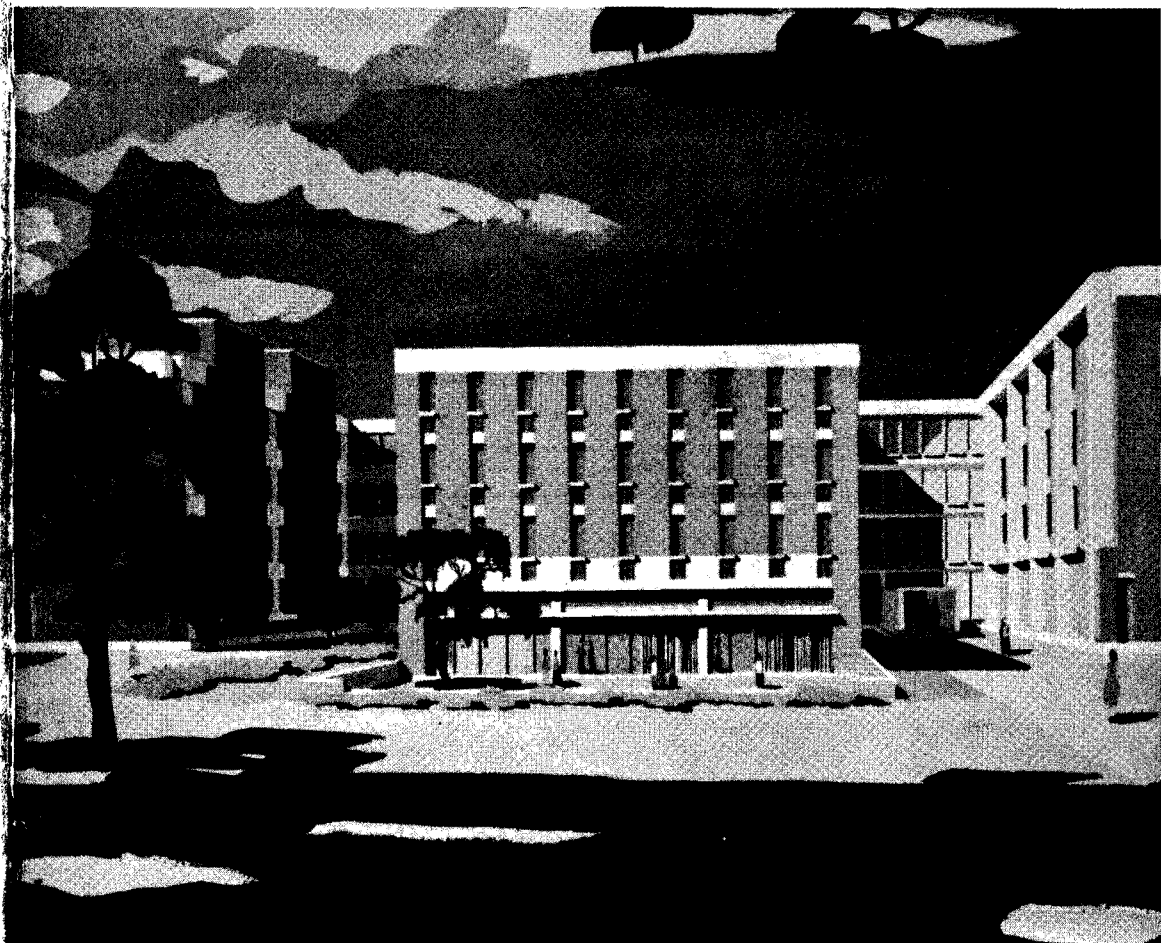


**UNIVERSITY
OF MISSOURI
at ST. LOUIS
BULLETIN**
ST. LOUIS, MISSOURI

GENERAL CATALOG
including Description of Courses



April 10, 1965

1965-66

UNIVERSITY OF MISSOURI AT ST. LOUIS

Offers Work in the Following Divisions:

Division of Business Administration

Division of Education and Teacher Training

Division of Humanities

Division of Mathematics and Pre-Engineering

Division of Modern Foreign Language

Division of Science

Division of Social Science

ARCHIVES
THOMAS JEFFERSON LIBRARY
UMSU

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.

COMMITTEE ON PUBLICATION

Ann Fischer
Susan Freegard

Eric Schoenfeld
Jane Williamson

Chairman - H. E. Mueller

THE UNIVERSITY OF MISSOURI
AT ST. LOUIS

GENERAL CATALOG
INCLUDING
DESCRIPTION OF COURSES*

Revised to December 19, 1964

FOR
1965-1966

*Courses offered only in the division at St. Louis. For information concerning the University of Missouri, Columbia, the University of Missouri at Rolla, and the University at Kansas City, write directly to the Director of Admissions at the campus concerned.

CONTENTS

Board of Curators	3
University Calendar	4
Administrative Officers, Division Chairmen, Faculty	5
The University of Missouri at St. Louis	9
Admission	12
Fees, Expenses, Financial Aid	18
Student Affairs	22
Special Programs	24
General Regulations and Requirements	26
Degrees	29
Division of Business	33
Division of Teacher Education	34
Division of Mathematics and Pre-Engineering	35
Division of Science	37
Division of Social Science	44
Description of Courses	47
Art	48
Astronomy	49
Biology	49
Business Administration	50
Chemistry	52
Economics	53
Education	55
English	56
French	58
German	59
History	60
Mathematics	61
Music	63
Philosophy	64
Physics	65
Political Science	66
Psychology	68
Sociology-Anthropology	69
Spanish	70

109 SPANISH CONVERSATION (3)	
Prerequisite: Spanish 2 or equiv. A course in oral practice and composition. Emphasis is on the aural aspects of language. Course is designed to impart the necessary linguistic fluency needed by those interested in teaching, business economics, administration, and government or State Department work in the language area.	
190 READINGS IN SPANISH (3)	
Prerequisite: Consent of instr. Readings on a topic mutually acceptable to student and instructor.	
203 ADVANCED READING (3)	
Prerequisite: 103, 106, 109 or equiv. Course is intended to help the student develop his reading skill through the use of unedited primary and secondary material.	
251 SPANISH LITERATURE (3)	
Prerequisite: Spanish 103 or equiv. Through the Golden Age. Required for Spanish majors.	
252 LATIN AMERICAN LITERATURE (3)	
Prerequisite: Spanish 103 or equiv. From the Colonial period to 1821. Required for Spanish majors.	
350 SPECIAL READINGS (cr. arr.)	
Prerequisite: consent of instr. Independent study through readings, reports and conferences.	
390 SENIOR READINGS (3)	
Prerequisite: Permission of dept. Required of all senior Spanish majors. Directed readings in an area mutually acceptable to student and instructor.	
391 SENIOR SEMINAR (3)	
Prerequisite: Permission of dept. Required of all senior Spanish majors. Directed reading and research, one product of which shall be a formal paper.	

