of Missouri-Columbia), associate professor
Walter Ehrlich	Ph.D. (Washington University), associate professor
George F. Putnam	Ph.D. (Harvard University), associate professor
Arthur H. Shaffer	Ph.D. (University of California, Los Angeles), associate professor
Blanche M. Touhill	Ph.D. (St. Louis University), associate professor
Armand D. Erickson	M.A., assistant professor
Norma Erickson	Ph.D. (University of Washington), assistant professor
Henry E. Friedlander	Ph.D. (University of Pennsylvania), assistant professor
Louis Gerteis	Ph.D. (University of Wisconsin), assistant professor
Steven Hause	Ph.D. (Washington University), assistant professor
Susan M. Hartmann	Ph.D. (University of Missouri-Columbia), assistant professor
William Maltby	Ph.D. (Duke University), assistant professor
Richard W. Resh	Ph.D. (University of Wisconsin), assistant professor
Dolores Williams	Ph.D. (St. Louis University), assistant professor
Carney Fisher	M.A., instructor
Robert Nelson	M.A., instructor
Linda Resh	M.A., instructor

General Education Requirements Each history major must satisfy the general education requirements of the university listed on page 23 and the general education requirements of the College of Arts and Sciences listed on page 43. 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. Majors are required to take History 10 and 200; two courses chosen from 3, 4, and 230; 192 and 193. 18 hours of 300-level work in history is required.

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), assistant professor
William Connett	Ph.D. (University of Chicago), assistant professor
Allen Holmes	Ph.D. (University of Illinois), assistant professor
Ronald Irwin	Ph.D. (University of Utah), assistant professor
Wayne L. McDaniel	Ph.D. (St. Louis University), assistant professor
Stephen E. Newman	Ph.D. (University of Utah), assistant professor
Robert Sandling	Ph.D. (University of Chicago), assistant professor
Gerald Peterson	Ph.D. (University of Utah), assistant professor
Ulrich Schoenwaelder	Ph.D. (Universität Frankfurt), assistant professor
Alan L. Schwartz	Ph.D. (University of Wisconsin), assistant professor

College of Arts and Sciences

Mathematics Faculty (Continued)

Frederic, W. Wilke	Ph.D (University of Missouri-Columbia), associate chairman, assistant professor
Atlaw Beliligne	B.S., instructor
Ruth Boothby	M.A., instructor
Robert Bowden	A.M., instructor
Robert C. C. Chen	M.A., instructor
Sookja Chung	M.S., instructor
Jonathan Cohen	M.A., instructor
W. James Dillon	M.A., instructor
Robert Harter	M.A., instructor
Frank Luebbert	M.S., instructor
Barbara Matthei	M.A., instructor
Richard Matthei	M.A., instructor
Mark Nugent	M.S., instructor
Harold Tessereau	M.A., assistant to the chairman, instructor

General Education Requirements Each mathematics major must satisfy the general education requirements of the university listed on page 23 and the general education requirements of the College of Arts and Sciences listed on page 43. Courses in mathematics may be used to meet the university's science and mathematics area requirement. The college's foreign language requirement should be met in German, French or Russian. The non-Western area requirement may be met by any non-Western course.

Related Area of Study Requirements Each mathematics major must complete either a sequence of at least nine semester hours in each of two departments related to mathematics, including a course beyond the introductory level in one sequence, or a single sequence of at least 18 hours in one department. Related sequences may be chosen from Physics including 111 and 112; Chemistry 11 and 12 and above; Astronomy 11 and 12 and above; Philosophy, including 160, 250 and 360; Economics, including 365 and 366; or other areas approved by the Department of Mathematics.

Departmental Requirements Each mathematics major must complete six three-hour courses numbered above 201, including courses 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.

No grade below "C" in any mathematics course may be counted toward a major in mathematics and the student must achieve an overall grade point average of 2.0 in all courses attempted in his major department. A minimum of 12 hours of 300-level mathematics courses must be completed on the St. Louis campus.

Departmental Recommendations Majors preparing for graduate study are strongly advised to complete Mathematics 310, 311, 340 and 341.

DEPARTMENT OF MODERN FOREIGN LANGUAGES AND LITERATURES

Faculty

Marion Holt	Ph.D. (University of Illinois), chairman, associate professor Spanish
Enrique Noble	Ph.D. (University of Havana), professor Spanish
Alejandro Ramirez	Ph.D. (Washington University), visiting professor Spanish
Marcus Allen	Ph.D. (University of Pittsburgh), associate professor French
Alfred F. Goessl	Ph.D. (Tulane University), associate professor German
Vladimir Butkoff	M.A., assistant professor Russian
Robert I. Cloos	Ed.D. (Rutgers University), assistant professor German and education
Kay Cushman	Ph.D. (Indiana University), assistant professor French
Ingeborg Goessl	Ph.D. (University of Kansas), assistant professor German
Mary Guckel	Ph.D. (University of Illinois), assistant professor German
Paul Hoffman	M.A., assistant professor German
Maryse Beaugnier	M.A., instructor French
Alexandra Butkoff	B.A., instructor Russian
Eugene Dalton	M.A., instructor German
Julianne Dueber	M.A., instructor Spanish
Luz M. Garces	M.A., instructor Spanish
Anne Hintz	M.A., instructor French
Zayda Jung	M.A., instructor Spanish
Albert Kalmar	M.A., instructor German

College of Arts and Sciences

Languages Faculty (Continued)

Marie Koons	M.A., instructor French
Michael J. Mahler	M.A., instructor Spanish and director language laboratory
Willem H. Marda	M.A., instructor German
Nerina Martinez	Ed.D. (University of Camaguey, Cuba), instructor Spanish
Dolores Richardson	M.A., instructor French
Barbara C. Sandmel	M.A., instructor French
Harriet Waller	M.A., instructor French
Anne Weitzel	M.A., instructor French
Leland D. Wright	M.A., instructor Spanish
Susan Spagna	B.S., assistant instructor Spanish

The Department of Modern Foreign Languages and Literatures offers work leading to the degree of bachelor of arts and a major in foreign language and literature for the 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 23 and the general education requirements of the College of Arts and Sciences listed on page 43. Courses in foreign language literature 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 in any non-Western course.

Departmental Requirements Students petitioning for a major in modern foreign languages and literatures must have completed eight hours of course work or its equivalent in the language selected with a grade of "C" or better.

Each major in French or Spanish must complete 35 hours of the language and literature courses above the introductory level, including: 101, 102, 108, 200, 201, 202 and four courses on the 300 level, one of which must be 399. German majors must take 101, 102, 108, 200, 201, 301, 302, 399 and four other upper level courses which shall be specified by the department. A grade point average of 2.0 must be attained in the major language. (A grade of "B" is required in course 108 in French, German and Spanish.)

All students seeking the A.B. degree in foreign language who desire a teaching certificate must meet the departmental requirements (35 hours) for a major in language. In addition they must take courses 220 (Introduction to Linguistics) and 264 (Curriculum and Methods) and

fulfill the Professional Secondary Education Requirements of the School of Education. (Those students seeking B.S. degree in education with a major in foreign language are required to complete only 30 hours of work within the department; 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 Introduction to Linguistics 220 and additional work in language and literature courses on the 300 level, up to a maximum of 45 hours. French majors are also strongly urged to take French 210. Although the language major is encouraged to prepare himself as thoroughly as possible, the total of 35 hours may be reduced in proportion to the degree of success achieved on a placement test taken upon his entrance to the university. All language majors are urged to take the Undergraduate Record Examination in the senior year.

Students who are natives of French, German, Russian or Spanish speaking countries, or who speak those languages fluently, should consult the department before electing courses in these languages and literatures.

It is strongly recommended that a language major take a minimum of 12 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, English 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 during the summer preceding the senior year. This program must be approved by the department and appropriate credit toward the major will be granted.

DEPARTMENT OF PHILOSOPHY

Faculty

James F. Doyle	Ph.D. (Yale University), chairman, associate professor
Edward B. Costello	Ph.D. (Northwestern University), associate dean, College of Arts and Sciences, associate professor
Peter Fuss	Ph.D. (Harvard University), associate professor
David A. Conway	Ph.D. (Princeton University), assistant professor

College of Arts and Sciences

Philosophy Faculty (Continued)

J. Ronald Munson	Ph.D. (Columbia University), assistant professor
Henry L. Shapiro	Ph.D. (Columbia University), assistant professor
John E. Clifford	M.A., instructor
David V. C. Lincicome	M.A., instructor
Mario F. Morelli	M.A., instructor
Stephen E. Norris	M.A., instructor
Peter L. Oppenheimer	M.A., instructor
James H. Walters	M.A., instructor
Carol J. Nisbet	M.A., instructor in classics

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 special 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—to 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 23 and the general education requirements of the College of Arts and Sciences listed on page 43. Students may take any course in philosophy to meet the university's humanities area requirement.

Departmental Requirements Each philosophy major must complete 30 hours of philosophy including Philosophy 160 and three courses from the Philosophy 201-205 sequence in the history of philosophy. At least three of the philosophy courses must be at the 300 level.

With consent of the department, each qualified major in philosophy may earn departmental honors by 1) completing at least six hours and no more than nine hours of Philosophy 391 (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 391.

A maximum of 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 and Staff

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
Robert Hight	Ph.D. (University of Missouri-Columbia), associate professor
John S. Rigden	Ph.D. (Johns Hopkins University), associate professor
Bob L. Henson	Ph.D. (Washington University), assistant professor
Charles N. Inskip	Ph.D. (University of Tennessee), assistant professor
Philip B. James	Ph.D. (University of Wisconsin), assistant professor
Jacob J. Leventhal	Ph.D. (University of Florida), assistant professor
Gerald R. North	Ph.D. (University of Wisconsin), assistant professor
Nancy M. O'Fallon	Ph.D. (University of Illinois), assistant professor
Suzanne Gronemeyer	A.M., instructor
Louis Deall	M.S., instructor
Robert E. Hubbard	director of physics laboratories
Leonard Piskorski	machine shop foreman

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

College of Arts and Sciences

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 23 and 43). 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. 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-three hours of physics including Physics 1, 10, 15, 111, 112, 211, 212, 221, 223, 231, 241, 282 and 301.

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 option 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-one hours of mathematics including Mathematics 80, 122, 175, 201, and 302. (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 Forty-four to forty-seven (44-47) hours of physics including Physics 1, 10, 15, 111, 112, 211, 212, 221, 223, 231, 241, 289 (Total of two credit hours), 290 (Total of three credit hours), 301 (Mathematics 304 may be substituted for Physics 301), 321, 323, 331, and 335.

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-one to twenty-four hours of mathematics including Mathematics 80, 175, 122, 101, and 302. 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. Mathematics 304 may be substituted for Physics 301. Chemistry 11 or equivalent is required. All students are urged to begin the calculus sequence (Mathematics 80) as soon as possible.

Departmental Requirements Forty-five to forty-eight (45-48) hours of physics including Physics 1, 10, 15, 111, 112, 211, 212, 221, 223, 241, 301 (Mathematics 304 may be substituted for Physics 301), 321, 323, 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.

College of Arts and Sciences

Related Area of Study Requirements Twenty-one to twenty-four (21-24) hours of mathematics including Mathematics 80, 175, 201, 122, 302. Students with experience in digital computer programming may be excused from Mathematics 122. Additional hours of mathematics are recommended. Mathematics 304 may be substituted for Physics 301. Chemistry 11 and 12 or equivalent is required. Additional hours of chemistry are recommended. All students are urged to begin the calculus sequence (Mathematics 80) as soon as possible.

Departmental Requirements Forty-four to forty-seven (44-47) hours of physics including Physics, 1, 10, 15, 111, 112, 201, 202, 211, 212, 215, 221, 223, 225, 231, 241, 289 (Total of two credit hours) 301 (Mathematics 304 may be substituted for Physics 301), and 323.

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.

DEPARTMENT OF POLITICAL SCIENCE

Faculty

Lyman T. Sargent	Ph.D. (University of Minnesota), chairman, assistant professor
Edwin H. Fedder	Ph.D. (American University), professor
Werner F. Grunbaum	Ph.D. (University of Chicago), professor
Robert S. Sullivant	Ph.D. (University of Chicago), dean, Graduate School, professor
Hampton T. Davey	Ph.D. (University of California, Los Angeles), assistant professor
Edward C. Dreyer	Ph.D. (University of North Carolina), assistant professor
E. Terrence Jones	Ph.D. (Georgetown University), assistant professor
Ruth Jones	Ph.D. (Georgetown University), assistant professor
Eldon S. Miller	Ph.D. (George Washington University), assistant professor, geography*

*Staff Urban Planner of the Center of Community and Metropolitan Studies.

Political Science Faculty (Continued)

Mark Stern	Ph.D. (University of Rochester), assistant professor
Stephen E. C. Hintz	M.A., instructor
Joyce R. Lilie	M.A., instructor
Stuart A. Lilie	M.A., instructor
Thomas J. Pavlak	M.A., instructor
Frederic Pearson	M.A., instructor
Thomas Zant	M.A., instructor

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 23 and the general education requirements of the College of Arts and Sciences listed on page 43. 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 in 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

College of Arts and Sciences

- Group IV: Comparative Politics (course 255 may not be used to satisfy this requirement)
- 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 86. 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

Alan G. Krasnoff	Ph.D. (The University of Texas), chairman, professor
Edmund S. Howe	Ph.D. (University of London), professor
Arthur L. Irion	Ph.D. (State University of Iowa), professor
Lewis J. Sherman	Ph.D. (University of Illinois), director, counseling service, professor
Frederick J. Thumin	Ph.D. (Washington University), professor*
James F. Lomont	Ph.D. (University of Illinois), 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
Theresa S. Howe	Ph.D. (University of California, Berkeley), assistant professor
Donald D. Lisenby	Ph.D. (Washington University), assistant professor
Samuel J. Marwit	Ph.D. (State University of New York at Buffalo), assistant professor
Doris P. Mosby	Ph.D. (Washington University), assistant professor
Miles L. Patterson	Ph.D. (Northwestern University), assistant professor

*Primary appointment, School of Business Administration.

Psychology Faculty (Continued)

Milton E. Strauss	Ph.D. (Harvard University), assistant professor
James T. Walker	Ph.D. (University of Colorado), assistant professor

General Education Requirements Each psychology major must satisfy the general education requirements of the university listed on page 23 and the general education requirements of the College of Arts and Sciences listed on page 43. Courses in psychology may be used to meet the university's social science area requirement. The College of Arts and Sciences' foreign language requirement should be met in French, German or Russian. The non-Western requirement may be met by any non-Western course.

Related Area of Study Requirements Each psychology major must take Mathematics 40 or the equivalent prior to or concurrent with Psychology 201.

Departmental Requirements Each psychology major must complete 32 hours of psychology including Psychology 1 and 2 (preferably in the freshman year), 201 (preferably in the sophomore year), 219 and one of the following: 314, 355, 357, 358 or 365 (preferably in the junior year), 361 (preferably in the senior year) and 192 and 193 (for seniors only). He must take seven elective hours in psychology courses.

Each psychology major must pass a comprehensive examination during his senior year.

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

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY

Faculty

K. Peter Etzkorn	Ph.D. (Princeton University), chairman, professor sociology
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

College of Arts and Sciences

Sociology-Anthropology Faculty (Continued)

Harry H. Bash	Ph.D. (University of Pennsylvania), assistant professor sociology
Mridula A. Durbin	Ph.D. (State University of New York at Buffalo), assistant professor anthropology
Richard C. Gilman	Ph.D. (University of Chicago), assistant professor sociology
Thomas H. Hay	Ph.D. (Michigan State University), assistant professor anthropology
Edward C. Lehman, Jr.	Ph.D. (Mississippi State University), assistant professor sociology
Richard A. Ferrigno	M.A., instructor sociology
Charles C. Lantz	M.A., instructor anthropology
Edward Sabin	M.A., instructor sociology

The Department of Sociology and Anthropology offers the B.A. degree with the following three-fold aim: (1) to prepare for graduate school students desiring to work professionally in sociology, anthropology and social service; (2) to provide a broad background in the social sciences for those interested in a liberal education and in careers in business or 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 offerings 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 23, and the general requirements of the College of Arts and Sciences listed on page 43. 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 43). The Asian-African area requirement may be met by any non-Western course.

Related Area Requirements During their course of studies majors in the Department of Sociology and Anthropology 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.

Departmental Requirements Three emphases are recognized within the departmental program of undergraduate studies: Sociology, Undergraduate Social Service, and Anthropology. All students, regardless of program emphasis, are required to pass the following basic courses:

Sociology 20 Sociological Inquiry (3)
 Sociology 110 Sociological Theory (3)
 Sociology 130 Research Methods (3)

In addition to these basic courses, students must complete requirements for their major as follows:

Emphasis I: General Sociology Major

Sociology 120 *Quantitative Techniques in Sociology (3)
 Sociology 390 Senior Seminar (Thesis Research) (3)

Fifteen (15) hours of upper division credits selected from sociology and/or anthropology courses.