- 193 SENIOR SEMINAR (3)
Prerequisite: consent of dept. Required for all senior sociology-anthropology majors. Directed reading and research, one product of which shall be a formal paper.
- 311 CRIMINOLOGY (3)
Prerequisite: Sociology 2. Study of criminal behavior as a social process. Theories of crime, punishment, and rehabilitation.
- 314 SOCIOLOGY OF THE FAMILY (3)
Prerequisite: Sociology 2; or Anthropology 10 and 11. Family as a social form related in structure and function to larger forms of social organization. Study of the family in various cultures as an agency of personality development. Emphasis upon the family in America.
- 315 COLLECTIVE BEHAVIOR (3)
Prerequisite: Sociology 2; or Psych. 2. Crowds, public opinion, the mass, social movements, and other collective forms of behavior. Their relationship to social change.
- 316 URBAN SOCIOLOGY (3)
Prerequisite: Sociology 2. Urbanism as a world phenomenon; ecological, demographic characteristics of cities; organization of formal and informal associations, racial and cultural relations, forms of communications; housing and city planning.
- 327 RACE AND ETHNIC RELATIONS (3)
Prerequisite: Sociology 2. Historical and contemporary examination of social cultural, social-psychological aspects of race and ethnic categories.
- 328 PERSONALITY AND CULTURE (3) Same as Psychology 328.
Prerequisite: Anthropology 10 and 11 or Psych. 2. Analysis of relationships between sociocultural systems and individual psychological processes. Cultural factors emphasized.
- 350 SPECIAL READINGS (cr. arr.)
Prerequisite: consent of instr. Independent study through readings, reports and conferences.

SPANISH

- 1 ELEMENTARY SPANISH (4)
Elementary course in which the student acquires familiarity with the written and oral aspects of the language. Additional practice in aural comprehension and pronunciation through use of the language laboratory.
- 2 INTERMEDIATE SPANISH (4)
Contin. of Course 1. Increased practice in conversation, study of grammar rules for correct usage, reading for pleasure, simple composition. Additional practice through use of the language lab.
- 103 SPANISH READING (3)
Prerequisite: Spanish 2 or equiv. Essentially a reading course, consisting primarily of essays, background materials on Spain and Latin America, and contemporary plays.
- 106 SPANISH COMPOSITION (2)
Prerequisite: Spanish 2 or equiv. Grammar review and composition.

THE BOARD OF CURATORS

Term Expires January 1, 1967

John H. Caruthers St. Louis
Oliver B. Ferguson Fredericktown
Orestes Mitchell, Jr. St. Joseph

Term Expires January 1, 1969

Robert Neill. St. Louis
Ike Skelton Lexington
William C. Meyers, Jr. Joplin

Term Expires January 1, 1971

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

OFFICERS OF THE BOARD

Robert Neill, President St. Louis
Oliver B. Ferguson, Vice President Fredericktown
Mary Robnett, Secretary Columbia
Albert M. Price, Treasurer Columbia

UNIVERSITY CALENDAR 1965-1966

St. Louis Divisions

First Semester

1965

September 30 - Thursday, Registration
October 1 - Friday, Orientation
October 4 - Monday, Classwork begins, 8 a.m.
November 24 - Wednesday, Thanksgiving Vacation begins, end of day
November 29 - Monday, Classwork resumes, 8 a.m.
December 17 - Friday, Christmas Vacation begins, end of day

1966

January 3 - Monday, Classwork resumes 8 a.m.
January 31 - February 7, Final Examinations
February 7 - Monday, First Semester closes, end of day

Second Semester

February 8 - Tuesday, Registration
February 9 - Wednesday, Classwork begins, 8 a.m.
April 5 - Tuesday, Easter Vacation begins, end of day
April 13 - Wednesday, Classwork resumes, 8 a.m.
June 1-8 - Final Examinations
June 8 - Second Semester closes, end of day

Summer Session

June 20 - Monday, Registration
June 21 - Classwork begins, 8 a.m.
July 4 - Monday, Holiday
August 12 - Summer Session closes, end of day

between sociocultural systems and individual psychological processes. Cultural factors emphasized.

- 345 ABNORMAL PSYCHOLOGY (3)
Prerequisite: 12 hrs. of psychology. Etiology and description of certain symptom complexes commonly found in the mentally ill, with a consideration of selected therapeutic procedures.
- 350 SPECIAL READINGS (cr. arr.)
Prerequisite: consent of instr. Independent study through readings, reports and conferences.
- 357 PSYCHOLOGY OF LEARNING (4) (with lab.)
Prerequisites: Psych. 212 and 301. Laboratory and lectures in the area of classical and instrumental conditioning. Primary emphasis on data obtained from experiments utilizing infra-human organisms.
- 361 HISTORY AND SYSTEMS OF PSYCHOLOGY (3)
Prerequisite: 12 hrs. of psychology. Historical antecedents of contemporary scientific psychology, including a survey of systems and schools of psychology.

SOCIOLOGY-ANTHROPOLOGY

- 1 INTRODUCTION TO SOCIOLOGY (3)
Study of human behavior as related to the human group. Society, culture, and personality analyzed, using sociological concepts and principles.
- 2 INTRODUCTION TO SOCIOLOGY (3)
Prerequisite: Sociology 1. Contin. of Sociology 1.
- 10 INTRODUCTION TO ANTHROPOLOGY (3)
Survey of the biological and cultural development of man. Fossil man, racial types, the nature of culture, major institutions.
- 11 INTRODUCTION TO ANTHROPOLOGY (3)
Contin. of Anthropology 10.
- 150 SOCIAL DISORGANIZATION (3)
Prerequisite: Sociology 2. Analysis of social problems, such as crime, delinquency, mental illness, and suicide. Focus on both personal and social disorganization.
- 153 PEOPLES AND CULTURES OF THE WORLD (3)
Examination of a variety of societies and their cultures, with emphasis upon those which are preliterate.
- 160 SOCIAL PSYCHOLOGY (3) Same as Psychology 160.
Prerequisite: Psych. 2 or Sociology 2. Study of the interaction between the individual and his social environment. Examination of basic principles, concepts, methods.
- 190 READINGS IN SOCIOLOGY (3)
Prerequisite: 9 hrs. of sociology, junior standing, and permission of the instr. Readings on a topic mutually acceptable to student and instructor.
- 192 SENIOR READINGS (3)
Prerequisite: consent of dept. Required for all senior sociology-anthropology majors. Directed readings in an area mutually acceptable to student and instructor.

PSYCHOLOGY

- 1 GENERAL PSYCHOLOGY (3)
A survey of the facts, principles, and methods in the study of human behavior.
- 2 GENERAL PSYCHOLOGY (3)
Prerequisite: Psych. 1. Contin. of Psych. 1.
- 160 SOCIAL PSYCHOLOGY (3) Same as Sociology 160.
Prerequisite: Psych. 2 or Sociology 2. Study of the interaction between the individual and his social environment. Examination of basic principles, concepts, methods.
- 170 CHILD AND ADOLESCENT PSYCHOLOGY (3)
Prerequisite: Psych. 2. Principles of biological, behavioral and personality development from birth through maturity.
- 192 SENIOR READINGS (3)
Prerequisite: consent of dept. Required for all senior psychology majors. Directed readings in an area mutually acceptable to student and instructor.
- 193 SENIOR SEMINAR (3)
Prerequisite: consent of dept. Required for all senior psychology majors. Directed reading and research, one product of which shall be a formal paper.
- 201 PSYCHOLOGICAL STATISTICS (3)
Prerequisite: Psych. 2. Statistical methods in psychological measurement, analysis of psychological data, frequency distribution analysis, sampling, tests of significance, correlational methods.
- 212 HUMAN LEARNING (3)
Prerequisite: Psych. 2. A consideration of important findings in the areas of human learning and retention. Primary emphasis is descriptive, not theoretical.
- 290 PSYCHOLOGY READINGS (3)
Prerequisite: Psych. 2 and permission of instr. Readings on a topic mutually acceptable to student and instructor.
- 301 ADVANCED STATISTICS AND EXPERIMENTAL DESIGN (3)
Prerequisite: 12 hours of psychology, including Psych. 201. Statistical methods particularly useful in psychological research and the design of experiments appropriate to these methods.
- 310 MOTIVATION THEORY (3)
Prerequisite: 12 hrs. of psychology. Survey of current theoretical material in the area of motivation.
- 314 PHYSIOLOGICAL PSYCHOLOGY (3)
Prerequisite: 12 hrs. of psychology and Biology 11 and 12. Critical consideration of the biological determinants of behavior with particular emphasis on the nervous and endocrine systems.
- 315 PERSONALITY THEORY (3)
Prerequisite: 12 hrs. of psychology. Structural and dynamic aspects of the human personality considered in the context of selected theoretical systems.
- 319 GENERAL EXPERIMENTAL PSYCHOLOGY (4) (with lab.)
Prerequisite: Psych. 301. Study of various classical areas in psychology including reaction time, psychophysics, perception, psychomotor skills, and autonomic reactions.
- 328 PERSONALITY AND CULTURE (3) Same as Anthropology 328.
Prerequisite: Anthropology 10 and 11; or Psych. 2. Analysis of relationships

ADMINISTRATIVE OFFICERS

ELMER ELLIS, A.B., A.M., Ph.D., LL.D., President of the University of Missouri
JAMES L. BUGG, Jr., Ph.D., Dean of Faculties
HAROLD EICKHOFF, Ph.D., Assistant Dean
HILBERT E. MUELLER, Ed.D., Director of Admissions
CARL F. HUFFMAN, B.S.B.A., Director of University Development
DONALD G. BOWLING, M.A., Acting Director of Evening Program
JOHN P. PERRY, M.S., Business Officer
SUSAN FREEGARD, M.S., Lib. Sc., Librarian

CHAIRMEN OF DIVISIONS

EDWARD ANDALAFTE, Ph.D., Division of Mathematics and Pre-Engineering
CHARLES W. ARMBRUSTER, Ph.D., Division of Science
GLEN R. DRISCOLL, Ph.D., Division of Social Science
WILLIAM C. HAMLIN, Ph.D., Division of Humanities
PAUL HOFFMAN, M.A., Division of Modern Foreign Languages
EMERY C. TURNER, M.B.A., Division of Business Administration
ADOLPH UNRUH, Ph.D., Division of Education and Teacher Training

FACULTY

Allen, David L., M.A., Instructor, English
Andalafte, Edward, Ph.D., Associate Professor, Mathematics
Armbuster, Charles W., Ph.D., Assistant Professor, Chemistry
Babcock, Muriel B., M.A., Instructor, Biology
Babcock, R. George, Ph.D., Assistant Professor, Biology
Barnhill, Jack G., M.A., Assistant Professor, Business
Beckman, Kenneth R., M.A., Instructor, Mathematics
Berndt, Alan F., Ph.D., Assistant Professor, Chemistry
Boswell, John, Ph.D., Assistant Professor, Psychology
Bugg, James L., Jr., Ph.D., Professor, History
Brown, Malcolm B., M.A., Assistant Professor, Philosophy
Burns, Roy Gene, Ph.D., Associate Professor, History
Cassins, Patrick, M.A., Instructor, Mathematics
Chapin, Arnold B., M.A., Instructor, English
Chomeau, Mary D., M.A., Instructor, French
Costello, Edward, Ph.D., Associate Professor, Philosophy
Crowley, Frances, Ph.D., Assistant Professor, Spanish
Damhorst, Donald F., Ph.D., Visiting Assistant Professor, Philosophy
Dorsett, Lyle, Ph.D., Assistant Professor, History

Dougherty, Charles, Ph.D., Professor, English
 Driscoll, Glen R., Ph.D., Professor, History
 Duffe, Mary, M.A., Instructor, French
 Eickhoff, Harold, Ph.D., Assistant Professor, History
 Fischer, Ann, M.A., Instructor, English
 Forderhase, Eugene, M.A., Instructor, History
 Gleeson, Owen, M.A., Instructor, Mathematics
 Gribble, Stephen C., Ph.D., Visiting Professor, Education
 Hackett, John, M.A., Instructor, English
 Hain, Dorothy, M.A., Instructor, Mathematics
 Hamlin, William C., Ph.D., Associate Professor, English
 Heisinger, James F., Ph.D., Assistant Professor, Biology
 Hoffman, Paul, M.A., Assistant Professor, German
 Hoyt, Douglas, M.A., Instructor, English
 Jenkins, Judith, M.A., Instructor, English
 Kramer, John E., Ph.D., Assistant Professor, Sociology
 Krasnoff, Alan, Ph.D., Associate Professor, Psychology
 Krogmann, Marian, M.A., Instructor, Political Science
 Larsen, David W., Ph.D., Assistant Professor, Chemistry
 Leff, Susan, M.A., Instructor, English
 Lisenby, Donald, Ph.D., Assistant Professor, Psychology
 Lone, Jacqueline, M.A., Instructor, Spanish
 Luchting, Wolfgang, Ph.D., Assistant Professor, German
 Makler, Fredric, M.A., Instructor, Spanish
 Mathes, Irma B., M.A., Instructor, Sociology
 McDaniel, Wayne L., M.A., Instructor, Mathematics
 Miller, Kenneth E., Ph.D., Associate Professor, Music
 Mitchell, William, M.A., Assistant Professor, Economics
 Montag, George E., M.A., Instructor, English
 Mueller, H. E., Ed.D., Professor, Education
 Murry, Donald A., Ph.D., Assistant Professor, Economics
 Nolte, William H., Ph.D., Associate Professor, English
 Osmon, Robert V., Ph.D., Associate Professor, Education
 Ostergard, A. J., M.A., Instructor, Engineering Drawing
 Parks, Jane C., M.A., Instructor, English
 Perry, Anne, M.A., Instructor, French
 Pisoni, John, M.A., Instructor, German
 Preston, A. Wendy, M.A., Instructor, French
 Ramirez, Naomi, M.A., Instructor, Spanish
 Reals, Willis H., Ph.D., Visiting Professor, Education
 Reeves, Earl, Ph.D., Associate Professor, Political Science
 Remmling, Elba, M.A., Instructor, Spanish
 Saigh, William, Ph.D., Associate Professor, Business
 Sanchez, Rufino, Ph.D., Instructor, Spanish
 Sargent, Lyman T., Ph.D., Assistant Professor, Political Science
 Schmoll, Ronald, M.A., Instructor, German
 Schoenfeld, Eric, M.A., Assistant Professor, French
 Stein, Susan, M.A., Instructor, English
 Sullivant, Robert S., Ph.D., Professor, Political Science
 Tombaugh, Richard, M.S., Th.D., Visiting Assistant Professor, Biology