Emphasis 2: Undergraduate Social-Service Major

Sociology 120 *Quantitative Techniques in Sociology (3)
 Sociology 140 Sociological Aspects of Social Work (3)
 Sociology 210 Criminology or
 Sociology 214 Juvenile Delinquency (3)
 Sociology 360 Sociology of Minority Groups (3)
 Sociology 390 Senior Seminar (Thesis Research) (3)

Six (6) hours of upper division credit in sociology or anthropology. Suitable electives are: Sociology of the Family, Sociology of Education, Social Stratification, Urban Sociology, Problems of the Urban Community.

Emphasis 3: Anthropology Major

Anthropology 5 Human Origins (3)
 Anthropology 11 Man, Culture and Society (3)
 Anthropology 381 Theory of Anthropology (3)
 Anthropology 390 Senior Seminar (Thesis Research) (3)

Nine (9) upper division credits selected from the offerings in anthropology and/or sociology. Three additional credit hours in Philosophy of Science (Philosophy 250 or 335) are also recommended for anthropology majors.

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

School of Business Administration

Faculty

Emery C. Turner	D.B.A. (Washington University), dean, professor accounting
Donald H. Driemeier	D.B.A. (Washington University), assistant dean, assistant professor finance
Sioma Kagan	Diplom-Ingenieur, Ph.D. (Columbia University), professor international business
Frederick E. May	Ph.D. (University of Michigan), professor marketing
Frederick J. Thumin	Ph.D. (Washington University), professor management and psychology
Howard B. Baltz	Ph.D. (Oklahoma State University), associate professor quantitative management science
Helmut R. Kollai	Ph.D. (University of Goettingen) associate professor management
R. Frank Page	Ph.D. (University of Illinois), C.P.A., associate professor accounting
Robert A. Schuchardt	D.B.A. (Washington University), associate professor accounting
Louis J. Shuster	D.B.A. (University of Washington), associate professor management
Stanley L. Sokolik	Ph.D. (Ohio State University), associate professor management
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
Albert P. Ameiss	Ph.D. (St. Louis University), assistant professor accounting
Ronald E. Carlson	M.B.A. (University of Wisconsin), C.P.A., assistant professor accounting
Andre B. Corbeau	Ph.D. (Tulane University), assistant professor quantitative management science
Vincent B. D'Antoni	D.B.A. (Washington University), assistant professor finance

Richard W. Furst	D.B.A. (Washington University), assistant professor finance
Joseph P. Giljum	J.D., (St. Louis University) L.L.M. (New York University), C.P.A., assistant professor law and taxation
Robert E. Markland	D.B.A. (Washington University), assistant professor quantitative management science
Carl F. Meyer	D.Sc. (Washington University), assistant professor quantitative management science
James J. Wong	Ph.D. (Ohio State University), assistant professor marketing
Richard W. Beatty	M.B.A., instructor management
Richard E. Carmody	M.S. in C., instructor marketing
Kurt E. Chaloupecky	M.A., instructor accounting
John E. Cox	M.A., C.P.A., instructor accounting
Douglas E. Durand	M.B.A., instructor management
Robert C. Frese	M.S., instructor quantitative management science
David R. Ganz	M.S. in C., dean, Student Affairs, instructor accounting
William P. Heinbecker	M.A., instructor quantitative management science
Marie Adele Humphreys	M.A., instructor quantitative management science
Spencer D. Jordan	M.S., instructor management
Nicholas A. Kargas	M.S., C.P.A., instructor accounting
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
Kaye E. Shumate	B.S., instructor quantitative management science

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

School of 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. To be admitted to the School of Business Administration, a student must present sixty (60) credit hours of course work with a two point (2.0) minimum grade point average for all work taken at the university. (Transfer credit will be evaluated to assure similar requirements for all prospective students to the School of Business Administration.)

It is recommended that the sixty (60) hours of work needed for admission 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 and non-Western course within his first sixty hours. The accounting, economics, statistics, science and non-Western requirements are those of the School of Business Administration, and hence, are referred to specifically.

General Education Requirements All business administration students must complete the requisite courses to fulfill the university general education requirements listed on page 23.

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 requirements:

A. Economics 50 and 51	6 hours
B. A course in a non-Western subject	3
C. One lecture course in a biological or physical science	3
D. Minimum proficiency of College Algebra (Mathematics 40–Pre-Calculus Mathematics)	4
Remaining university general education requirements	<u>26</u>

42 hours

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

- A. Fourteen hours (14) of one foreign language, or
- B. A minimum of Mathematics 101 or 80 and one additional quantitative course chosen from Mathematics 175; Business Administration 104, 231, or 375; or Economics 365. (Mathematics 80 is prerequisite to higher mathematics; Mathematics 101 is a terminal mathematics course for those desiring no additional mathematics.)

The 14 hours in language may *not* be included among the 42 hours of the general education requirement; 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. 106—Basic Marketing	3
Business Admin. 202—Fundamentals of Production	3
Business Admin. 204—Financial Management	3
Business Admin. 310—Personnel Administration	3
Business Admin. 156—Legal Environment of Business	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.

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

School of Business Administration

requirements as follows:

A student must demonstrate a minimum proficiency in mathematics, defined by the School of Business Administration faculty as the equivalent to college algebra. College algebra or Mathematics 40—Pre-Calculus Mathematics is prerequisite to the School of Business Administration requirement that all students take Business Administration 31—Elementary Statistics.

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 partially fulfilled by two School of Business Administration requirements: Pre-Calculus Mathematics and a science lecture. (This assumes that a student does not transfer in a proficiency of college algebra or greater.) A student, then, who exercises the mathematics option (described below) while pursuing a B.S. degree in Business Administration would complete this general education requirement by taking one additional course in mathematics as required by that option: the equivalent of either Mathematics 101—Survey Calculus, or Mathematics 80—Analytic Geometry and Calculus I.

A student exercising the language option (also described below) must take an additional course in mathematics or science to fulfill the general education requirement calling for at least three courses from these combined areas. 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, 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 80—Analytic Geometry and Calculus I. 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 14 hours of a foreign language. This is satisfied by taking a sequence of courses numbered 1—four hours credit, 2—four hours credit, 101—three hours credit and 102—three hours credit. Such students must still meet the School of Business Administration college algebra and science lecture requirement and take an additional mathematics or science course to fulfill the general education requirements. The 14 hours of foreign language will be counted towards 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 104—Fundamentals in Digital Computer Programming; or Business Administration 375—Operations Research. 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** include economics, history, political science, psychology, and sociology and anthropology. A student seeking a B.S. degree in Business Administration automatically fulfills this requirement. The social science requirement is met, in part, by satisfying the state requirement. History 3 or 4—American Civilization, or Political Science 11—Government in Modern Society, are some of the courses which fulfill this requirement. The state requirement is mandatory for all students. The social science requirement is completed by meeting the School of Business Administration requirement that a B.S. candidate take Economics 50 and 51—Principles of Economics.

School of Business Administration

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 (Social Science). This is not a complete list of non-Western courses.

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

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

Faculty

George E. Mowrer	Ed.D. (University of Missouri-Columbia), dean, professor
Richard Burnett	Ed.D. (Indiana University), professor
Thomas Jordan	Ed.D. (Indiana University), professor
H. E. Mueller	Ed.D. (University of Missouri-Columbia), director of admissions and registrar, professor
Hans C. Olsen	Ed.D. (University of Illinois), assistant dean, professor
Wallace Ramsey	Ed.D. (University of Missouri-Columbia), professor
Harold Richey	Ph.D. (University of Kansas City), professor
Ivan Russell	Ph.D. (University of Michigan), professor
Arthur Smith	Ph.D. (St. Louis University), associate dean, professor
Huber Walsh	Ed.D. (University of California, Los Angeles), professor
Joy Whitener	Ed.D. (Washington University), dean, Evening College, professor
Kingsley Wientge	Ed.D. (Washington University), professor
Ward E. Barnes	M.A., Honorary Doctorate of Laws (University of Missouri-Columbia), visiting professor
Walter Cegelka	Ed.D. (Syracuse University), associate professor
Walter Ehrlich	Ph.D. (Washington University), associate professor
Margaret Fagin	Ed.D. (Syracuse University), associate professor
Robert Gard	Ed.D. (Arizona State University), associate professor
George Marconnit	Ph.D. (University of Iowa), associate professor
John Rigden	Ph.D. (Johns Hopkins University), associate professor
John Shultz	Ph.D. (University of Iowa), associate professor
Charles Smith	M.S., associate professor
Blanche Touhill	Ph.D. (St. Louis University), associate professor
Harold Turner	Ed.D. (George Peabody College), associate professor
Henry Weinstock	Ed.D. (University of Georgia), associate professor

School of Education

Education Faculty (Continued)

Jane Williamson	Ph.D. (Bryn Mawr College), associate professor
Warren Bellis	D.M.A. (University of Michigan), assistant professor
Frederick Brechler	Ph.D. (Ohio State University), assistant professor
Carol Burden	Ed.D. (University of Illinois), assistant professor
Larry Burden	Ed.D. (University of Illinois), assistant professor
Earl Clark	Ed.D. (Wayne State University), assistant professor
Robert Cloos	Ed.D. (Rutgers University), assistant professor
Richard Dustin	Ph.D. (University of Minnesota), assistant professor
Rickey George	Ph.D. (Northwestern University), assistant professor
Donald Greer	Ph.D. (University of Missouri-Columbia), assistant professor
William Griffith	Ph.D. (University of Iowa), assistant professor
Allen Holmes	Ph.D. (University of Illinois), assistant professor
Diana Jordan	Ph.D. (Wayne State University), assistant professor
Alice Klein	Ph.D. (New York University), assistant professor
Enno Lietz	Ph.D. (Southern Illinois University), assistant professor
Arthur Littleton	Ph.D. (St. Louis University), assistant professor
Jon Marshall	Ed.D. (University of Kansas), assistant professor
Jane Miller	Ph.D. (Tulane University), assistant professor
John Morris	Ph.D. (St. Louis University), assistant professor
Carmelita O'Connor	Ph.D. (St. Louis University), assistant professor
Jerry Pulley	Ed.D. (University of Missouri-Columbia), assistant professor

Education Faculty (Continued)

Robert Rea	Ph.D. (Southern Illinois University), assistant professor
Leo Rodenborn	Ed.D. (Oklahoma State University), assistant professor
Virgil Sapp	B.S., dean, Extension Division, assistant professor
Drew Tinsley	Ph.D. (University of Texas), assistant professor
Paul Travers	Ed.D. (George Peabody College), assistant professor
Doris Trojcek	Ed.D. (Indiana University), assistant professor
Clive Veri	Ph.D. (University of Nebraska), assistant dean, Extension Division, assistant professor
Elizabeth Watson	Ed.D. (Indiana University), assistant professor
Aline Crawford	M.A., instructor
Katherine Goerss	M.Ed., instructor
Charlotte Twomey	M.S., instructor
Edith Young	M.Ed., instructor

The School of Education curriculum includes work leading toward a bachelor of science in education with specialization in any of the following: early childhood education, elementary education, secondary education and special education. In cooperation with other schools and colleges of the university, the School of Education participates in providing a Dual Program for students pursuing other degrees but planning a teaching career.

Admission to Teacher Education Programs After completing two years of college course work at an accredited institution, students who intend to teach apply to the School of Education for admission to a teacher education program. Students who have completed two full years or more of college work in some institution other than the University of Missouri - St. Louis, must be fully admitted to the university before being admitted to the School of Education. Students who intend to receive degrees from other colleges or schools in the university and a teaching certificate from the School of Education must be admitted to the Dual Program through the School of Education.

The standards listed below apply to those students entering the School of Education for the first time with junior year or higher standing and those working for a secondary school teaching certificate

School of Education

although officially enrolled in other colleges or schools in the university (Dual Program).

Admission Requirements 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 54 semester hours of work must be completed with a grade point average of 2.00 or above. The quality of work must indicate a strong potential for success in a teacher education program. 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. Satisfactory Emotional and Physical Qualifications A student must give evidence of those qualities necessary for success in teaching.

4. Special Requirements Specific prerequisites and/or other special requirements of the curriculum area for which the student is applying must be met.

Early Application Since admission procedures take considerable time, all applicants are urged to present their formal applications for admission to the School of Education as early as possible, and in all cases, at least six weeks before the beginning of any semester.

Advisement The programs for teacher education vary considerably. It is necessary to plan the four year program 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 program, 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 who expect to teach in high schools must meet certification requirements, which include strong majors (and specific subject concentrations) in their chosen teaching fields. Early advisement is essential. Students should continue to consult with their advisers before enrolling each semester.

Teacher 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 Dual Program requirements. All requests and inquiries regarding certification should be directed to the Office of Teacher Certification in the School of Education.

Admission to Student Teaching The student must make formal application for admission to student teaching at least one semester prior to the one in which he plans to do his student teaching. Applications must be filed during the period designated by the Student Teaching Office.

Requirements for Student Teaching Placement

1. Full admission to the School of Education must be accomplished before application for student teaching can be accepted.
 2. Satisfactory recommendation by the student's adviser in the teacher education program.
 3. Completion at the University of Missouri – St. Louis of not less than 12 semester hours of course work authorized by the student's adviser in the teacher education program.
 4. Adequate work in the teaching major as defined by the student's teaching area.
 5. Completion of prerequisite courses in professional education.
 6. Satisfactory completion of 90 semester hours of accepted university work.
 7. A minimum grade point average of 2.00.
- Application forms are available at the Student Teaching Office during the published application periods.

Programs Leading to a Bachelor of Science in Education Degree

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	<u>3 hours</u>

School of Education

Mathematics

Mathematics 50 and one additional course (Mathematics 51 recommended)	<u>6 hours</u>	6
---	----------------	---

Science

Biological Science	3 hours	8
Physical Science	3 hours	
Science Lab	<u>2 hours</u>	

Humanities

Music 134 plus two courses chosen from the fields of art, music, philosophy and literature	<u>8 hours</u>	8
--	----------------	---

Social Science

Psychology 1, 2, and 270	9 hours	21
Political Science 11 or 376	3 hours	
History 3 and 4	6 hours	
Sociology 224	<u>3 hours</u>	

Departmental Requirements

Ed. 101 The School in Contemporary Society	3 hours	33
Ed. 140 Elementary School Organization, Management & Techniques of Teaching	3 hours	
Ed. 150 Children's Literature & Language Arts	3 hours	
Ed. 302 Psychology of Teaching & 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	3 hours	
Ed. 318 Exploring the Social World With Young Children	3 hours	
Ed. 325 Teaching Reading in the Elementary School	3 hours	
Ed. 251 Elementary School Student Teaching	<u>6 hours</u>	

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

Electives	<u>26 hours</u>	
		26
		<u>120 hours</u>

ELEMENTARY EDUCATION The Elementary Education curriculum prepares students to teach in grades one through eight.

General Education Requirements

English, Speech

English 10	3 hours
Speech 101	<u>3 hours</u>

6

Mathematics

Mathematics 50 and one additional course (Mathematics 51 recommended)	<u>6 hours</u>
--	----------------

6

Science

Biological Science	3 hours
Physical Science	3 hours
Science Lab	<u>2 hours</u>

8

Humanities

Music 134 plus two courses chosen from the fields of art, music, philosophy and literature	<u>8 hours</u>
---	----------------

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	<u>3 hours</u>

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	<u>3 hours</u>

11

Departmental Requirements

Ed. 101 The School in Contemporary Society	3 hours
--	---------

School of Education

Departmental Requirements (Continued)

Ed. 140 Elementary School Organization, Management & 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 & Learning	3 hours
Ed. 325 Teaching Reading in the Elementary School	3 hours
Ed. 251 Elementary School Student Teaching	<u>6 hours</u>

30

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	<u>18 hours</u>
-----------------	-----------------

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, the provision for that is made in the special education program.