- munities; place of municipal corporation in American governmental system.
- 307 MUNICIPAL ADMINISTRATION (3)
 Prerequisite: Political Sci. 11. Study of administrative organization and problems at the municipal level.
- 310 PUBLIC ADMINISTRATION (3)
 Prerequisite: Political Sci. 11. Survey of public administration with reference to organization, financial administration, personnel management, judicial control of the administrative process.
- 320 THE AMERICAN CONSTITUTION (3)
 Prerequisite: Political Sci. 11. Study of leading American constitutional principles as they have evolved through important decisions of the United States Supreme Court.
- 321 THE CONSTITUTION AND CIVIL RIGHTS (3)
 Prerequisite: Political Sci. 11. Civil rights in American constitutional context emphasizing freedom of religion, freedom of expression, minority discrimination, loyalty, rights of defendants.
- 328 POLITICAL BEHAVIOR (3)
 Prerequisite: Political Sci. 11. Economic, psychological, and social dimensions of political behavior; political participation, leadership and elites; political attitudes; voting behavior and decision making processes.
- 350 SPECIAL READINGS (cr. arr.)
 Prerequisite: consent of instr. Independent study through readings, reports and conferences.
- 352 COMPARATIVE GOVERNMENT: DEMOCRACIES (3)
 Prerequisite: Political Sci. 11. Study of democratic theory and practice through the comparative analysis of existing democratic governments, with special emphasis on western Europe.
- 353 COMPARATIVE GOVERNMENT: DICTATORSHIPS (3)
 Prerequisite: Political Sci. 11. Study of dictatorial governments with special emphasis on the development of modern totalitarian states in Germany and the U.S.S.R.
- 360 AMERICAN POLITICAL THOUGHT (3)
 Prerequisite: Political Sci. 11. Development of political thought in America from colonial period to contemporary scene.
- 361 HISTORY OF POLITICAL THOUGHT (3)
 Prerequisite: Political Sci. 11. Study of political theory from Plato to Machiavelli.
- 362 HISTORY OF POLITICAL THOUGHT (3)
 Prerequisite: Political Sci. 11. Development of political theory from Machiavelli to the present.
- 385 INTERNATIONAL ORGANIZATION (3)
 Prerequisite: Political Science 11. Forms, functions of international organizations; special reference to the United Nations and International Court of Justice.

365 MODERN PHYSICS (5)

Prerequisite: Physics 224. Particles and waves, the Schrödinger equation, elementary particles. 3 hrs. lect. and 7 hrs. lab.

POLITICAL SCIENCE

11 GOVERNMENT IN MODERN SOCIETY (3)

Introduction to some of the basic concepts of government and politics including a comparative survey of the institutions of government and major modern political philosophies. Special emphasis on constitutions and constitutionalism. Course fulfills the state requirement.

12 GOVERNMENT IN MODERN SOCIETY (3)

Prerequisite: Political Sci. 11. Application of basic concepts of government to the study and analysis of the functions of government in modern society, with special emphasis on the United States.

55 INTERNATIONAL POLITICS (3)

Prerequisite: Political Sci. 11. Major factors shaping relations between nations. Development of international institutions. Focus on such problems as European integration; emerging nations; the impact of the armament race on world politics.

160 INTRODUCTION TO POLITICAL THOUGHT (3)

No prerequisite. Survey of political thought relating to source and nature of authority. Forms of government, control of power. Cannot be used as credit toward a major in political science.

190 POLITICAL SCIENCE READINGS (3)

Prerequisite: Political Sci. 11, permission of instr., and junior standing. Readings on topic mutually acceptable to student and instructor.

192 SENIOR READINGS (3)

Prerequisite: consent of dept. Required for all senior political science majors. Directed readings in an area mutually acceptable to student and instructor.

193 SENIOR SEMINAR (3)

Prerequisite: consent of dept. Required for all senior political science majors. Directed reading and research, one product of which shall be a formal paper.

202 STATE AND LOCAL GOVERNMENT (3)

Prerequisite: Political Sci. 11 or permission of instr. 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 U.S., with special emphasis on Missouri. This course meets both the general state requirement and the state education requirement.

305 POLITICAL PARTIES (3)

Prerequisite: Political Sci. 11. Development, organization, functions, activities of major and minor political parties; pressure groups; election administration, especially in United States.

306 MUNICIPAL GOVERNMENT (3)

Prerequisite: Political Sci. 11. Study of political organization of urban com-

Turner, Emery C., M.B.A., Assistant Professor, Business
Unruh, Adolph, Ph.D., Professor, Education
Walter, Ingo, Ph.D., Assistant Professor, Economics
Weidman, Stuart W., Ph.D., Assistant Professor, Chemistry
Weill, Herman, Ph.D., Associate Professor, History
Wetteroth, Catherine, M.A., Instructor, German
Whealen, William F., M.A., Instructor, English
Williamson, Jane, Ph.D., Assistant Professor, English
Woodard, William L., M.A., Instructor, Political Science
Wu, Joseph, M.A., Instructor, Philosophy

EAST CENTRAL DISTRICT, EXTENSION DIVISION

University of Missouri at St. Louis

Administration

Virgil N. Sapp, Director of Extension
University of Missouri at St. Louis
and
District Director - East Central Dis-
trict
7520 Natural Bridge Road - Room 302
St. Louis, Missouri 63121

D. Everett Thomas
Extension Education Coordinator
University of Missouri Extension
Division
7520 Natural Bridge Road - Room 302
St. Louis, Missouri 63121

Donald W. Mocker
Extension Education Coordinator
University of Missouri Extension
Center
230 South Meramec
Clayton, Missouri 63105

Gilbert Rhodes, Director
University of Missouri Extension
Center
Court House
Hillsboro, Missouri 63050

Raymond I. Steffens, Director
University of Missouri Extension
Center
Post Office Building
Union, Missouri 63084

J. B. Carmichael, Director
University of Missouri Extension
Center
P. O. Box 129
St. Charles, Missouri 63301

William A. Gates, Director
University of Missouri Extension
Center
230 South Meramec
St. Louis, Missouri 63105
and
1216 North 13th Street
St. Louis, Missouri 63106

PHYSICS

- 1 GENERAL PHYSICS (3)
Prerequisite: Math. 12 or equiv. 3 hrs. lect.
- 2 GENERAL PHYSICS (3)
Prerequisite: Physics 1. Contin. of Physics 1. 3 hrs. lect and 1 hr. of discussion.
- 3 GENERAL PHYSICS LABORATORY (2)
Lab course to accompany Physics 1. 3 1/2 hrs. lab.
- 11 INTRODUCTORY PHYSICS (5)
Prerequisite: Math. 175 (may be taken concurrently). Mechanics, electricity and magnetism, heat, sound, light and waves, classical and quantum. 3 hrs. lect., 1 hr. discussion, and 3 1/2 hrs. lab.
- 12 INTRODUCTORY PHYSICS (5)
Prerequisites: Physics 11 and Math. 201 (Math. 201 may be taken concurrently). Contin. of Physics 11. 3 hrs. lect., 1 hr. discussion and 3 1/2 hrs. lab.
- 211 INTERMEDIATE PHYSICS LABORATORY (1)
Prerequisites: Physics 12 and Math. 301 (Math. 301 may be taken concurrently). Experiments covering topics in classical mechanics, heat, electricity, light, with an emphasis on experimental accuracy and modern laboratory techniques.
- 212 INTERMEDIATE PHYSICS LABORATORY (1)
Prerequisite: Physics 211. Contin. of Physics 211.
- 221 MECHANICS (3)
Prerequisite: Physics 12. Advanced course covering static equilibrium, relative motion, elementary relativity, systems of particles, central forces, oscillations, generalized coordinates, and Lagrange's equations. 3 hrs. lect.
- 224 INTRODUCTION TO QUANTUM MECHANICS (3)
Prerequisite: Physics 221. Elementary treatment of quantized mechanical systems and methods of Schrödinger's wave mechanics. 3 hrs. lect.
- 261 ATOMIC AND NUCLEAR PHYSICS (3)
Prerequisite: Physics 12. Collision processes, fundamental particles, special relativity, radioactivity, optical and x-ray spectra, principles of atomic and molecular structure, quantum theory of atomic and molecular energy states. 3 hrs. lect.
- 272 ELECTRICITY AND MAGNETISM (3)
Prerequisites: Physics 12 and Math. 301 (Math. 301 may be taken concurrently). Electrostatics, currents, magnetic fields, Lorentz forces, Maxwell's equations. 3 hrs. lect.
- 289 SEMINAR (1)
All physics majors must enroll as Hearers in Physics 289 during both semesters of junior year; all physics majors must take Physics 289 for credit during both semesters of senior year. Presentation of selected papers by students and faculty members at weekly departmental meetings.
- 290 RESEARCH (cr. arr.)
- 336 THERMODYNAMICS (3)
Prerequisite: Physics 224. The laws of thermodynamics, statistical definition of entropy, kinetic theory, specific heat of solids. 3 hrs. lect.
- 356 ELECTROMAGNETIC WAVES (3)
Prerequisites: Physics 224. Electromagnetic waves, dispersion, diffraction, transition to geometric optics, relativity. 3 hrs. lect.

PHILOSOPHY

- 1 ELEMENTARY LOGIC (3)
Study of the traditional laws of thought; terms, judgments, reasoning and the detection of fallacies. Fundamental operations of some systems of modern symbolic logic.
- 5 INTRODUCTION TO PHILOSOPHY (3)
A systematic study of alternative solutions to the major fundamental problems in metaphysics, theory of knowledge, ethics.
- 201 EASTERN PHILOSOPHY (3)
No prerequisite. A general survey of the main philosophical and religious ideas of India and China through such oriental classics as Vedanta, Buddhism, Confucianism, Taoism, the Yin Yang cosmological doctrines, and Zen Buddhism.
- 209 HISTORY OF WESTERN PHILOSOPHY: THALES THROUGH LEIBNIZ (3)
Prerequisite: Philosophy 5. A survey of the major philosophers from the earliest Greeks through the Medieval thinkers and the early modern rationalists.
- 210 HISTORY OF WESTERN PHILOSOPHY: LOCKE THROUGH CONTEMPORARY (3)
Prerequisite: Philosophy 5. A survey of major philosophers from the British Empiricists to the present.
- 300 PLATO AND ARISTOTLE (3)
Prerequisite: Philosophy 5 or permission of dept. The ethics, method, epistemology, and metaphysics of Plato's later works and the study of Aristotle's physics, psychology, metaphysics and ethics.
- 311 AUGUSTINE AND AQUINAS (3)
Prerequisite: Philosophy 5 or permission of dept. A study of the epistemologies, psychologies, metaphysics, and ethics of Augustine and Aquinas together with Augustine's philosophy of history and Aquinas' political theory.
- 320 KANT (3)
Prerequisite: Philosophy 5 or permission of dept. A study of Kant's "Critique of Pure Reason" and of his "Critique of Practical Reason" with some attention to his aesthetics.
- 340 FORMAL LOGIC (3)
Prerequisite: Elementary Logic or Math. 80. A study of the principles and techniques of modern deductive logic. Both truth-functional and quantificational methods will be employed. Special emphasis given to construction of proofs; some attention to the properties of deductive systems and the axiomatic method.
- 341 EXISTENTIALISM (3)
Prerequisite: Philosophy 5 or permission of dept. A study of the metaphysics and ethics of Jaspers, Heidegger, Sartre, and Marcel.
- 350 SPECIAL READINGS (cr. arr.)
Prerequisite: consent of instr. Independent study through readings, reports and conferences.
- 351 PHILOSOPHY OF SCIENCE (3)
Prerequisite: Philosophy 5 or 340; and 8 hours of science. A study of the nature and presuppositions of science, types of scientific explanation, the logical character of scientific laws, the cognitive status of theories, the space-time problem, causality and indeterminism. The place of science in human life and its relation to human values are critically investigated.

UNIVERSITY OF MISSOURI AT ST. LOUIS

The University of Missouri at St. Louis opened in the fall of 1960 as the Normandy Residence Center of the University of Missouri. Established through the joint efforts of the University of Missouri and the Normandy (St. Louis County) School District, it began as a junior college serving 250 students its first year. An evening curriculum supervised by the Extension Division of the University provided adult education courses.

The University of Missouri, established in 1839 at Columbia, has, from its inception, taken as its major task the role of leadership in the developing system of higher education in the state. Through the years, the changing demands of this role altered the University from a small liberal arts college, emphasizing a classical curriculum, to a large university embracing fourteen schools and colleges in Columbia, and a separate School of Mines and Metallurgy in Rolla, founded in 1870.

In 1963 a historic and fundamental change added the University of Kansas City and the Normandy Residence Center in St. Louis to a new University of Missouri system, which now embraces four campuses in Columbia, Kansas City, Rolla, and St. Louis. The administrative leadership of the University resides in a single Board of Curators and President, and in four Chancellors who act as the administrative heads of the campuses.

A federalistic administrative policy allows each of the four campuses the maximum freedom to develop programs designed to meet the needs of each area, while providing common overall policies and objectives. Thus the University of Missouri has provided a means by which it may more readily achieve its purpose. One university system of four campuses with a common policy on admission, fees, research, faculty, and quality of education seems the best method of meeting the changing demands of an omnipresent future.

Today, in its classrooms, thousands of students are educated in a catalogue of disciplines which range from accounting to zoology, while its professional schools graduate each year a constantly increasing number of engineers, physicians, veterinarians, pharmacists, lawyers, journalists, educators, business men, and other highly trained specialists. In its libraries and laboratories a constant search goes on to broaden the boundaries of knowledge. On each campus an Extension Division brings the services of the University to virtually every county, city and village in the state, as its programs to citizens in all parts of Missouri grow in size and quality.

The University of Missouri at St. Louis owes its establishment to the rapidly growing educational need of the state's largest urban area for a state university campus which would provide education of high quality at moderate cost and serve the people of the metropolitan area by supplying the assistance and leadership which the responsibilities of the state university demand. Altered from a two year to a four year institution in 1963, the St. Louis Campus will add a graduate program as soon as the acquisition of faculty and the erection of additional physical facilities permit.

The original student body of 250 had grown to 550 by 1963 and will be approximately 4500 in the fall of 1965. The faculty, originally four full time and eight part time instructors, will be approximately 103 full time and 84 part time instructors for the 1965-66 session.