General Education Requirements in Elementary Education

See page 84	<u>50 hours</u>
-------------------	-----------------

50 hours

Related Area Requirements in Elementary Education

See page 84	<u>11 hours</u>
-------------------	-----------------

11 hours

Departmental Requirements in Elementary Education

See page 84 24 hours
 (Education 251 not required) 24 hours

Departmental Requirements in Special Education

Ed. 313 (Psych. 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
 21 hours

Electives 15 hours
 15 hours
 120 hours

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 23 42 hours
 42 hours

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. 162, 261-9 Methods Course in Teaching Major 3 hours
 Ed. 271 Secondary School Student Teaching 6 hours
 21 hours

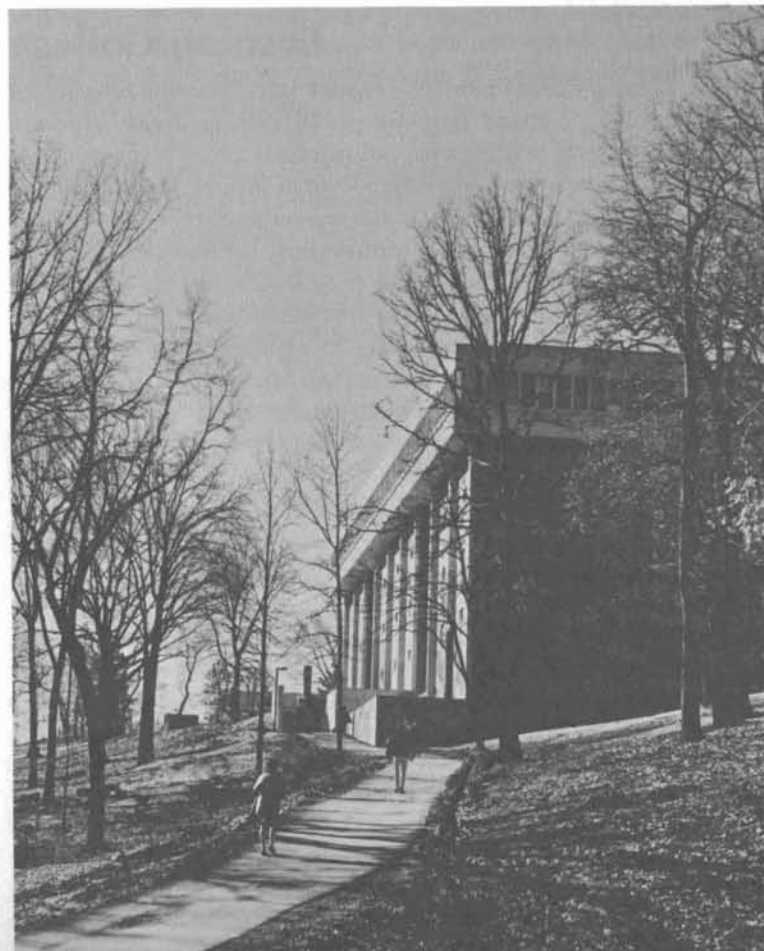
Teaching Fields

Students in this program must prepare to teach in a secondary school teaching field. Fields require 30 to

School of Education

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) 30-40 hours

Electives 17-27 hours
 120 hours



Graduate School

A graduate program in education is available which provides the complete program for the master's degree in education (M.Ed.) in the areas of elementary or secondary education, elementary school administration, secondary school administration, elementary guidance and counseling or secondary guidance and counseling.

The University of Missouri – St. Louis offers the master of arts (M.A.) degree in economics, history, political science and sociology and the master of business administration (M.B.A.) degree.

For details of the programs and for specific admissions requirements, see the Graduate Bulletin or contact the Admissions Office or the appropriate dean.

Evening College

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

Degrees offered by the Evening College include the bachelor of arts, the bachelor of science in the administration of justice, the bachelor of science in business administration, the bachelor of science in chemistry, the bachelor of science in education and the bachelor of science in physics (with three areas of specialization).

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

Graduate courses are available to evening students in several areas. (See the Graduate School announcement above.) Prospective applicants should consult the appropriate school or department for further information.

Evening classes are scheduled between 5:20 p.m. and 9:25 p.m. in such a way as to enable students to carry a full academic load.

Counseling and Advising Services As part of the Evening College's attempt to assist its students and prospective students in their course planning and vocational choice, counseling and advising services are available during day and evening hours. A staff of professional counselors and 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.

Students transferring from other colleges or universities should request a transcript evaluation as soon as possible after enrolling. All

Evening College

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

Admission Applications for admission 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 17.

Description of Courses

All courses offered at the University of Missouri–St. Louis are listed by departments or fields of learning in alphabetical order. 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 the University of Missouri – Kansas City.

The university reserves the right to cancel without notice any course listed in the *General Catalog* or in the *Schedule of Courses* for any semester or to withdraw any courses which do not have an 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:

- | | |
|------------|---|
| 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 |

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

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

ADMINISTRATION OF JUSTICE PROGRAM

Prerequisites may be waived by consent of department.

- 200 American System of Justice – Institutional (3)**
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).
- 220 American System of Justice – Legal (3)**
The objective of social control; mechanisms of social control; the American legal system as one mechanism; kinds of deviance to be controlled through it; problem areas (gambling, narcotics, sexual behavior, etc.)
- 250 Police Administration (3)**
Organization and administration of police systems; peculiar characteristics of police organizations and police personnel; relation of police departments to other public agencies; control and responsibility of police departments. In general, the application of generalizations from public administration to police systems.

Description of Courses

- 280 Senior Seminar – Special Problems in the Administration of Justice (3)**
Prerequisite: Consent of instructor. Study of selected special problems in the administration of justice.

- 290 Senior Readings (3)**
Prerequisite: Consent of instructor. Independent study to meet individual needs, interests, and problems that the student may have in any of the specialized fields in the administration of justice. Progress meetings between the student and the instructor will be held regularly.

ANTHROPOLOGY

Prerequisites may be waived by consent of department.

- 5 Human Origins (3)**
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)**
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.
- 90 Freshman Seminar (3)**
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 128 Languages of the World (3)**
Language as a vehicle of communication and as a socio-cultural institution—unity and diversity in human languages. The phonological, syntactic, and semantic systems of Indo-European and non-Indo-European languages of the world.
- 303 Cultures of South Asia (3)**
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)**
Prerequisite: Anthropology 11 or consent of the instructor. A survey of the cultures of Southeast Asia including the prehistory of the area, the ethnographic and linguistic groupings, and their social organization and cultural systems of these groups. This course satisfies the Asian-African requirement of the College of Arts and Sciences.

Anthropology (Continued)

- 307 Cultures of Native North America (3)**
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)**
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.
- 335 Cultural Change and Applied Anthropology (3)**
Prerequisite: Anthropology 11 or consent of instructor. The interactions and underlying processes of change in the meeting of divergent cultural systems. Reactions of native societies of Africa, the Americas, and Asia to modern state systems.
- 345 Language and Culture (3)**
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)**
Prerequisite: One course in linguistics or consent of instructor. Linguistic analysis of syntax including introduction into formal structures of symbolic, social and cultural behavior.
- 355 Political Anthropology (3)**
Prerequisite: Anthropology 11 or consent of instructor. A review of the pertinent literature on the political process in native and non-Western societies with emphasis upon local-level politics in traditional-modern interface of emerging nations.
- 365 Comparative Religions (3)**
Prerequisite: Anthropology 11 or consent of the instructor. A survey of supernatural elements of cultural systems and the place of religion in human societies with emphasis upon non-Western, traditional societies.
- 377 Culture and Personality (3) (Same as Psychology 377)**
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)**
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)**
Prerequisite: Anthropology 11, 381 and senior standing. Completion of a major report dealing with the subject chosen through student-staff consultation. Periodic conferences with designated faculty.

Description of Courses**391 Current Issues in Anthropology (3)**

Prerequisite: Anthropology 11 or consent of the instructor. The current literature (journals and books) will be read to understand current trends and problems in the field.

ART HISTORY, THEORY

Prerequisites may be waived by consent of department.

- 1 Masterpieces of Art (3)**
Illustrated discussion with examples from varied historic and contemporary art fields on the nature of art, functions and methods of creative expression. This course will not apply toward requirements for an art major.
- 6 Introduction To The African Arts (3)**
A survey of the cultural contributions of African music, dance and sculpture to contemporary America.
- 90 Freshman Seminar (3)**
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 101 History of Western Art (3)**
Prerequisite: Sophomore standing or consent of department. Illustrated lectures and discussion of the architecture, sculpture, painting of Greece, Rome and Medieval Europe.
- 102 History of Western Art (3)**
Prerequisite: Sophomore standing or consent of department. Illustrated lectures and discussion of the general development of art and architecture from the fourteenth century to the present.
- 139 Art Activities For Elementary Schools (3) (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.
- 305 Classical Art and Archaeology of Greece and Rome (3)**
Prerequisite: Sophomore standing or consent of department. A general survey of the development of material culture in Greece and Rome from the earliest times through the Hellenistic Period and through the early Roman Empire.
- 310 Medieval Art (3)**
Prerequisite: Art 101. The art and architecture of the Middle Ages from the early Christian era through the late Gothic Period.

Art History (Continued)

- 321 Italian Renaissance Art (3)**
Prerequisite: Art 102. 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)**
Prerequisite: Art 102. 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)**
Prerequisite: Art 102. 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)**
Prerequisite: Art 102. Seventeenth century art in Holland, Flanders and Spain with emphasis on such artists as Rembrandt, Rubens, VanDyck and Velasquez.
- 330 American Art (3)**
Prerequisite: Art 102 or consent of department. 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)**
Prerequisite: Art 102. The study of European Art from Neoclassicism and Romanticism through Post-Impressionism.
- 342 Twentieth Century Art (3)**
Prerequisite: Art 102. 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)**
Prerequisite: Art 102. Dealing with the history of print forms: woodcuts, etchings, engravings, 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.

BIOLOGY

Prerequisites may be waived by consent of department.

- 1 General Biology (3)**
Emphasis on fundamental principles of biology. Biology 1 can be applied toward fulfillment of the general education requirement in science. Biology 1 does not satisfy the prerequisite requirements of other courses in biology. Students who plan to pursue a career in medicine or one of the medically oriented professions should enroll in Biology 11/12 rather than Biology 1.

Description of Courses

- 3 General Biology Laboratory (2)**
Prerequisite: Biology 1 (may be taken concurrently). Laboratory course to accompany Biology 1. Biology 3 can be used to fulfill the general education requirement in a laboratory science. Biology 3 does not meet the prerequisite requirements of other courses in biology. Three and one-half hours laboratory per week.
- 11 Introductory Biology I (5)**
Prerequisite: Chemistry 11 (may be taken concurrently). Biology 11/12 provides a two-semester sequence giving intensive introduction to the general properties of living systems, both plant and animal. Three hours lecture and three and one-half hours laboratory per week.
- 12 Introductory Biology II (5)**
Prerequisite: Biology 11. Continuation of Biology 11. Three hours lecture and three and one-half hours laboratory per week.
- 110 The Biology of Man (3)**
Prerequisite: Biology 1. Lectures, discussions and assigned readings concerning man's characteristics as an organism and the details of his changing relationship to his environment. Three hours lecture per week.
- 115 Human Heredity and Evolution (3)**
Prerequisite: Biology 1. The study of heredity and evolution with special reference to human populations. Three hours lecture per week.
- 180 Methods of Teaching Biology in Secondary Schools (3)**
Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the science 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 science.
- 202 Comparative Anatomy (2)**
Prerequisite: Biology 12. A study of the microscopic and macroscopic structures of the different phyla of the animal kingdom. Special reference is given to the evolution of form and function. Two hours lecture per week.
- 204 Comparative Anatomy Laboratory (3)**
(Must be taken concurrently with Biology 202.) Anatomical study of the animal kingdom. Seven hours laboratory per week.
- 213 General Physiology (3)**
Prerequisite: Chemistry 261 (may be taken concurrently) and Biology 12. The basic functional aspects of organ systems in relation to the physicochemical properties of protoplasm. Three hours lecture per week.

Biology (Continued)

- 215 General Physiology Laboratory (2)**
Prerequisite: Biology 213 (may be taken concurrently). Instrumental and experimental studies in physiology. Three and one-half hours laboratory per week.
- 224 Genetics (3)**
Prerequisite: Biology 12. 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)**
Prerequisite: Biology 224 (may be taken concurrently). Laboratory to accompany Biology 224. Three and one-half hours laboratory per week.
- 235 Development (3)**
Prerequisite: Biology 224. Basic principles of development in plants and animals from the point of view of growth, morphogenesis and differentiation.
- 237 Development Laboratory (2)**
Prerequisite: Biology 235 (may be taken concurrently). Three and one-half hours of laboratory per week.
- 242 Population Biology (3)**
Prerequisite: Biology 224. The structure, operation and evolution of populations including studies of varied environments, the interrelations between living organisms and their environment; organization, growth and the regulation of populations, inter-action between and within populations; natural selection, variability, mechanisms and results of evolution. Three hours lecture per week.
- 244 Population Biology Laboratory (2)**
Prerequisite: Biology 242 (may be taken concurrently). Laboratory to accompany Biology 242. Three and one-half hours laboratory per week and/or field studies to be arranged.
- 246 Evolution (3)**
Prerequisite: Biology 224. The course and mechanisms of organic evolution. Three hours lecture per week.
- 250 Plant Structure (3)**
Prerequisite: Biology 12. Morphological and anatomical studies of the members of the plant kingdom. Three hours lecture per week.
- 252 Plant Structure Laboratory (2)**
Prerequisite: Biology 250 (may be taken concurrently). Laboratory to accompany Biology 250. Three and one-half hours laboratory per week.
- 260 Microtechnique (2)**
Prerequisite: Biology 213. Technical aspects of preparation of biological material for proper microscopic study. Two hours lecture per week.

Description of Courses

- 262 Microtechnique Laboratory (3)**
(Must be taken concurrently with Biology 260.) The preparation of specimens for microscopical study. Includes wholemount techniques, sectioning, routine staining methods and histochemical procedures. Seven hours laboratory per week.
- 276 Biological Chemistry (3)**
Prerequisite: Chemistry 261, 263 and Biology 12 and 224. The chemistry and function of the living cell and its constituents and the interactions and conversions of intracellular substances. Three hours lecture per week.
- 278 Biological Chemistry Laboratory (2)**
Prerequisite: Biology 276 (may be taken concurrently). Laboratory to accompany Biology 276. One hour lecture and three and one-half hours laboratory per week.
- 280 Animal Behavior (3)**
Prerequisite: Biology 11 and 12, 6 additional hours of biology or psychology or consent of instructor. The study of invertebrate and vertebrate behavior; including developmental, genetic and ecological aspects of behavior; behavior interactions within and between populations. Three hours lecture per week.
- 282 Animal Behavior Laboratory (2)**
Prerequisite: Biology 280 (may be taken concurrently). Laboratory to accompany Biology 280. Techniques for studying animal behavior. Three and one-half hours laboratory per week.
- 289 Seminar (1)**
Required of all biology majors during both semesters of their senior year. Presentation of selected papers by students.
- 290 Research (Credit arranged)**
- 295 Field Biology Seminar (2)**
Prerequisite: 15 hours of biology including Biology 11 and 12, and consent of instructor. Intensive study of the flora and fauna of selected areas of the North American continent including a ten day field trip during spring recess. A final report required. The area studied will be announced in the schedule of courses. Two hours seminar per week.
- Note: There is a specific fee charged for this course.*
- 310 Cellular Biology (3)**
Prerequisite: Biology 213, 215 and 224. Cellular metabolism and structure. Three hours lecture per week.
- 312 Cellular Biology Laboratory (2)**
Prerequisite: Biology 310 (may be taken concurrently). Instrumentation and experimental techniques in cellular biology. Three and one-half hours laboratory per week.

Biology (Continued)

- 313 Comparative Animal Physiology (3)**
Prerequisite: Biology 213 and 215. The evolutionary relationships of animals considered in terms of physiological and biochemical characteristics. Three hours lecture per week.
- 315 Comparative Animal Physiology Laboratory (2)**
Prerequisite: Biology 313 (may be taken concurrently). Analysis of physiological processes and their adaptive significance in specific environments. Three and one-half hours laboratory per week.
- 316 Microbiology (3)**
Prerequisite: Biology 213 and 224. A study of microorganisms, their metabolism and their interaction with other forms of life. Three hours lecture per week.
- 317 Immunobiology (3)**
Prerequisite: Biology 276, Chemistry 261 and 263. 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.
- 318 Microbiology Laboratory (2)**
Prerequisite: Biology 316 (may be taken concurrently). Experimental studies and procedures of microbiological techniques. Three and one-half hours laboratory per week.
- 319 Immunobiology Laboratory (2)**
Prerequisite: Biology 317 (may be taken concurrently). Basic experimental laboratory procedures in immunology. Introduction to experimental evidence underlying concepts of immunology. Three and one-half hours laboratory per week.
- 321 Advanced Genetics (3)**
Prerequisite: Biology 224. Selected topics in genetic theory. Three hours lecture per week.
- 322 Cytogenetics (3)**
Prerequisite: Biology 224. Structure and composition of cytoplasm and nuclei. Structure and replication of chromosomes. Analysis of cell cycles and their experimental modification with drugs and radiations. Chromosome behavior and its relationship to heredity, speciation and the evolution of sexual dimorphism. Cytology of reproduction. Three hours lecture per week.
- 323 Advanced Genetics Laboratory (2)**
Prerequisite: Biology 321 (may be taken concurrently). Instrumentation and experimental studies in genetic analysis. Three and one-half hours laboratory per week.
- 324 Cytogenetics Laboratory (2)**
Prerequisite: Biology 322 (may be taken concurrently). Laboratory to accompany Biology 322. Three and one-half hours laboratory per week.

Description of Courses

- 330 Advanced Development (2)**
Prerequisite: Biology 213, 235, 276. A discussion of experimental approaches as applied to the analysis of development. Two hours lecture per week.
- 332 Advanced Development Laboratory (2)**
Prerequisite: Biology 330 (may be taken concurrently). Instruction and practice in the application of experimental techniques to the study of development. Seven hours of laboratory per week.
- 376 Advanced Metabolism (3)**
Prerequisite: Biology 276 and consent of instructor. Detailed description of metabolic pathways and their regulation including the mechanism of enzyme action. Three hours lecture per week.
- 378 Advanced Metabolism Laboratory (2)**
Prerequisite: Biology 376 (may be taken concurrently). Methods for studying metabolic control mechanisms, methods of enzymology, advanced analytical techniques. Three and one-half hours laboratory per week.