A full resident program has been instituted in place of the earlier extension program in the late afternoon and evening, and the University now has two programs, Day and Evening, each under its own dean and faculty. Seven divisions--Business, Education, Humanities, Mathematics and Pre-Engineering, Modern Languages, Science, and Social Sciences--administer courses in twenty-six different disciplines. In the near future the University of Missouri at St. Louis will be divided into a College of Arts and Science and Schools of Business and Education.

The campus is located in Normandy on the site of the former Bellerive Country Club. Its 128 acres of grass, trees, and rolling land contain a three building complex, recently completed, which houses classrooms; fully equipped science, language, psychology, and statistics laboratories; faculty research laboratories; and faculty, departmental, and divisional offices. Another building, the old Bellerive Country Club house, completes the physical plant. A library, humanities classroom building, and a Student Union will be under construction in the near future.

The objectives and purpose of this campus are outlined in the faculty by-laws reproduced on the following page. Summarized, they may be stated as the three-fold purpose of the discovery, the dissemination, and the application of knowledge. Or, stated in a different way, its purpose is that of research, teaching, and service to the people of the metropolitan area of St. Louis and to the state of Missouri. Its objective is academic excellence, and all students are required to follow a curriculum which gives them a broad training in the liberal arts and sciences and depth in a major discipline of their choice.

This institution encourages students to qualify for advanced placement and credit, to enroll in the Honors Program if they qualify, to enroll whenever possible in seminars, in individual readings courses, and in courses which emphasize undergraduate research. Faced with the necessity of a rapid expansion which will bring more than 20,000 students to the campus by 1975, it intends to maintain its primary concern with superior teaching, informal and frequent contacts between faculty and students, creative research, and service to the metropolitan community.

More than a century ago, an early college president stated the aim of his institution as that of forming "good men and good citizens." No statement better summarizes the goal of the University of Missouri at St. Louis.

"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,

one and several variables, sequences and series, the Riemann-Stieltjes integral.

- 316 FUNCTIONS OF A COMPLEX VARIABLE (3)
Prerequisite: Math. 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 (3)
Prerequisite: Math. 201. Introduction to theory of probability and statistics using concepts and methods of the calculus.
- 323 NUMERICAL ANALYSIS (3)
Prerequisite: Math. 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: Math. 201. Properties of the integers, multiplicative functions, congruences, primitive roots, quadratic residues.
- 340 INTRODUCTION TO ABSTRACT ALGEBRA (3)
Prerequisite: Math. 201. Introduction to theory of groups, rings, integral domains, fields, and polynomials over a field.
- 350 SPECIAL READINGS (cr. arr.)
Prerequisite: Math. 201 and consent of instr.
- 358 MATHEMATICAL LOGIC (3)
Prerequisite: Math. 201 or Philosophy 340. 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.
- 367 INTRODUCTION TO NON-EUCLIDEAN GEOMETRY (3)
Prerequisite: Math. 201. A summary of the history of the non-Euclidean geometries and a study of hyperbolic plane geometry.

MUSIC

- 1 MASTERPIECES OF MUSIC (3)
Introduction to the materials of music, music theory, and musical forms including an analysis of selected masterpieces from the Renaissance to the 20th century.
- 40 UNIVERSITY CHORUS (no credit)
Prerequisite: Permission of instr. Preparation and public performance of choral masterpieces.
- 101 HISTORY OF WESTERN MUSIC (3)
A general survey of the history of western music from the Greek period to the 18th century.
- 102 HISTORY OF WESTERN MUSIC (3)
Contin. of Music 101 to the present.
- 137 ELEMENTARY SCHOOL MUSIC (3) Same as Education 137.
Prerequisite: soph. standing. 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.

- 10 COLLEGE ALGEBRA (3)
Prerequisite: (a) 2-1/2 high school units of math, including 1-1/2 units of algebra, or (b) Math. 3. Review of fundamental concepts and topics from elementary algebra. Emphasis on polynomial functions and graphic representation of functions. Equations, systems of equations, inequalities, the binomial theorem, mathematical induction.
- 11 ELEMENTARY TRANSCENDENTAL FUNCTIONS (3)
Prerequisite: 1-1/2 high school units in algebra. Introduction to trigonometric, inverse trigonometric, logarithmic, and exponential functions.
- 12 COLLEGE ALGEBRA AND TRANSCENDENTAL FUNCTIONS (5)
Prerequisite: 2-1/2 high school units of mathematics, including 1-1/2 units of algebra; or Math. 3. A combination of Math. 10 and 11.
- 15 MATHEMATICS: IDEAS AND STRUCTURE (3)
Prerequisite: 2 high school units in mathematics, excluding general mathematics. 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.
- 80 ANALYTIC GEOMETRY AND CALCULUS I (5)
Prerequisite: Grade of C in courses 9 and 10, or four high school units of mathematics, including two units of algebra. 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.
- 104 FUNDAMENTALS OF DIGITAL COMPUTER PROGRAMMING (2)
Prerequisite: Math. 10 or equiv. Principles of programming digital computers in machine, symbolic, and algebraic languages. Does not count toward a major in mathematics.
- 175 ANALYTIC GEOMETRY AND CALCULUS II (5)
Prerequisite: Grade of C or better in Math 80. Selected topics from plane analytic geometry and calculus.
- 201 ANALYTIC GEOMETRY AND CALCULUS III (5)
Prerequisite: Grade of C or better in Math 175. Solid analytic geometry and selected topics in calculus.
- 222 DIGITAL COMPUTER METHODS (2)
Prerequisite: Math. 201 or concurrent registration. Study of digital computer systems, techniques of programming, and application to problems in the calculus. No credit to students having credit in Math. 104.
- 230 THEORY OF EQUATIONS (3)
Prerequisite: Math 175 with a grade of C or better, or consent of instr. Solution of algebraic equations, systems of equations, relations among the roots, and numerical methods.
- 301 DIFFERENTIAL EQUATIONS (3)
Prerequisite: Grade of C or better in Math 201. Common types of ordinary differential equations including many applied problems, operational methods. Brief introduction to partial differential equations, boundary forms under groups.
- 310 ADVANCED CALCULUS (3)
Prerequisite: Math. 201. Limits, continuity, and differentiability of functions of

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," stated John B. Bowman, first president of the University of Kentucky (1865).

The Purpose of the University of Missouri at St. Louis:

A Statement from the Faculty By-Laws

- A. It shall be the policy of this University, and a principal concern of its Curriculum Committee, to insure that each student who graduates completes a program which provides a broad liberal education in the fine arts, the humanities, the social sciences, and the sciences; depth of training in a major area of study; knowledge of the heritage of the past, of the political, social, and economic responsibilities of citizens, and of cultures other than his own.
- B. Every student shall be required to enroll in at least one seminar in his major discipline during his senior year, to complete successfully an approved research project, and to pass a comprehensive examination in his major discipline.
- C. It shall be the declared policy of the faculty to:
1. Accelerate by all possible means the undergraduate's entry into advanced work.
 2. Place principal emphasis upon the primacy of academic objectives and the maintenance of academic standards rigorous enough to insure superior preparation for graduate or professional training.
 3. Place emphasis in all classes on the significance of adequate communication, both written and oral. Students will be required to express themselves in clear and correct prose in their written assignments, both in and out of class.
 4. Emphasize and reward students for clear and precise thinking, originality, creativity, independent thought, and analytical and evaluative presentation.
 5. Avoid wherever possible the obsolete curriculum barriers which divide disciplines, and to encourage and emphasize the interdependence and integration of all knowledge.
 6. Recognize and carry out the responsibility which is mandatory upon the state university to educate for responsible citizenship, to participate in community affairs, and to constantly increase the quality of service to the community.
 7. Recognize as a principal responsibility of the faculty the duty of working actively with students in campus concerns, of meeting with them in informal situations, of undertaking the responsibility of leading them toward the exciting challenge of intellectual discovery, and of maintaining as a basic objective the teaching function which requires sympathetic understanding of, and approaches to, students.
 8. To acknowledge the necessity of creativity of thought and effort in experimentation in curriculum and techniques, and to provide proper leadership in higher education in this metropolitan community and in the State.
 9. To acknowledge the primary role of superior teaching in this institution, and to recognize the necessity for encouraging original research as an inevitable adjunct of superior teaching.