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 and Mathematics 40. Introduction to descriptive statistics, including collection, organization and presentation of data; averages; dispersion. Introduction to statistical inference, probability, index numbers, time series, correlation.
- 104 Fundamentals of Digital Computer Programming (3) (Same as Mathematics 104)**
Prerequisite: Sophomore standing and Mathematics 40 or equivalent. Principles of programming digital computers in machine, symbolic and algebraic languages.
- 106 Basic Marketing (3) (Formerly Business Administration 106—Principles of Marketing)**
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.

Business Administration (Continued)

- 140 Fundamentals of Financial Accounting (3) (Formerly Business Administration 36 and 37—Elementary Accounting I and II)**
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 equities; also included is an introduction to the computer as an accounting tool.
- 145 Fundamentals of Managerial Accounting (3) (Formerly Business Administration 302—Managerial Accounting)**
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) (Formerly Business Administration 204—Corporate Finance)**
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 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.

Description of Courses

- 225 Computer Systems and Programming Systems (3)**
Prerequisite: Grade of "A" or "B" in Fundamentals of Digital Computer Programming or consent of instructor. A survey of the significant features of procedure oriented languages such as Fortran, Algol, Cobol, and PL/1. Also techniques for sorting, searching, scanning, data conversion, and construction and maintenance of files.
- 231 Intermediate Statistics (3)**
Prerequisite: Elementary Statistics 31, Fundamentals of Digital Computer Programming 104, Mathematics 80 or 101 and junior standing. Study of advanced statistical methods of modern decision theory, including such topics as distribution-free statistical tests, statistical simulation and multivariate analysis.
- 253 Managerial Economics (3) (Same as Economics 253)**
Prerequisite: Economics 51. 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) (Formerly Business Administration 270—Advertising)**
Prerequisite: Basic Marketing 106. A study of the development, organization, and control of personal selling, advertising, and publicity—marketing communications. Major emphasis is placed on demand stimulation and consumer behavior. Topics considered include: packaging, selling strategy, media selection and their relationships in the promotion process.
- 275 Marketing Research (3)**
Prerequisite: Basic Marketing 106. Analysis of the acquisition, organization, and application of marketing information for business management. Major emphasis is placed on the problems of the defining of information needs, analyzing research findings, and utilizing information. Statistical decision theory, mathematical methods, models, and/or cases are utilized to illustrate approaches to marketing research problems, such as market determination, buyer motives, sales forecasts, buyer-seller relationships, performance of marketing functions.

*Starred prerequisites may be taken concurrently with listed offering.

Business Administration (Continued)

- 308 Production and Operations Management (3) (Formerly Business Administration 308—Production Management)**
Prerequisite: Fundamentals of Production 202 and *Mathematics 101 or 80. Application of the tools and techniques of statistical decision theory and operations research to production and operating problems. Emphasis on the mathematical modeling of complex and ill-structured problems in large-scale systems.
- 310 Personnel Management (3)**
Prerequisite: Economics 51 and *Elementary Statistics 31. Consideration of problems in staffing, developing and motivating personnel in a work setting. Topics include organization for personnel management, group behavior, individual differences, resistance to change and other problems encountered in developing and maintaining an effective work force.
- 312 Industrial and Labor Relations (3)**
Prerequisite: Personnel Management 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: Basic Marketing 106. 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.
- 318 Industrial Psychology (3) (Same as Psychology 318)**
Prerequisite: Psychology 201 or Personnel Management 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.
- 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) (Formerly Intermediate Accounting 217)**
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.

Description of Courses

- 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)**
(Contains some topics previously covered in Advanced Accounting 322 and some topics not previously covered.) 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) (Formerly Cost Accounting 321)**
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) (Formerly Accounting: Income Taxes 323)**
Prerequisite: 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) (Formerly Auditing 331)**
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.
- 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.

Business Administration (Continued)

- 368 Business Fluctuations and Forecasting (3) (Same as Economics 252)**
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 Organization Theory and Structure (3)**
Prerequisite: Personnel Management 310. Organizational structure and executive behavior and their interrelationships are examined. Focus is on the emerging research relevant to the behavior of people in organization structures and the role of administrators in recognizing, modifying and interacting within such structures.
- 375 Operations Research (3)**
Prerequisite: Mathematics 80 or 101, Elementary Statistics 31, Fundamentals of Digital Computer Programming 104 and junior standing. Development of optimum methods and models for management control and decision-making. Based on newer methods of quantitative and statistical analysis and mathematical programming.
- 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.
- 391 Business Policy and Administration (3)**
Prerequisite: Senior standing, Basic Marketing 106, Financial Management 204 and Personnel Management 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 the formulation of a policy framework, planning and implementing executive action. Both team and individual analyses and reports are utilized with class evaluation and recommendations.

CHEMISTRY

Prerequisites may be waived by consent of department.

- 1 General Chemistry (3)**
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 other course (except Chemistry 3) in chemistry. Three hours lecture per week.
- 3 General Chemistry Laboratory (2)**
Prerequisite: Chemistry 1 (may be taken concurrently). Experiments are designed to acquaint the students with chemistry in the laboratory.

Description of Courses

- 11 Introductory Chemistry I (5)**
Prerequisite: Mathematics 40 (may be taken concurrently) or equivalent. 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 weekly.
- 12 Introductory Chemistry II (5)**
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.
- 180 Methods of Teaching Chemistry in Secondary Schools (3)**
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.
- 202 Introduction to Chemical Literature (1)**
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.
- 222 Quantitative Analysis (3)**
Prerequisite: Chemistry 12. Principles and practice of elementary quantitative analytical chemistry. Laboratory work will emphasize instrumental techniques, electro-chemistry, and some spectrophotometry. One one and one-half hour lecture period and four and one-half hours laboratory weekly.
- 231 Physical Chemistry I (3)**
Prerequisite: Mathematics 201 (may be taken concurrently), Physics 10 and 111 (or equivalent) and Chemistry 222. 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)**
Prerequisite: Chemistry 231. Continuation of Chemistry 231. Three hours lecture per week.
- 233 Laboratory in Physical Chemistry I (2)**
Prerequisite: Chemistry 231 (may be taken concurrently). Experiments designed to illustrate principles introduced in Chemistry 231. One hour lecture and seven hours laboratory per week.
- 234 Laboratory in Physical Chemistry II (2)**
Prerequisite: Chemistry 232 (may be taken concurrently), Chemistry 233. Experiments designed to illustrate principles introduced in Chemistry 232. One hour lecture and seven hours laboratory per week.

Chemistry (Continued)

- 261 Structural Organic Chemistry (3)**
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)**
Prerequisite: Chemistry 261 (may be taken concurrently). A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours lecture per week.
- 263 Techniques of Organic Chemistry (2)**
Prerequisite: Chemistry 261 (may be taken concurrently). An introduction to laboratory techniques and procedures of synthetic organic chemistry. One hour lecture and seven hours laboratory per week.
- 264 Synthetic and Analytical Methods of Organic Chemistry (2)**
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 seven hours laboratory per week.
- 272 Biochemistry (3)**
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.
- 274 Biochemical Techniques (2)**
Prerequisite: Chemistry 272 (may be taken concurrently). Laboratory study of biochemical processes in cellular and subcellular systems with emphasis on the isolation and purification of protein (enzymes) and the characterization of catalytic properties. One hour lecture and three and one-half hours laboratory per week.
- 289 Seminar (1)**
Prerequisite: Chemistry 202. 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)**
Prerequisite: Consent of instructor. Independent laboratory and library study, in conjunction with faculty member, of fundamental problems in chemistry.
- 324 Instrumental Analysis (3)**
Prerequisite: Chemistry 222, 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.

Description of Courses

- 325 Qualitative Organic Analysis (3)**
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)**
Prerequisite: Chemistry 232. Selected advanced topics including solid-state, nonequilibrium and statistical thermodynamics. Three hours lecture per week.
- 336 Introduction to Quantum Chemistry (3)**
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)**
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)**
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.
- 352 Nuclear Chemistry (3)**
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)**
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)**
Prerequisite: Chemistry 264. Advanced synthetic methods of organic chemistry. One hour lecture and seven hours laboratory per week.
- 366 Physical Organic Chemistry (3)**
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.

Chemistry (Continued)

- 371 **Advanced Biochemistry (3)**
Prerequisite: Chemistry 272. Selected advanced topics in the chemistry of life processes. Three hours lecture per week.
- 373 **Advanced Biochemistry Laboratory (2)**
Prerequisite: Chemistry 274 and 371 (latter may be taken concurrently). Continuation of Chemistry 274. Laboratory to accompany Chemistry 371. One hour lecture and three and one-half hours laboratory per week.
- 381 **Special Topics (3)**
Prerequisite: Consent of instructor. A reading and seminar course in selected advanced topics. Three hours lecture per week.

ECONOMICS

Prerequisites may be waived by consent of department.

- 50 **Principles of Economics I (3)**
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.
- 51 **Principles of Economics II (3)**
Prerequisite: Economics 50. Continuation of Economics 50, with emphasis on the theory of the firm, price determination and resource allocation.
- 90 **Freshman Seminar (3)**
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 99 **The City (3) (Same as 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.
- 190 **Current Issues in Economics (3)**
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)**
Prerequisite: Upperclass or graduate standing in School of Education. Analysis of forces affecting the national economy, with emphasis on income determination, employment, money and banking, and international trade and finance. Special reference to topics included in elementary and secondary school social science curricula.
- 201 **Microeconomics for the School Curriculum (3)**
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)**
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.
- 230 **Comparative Economic Systems (3)**
Prerequisite: Economics 51. Comparative study of economic organization, growth and welfare in different national economies such as the United States, the Soviet Union and France.
- 240 **Economic Development (3)**
Prerequisite: Economics 50. Survey of economic growth as applied to underdeveloped countries. Analysis of development policies with emphasis on specific case studies.
- 250 **Intermediate Economic Theory: Macroeconomics (3)**
Prerequisite: 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)**
Prerequisite: Economics 51. Analysis of prices in terms of equilibrium of the business firm and consumer demand in markets of varying degrees of competition.
- 252 **Analysis of Business Conditions (3) (Same as Business Administration 368)**
Prerequisite: Economics 51. Macroeconomic analysis as applied to business decisions. Intensive discussion of factors affecting consumption, investment, the level of income and employment, and short-term fluctuations in economic activity. Emphasis on problems and techniques of forecasting.
- 253 **Managerial Economics (3) (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)**
Prerequisite: Economics 51. Forms of labor organization, state and federal labor legislation and policies of labor unions. Emphasis on an application of economic theory to the relations of labor and business.

Economics (Continued)

- 269 **The Marxist Heritage (3)** (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)**
Prerequisite: 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.
- 280 **History of Economic Thought (3)**
Prerequisite: Economics 51. The evolution of economic thought from the ancients through post-Keynesian theory.
- 316 **Public Finance: Federal (3)**
Prerequisite: 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)**
Prerequisite: 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)**
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)**
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)**
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.
- 339 **The Soviet Economy (3)**
Prerequisite: 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.

Description of Courses

- 340 **The Development of Industrial Economies (3)**
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)**
Prerequisite: Economics 51. 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)**
Prerequisite: Consent of instructor. Unscheduled, independent directed readings on topics mutually acceptable to student and instructor.
- 351 **Mathematical Economics (3)**
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) (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)**
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)**
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)**
Prerequisite: Economics 51 and Statistics 31. Mathematics 80 or 101 recommended. Application of statistical techniques to economic research problems.
- 366 **Econometrics (3)**
Prerequisite: Economics 365. Continuation of Economics 365.
- 370 **Economics of Location (3)**
Prerequisite: Economics 51. An analysis of the location of economic activity and the relationships that exist between regional economies.

Economics (Continued)

- 371 Issues in Urban Economics (3)**
Prerequisite: Economics 51. Problems of public policy in the city as it relates to education, housing, transportation, recreation and their financing. Recent government policies concerning the city and its surrounding areas will be emphasized.

EDUCATION

Prerequisites may be waived by consent of department.

- 101 The School in Contemporary Society (3)**
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. Open to freshmen and sophomores and required of students admitted to the School of Education. Prerequisite to other professional courses.
- 110 Elements of Health Education (3)**
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) (Same as Music 137)**
Prerequisite: Music 134 or consent of department. Basic musical preparation for all education majors. Development of the elementary school music program with emphasis on selection of music and methods of teaching music to children.
- 139 Art Activities for Elementary Schools (3) (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)**
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)**
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)**
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)**
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)**
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)**
Objectives of physical education for the elementary school child with applications of choice of activities, organization of program, theory, practices.
- 160 Teaching Music in the Elementary School (3) (Same as Music 160)**
Prerequisite: Music 112 and Education 101. Creating a musical environment in the classroom. The child voice in singing; development of rhythmic and melodic expression; rote songs, part singing; directed listening; utilization of notational elements; analysis of instrumental materials. Prerequisite to student teaching.
- 162 Teaching Music in the Secondary School (3) (Same as Music 162)**
Prerequisite: Music 112 and Education 101. Curriculum organization and administration of secondary school music classes. The adolescent voice; general music class; vocal and instrumental literature; music theory and music literature classes. Prerequisite to student teaching.
- 163 Techniques of Secondary School Teaching (3)**
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.
- 201 Black Americans in Education (3)**
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.

Education (Continued)

- 231 **Methods of Teaching Typewriting I (3)**
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)**
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)**
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)**
Prerequisite: Education 232 and Education 235. Instruction in the methods and techniques used to teach transcription. Laboratory required.
- 237 **Secretarial Practice (3)**
Prerequisite: Education 235 and Education 231 or consent of instructor. Instruction in methods and techniques used to teach office procedures and practices.
- 240 **Education of the Mentally Retarded (3)**
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.
- 251 **Elementary School Student Teaching (6)**
Prerequisite: Education 151, 152, 153 and admission to student teaching. Clinical teaching experience in elementary school classrooms under university and school supervision. Seminar accompanies classroom teaching experience.
- 252 **Elementary Student Teaching in Special Education (6)**
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.
- 261 **The Curriculum and Methods of Teaching Business Subjects (3)**
Prerequisite: Education 163 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.

Description of Courses

- 262 **The Curriculum and Methods of Teaching English (3) (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)**
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) (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) (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)**
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.
- 268 **The Curriculum and Methods of Teaching Physical Sciences (3)**
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.

Education (Continued)

- 269 The Curriculum and Methods of Teaching the Life Sciences (3)**
Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the life sciences courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of science. To be taken concurrently with student teaching.
- 271 Secondary School Student Teaching (6)**
Prerequisite: 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.
- 272 Secondary School Student Teaching in Special Education (6)**
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.
- 302 The Psychology of Teaching and Learning (3)**
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 teach.
- 310 Interpretation of Educational Tests and Measurements (3)**
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.
- 312 Speech and Language Problems of the Mentally Retarded (3)**
Study of the problems associated with speech and language development and the techniques employed by classroom teachers to lessen these problems for children. Required for all majors in Special Education.
- 313 The Psychology of Exceptional Children (3) (Same as Psychology 313)**
Prerequisite: Psychology 270. A study of the unique psychological problems of children who deviate from the normal. Required of all majors in Special Education.
- 315 Principles of Early Childhood Education (3)**
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.

Description of Courses

- 316 Creative Experiences for Young Children (3)**
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)**
Prerequisite: Education 315 and completion of science requirements in general education. A study of and experiences with materials, techniques and resources for broadening the child's awareness and understanding of science.
- 318 Exploring the Social World With Young Children (3)**
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.
- 320 Comparative Education (3)**
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)**
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.
- 325 Teaching Reading in the Elementary School (3)**
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)**
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.
- 330 Educational Statistics (3)**
Statistical methods for teachers, supervisors, superintendents and beginning graduate students. Frequency distributions, measures of central tendency, variability, sampling and correlation.

Education (Continued)

- 336 **Field Experience and Seminar in Secretarial Practice (3)**
Prerequisite: Education 101, 236, 237 and admission to the School of Education. Practical experience in office procedures. To be taken before student teaching.
- 340 **Selection and Utilization of Educational Media (3)**
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)**
Prerequisite: Education 140. Study of modern education with regard to objectives, content, methods in elementary school curriculum.
- 352 **Secondary School Curriculum (3)**
Prerequisite: Education 163. Sources, scope and organization of the curriculum, modern trends and methods of investigation.
- 360 **Principles and Procedures for Student Personnel Work (3)**
Student personnel work in educational institutions, objectives of student personnel work, certain pertinent techniques.
- 362 **Occupational and Educational Information (3)**
Nature, use of occupational and educational information. Characteristics, requirements of occupations and training opportunities.
- 365 **Problems of Teaching Reading in Secondary Schools (3)**
Prerequisite: Education 101. Methods and materials for improving reading in secondary school classes, including content fields.

ENGLISH

Composition and Language

- 10 **Composition (3)**
Theory and practice of writing expository prose. This course fulfills the general education requirement in basic communicative skills.
- 50 **Narration (3)**
Prerequisite: English 10 or equivalent. Theory and practice of writing the short story.
- 65GH **Honors Exposition (3)**
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)**
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.

Description of Courses

- 115 **Commercial Writing (3)**
Prerequisite: English 10 or equivalent. Emphasis upon news writing, newspaper feature writing, magazine article writing and book reviewing.
- 160 **Advanced Expository Writing (3)**
Prerequisite: English 10 or equivalent. Emphasis upon developing the critical and analytical capabilities of the writer. Course offers an introduction to research methods. Some sections (160B) of this course are recommended for prospective English teachers.
- 220 **Growth and Structure of the English Language (3)**
The historical, comparative, and modern linguistic analysis of the English language, from its origin to present day American English, with special emphasis on the relation of language to literature.
- 221 **Introduction to Modern Linguistics (3)**
A survey of the modern linguistic approaches to language analysis and their practical applications, including phonology, morphology, structural linguistics, tagmemics, and transformational grammar, as well as peripheral consideration of such related fields as lexicography, dialectology, and graphics.

Literature

- 12 **Literary Types (3)**
The student is introduced to the various literary types, including poetry, drama, fiction and the essay.
- 120 **Classical Literature in Translation (3)**
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)**
A comprehensive understanding of the *Old Testament*, its literary background and significance for Western civilization.
- 131 **English Literature I (3)**
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)**
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)**
Representative selections from American authors from the middle of the seventeenth century to the middle of the nineteenth century.

Literature (Continued)

- 172 **American Literature II (3)**
Representative selections from American authors from the middle of the nineteenth century to the present.
- 270 **Afro-American Literature (3)**
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)**
Historical survey of the principles of literary criticism from Plato to the present.
- 324 **Chaucer (3)**
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)**
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)**
The development of medieval drama from its liturgical origins to the English mystery cycles and morality plays, ending with the early pre-Elizabethan interludes.
- 331 **Elizabethan Poetry and Prose (3)**
A survey of non-dramatic literature of the sixteenth century, including Ascham, Elyot, Wyatt, Surrey, Spenser, Daniel and Drayton.
- 337 **Shakespeare: Tragedies and Romances (3)**
The development of Shakespeare's concept of tragedy and tragicomedy from *Titus Andronicus* to *The Tempest*. The play will be related to the social and literary milieu of the period.
- 338 **Shakespeare: Comedies and Histories (3)**
Shakespeare's early work for the theater with some attention to the sonnets and longer poems. 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)**
A survey of the dramatic writings of the period from the interludes of John Heywood to the closing of the theaters in 1642, with particular attention to the plays of Marlowe, Jonson, Webster and Ford. Though Shakespeare will not be studied in this course, connections between his works and those of his contemporaries will be discussed.

Description of Courses

- 344 **Seventeenth Century Literature (3)**
The non-dramatic literature of the period, including the metaphysical and cavalier poets and the major prose writers of the age, exclusive of Milton. The transition from the Renaissance to the Restoration.
- 345 **Milton (3)**
All the minor poems and the three longer poems with some attention to the major prose. Milton and his relation to the politics, theology and literature of the seventeenth century.
- 346 **Seventeenth and Eighteenth Century Drama (3)**
Critical reading of the dramatic literature of the Restoration and Post-Restoration periods.
- 354 **Eighteenth Century Literature (3)**
Lectures and discussions on the poetry, drama, fiction and essays of the Restoration and Eighteenth Century, including such authors as Dryden, Congreve, Addison, Steele, DeFoe, Swift, Pope, Fielding, Johnson, Gray, Goldsmith and Sheridan.
- 363 **The English Novel (3)**
Study of major English novels from the eighteenth century. The approach is principally analytical, with attention to historical development.
- 370 **Prose and Poetry of the Romantic Period (3)**
Critical reading of selections from Blake, Wordsworth, Coleridge, Lamb, Hazlett, Byron, Shelley, Keats and others. Also selected eighteenth century writers serve as background material.
- 371 **Prose and Poetry of the Victorian Period (3)**
Critical reading of selections from Tennyson, Browning, Arnold and others, in addition to selections from the major prose writers.
- 372 **The Later Nineteenth Century (3)**
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)**
American literature of the nineteenth century centering around such figures as Emerson, Hawthorne, Melville, Poe and Whitman.
- 374 **Major American Writers II (3)**
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)**
Development of the novel and short story in America through World War I. Emphasis is upon fiction representative of Romanticism, Realism and Naturalism.

Literature (Continued)

- 376 **American Fiction After World War I (3)**
Development of the novel and short story in America since World War I.
- 383 **Modern Fiction (3)**
Critical reading and analysis of selected British and American fiction of the twentieth century.
- 384 **Modern Poetry (3)**
Critical reading and analysis of selected British and American poetry of the twentieth century.
- 385 **Modern Drama (3)**
British, American and European drama of the last one hundred years: the well-made play, the problem play, verse drama, new definitions of tragedy, the angry theater, theater of the absurd.

Special Offerings

- 262 **The Curriculum and Methods of Teaching English (3) (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.
- 350 **Special Readings (1-3)**
Prerequisite: 300-level course in area of proposed work and consent of instructor. Individual work, with conferences adjusted to needs of the student.
- 390 **Seminar (3)**
Prerequisite: Consent of instructor. Intensive reading, critical discussion and writing on topics to be announced each semester. Enrollment limited to twelve students.

FRENCH

Prerequisites may be waived by consent of department.

- 1 **Elementary French (5)**
Emphasis will be placed upon the speaking and understanding of French and upon the acquisition of the fundamentals of grammar and syntax. One hour language laboratory required.
- 2 **Elementary French (5)**
Prerequisite: French 1. Emphasis will be placed upon the speaking and understanding of French and upon the acquisition of the fundamentals of grammar and syntax. One hour of language laboratory required.

Description of Courses

- 101 **Intermediate French (3)**
Prerequisite: French 2 or equivalent. Grammar review and cultivation of language skills through the study of moderately difficult prose selections.
- 102 **Intermediate French (3)**
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.
- 104 **Scientific French (3)**
Prerequisite: French 101 or equivalent. Introduction to reading of selected French texts in the natural and social sciences. Designed primarily for majors in these areas. Offered upon sufficient demand.
- 108 **Oral and Written Composition (3)**
Prerequisite: French 102 or equivalent. Emphasis will be placed upon the development of oral and written skills. May be taken concurrently with French 102.
- 110 **Masterpieces of French Literature in Translation (3)**
Prerequisite: Sophomore standing. Not open to French majors. Reading and discussion of selected masterpieces in French literature. May be taken to fulfill humanities requirements.
- 200 **Advanced Grammar and Stylistics (3)**
Prerequisite: French 108. Problems in grammatical analysis. Techniques of translation including *thème* and *version*.
- 201 **Introduction to French Literature (3)**
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.
- 202 **Introduction to French Literature (3)**
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.
- 210 **French Civilization (3)**
Prerequisite: French 102 or equivalent. A broad, general study of the culture and civilization of France from the medieval period to the present. All reading and classwork in French.
- 220 **Introduction to Linguistics (3) (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. Required for all foreign language majors seeking teaching certification.

French (Continued)

- 264 **Curriculum and Methods of Teaching Foreign Languages (3)** (Same as Education 264)
Prerequisite: Education 163, French 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.
- 331 **Medieval and Renaissance Literature (3)**
Prerequisite: French 201 or 202. Critical reading and analysis of representative works of the period in modernized French versions.
- 341 **Seventeenth Century French Theatre (3)**
Prerequisite: French 201 or 202. Critical reading of selected plays by Corneille, Moliere, Racine and other dramatists of the seventeenth century.
- 342 **Seventeenth Century French Prose and Poetry (3)**
Prerequisite: French 201 or 202. A critical study of representative poets and prose writers including novelists and philosophers.
- 353 **Eighteenth Century French Literature (3)**
Prerequisite: French 201 or 202. The philosophic movement. Selected works from Montesquieu, Voltaire, Diderot and Rousseau.
- 354 **Eighteenth Century French Theatre and Novel (3)**
Prerequisite: French 201 or 202. Critical reading and discussion of representative novels and plays of the eighteenth century.
- 361 **Nineteenth Century French Poetry and Theatre (3)**
Prerequisite: French 201 or 202. A study of literary movements and trends in the 19th century through the critical reading of selected works by the major poets and dramatists.
- 362 **Nineteenth Century French Novel (3)**
Prerequisite: French 201 or 202. Critical reading of selected works by the major novelists of the period. Discussion of realism and naturalism.
- 371 **Twentieth Century French Novel (3)**
Prerequisite: French 201 or 202. A study of selected works by the principal novelists of the modern period.
- 372 **Twentieth Century French Theatre and Poetry (3)**
Prerequisite: French 201 or 202. Critical reading and discussion of selected works by the leading dramatists and poets of the modern period.
- 399 **French Seminar (3)**
Prerequisite: Senior standing. Required of all French majors. Subject to be announced each year by the instructor in charge of the seminar.

Description of Courses

GEOGRAPHY

Prerequisites may be waived by consent of department.

- 101 **Introduction to Geography (3)**
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)**
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.

GERMAN

Prerequisites may be waived by consent of department.

- 1 **Elementary German (5)**
Emphasis will be placed upon the speaking and understanding of German and upon the acquisition of the fundamentals of grammar and syntax. One hour language laboratory required.
- 2 **Elementary German (5)**
Prerequisite: German 1. 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.
- 101 **Intermediate German (3)**
Prerequisite: German 2 or equivalent. Grammar review and cultivation of language skills through the study of moderately difficult prose selections.
- 102 **Intermediate German (3)**
Prerequisite: German 101 or equivalent. Further development of language skills through the reading and discussion of literary texts. May be taken concurrently with German 108 after consultation with instructor.
- 104 **Scientific German (3)**
Prerequisite: German 101 or equivalent. Introduction to reading of selected German texts in the natural and social sciences. Designed primarily for majors in these areas.
- 108 **Composition and Conversation (3)**
Prerequisite: German 101 or equivalent. Emphasis will be placed on speaking and writing German.
- 110 **Masterpieces of German Literature in Translation (3)**
Prerequisite: Sophomore standing. Not open to students majoring in German. 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.

German (Continued)

- 200 **German Syntax (3)**
Prerequisite: German 108 or equivalent. Study of the syntactical and morphological characteristics of the German language as seen in representative selections from German literature. Designed primarily and required for students majoring in German. May be taken concurrently with any 200 level course.
- 201 **Masterpieces of German Literature (3)**
Prerequisite: Two years of college German or equivalent. Introduction to German Literature—its subjects, forms and ideals.
- 202 **The German Novelle and Drama (3)**
Prerequisite: German 201 or equivalent. Reading and critical analysis of selected German *novellen* and dramas.
- 210 **German Culture and Civilization (3)**
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) (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. Required for all language majors seeking teaching certification.
- 264 **Curriculum and Methods of Teaching Foreign Languages (3) (Same as Education 264)**
Prerequisite: Education 163, German 200, 201, 202 and 220. 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.
- 301 **German Literature to 1800 (3)**
Prerequisite: German 201 and one other course in German literature or equivalent. Study of selected texts of German writers from the origins to 1800 and the historical, cultural and political factors which influenced their writings.
- 302 **German Literature since 1800 (3)**
Prerequisite: German 201 and one other course in German literature or equivalent. Continuation of German 301. Selected texts from 1800 to the present and the historical, cultural and political factors which influenced their authors.
- 311 **Goethe (3)**
Prerequisite: German 201 and one other course in German literature or equivalent. Introduction to Goethe's life and works.

Description of Courses

- 312 **Goethe's Faust (3)**
Prerequisite: German 201 and one other course in German literature or equivalent. Intensive study of Goethe's *Faust*, Parts I and II.
- 321 **Schiller (3)**
Prerequisite: German 201 and one other course in German literature or equivalent. Introduction to Schiller's life and works.
- 325 **The Age of Lessing (3)**
Prerequisite: German 201 and one other course in German literature or equivalent. Study of selected works pertaining to the period extending from German Rationalism to the *Sturm und Drang*.
- 335 **Thomas Mann (3)**
Prerequisite: German 201 and one other course in German literature or equivalent. Introduction to Mann's life and works.
- 399 **German Seminar (3)**
Prerequisite: Senior standing and two 300 level courses or equivalent. Limited to senior majors. Topic to be selected by instructor.

GREEK

Prerequisites may be waived by consent of department.

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

- 3 **American Civilization (3)**
Evolution of the cultural tradition of the Americas from the earliest times to the mid-nineteenth century, with emphasis on the relationship of ideas and institutions to the historical background. Course fulfills the state requirement.
- 4 **American Civilization (3)**
Continuation of History 3 to the present. Course fulfills the state requirement. Either 3 or 4 may be taken separately.
- 10 **Topics in the History of Western Civilization (3)**
Lectures, readings, and discussions on the development of European civilization and tradition from antiquity to the end of the 19th Century.

History (Continued)

- 45 **Race (3) (Same as 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 bases of racism in the U.S.; the consequences of racism for the individual and societies.
- 99 **The City (3) (Same as 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)**
Prerequisite: Consent of department. The development of the historical profession, the nature of history, and the problems of historical writing.
- 193 **Senior Seminar (3)**
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)**
Prerequisite: History 10 or consent of department. The development of the contemporary world since the outbreak of the Second World War 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)**
Prerequisite: Sophomore standing. The development of Asian Civilization from earliest times to the Manchu conquest.
- 211 **Asian Civilization (3)**
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)**
The experience of Black people in America from the period of the slave trade to the twentieth century, beginning with the areas and cultures of West Africa. The development and importance of 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.
- 265 **Curriculum and Methods of Teaching History and Social Studies (3) (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. Recommended to be taken concurrently with student teaching.
- 315 **Twentieth Century Southeast Asia (3)**
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.
- 316 **Twentieth Century East Asia (3)**
Prerequisite: Junior standing or consent of instructor. Emphasis on Japanese expansion, the Chinese revolutions, and the rise of Mao.
- 320 **The History of England from the Tudor Kings to the Congress of Vienna (3)**
Prerequisite: History 10 and 200 or consent of department. A study of the development of the English state and system of government, economics, and culture (1485-1815).
- 321 **The History of England from the Congress of Vienna to the Present Day (3)**
Prerequisite: History 10 and 200 or consent of department. The continuation of History 320.
- 328 **The Development of Modern France, 1814 to 1899 (3)**
Prerequisite: History 10 and 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 **The Development of Modern France Since 1899 (3)**
Prerequisite: History 10 and 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)**
Prerequisite: History 10 and 200 or consent of department. The growth of the modern state system; the origins of modern science.
- 331 **Europe in the Eighteenth Century (3)**
Prerequisite: History 10 and 200 or consent of department. The Old Regime, the Enlightenment, the French Revolution and Napoleon.

History (Continued)

- 332 Europe in the Nineteenth Century (3)**
Prerequisite: History 10 and 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)**
Prerequisite: History 10 and 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)**
Prerequisite: History 10 and 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)**
Prerequisite: History 10 and 200 or consent of department. Continuation of History 334 up to the Renaissance.
- 336 The Ancient Near East and Greece (3)**
Prerequisite: History 10 and 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)**
Prerequisite: History 10 and 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)**
Prerequisite: History 10 and 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 the Reformation (3)**
Prerequisite: History 10 and 200 or consent of department. Religious, intellectual, political and socio-economic developments of the sixteenth century.
- 340 History of Science (3)**
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)**
Prerequisite: History 10 and 200 or consent of department. Main currents of European intellectual thought from the 15th through the 18th centuries.

Description of Courses

- 344 European Diplomacy from 1815 to Present (3)**
Prerequisite: History 10 and 200 or consent of department. A survey of European international relations. The relationship between diplomacy and welfare, 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)**
Prerequisite: History 10 and 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)**
Prerequisite: History 10 and 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, 1890-1917 (3)**
Prerequisite: History 10 and 200 or consent of department. Thought, culture and radicalism during the last years of the Romanov Empire.
- 348 History of Russia, 1500-1894 (3)**
Prerequisite: History 10 and 200 or consent of department. The Moscovite and Romanov periods ending with the accession of the last Romanov.
- 350 Special Readings (credit arranged)**
Prerequisite: Consent of instructor. Independent study through readings, reports, and conferences.
- 351 American Intellectual History (3)**
Prerequisite: Any two of History 3, 4, or 230 or consent of department. American intellectual development to 1865.
- 352 American Intellectual History (3)**
Prerequisite: Any two of History 3, 4, or 230 or consent of department. Continuation of History 351.
- 353 United States History: Colonial America to 1763 (3)**
Prerequisite: Any two of History 3, 4, or 230 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)**
Prerequisite: Any two of History 3, 4, or 230 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)**
Prerequisite: Any two of History 3, 4, or 230 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)**
Prerequisite: Any two of History 3, 4, or 230 or consent of department. Economic, social and political development of the United States, 1877 to 1929.