ADMISSION

Inquiries regarding entrance should be addressed to the Director of Admissions, University of Missouri at St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121.

Directions to New Students

New students must submit credentials before August 1 for the fall semester, January 1 for the winter semester, and May 1 for the summer session. Admission can be determined only after all credentials are on file. All new students are required to submit application forms which may be obtained from the Director of Admissions. Out-of-state undergraduate students are required to submit a non-refundable application evaluation fee of \$10 with the application for admission. In addition, the following credentials are required.

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 his registration fee. This amount is credited to the student's incidental fee when he enrolls in the University.

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.

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.

Freshman Students

Admission

It is the policy of the University of Missouri to admit into regular standing all high school graduates with satisfactory records.

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.

origins of modern science; the Enlightenment; the French Revolution and Napoleon.

331 19th-20th CENTURY EUROPE (3)

Prerequisite: History 1 and 2. A survey of Europe in modern times with emphasis on the growth of 'isms' and the transition from the idea of the nation-state to that of a European community.

340 HISTORY OF SCIENCE (3)

Prerequisite: 1 lab. science and 6 hrs. of history. The origins of science and scientific methodology. The interaction of science and non-science. Emphasis upon the Greeks, the Renaissance, the 17th century and the 19th century.

350 SPECIAL READINGS (cr. arr.)

Prerequisite: Consent of instr. Independent study through readings, reports and conferences.

351 AMERICAN INTELLECTUAL HISTORY (3)

Prerequisite: History 3 and 4 or permission of instr. American intellectual development from earliest times to 1865.

352 AMERICAN INTELLECTUAL HISTORY (3)

Prerequisite: History 3 and 4 or permission of instr. Contin. of History 351 from 1865 to the present.

356 UNITED STATES HISTORY: CIVIL WAR TO WORLD WAR I (3)

Prerequisite: History 3 and 4. Economic, social and political development of the United States 1865 to World War I.

357 UNITED STATES HISTORY: WORLD WAR I TO PRESENT (3)

Prerequisite: History 3 and 4. A continuation of History 356 to the present.

365 AMERICAN URBAN HISTORY (3)

Prerequisite: History 3 and 4 or permission of instructor. American urban development from earliest times to 1865.

366 AMERICAN URBAN HISTORY (3)

Prerequisite: History 3 and 4 or permission of instr. Contin. of History 365 to the present.

375 19th CENTURY DIPLOMATIC HISTORY (3)

Prerequisite: History 1 and 2 or History 3 and 4 and junior standing. The foreign policy and diplomacy of nations in the 19th century, with central emphasis on Europe and the New Imperialism. Particular attention to the role of ideas in shaping foreign policy.

376 20th CENTURY DIPLOMATIC HISTORY (3)

Prerequisite: History 1 and 2 or History 3 and 4. The foreign policy and diplomacy of nations in the 20th century, with central emphasis on America and the New Diplomacy. Particular emphasis on the role of ideas in shaping foreign policy.

MATHEMATICS

3 BASIC ALGEBRA (2)

Fundamentals of algebra for students who have two years or less of mathematics in high school, excluding general mathematics. No credit toward a degree.

- 350 SPECIAL READINGS (cr. arr.)
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.
- 390 SENIOR READINGS (3)
Prerequisite: Permission of dept. Required for all senior German majors. Directed readings in an area mutually acceptable to student and instructor.
- 391 SENIOR SEMINAR (3)
Prerequisite: Permission of dept. Required for all senior German majors. Directed reading and research, one product of which shall be a formal paper.

HISTORY

- 1 EUROPEAN CIVILIZATION (3)
Evolution of European cultural tradition from earliest times to the mid-17th century. The relationship of ideas and institutions to the general historical background.
- 2 EUROPEAN CIVILIZATION (3)
Contin. of History 1 to the present.
- 3 AMERICAN CIVILIZATION (3)
Evolution of the cultural tradition of the Americas from earliest times to the mid-19th century, with emphasis on the relationship of ideas and institutions to the historical background. Course fulfills the state requirement.
- 4 AMERICAN CIVILIZATION (3)
Contin. of History 3 to the present.
- 190 AMERICAN HISTORY READINGS (3)
Prerequisite: History 3 and 4, junior standing, and consent of instr. Readings on a topic mutually acceptable to student and instructor.
- 191 EUROPEAN HISTORY READINGS (3)
Prerequisite: History 1 and 2, junior standing, and consent of instr. Readings on a topic mutually acceptable to student and instructor.
- 192 SENIOR READINGS (3)
Prerequisite: Consent of dept. Required for all senior history majors. Directed readings in an area mutually acceptable to student and instructor.
- 193 SENIOR SEMINAR (3)
Prerequisite: Consent of dept. Required for all senior history majors. Directed reading and research, one product of which shall be a formal paper.
- 210 ASIAN CIVILIZATION (3)
Prerequisite: Soph. standing. The development of Asian civilization from the earliest times to the Manchu conquest, with emphasis on the relationship of ideas and institutions to the historical background.
- 211 ASIAN CIVILIZATION (3)
Prerequisite: Soph. standing. Either 210 or 211 may be taken separately. Contin. of History 210 with emphasis on the Asian response to the Western incursion.
- 330 17th-18th CENTURY EUROPE (3)
Prerequisite: History 1 and 2. The growth of the modern state system; the

PLAN B--A student who is not a graduate of a four-year high school, or who is at least 18 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 to be had in an accredited high school. Adults, military personnel, and veterans may qualify for admission by satisfactorily passing the high school level General Educational Development tests prepared for the United States Armed Forces Institute.

Missouri Freshmen

TOP THIRD: Applicants who rank in the upper third of their high school class at the end of the sixth semester will be admitted between Oct. 15 and Jan. 1.

UPPER HALF: Applicants who rank in the upper one-half of their high school graduation 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 graduation 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 graduation class cannot be accepted. The University administration suggests that students who rank in the lower one-third of their graduation 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

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

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.

The required test for entering freshmen admitted to the University of Missouri at St. Louis is the ACT (American College Testing Program) battery. In

lieu of the ACT Test Battery the University of Missouri at St. Louis may accept the tests of the Missouri Colleges Cooperative Testing Program or the College Board Achievement Tests of the College Entrance Examination Board. Placement test scores are required in English, mathematics, and foreign language (French, Spanish or German).