History (Continued)

- 357 **United States History 1929 to Present (3)**
Prerequisite: Any two of History 3, 4, or 230 or consent of department. Economic, social and political development of the United States, 1929 to present. The New Deal, World War II, Post War alliances and diplomacy.
- 358 **Civil War and Reconstruction (3)**
Prerequisites: Any two of History 3, 4, or 230 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)**
Prerequisite: Any two of History 3, 4, or 230 or consent of department. The political and social developments of the antebellum period relating to the growth of sectionalism and the developing anti-slavery crusade.
- 360 **American Frontier History (3)**
Prerequisite: Any two of History 3, 4, or 230 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.
- 365 **American Urban History (3)**
Prerequisite: Any two of History 3, 4, or 230 or consent of department. The use of the city, and the transformation of ideas and institutions in the American city from colonial times to the present.
- 367 **Growth of the American Economy (3)**
Prerequisites: Any two of History 3, 4, or 230 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)**
Prerequisite: Any two of History 3, 4, or 230 or consent of department. History of American business, industry and labor.
- 370 **Asian-American Relations (3)**
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.
- 377 **U.S. and Wars of National Liberation (3)**
Prerequisite: Junior standing or permission of instructor. A comparative study of the American response to selected revolutionary movements in Asia, Latin America and Africa.

LATIN

Prerequisites may be waived by consent of department.

- 1 **Elementary Latin (4)**
Prerequisite: None. Fundamentals of grammar and syntax, for students with no previous acquaintance with the language.

Description of Courses**2 Elementary Latin (4)**

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)

Prerequisite: An elementary knowledge of classical Latin. Medieval Latin grammar, acquired through the study of medieval tracts in manuscript.

MATHEMATICS

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

Prerequisites may be waived by consent of department.

02 Fundamentals of Algebra (4)

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 a degree.

15 Mathematics: Ideas and Structures (3)

Prerequisite: Mathematics 02 or a satisfactory score on the mathematics placement examination. An introduction to the spirit of mathematics and to modern mathematical thought. Course is designed for the student who does not intend to major in mathematics or science. Credit not granted for both Mathematics 15 and 50.

40 Pre-Calculus Mathematics (4)

Prerequisite: Mathematics 02; or three units of high school mathematics including one and one-half units of algebra and a satisfactory score on the mathematics placement exam. Topics from algebra and trigonometry for the student who plans to take further work in mathematics. Polynomial functions, the binomial theorem, mathematical induction, the logarithmic, exponential, trigonometric, and inverse trigonometric functions.

50 Structure of Mathematical Systems I (3)

Prerequisite: Mathematics 02 or a satisfactory score on the mathematics placement examination. A study of mathematical systems, elementary logic, natural numbers, sets, construction of the integers. Credit not granted for both Mathematics 15 and 50. Recommended for elementary education students.

51 Structure of Mathematical Systems II (3)

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.

Mathematics (Continued)

- 80 Analytic Geometry and Calculus I (5)**
Prerequisite: Mathematics 40 or four high school units of mathematics, including two units of algebra and one-half unit of trigonometry and a satisfactory score on the mathematics placement exam. Introduction to analytic geometry, differential calculus and integral calculus. Courses 80, 175 and 201 are a sequence of courses which have integrated the material formerly contained in courses in plane and solid analytic geometry and differential and integral calculus.
- 101 Survey Calculus (4)**
Prerequisite: Same as for Mathematics 80. Introduction to plane analytic geometry and a 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. Mathematics 101 may not be used to satisfy the prerequisite for Mathematics 175.
- 102 Finite Mathematics (4)**
Prerequisite: Mathematics 40. Mathematics 101 recommended. Introductory logic and set theory, partitions and counting problems, elementary probability theory, stochastic processes, Markov chains, vectors and matrices, linear programming, and game theory.
- 104 Fundamentals of Digital Computer Programming (3) (Same as Business Administration 104)**
Prerequisite: Mathematics 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 I (3)**
Prerequisite: Mathematics 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.
- 175 Analytic Geometry and Calculus II (5)**
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)**
Prerequisite: Mathematics 175. Solid analytic geometry and selected topics in calculus. Mathematics 80, 175, and 201 form a sequence of courses.
- 222 Computers and Programming II (3)**
Prerequisite: Mathematics 122. Computer organization, addressing techniques, digital representation, assembly language, selected programming techniques, program segmentation and linkage, computer system organization. Does not count toward a major in mathematics. Two hours of lecture and two hours of laboratory per week.

Description of Courses

- 230 Theory of Equations (3)**
Prerequisite: Mathematics 175 or consent of department. Solution of algebraic equations, systems of equations, relations among the roots and numerical methods.
- 250 Introduction to Abstract Mathematics (3)**
Prerequisite: Mathematics 201. An introduction to some of the fundamental ideas of abstract mathematics. Required for mathematics majors.
- 301 Differential Equations (3)**
Prerequisite: Mathematics 201. Common types of ordinary differential equations, including many applied problems, operational methods. Brief introduction to partial differential equations, boundary value problems.
- 302 Applied Mathematics I (3)**
Prerequisite: Mathematics 201. Solution of systems of linear equations; solutions of linear differential equations with constant coefficients, first order differential equations, systems of first order equations. Power series and the solution of differential equations by power series methods.
- 303 Applied Mathematics II (3)**
Prerequisite: Mathematics 301 or Mathematics 302. Vector analysis; line, surface, and volume integrals; Green's, Stokes' and the divergence theorems; introduction to Fourier series; partial differential equations.
- 304 Applied Mathematics III (3)**
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 I (3)**
Prerequisite: Mathematics 250 or consent of department. Limits, continuity and differentiability of functions of one and several variables, sequences and series, the Riemann-Stieltjes integral.
- 311 Advanced Calculus II (3)**
Prerequisite: Mathematics 310. Continuation of Mathematics 310.
- 316 Functions of a Complex Variable (3)**
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)**
Prerequisite: Mathematics 250 or consent of department. Introduction to theory of probability and statistics using concepts and methods of the calculus.

Mathematics (Continued)

- 321 Mathematical Statistics II (3)**
Prerequisite: Mathematics 320. Continuation of Mathematics 320. Continuous sample spaces, stochastic processes, statistical inference, and statistical models.
- 323 Numerical Analysis (3)**
Prerequisite: Mathematics 201. Finite differences, numerical differentiation, integration, solution of equations and differential equations. Special reference to use of high speed computers.
- 335 Theory of Numbers (3)**
Prerequisite: Mathematics 250 or consent of department. Properties of the integers, multiplicative functions, congruences, primitive roots, quadratic residues.
- 340 Introduction to Abstract Algebra I (3)**
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)**
Prerequisite: Mathematics 340 or consent of the department. Continuation of Mathematics 340 with emphasis on linear algebra.
- 350 Special Readings (credit arranged)**
Prerequisite: Mathematics 250 and consent of instructor.
- 358 Mathematical Logic (3)**
Prerequisite: Mathematics 250 or Philosophy 360 or consent of 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)**
Prerequisite: Mathematics 250 or consent of department. Analytic approach to the study of projective spaces. Theorems of Desargues, Pascal and Brianchon. Projective properties of conics.
- 366 Foundations of Geometry (3)**
Prerequisite: Mathematics 250 or consent of department. A development of portions of Euclidean geometry from a selected set of axioms, including a discussion of consistency, independence, categoricity and completeness of the axioms.
- 367 Introduction to Non-Euclidean Geometry (3)**
Prerequisite: Mathematics 250 or consent of department. A summary of the history of the non-Euclidean geometries and a study of hyperbolic plane geometry.
- 380 Introduction to Topology (3)**
Prerequisite: Mathematics 250 or consent of 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.

Description of Courses

- 410 Theory of Functions of a Real Variable (3)**
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)**
Prerequisite: Mathematics 340 and 341 and consent of 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.

MILITARY SCIENCE

The courses in this department make up the Army ROTC program designed to qualify for commissions those male students who desire to serve in the United States Army. (For enrollment information see page 35.) Course credit is for two semesters or one full year enrollment in the course.

MS 101-102 Fundamentals of Leadership and Management (2)

Acquaints the student with the fundamentals of military science including the development of the US Army and the US Defense Establishment and the Army's place in current affairs; introduction to management of military resources; and development of leadership abilities through practical exercises, to include close order drill and familiarization with the service weapon. Two class hours and one leadership laboratory per week.

MS 201-202 Applied Leadership and Management (2)

Prerequisite: MS 101-102 or equivalent. Instruction is designed to provide the student with a background in American Military History; functions, duties and responsibilities of junior leaders; continued development of leadership through practical exercises; operations of the basic military team to include military geography and use of maps and aerial photographs. Three class hours and one leadership laboratory per week.

MS 301-302 Advanced Leadership and Management (6)

Prerequisite: MS 201-202 or equivalent and selection by the Department of Military Science. Case studies in leadership, management and decision making; development of the student's 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; applicatory work emphasizing the duties and responsibilities of junior leaders. Three class hours and one leadership laboratory per week and, during either MS 301 or 302, concurrent enrollment in a department-approved, university-taught, three-unit course.

Military Science (Continued)

MS 401-402 Theory and Dynamics of the Military Team; 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 military logistics; obligations and responsibilities of an officer on active duty; application of leadership principles, stressing responsibilities of the leader and affording experience through practical exercises. Three class hours and one leadership laboratory per week and, during either MS 401 or 402, concurrent enrollment in a department-approved, university-taught, three-unit course.

AIR FORCE AEROSPACE STUDIES

The courses in AF Aerospace Studies make up the Air Force ROTC program designed to qualify for commission those male students who desire to serve as officers in the United States Air Force. All of the following courses are held on the campus of Washington University in St. Louis. (For enrollment information see page 35.) Course credit indicated is for two semesters or one full year enrollment in the course.

AS 301-302 and AS 401-402 comprise the complete two-year institutional phase of the AFROTC program. Students desiring the Air Force commission should attend a six-week field training camp during the summer before enrolling in AS 301. Application for field training may be directed to any professor of AF Aerospace Studies during the fall or early spring prior to the summer in which the training will be taken. Applicants must have two years of graduate or undergraduate school remaining after attending summer camp.

AS 301-302 Growth and Development of Aerospace Power (6)

Prerequisite: Six weeks of field training. Survey course on the nature of war; development of air power in the United States; mission and organization of the Defense Department; Air Force concepts, doctrine and employment; astronautics and space operations; future development of aerospace power, including problems in space exploration. Three class hours per week.

AS 401-402 The Professional Officer (6)

Prerequisite: AS 301-302. A study of the meaning and responsibilities of professionalism; the Military Justice System; theory, function and discipline of leadership principles, functions and tools of management, with special attention to problem solving and communication. Future Air Force pilots are given 36½ hours of free flying instruction in light aircraft. Three class hours per week.

Description of Courses

MUSIC

Prerequisites may be waived by consent of department.

APPLIED MUSIC

44, 45, 46 (1)

115, 116, 135, 136, 155, 156 (2)

Credit shall be granted for applied study in the following areas: baritone, bassoon, clarinet, classical guitar, flute, french horn, oboe, harp, organ, percussion, piano, saxophone, string bass, trombone, trumpet, tuba, viola, violin, violoncello and voice.

14, 15, 16 Piano Proficiency Class (1)

Prerequisite: Permission of the department. Group instruction for those who intend to be music majors and who do not meet minimum keyboard requirements. Two class periods per week.

17 Secondary Applied Music Class (1)

Prerequisite: Permission of the department. Performance, teaching techniques and materials for the various performance media. Two class periods per week.

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

18, 19, 20 Intermediate Piano (1)

Prerequisite: Permission of the department. Instruction above the minimum proficiency level for the non-keyboard music major.

21, 22, 23 Intermediate Voice (1)

Prerequisite: Permission of the department. Instruction for non-voice majors under the choral option of the music education curriculum.

40 University Chorus (1)

Prerequisite: Consent of instructor. Preparation and performance of choral masterpieces.

41 The Missouri Singers (1)

Prerequisite: Consent of instructor. The study and performance of music for vocal chamber ensemble.

50 University Orchestra (1)

Prerequisite: Consent of instructor. Study, preparation and performance of orchestral repertory.

Music (Continued)

- 52 **University Band (1)**
Prerequisite: Consent of instructor. Study, preparation and performance of music for the wind ensemble and band.
- 54 **Chamber Ensemble (1)**
Prerequisite: Consent of department. Study, preparation and performance of music for the chamber ensemble.
- 60 **Collegium Musicum (1)**
Prerequisite: Consent of instructor. Performance of music for chamber ensemble with particular emphasis on the Renaissance and Baroque Periods.

MUSIC HISTORY, LITERATURE, THEORY

- 1 **Introduction to Music (3)**
An historically oriented study of art music, its styles and forms from the Baroque Period to the present day. This course will not apply toward requirements for a music major.
- 2 **Introduction to Symphonic Music (3)**
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)**
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)**
Prerequisite: Music 3 or consent of department. Continuation of Music 3.
- 5 **Introduction to Non-Western Music (3)**
A survey of the music of the Asian and African continents, with emphasis upon the function of music in the various cultures. This course will not apply toward requirements for a music major.
- 6 **Introduction To The African Arts (3)**
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)**
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)**
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.

Description of Courses

- 102 **History of Western Music (3)**
Prerequisite: Music 3 or consent of department. Continuation of Music 101.
- 111 **Theory of Music (3)**
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)**
Prerequisite: Music 111 or consent of department. Continuation of Music 111.
- 121 **Form and Analysis (2)**
Prerequisite: Music 112. Study of basic musical forms and structures.
- 122 **Form and Analysis (2)**
Prerequisite: Music 121. Emphasis upon the larger musical forms. Introduction of contemporary structure.
- 134 **Introduction to the Theory of Music (2)**
An introductory course in the rudiments of music, specifically designed to meet the needs of the elementary classroom teacher. Systematic training in the fundamentals of music and their application. This course will not apply toward requirements for a music major.
- 137 **Elementary School Music (2) (Same as Education 137)**
Prerequisite: Music 134 or consent of department. Basic musical preparation for all students preparing for elementary school teaching. Development of the elementary school music program, with emphasis on selection of music and methods of teaching music to children. This course will not apply toward requirements for a music major.
- 141 **Orchestration (2)**
Prerequisite: Music 112. Scoring for various instrumental ensembles including full orchestra; score analysis.
- 151 **Conducting (2)**
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.
- 160 **Teaching Music in the Elementary School (3) (Same as Education 160)**
Prerequisite: Music 112 and Education 101. Creating a musical environment in the classroom. The child voice in singing; development of rhythmic and melodic expression; rote songs; part singing; directed listening; utilization of notational elements; analysis of instrumental materials. Prerequisite to student teaching.

Music (Continued)

- 162 **Teaching Music in the Secondary School (3)** (Same as Education 162)
Prerequisite: Music 112 and Education 101. Curriculum organization and administration of secondary school music classes. The adolescent voice; general music class; vocal and instrumental literature; music theory and music literature classes. Prerequisite to student teaching.
- 192 **Senior Readings (3)**
Prerequisite: Consent of department. Required of all senior music majors. Directed readings and research in an area mutually acceptable to the student and instructor.
- 321 **Music of the Middle Ages (3)**
Prerequisite: Music 101 or consent of department. A study of music and musical thought from the beginning of Christianity to 1450. Gregorian chant, polyphonic music, the Ars Antiqua and the Ars Nova.
- 322 **Music of the Renaissance (3)**
Prerequisite: Music 101 or consent of department. A study of the theoretical and practical impact of humanism on music, musicians, and musical thought from 1450 to 1600. Sacred and secular music; the rise of an instrumental idiom.
- 323 **Music of the Baroque (3)**
Prerequisite: Music 101 or consent of department. A detailed study of 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)**
Prerequisite: Music 102 or consent of department. A study of the growth of classical style; galant and expressive styles; Mozart, Haydn and Beethoven.
- 325 **Music of the Romantic Period (3)**
Prerequisite: Music 102 or consent of department. Composers, forms and styles in 19th century music. The literary and social background of musical Romanticism.
- 326 **Music of the Twentieth Century (3)**
Prerequisite: Music 102 or consent of department. A detailed study of trends in modern music and of influential composers; Impressionism, serial composition, electronic music, and other recent techniques.
- 351 **Advanced Conducting (2)**
Prerequisite: Music 151 or consent of department. Advanced study of conducting and rehearsal techniques, score reading and interpretation.
- a. Instrumental
 - b. Choral

Description of Courses

PHILOSOPHY

Prerequisites may be waived by consent of department.

- 50 **Major Questions in Philosophy (3)**
A study and discussion of representative issues in philosophy, such as freewill and determinism, relations of mind and body, the basis of value judgments, models of knowledge and belief and the possibility of constructing a world view.
- 60 **Logic and Language (3)**
An introduction to the language and logical structure of arguments, the principles of sound reasoning and application of these principles in a variety of contexts.
- 90 **Freshman Seminar (3)**
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 101 **Approaches to Ethics (3)**
Prerequisite: Freshmen admitted by consent of department. Traditional and contemporary approaches to an understanding of moral choice and appraisal, the conditions of moral conduct and relations between individual and social ethics.
- 102 **Philosophy of Religion (3)**
Prerequisite: Freshmen admitted by consent of department. A philosophical investigation of problems posed by religion, such as the nature of religious faith and experience, the relation of faith and reason, alternative concepts of deity and the problem of evil.
- 105 **Philosophical Ideas in Literature (3)**
Prerequisite: Freshmen admitted by consent of department. Critical reading and discussion of selected literary works in terms of the philosophical problems they present.
- 160 **Formal Logic (3)**
Prerequisite: Freshmen admitted by consent of department. An introductory formal study of deductive inference. Emphasis is placed on the logical structure of language and construction of proofs.
- 170 **Asian Philosophy (3)**
Prerequisite: Freshmen admitted by consent of department. Critical study of selected philosophical classics of India and China.
- 201 **Ancient Philosophy (3)**
Prerequisite: Freshmen admitted by consent of department. The principal philosophical doctrines of the ancient world, with special emphasis on the philosophies of Plato and Aristotle.

Philosophy (Continued)

- 202 **Medieval and Renaissance Philosophy (3)**
A critical study of the most important philosophies of the period from Augustine to the Renaissance.
- 203 **Early Modern Philosophy (3)**
Principal figures in the development of rationalism, empiricism and skepticism in early modern Europe, from Descartes to Kant.
- 204 **Nineteenth Century Philosophy (3)**
A study of the conflict of idealistic, materialistic, utilitarian and irrationalist philosophies of the nineteenth century, from Kant to J.S. Mill and from Hegel to Nietzsche.
- 205 **Twentieth Century Philosophy (3)**
The major issues and trends in contemporary philosophy, presented through selected readings from pragmatism, logical positivism, process philosophy, linguistic analysis and existentialism.
- 220 **Problems in the Philosophy of Education (3)**
A critical study and discussion of selected issues in education, including the distinctive features of education as an activity and achievement, the concepts of teaching and learning, relations between education and values, and the functions of a university.
- 225 **Philosophy of Art (3)**
A study of issues concerning the definition of art, meaning and truth in the arts, aesthetic experience, taste and appreciation and the criticism of art.
- 230 **Social and Political Philosophy (3)**
A systematic analysis of concepts and norms which relate to the theory and practice of political societies. Among the concepts and norms considered are those of community, political authority, freedom and personal rights, equality and social justice, welfare and collective preference.
- 250 **Philosophy of Science (3)**
An examination of logical and methodological problems related to the sciences, including the structure of scientific explanations, laws and theories; methods of concept formation; and confirmation and the problem of induction.
- 260 **Philosophy of History (3)**
A critical analysis of concepts and methods characteristic of the study of history. Among the topics considered are historical explanation, objectivity, causation, significance and concepts of historical trends and patterns.
- 265 **Philosophy of Law (3)**
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 assigning responsibility and punishment.

Description of Courses

- 269 **The Marxist Heritage (3) (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.
- 301 **Plato and Neo-Platonism (3)**
An intensive study of Plato's writings, with special emphasis on his ethics, theory of knowledge, and metaphysics, and of selected philosophers on whom Plato has had a significant influence.
- 302 **Aristotle and His Influence (3)**
A detailed critical study of Aristotle's metaphysics, physics, psychology and ethics, together with an attempt to assess his influence on later philosophy.
- 305 **Modern Rationalism (3)**
An examination of rationalism as a modern philosophical tradition, and especially its classical formulations by Descartes, Spinoza and Leibniz.
- 306 **British Empiricism (3)**
An investigation of the sources of empiricism as a philosophy, its classical development by Locke, Berkeley and Hume, and a few of its more recent manifestations.
- 307 **Kant's Philosophy and the Modern World (3)**
The critical idealism of Kant, with special emphasis on his theory of knowledge and moral philosophy. A study of Kant's impact on epistemology, ethical theory and recent conceptions of science and mathematics.
- 308 **Hegel and the Idealist Tradition (3)**
Absolute idealism as developed by Hegel and his followers. Detailed study of Hegel's metaphysics and theory of knowledge, together with an exploration of his influence on other thinkers of the past and present.
- 310 **Pragmatism (3)**
An intensive study of pragmatism as developed by Peirce, James, Dewey and other contemporary proponents.
- 315 **Existentialism and Phenomenology (3)**
Critical study of the major existentialist philosophers from Kierkegaard to the present, together with the phenomenology of Husserl and his followers.
- 318 **Philosophy of Mind (3)**
Analysis of mental concepts, such as consciousness, perception, action and intention, as a basis for understanding the relation between mind and body, the basis of personal identity and knowledge of other minds.

Philosophy (Continued)

- 320 Theories of Knowledge (3)**
An examination of concepts and problems involved in the characterization and appraisal of knowledge. Specific topics will vary, but will include scientific and common sense knowledge, belief, perception, memory, truth and necessity. Both traditional and contemporary philosophers will be read and discussed.
- 321 Metaphysics (3)**
A critical examination of selected metaphysical questions—such as substance, universals, causality, necessity, space and time, freewill, being and identity—as they are treated in the writings of one or more philosophers.
- 325 Recent Ethical Theory (3)**
An intensive study of major contributions to twentieth century ethics, including works by Moore, Dewey, Ross, Stevenson and Hare.
- 330 Philosophy of Language (3)**
A systematic analysis of language and its uses, meaning and its various modes, definition, metaphor and symbolism.
- 335 Philosophical Issues in the Social Sciences (3)**
A detailed analysis of issues raised by the social sciences, including the logical characterization of explanations, predictions, laws and theories; types of reductionism; and objectivity, values and the empirical basis of the social sciences.
- 350 Special Readings (credit arranged)**
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.
- 360 Advanced Formal Logic (3)**
Prerequisite: Philosophy 160 or consent of instructor. Rigorous study of major developments in a variety of contemporary logical systems. Emphasis is given to theoretical problems in logic, and some attention to philosophical issues arising from logic.
- 391 Senior Thesis (3-6)**
Prerequisite: Consent of department. Directed individual research and thesis 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.

PHYSICS

Prerequisites may be waived by consent of department.

- 1 Foundations of Modern Physical Theory (3)**
Prerequisite: Mathematics 02 or equivalent. An introduction to fundamental principles underlying the foundations of physics. Recommended for any student interested in physics, with special sections designed for elementary education majors. Five hours multi-media per week.

Description of Courses

- 2 Applications of Modern Physical Theory (3)**
Prerequisite: Physics 1. Continuation of Physics 1 designed for students who plan to pursue a career in medicine or in one of the medically-oriented professions. No credit for students majoring in physics or chemistry. Three hours lecture plus one hour discussion per week.
- 3 Demonstration Experiments in Physical Theory (2)**
Prerequisite: Physics 1 (may be taken concurrently). Laboratory course designed to accompany Physics 1. No credit for students majoring in physics and chemistry. Four hours laboratory per week.
- 10 Experimentation in Physics (2)**
Prerequisite: Mathematics 40. Laboratory course designed to help the student discover how experimental techniques may be used to obtain meaningful information about nature. Four hours laboratory per week.
- 15 Introductory Physics Laboratory (2)**
Prerequisite: Physics 10, 111 (Physics 111 may be taken concurrently). Set of experiments selected from certain areas of physics, utilizing the methods developed in Physics 10. Four hours laboratory per week.
- 111 Elementary Theoretical Physics I (3)**
Prerequisite: Physics 1 and Mathematics 80 or 101. A survey of the main areas of theoretical physics using elementary mathematical techniques. Three hours lecture plus one hour discussion per week.
- 112 Elementary Theoretical Physics II (3)**
Prerequisite: Physics 111 and Mathematics 175 or 101. Continuation of Physics 111. Three hours lecture plus one hour discussion per week.
- 180 Methods of Teaching Physics in Secondary Schools (3)**
Prerequisite: Education 163 and a near-major in the subject area. A study of the scope and sequence of the science 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 science.
- 200 Survey of Theoretical Physics (3)**
Prerequisite: Physics 111 or Physics 1 and Mathematics 201. A survey of the main areas of theoretical physics using relatively elementary mathematical techniques, including classical mechanics, electricity and magnetism, quantum mechanics, relativity and statistical mechanics. Three hours lecture per week.
- 201 Elementary Electronics I (3)**
Prerequisite: Physics 2 or 112 or consent of instructor. 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.

Physics (Continued)

- 202 Elementary Electronics II (3)**
Prerequisite: Physics 201. Continuation of Physics 201. Six hours laboratory per week.
- 211 Intermediate Physics Laboratory I (1)**
Prerequisite: Physics 112. Experiments covering topics in classical and quantum physics with emphasis on experimental accuracy and modern laboratory techniques. Four hours laboratory per week.
- 212 Intermediate Physics Laboratory II (1)**
Prerequisite: Physics 112. Experiments covering topics in classical and quantum physics with emphasis on experimental accuracy and modern laboratory techniques. Four hours laboratory per week.
- 215 Electronic Instrumentation I (1-3)**
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)**
Prerequisite: Physics 202 and consent of department. Special topics in electronic instrumentation selected through consultation between student and instructor. Hours arranged.
- 221 Mechanics (3)**
Prerequisite: Mathematics 302 and Physics 112 (Mathematics 302 may be taken concurrently). Advanced course covering rigid body dynamics, damped and undamped oscillatory motion, with an introduction to Lagrange's equations and variational principles. Three hours lecture and one hour discussion per week.
- 223 Electricity and Magnetism (3)**
Prerequisite: Physics 301 (may be taken concurrently). Electromagnetic fields, including electrostatics, dielectric materials, solution to Laplace's equation, currents and magnetic fields, motion of charged particles, introduction to electromagnetic waves. Three hours lecture and one hour discussion per week.
- 225 Physical Optics (3)**
Prerequisite: Physics 112. A basic study of light: interference, diffraction, crystal optics, reflection, scattering and light quanta. Three hours lecture and one hour discussion per week.
- 231 Introduction to Modern Physics (3)**
Prerequisite: Physics 112. Introduction to modern physics for physics majors and students in other departments. Relativity, radiation and quanta, atomic and nuclear physics. Three hours lecture and one hour discussion per week.
- 241 Thermal and Statistical Physics (3)**
Prerequisite: Physics 221. Introduction to statistical mechanics, laws of thermodynamics, kinetic theory. Three hours lecture and one hour discussion per week.

Description of Courses

- 281 Directed Readings in Physics (credit arranged)**
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)**
Prerequisite: Physics 111 and Physics 231. A study of the historical evolution of physics. Three hours lecture per week.
- 289 Seminar (1)**
Presentation of selected papers by students and faculty members at weekly meetings. May be taken twice for credit.
- 290 Research (credit arranged)**
Prerequisite: Consent of department. Independent physics research projects arranged between student and instructor. Hours arranged.
- 301 Introduction to Mathematical Physics (3)**
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)**
Prerequisite: Physics 231. 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 (1-3)**
Prerequisite: Physics 211, 212, 221 and 223. Physics majors are introduced to the experimental techniques used in research. A student may be given a special problem or assigned to an existing research project. Hours arranged.
- 312 Advanced Physics Laboratory II (1-3)**
Prerequisite: Physics 211, 212, 221 and 223. Physics majors are introduced to the experimental techniques used in research. A student may be given a special problem or assigned to an existing research project. Hours arranged.
- 321 Dynamics (3)**
Prerequisite: Physics 221, Mathematics 302. Theory of small oscillation, perturbation methods, Lagrange's equations, Hamilton's equations, canonical transformations, Hamilton-Jacobi theory. Three hours lecture and one hour discussion per week.
- 323 Electromagnetic Theory (3)**
Prerequisite: Physics 223, 301. Maxwell's equations, reflection and refraction, guided waves, radiation of electromagnetic waves, and electromagnetic fields of moving charges. Three hours lecture and one hour discussion per week.

Physics (Continued)

- 331 **Introduction to Quantum Mechanics (3)**
Prerequisite: Physics 241, 301, 321, 323, (Physics 323 may be taken concurrently). 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)**
Prerequisite: Physics 221, 223, 231. 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)**
Prerequisite: Physics 333. Continuation of Physics 333. Three hours lecture and one hour discussion per week.
- 335 **Atomic and Nuclear Physics (3)**
Prerequisite: Physics 331. Applications 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.
- 341 **Statistical Thermodynamics (3)**
Prerequisite: Physics 321 (may be taken concurrently). An introduction to ensemble theory applied to systems in equilibrium. Applications include Fermi-Dirac and Einstein-Bose statistics; specific heats of solids. Three hours lecture and one hour discussion per week.
- 351 **Elementary Solid State Physics (3)**
Prerequisite: Physics 331. Theoretical and experimental aspects of solid state physics, including one-dimensional band theory of solids; electron emission from metals and semiconductors; electrical and thermal conductivity of solids. Three hours lecture and one hour discussion per week.

ASTRONOMY

The following courses carry credit through the Department of Physics, University of Missouri – St. Louis.

- 1 **General Astronomy I (3)**
Prerequisite: Mathematics 02 or equivalent. Study of earth structure, earth motions, the moon, planets, asteroids, comets, meteors, the sun and stars. Origin and evolution of the solar system. History of astronomy from ancient times to present day. Planetarium observing session to be announced.
- 2 **General Astronomy II (3)**
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. Observing session.

Description of Courses

- 11 **Introduction to Astronomy I (4)**
Prerequisite: Mathematics 175, Physics 15 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)**
Prerequisite: Mathematics 175, Physics 15 and Physics 112. Introduction to Astronomy I. A continuation of Introduction to Astronomy I.
- 222 **Introduction to Celestial Mechanics I (3)**
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)**
Prerequisite: Mathematics 302 (or concurrent registration) and Introduction to Celestial Mechanics I (or consent of instructor). A continuation of Introduction to Celestial Mechanics I.

POLITICAL SCIENCE

Prerequisites may be waived by consent of department.

UNGROUPED COURSES

- 11 **Government in Modern Society (3)**
Introduction to basic concepts of government and politics with special reference to the United States, but including comparative material from other systems. Course fulfills the state requirement.
- 12 **Government in Modern Society (3)**
Prerequisite: Political Science 11. Continuation of Political Science 11. Application of basic concepts of government in modern society, with special emphasis on the United States. Course fulfills the state requirement.
- 90 **Freshman Seminar (3)**
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 99 **The City (3) (Same as 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.

Political Science (Continued)

- 190 **Political Science Readings (credit arranged)**
Prerequisite: Political Science 11, consent of instructor and junior standing. Readings on topics mutually acceptable to student and instructor.
- 192 **Senior Readings (3)**
Prerequisite: Consent of department. Directed readings of selected contemporary literature in the discipline.
- 193 **Senior Seminar (3)**
Prerequisite: Consent of department. Directed readings and research, one product of which shall be a formal paper.
- 390 **Special Readings (credit arranged)**
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.

GROUP I: PUBLIC LAW

- 320 **Introduction to American Constitutional Law (3)**
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)**
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.
- 323 **The Judicial Process (3)**
Prerequisite: Political Science 11. Analysis of the role of the judiciary in policy formation.
- 325 **Jurisprudence (3)**
Prerequisite: Political Science 11. 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.

GROUP II: POLITICAL PROCESS

- 215 **The Black American in United States Politics (3)**
The position and political behavior of Black Americans in both rural and urban environments, with emphasis on styles of leadership, organization, strategy, and ideology. Field work in the St. Louis metropolitan area will provide research experience and current information.

Description of Courses

- 234 **Political Sociology (3) (Same as Sociology 234)**
Prerequisite: Political Science 11, Sociology 10 or 20. The analysis of power as a social phenomenon. The processes of legitimizing power and instituting authoritative structures. Stabilizing of social control and social integration at various levels of social and political organization.
- 315 **The American Presidency (3)**
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)**
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.
- 335 **Political Parties (3)**
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.
- 337 **Public Opinion and Communications (3)**
Prerequisite: Political Science 11. Analysis of the methodology and techniques of public opinion formation and the role of public opinion in the American political system. Communications is examined as a tool of opinion makers.
- 338 **Political Behavior (3)**
Prerequisite: Political Science 11. Economic, psychological and social dimensions of political behavior, political participation, leadership and elites; political attitudes; voting behavior and decision making processes.
- 339 **Political Leadership (3)**
Prerequisite: Political Science 11. Analysis of the factors influencing recruitment into the political process. Also stressed is the relationship between patterns of career development and political behavior.

GROUP III: PUBLIC ADMINISTRATION

- 340 **Public Administration (3)**
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) (See Group IV)**
- 343 **Public Policy and the Administrative Process (3)**
Prerequisite: Political Science 11. Analysis of the formulation of public policies through the administrative process.

Political Science (Continued)

- 345 **Business and Government (3) (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.
- 377 **Municipal Administration (3) (See Group VI)**

GROUP IV: COMPARATIVE POLITICS

- 150 **European Comparative Politics (3)**
Prerequisite: Political Science 11. Examination of theoretical approaches to the study of political systems and a study of selected foreign political systems with primary emphasis upon West European democratic systems.
- 255 **Asian Comparative Politics (3)**
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)**
Prerequisite: Political Science 11. 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)**
Prerequisite: Political Science 11. 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)**
Prerequisite: Political Science 11. 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.

GROUP V: THEORY AND METHODOLOGY

- 261 **History of Political Thought (3)**
Study of political philosophy from Plato to Machiavelli.
- 262 **History of Political Thought (3)**
Study of political philosophy from Machiavelli to the present.
- 269 **The Marxist Heritage (3) (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.

Description of Courses

- 300 **Empirical Political Theory (3)**
Prerequisite: Political Science 11. Consideration of the elements of scientific method; scientific method and social phenomena; critics of the scientific approach in political science, nature and logic of explanatory theories, such as systems theory, structural-functional analysis and deductive theories.
- 301 **Positive Models and Theories of Strategy (3)**
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.
- 360 **American Political Thought (3)**
Prerequisite: Political Science 11. Development of political thought in America from colonial period to contemporary scene.
- 365 **Normative Political Philosophy (3)**
Prerequisite: Political Science 11. 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.
- 366 **Utopian Political Thought (3)**
Prerequisite: Political Science 11 or consent of instructor. Study of the utopian tradition in the history of political thought. Particular emphasis on utopian socialism, the communitarian movement and contemporary anti-utopian thought.

GROUP VI: URBAN AND REGIONAL POLITICS

- 170 **State and Local Government (3)**
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 both the state requirement and the state teacher certification requirement.
- 375 **Urban Planning and Politics (3)**
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)**
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.

Political Science (Continued)

- 377 **Municipal Administration (3)**
Prerequisite: Political Science 11. Study of administrative organization and problems at the municipal level.
- 379 **The Socio-Political Nature of Urban Regions (3) (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)**
Prerequisite: Political Science 11. Analysis of politics among nations; imperialism, balance of power, international morality, sovereignty, diplomacy; analysis of the problem of peace, disarmament, international organizations, world government.
- 282 **United States Foreign Policy (3)**
Prerequisite: Political Science 11. 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)**
Prerequisite: Political Science 11. Forms and functions of international organizations, with special reference to the United Nations and problems of international integration.
- 380 **International Politics: Theory and Process (3)**
Prerequisite: Political Science 180 or consent of instructor. 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)**
Prerequisite: Political Science 11. Empirical studies of foreign policy decision-making.
- 382 **Foreign Policy Decision-Making (3)**
Prerequisite: Political Science 11. Empirical and experimental studies of foreign policy decision-making processes.
- 383 **International Integration (3)**
Prerequisite: Political Science 11. The processes by which new political entities are formed in the international system replacing previously discrete national units.
- 388 **Special Studies in International Relations (3)**
Prerequisite: Consent of instructor. Regional or functional problems in international relations, e.g., international relations of the Middle East, Western Europe, international political coalitions.

Description of Courses**PSYCHOLOGY**

Prerequisites may be waived by consent of department.

- 1 **General Psychology (3)**
A survey of the facts, principles and methods in the study of human behavior.
- 2 **General Psychology (3)**
Prerequisite: Psychology 1. Continuation of Psychology 1.
- 45 **Race (3) (Same as History 45 and Sociology 45)**
Prerequisite: 12 hours of college course credit. Origins and functions of conceptions of race. Biological and social definitions of race; the function of racial ideologies for societies; social, historical and psychological bases of racism in the U.S.; the consequences of racism for the individual and societies.
- 99 **The City (3) (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.
- 105 **Group Prejudice and Minority Identity (3) (Same as Sociology 105)**
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.
- 150 **The Psychology of Individual Differences (3)**
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) (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.
- 192 **Senior Readings (3)**
Prerequisite: Consent of department. Required for all senior psychology majors. Directed readings and research, one product of which shall be a formal paper.
- 193 **Senior Seminar (3)**
Prerequisite: Consent of department. Required for all senior psychology majors. Directed readings and research, one product of which shall be a formal paper.
- 201 **Psychological Statistics (4) (with laboratory)**
Prerequisite: Psychology 2, Mathematics 40 (may be taken concurrently). Statistical methods in psychological measurement, analysis of psychological data. Frequency distribution analysis, sampling, tests of significance, correlational methods.

Psychology (Continued)

- 212 Principles of Learning (3)**
Prerequisite: Psychology 2. A consideration of critical findings in learning.
- 219 General Experimental Psychology (3) (with laboratory)**
Prerequisite: Psychology 201. Research methods and analysis techniques used in psychological inquiry. Special emphasis placed on the logic of research design. Includes laboratory study of and analysis of selected methods.
- 270 Child Psychology (3)**
Prerequisite: Psychology 2. Principles of biological, behavioral and personality development from conception to puberty.
- 271 Adolescent Psychology (3)**
Prerequisite: Psychology 2. Principles of biological, behavioral and personality development from puberty to maturity.
- 290 Psychology Readings (3)**
Prerequisite: Psychology 2 and consent of instructor. Readings on a topic mutually acceptable to student and instructor.
- 301 Advanced Statistics and Experimental Design (3)**
Prerequisite: 12 hours of psychology, including Psychology 201. Statistical methods particularly useful in psychological research and the design of experiments appropriate to these methods.
- 310 Motivation Theory (3)**
Prerequisite: 12 hours of psychology. Survey of current theoretical material in the area of motivation.
- 313 The Psychology of Exceptional Children (3) (Same as Education 313)**
Prerequisite: Education 102 and either Psychology 270 or Psychology 271. A study of the special psychological and educational problems of the child who deviates from the normal.
- 314 Physiological Psychology (3) (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.
- 315 Personality Theory (3)**
Prerequisite: 12 hours of psychology. Structural and dynamic aspects of the human personality considered in the context of selected theoretical systems.
- 318 Industrial Psychology (3) (Same as Business Administration 318)**
Prerequisite: Psychology 201 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.

Description of Courses

- 345 Abnormal Psychology (3)**
Prerequisite: 12 hours of psychology. Etiology and description of certain symptom complexes commonly found in the mentally ill, with consideration of selected therapeutic procedures.
- 350 Special Readings (credit arranged)**
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.
- 355 Psychology of Perception (3) (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.
- 356 Cognitive Processes (3)**
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.
- 357 Psychology of Learning (3) (with laboratory)**
Prerequisite: Psychology 219. Major theoretical positions and experimental conditions of learning. Includes laboratory study of selected problems.
- 358 Comparative Psychology (3) (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.
- 361 History and Systems of Psychology (3)**
Prerequisite: 12 hours of psychology. Historical antecedents of contemporary scientific psychology, including a survey of systems and schools of psychology.
- 365 Psychological Tests and Measurements (3) (with laboratory)**
Prerequisite: Psychology 201; 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.
- 377 Personality and Culture (3) (Same as Sociology 377)**
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.

RUSSIAN

Prerequisites may be waived by consent of department.

- 1 Elementary Russian (5)**
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)**
Prerequisite: Russian 1. 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.
- 101 Intermediate Russian (3)**
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)**
Prerequisite: Russian 101 or equivalent. Continuation of Russian 101.
- 104 Scientific Russian (3)**
Prerequisite: Russian 101 or equivalent. Introduction to reading of selected Russian texts in the natural and social sciences. Designed primarily for majors in these areas.
- 108 Oral and Written Composition (3)**
Prerequisite: Russian 102 or equivalent. Emphasis will be placed upon the development of oral and written skills. May be taken concurrently with Russian 102.
- 110 Nineteenth Century Russian Literature in Translation (3)**
Readings of representative works drawn from the nineteenth century Russian literature up to 1845. Course to focus upon works of Pushkin, Lermontov, Gogol and Turgenyev. Lectures and discussion. May be taken to fulfill humanities requirements.
- 111 Nineteenth Century Russian Literature in Translation (3)**
Readings of representative works drawn from nineteenth century Russian literature after 1845. Course to focus upon works of Dostoyevsky, Tolstoy and Chekhov. Lectures and discussion. May be taken to fulfill humanities requirements.
- 112 Twentieth Century Russian Soviet Literature in Translation (3)**
Reading and discussion of the most representative writings from Gorki to Pasternak. May be taken to fulfill humanities requirements.

Description of Courses

200 Syntax of the Russian Language (3)

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 department.

- 10 Introduction to Sociology (3)**
Sociology as an approach to social phenomena. Classic and contemporary models of social structures and processes.
- 20 Sociological Inquiry (3)**
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.
- 45 Race (3) (Same as Psychology 45 and History 45)**
Prerequisite: 12 hours of college course credit. Origins and functions of conceptions of race. Biological and social definitions of race; the function of racial ideologies for societies; social, historical and psychological bases of racism in the U.S.; the consequences of racism for the individual and societies.
- 90 Freshman Seminar (3)**
Prerequisite: Freshman standing and consent of instructor. Topics to be announced. Weekly seminars supplemented by individual conferences. Limited to 12 students.
- 99 The City (3) (Same as History 99, Political Science 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.
- 105 Group Prejudice and Minority Identity (3) Same as Psychology 105)**
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.
- 110 Sociological Theory (3)**
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.

Sociology (Continued)

- 120 Quantitative Techniques in Sociology (3)**
Prerequisite: Sociology 10 or 20. 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-ration, correlation and multiple regression analyses, non-parametric statistics.
- 130 Research Methods (3)**
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)**
Prerequisite: Sociology 10 or 20. An introduction to social work for students of sociology. Stress is placed upon uses of sociological theory, methods and research findings in various types of social service programs.
- 146 Social Issues and Community Organization (3)**
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)**
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.
- 210 Criminology (3)**
Prerequisite: Sociology 10 or 20. Crime as a social phenomenon. Problems of prevention and treatment. Theories of crime and criminal behavior.
- 214 Juvenile Delinquency (3)**
Prerequisite: Sociology 10 or 20. The nature of delinquency and youth crime, their extent and trends; delinquency causation; effects of police, courts, probation, and correctional institutions. Experiments in treatment and prevention.
- 224 Sociology of the Family (3)**
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)**
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)**
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.

Description of Courses

- 242 Organizational Analysis (3)**
Prerequisite: Sociology 10 or 20. The structural characteristics of formal and informal organizations. Rational and natural-system models. Pressures toward equilibrium and changes.
- 256 Sociology of Education (3)**
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.
- 268 Sociology of Adolescence and Youth (3)**
Prerequisite: Sociology 10 or 20. Adolescence and youth in historical, cross-cultural and subcultural perspectives; inter-generational conflict; peer group, educational, familial, economic and political roles; conformity and non-conformity as exemplified by hippies, activists, delinquents, drop-outs.
- 278 Sociology of Law (3)**
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)**
Prerequisite: Sociology 10 or 20. The creative individual, his work, and his public. Social pressures and rewards.
- 302 Urban Sociology (3)**
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)**
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)**
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.
- 314 Social Change (3)**
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.

Sociology (Continued)

- 322 Advanced Quantitative Techniques (3)**
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.
- 332 Advanced Methodology (3)**
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)**
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)**
Prerequisite: Sociology 10 or 20; junior standing or consent of instructor. The urban community as an arena of social action and problem-solving with emphasis on the sociological aspects of urban problems.
- 350 Special Readings (credit arranged)**
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.
- 352 Advanced Principles of Sociology (3)**
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)**
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)**
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.

Description of Courses

- 362 Sociology of Deviant Behavior (3)**
Prerequisite: Sociology 10 or 20; junior standing or consent of instructor. Theories of the nature, causes, and control of deviance; agencies of social control; analysis of specific forms, e.g., crime, delinquency, mental disorders, alcoholism, drug addiction, suicide, homosexuality.
- 364 The Sociology of Religion (3)**
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.
- 378 Advanced Social Psychology (3)**
Prerequisite: Sociology 160 or Psychology 160, junior standing or consent of instructor. Intensive concentration on selected topics and issues.
- 379 The Socio-Political Nature of Urban Regions (3) (Same as Political Science 379)**
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)**
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)**
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.

SPANISH

Prerequisites may be waived by consent of department.

- 1 Elementary Spanish (5)**
Emphasis will be placed upon the speaking and understanding of Spanish and upon the acquisition of the fundamentals of grammar and syntax. One hour language laboratory required.
- 2 Elementary Spanish (5)**
Prerequisite: Spanish 1. 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)**
Prerequisite: Spanish 2 or equivalent. Grammar review and cultivation of language skills through the study of selected modern works.

Spanish (Continued)

- 102 Intermediate Spanish (3)**
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)**
Prerequisite: Spanish 102 or equivalent. Emphasis will be placed upon the development of oral and written skills. May be taken concurrently with Spanish 102.
- 110 Masterpieces of Spanish Literature in Translation (3)**
Prerequisite: Sophomore standing. Not open to Spanish majors. 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.
- 111 Masterpieces of Spanish American Literature in Translation (3)**
Prerequisite: Sophomore standing. Not open to Spanish majors. 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 requirements.
- 200 Syntax of the Spanish Language (3)**
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.
- 201 Introduction to Hispanic Literature: Spain (3)**
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.
- 202 Introduction to Hispanic Literature: Spanish America (3)**
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.
- 220 Introduction to Linguistics (3) (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. Required for all foreign language majors seeking teaching certification.

Description of Courses

- 264 Curriculum and Methods of Teaching Foreign Languages (3) (Same as Education 264)**
Prerequisite: Education 163, Spanish 200, 201, 202 and 220. 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.
- 310 Spanish Literature from 1898 to 1939 (3)**
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)**
Prerequisite: Spanish 201. A study of cultural and literary developments since the Spanish Civil War. Emphasis on leading novelists, poets, essayists and dramatists.
- 320 Poetry, Drama and Fiction of the Nineteenth Century (3)**
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)**
Prerequisite: Spanish 201. Selective readings from the drama of Lope de Vega, Tirso de Molina, Ruiz de Alarcón, Calderón de la Barca and from the poetry of Garcilaso, Fray Luis de León, San Juan de la Cruz, Góngora, Lope de Vega, Quevedo.
- 330 Cervantes (3)**
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)**
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*; *Marqués de Santillana*; *El Romancero*; *La Celestina*; the picaresque novel, and *Don Quixote*.
- 340 Spanish American Literature of the Nineteenth Century (3)**
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 20th Century (3)**
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.

Spanish (Continued)

- 399 **Seminar on Hispanic Literature (3)**
Required of major students in the senior year. Subject to be announced every year by the instructor in charge of the seminar. Limited to senior majors.

SPEECH

Prerequisites may be waived by consent of department.

- 10 **Basic Communication (3)**
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)**
Prerequisite: Sophomore standing. Emphasis on effective oral communication, formal and informal. Theories and techniques of argument and persuasion, organization, evidence, delivery.
- 201 **Introduction to Argumentation and Debate (3)**
Fundamentals of argumentation and debate. Application of logic and audience analysis. Preparing briefs. Some debating.
- 203 **Introduction to Communication Theory and Research (3)**
A survey of communication theories and research techniques. Use of several research techniques and application of one or more in a communication research project.
- 210 **Introduction to Radio and Television Broadcasting (3)**
An introduction to broadcasting, including the areas of history, government regulations, station operation, and program development.
- 211 **The Broadcast Audience (3)**
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.
- 220 **Introduction to the Theatre (3)**
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.
- 221 **Theory and Practice in the Fundamentals of Acting (3)**
- 230 **Small Group Communication (3)**
Development of communication skills needed in small group decision-making. Application of these skills to contemporary problems, with special emphasis on urban problems.
- 301 **Communication in American Politics (3)**
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.

**University of Missouri – St. Louis Calendar
1970-1971**

1970 FIRST SEMESTER

- September 8,9 Tuesday, Wednesday, Regular Registration, day students
- September 10,11,14 Thursday, Friday, Monday, New Student Orientation
- September 14,15,16 Monday, Tuesday, Wednesday, Evening College Registration
- September 17 Thursday, Classwork begins, 7:40 a.m.
- November 25 Wednesday, Thanksgiving vacation begins, 5:00 p.m.
- November 30 Monday, Classwork resumes, 7:40 a.m.
- December 18 Friday, Christmas vacation begins, 5:00 p.m.

1971

- January 4 Monday, Classwork resumes, 7:40 a.m.
- January 15 Friday, Classwork First Semester ends, end of day
- January 19 Tuesday, Examinations begin
- January 27 Wednesday, First Semester closes, end of day

SECOND SEMESTER

- January 28 Thursday, Registration, day students
- February 1,2 Monday, Tuesday, Evening College Registration
- February 4 Thursday, Classwork begins, 7:40 a.m.
- April 2 Friday, Spring vacation begins, 5:00 p.m.
- April 12 Monday, Classwork resumes, 7:40 a.m.
- April 13 Tuesday, Thomas Jefferson Day, Honors Convocation
- May 21 Friday, Classwork Second Semester ends, end of day
- May 24,25 Monday, Tuesday, Stop-Day–Study Days
- May 26 Wednesday, Examinations begin
- May 31 Monday, Memorial Day, holiday
- June 4 Friday, Second Semester closes, end of day
- June 10 Thursday, Commencement

SUMMER SESSION

- June 17 Thursday, Evening College Registration
- June 21 Monday, Registration and Orientation, day students
- June 22 Tuesday, Classwork begins, 7:40 a.m.
- July 5 Monday, Independence Day, holiday
- August 12,13 Thursday, Friday, Examinations begin
- August 13 Friday, Summer Session closes, end of day