Preparation for College

Applicants must present a minimum of 15 acceptable high school units, excluding physical education and military science. The recommended pattern is: English-4 units; mathematics -2 to 4 units (exclusive of General Mathematics); foreign language - 2 to 4 units of one or more classical or modern foreign languages; social sciences - 1 or more units; natural sciences -1 or more units (selected from the laboratory sciences). Free electives as needed to bring the total number of units to 15 may be selected from fundamental fields normally accepted from a fully accredited high school.

Advanced Standing for Freshmen

The University of Missouri at St. Louis grants advanced standing to entering freshmen who, on the basis of performance on comprehensive examinations, demonstrate proficiency in certain college-level courses such as English, mathematics, history, botany, zoology, chemistry, accounting, political science, and foreign languages.

College Entrance Examination Board Advanced Placement Examinations in the subjects listed above have been approved as a basis for advanced credit at the University. Applications to take CEEB Examinations and inquiries about the material covered should be addressed to College Board Advanced Placement Examinations, Box 592, Princeton, N. J.

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

Transfer Students

Admission

Transfer students from other colleges and universities must submit official transcripts of high school and college work and an Application for Admission. Official transcripts from each college attended must be submitted to the Office of Admissions. All credentials submitted for admission become the property of the University of Missouri at St. Louis.

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 at 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

- 251 FRENCH LITERATURE (3)
Prerequisite: French 103 or equiv. From the origins to Rousseau. Required for French majors.
- 252 FRENCH LITERATURE (3)
Prerequisite: French 103 or equiv. From Rousseau to the present. Required for French majors.
- 350 SPECIAL READINGS (cr. arr.)
Prerequisite: Consent of instr. Independent study through readings, reports and conferences.
- 390 SENIOR READINGS (3)
Prerequisite: Permission of dept. Required for all senior French majors. Directed readings in an area mutually acceptable to student and instructor.
- 391 SENIOR SEMINAR (3)
Prerequisite: Permission of department. Required for all senior French majors.

GERMAN

- 1 BEGINNING GERMAN (4)
Emphasis on pronunciation, grammar and the acquisition of basic vocabulary and simple conversational patterns. Additional practice in aural comprehension and pronunciation through use of the language laboratory. Elementary reading.
- 2 INTERMEDIATE GERMAN (4)
Prerequisite: 1 or equiv. Contin. of study of grammar, vocabulary and aural-oral language patterns begun in German 1, with some practice in composition and conversation. Continued use of language laboratory to improve comprehension. Increased emphasis on reading.
- 103 GERMAN READING (3)
Prerequisite: 2 or equiv. Development of reading skill and appreciation of German literature through study and discussion of short prose, poetry selections and novellets.
- 106 GERMAN COMPOSITION AND CONVERSATION (3)
Prerequisite: 103 or equiv. Practice in writing, speaking and understanding German with emphasis on idiomatic usage. Writing of compositions with attention to correctness in style. Class conversation on topics taken from German newspaper articles.
- 190 READINGS IN GERMAN (3)
Prerequisite: Consent of instr. Readings on a topic mutually acceptable to student and instructor.
- 203 ADVANCED READING (3)
Prerequisite: 103 or equiv. Course is intended to help the student develop his reading skill through the use of unedited primary and secondary material.
- 251 GERMAN LITERATURE (3)
Prerequisite: German 103 or equiv. From the origins to 1800. Required for German majors.
- 252 GERMAN LITERATURE (3)
Prerequisite: German 103 or equiv. From 1800 to the present. Required for German majors.

Tennyson, Browning, Arnold, Hopkins, and others in addition to selections from the major prose writers.

- 373 MAJOR AMERICAN WRITERS I (3)
Prerequisite: English 135 or 175 or equivalent. American literature of the early 19th century centering around such figures as Emerson, Hawthorne, Melville and Poe.
- 374 MAJOR AMERICAN WRITERS II (3)
Prerequisite: English 135 or 175 or equivalent. American literature of the late 19th and early 20th centuries, centering around such figures as Whitman, Howells, James, Dickinson, Adams, and Crane.
- 377 THE AMERICAN NOVEL (3)
Prerequisite: English 10 and 12 or equivalent. A study of representative American novels of the 19th and 20th centuries.
- 383 MODERN FICTION (3)
Prerequisite: English 135 or 175 or equivalent. Critical reading and analysis of selected British and American fiction of the 20th century.
- 384 MODERN POETRY (3)
Prerequisite: English 135 or 175 or equivalent. Critical reading and analysis of selected British and American poetry of the 20th century.
- 390 SENIOR READINGS (3)
Prerequisite: Permission of dept. Required for all senior English majors. Directed readings in an area mutually acceptable to student and instructor.
- 391 SENIOR SEMINAR (3)
Prerequisite: Permission of dept. Required for all senior English majors. Directed readings in an area mutually acceptable to student and instructor.
- 101 EFFECTIVE SPEAKING (3)
Prerequisite: Soph. standing. Emphasis on effective oral communication, formal and informal. Theories and techniques of argument and persuasion, organization, evidence, delivery.

FRENCH

- 1 ELEMENTARY FRENCH (4)
Beginning course in composition, conversation, and reading. Five recitation and two lab. periods per week.
- 2 INTERMEDIATE FRENCH (4)
Contin. of course 1. Five recitation periods per week. Two additional periods in the language laboratory provided for students who demonstrate oral-aural aptitude in course 1.
- 103 FRENCH READING (3)
Prerequisite: Course 2 or equiv. Cultivation of reading skill combined with introduction to the humanistic values of the literature.
- 190 READINGS IN FRENCH (3)
Prerequisite: Consent of instr. Readings on a topic mutually acceptable to student and instructor.
- 203 ADVANCED READING (3)
Prerequisite: 103 or equiv. Course is intended to help the student develop his reading skill through the use of unedited primary and secondary material.

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 August 1; for the winter semester by January 1; and for the summer session by May 1.

Advanced Standing

Credit hours in the form of advanced standing may be allowed for work satisfactorily completed in another college or university of recognized standing insofar as such work satisfies the requirements of the University; however, no grades are recorded for courses accepted on transfer. 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.

Students From Other Countries

ABROAD. Prospective students living outside the United States and its possessions are advised to write the Director of Admissions at least a 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 must establish evidence of proficiency in English by a recognized examination.

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 is eligible for admission.

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 21 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, 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 graduation class may be admitted on a probationary status provided they can, by satisfactory evidence on approved tests, demonstrate that they have the potential to complete successfully a college course. Such students may be re-classified as regular students when they have demonstrated by one year of satisfactory work in the University their ability to obtain a degree.

Other Students

Visiting Student Admission

Students who do not wish to earn a degree from the University of Missouri at 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 and the Evening Program. 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.

Hearers

With the consent of the Dean and the teacher concerned, a student may be admitted to any course as a 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.

from its beginnings to the present, concluding with an examination of the English language in America. Some supplementary reading in translation of Old and Middle English literary works.

315 LITERARY CRITICISM (3)

Prerequisite: English 135 or 175 or equivalent. Historical survey of the principles of literary criticism from Plato to the present.

324 CHAUCER AND THE MIDDLE ENGLISH WRITERS (3)

Prerequisite: English 10 and 12 or equivalent. Course is concerned primarily with Middle English poetry. It surveys the entire period but concentrates on the Canterbury Tales in particular. All readings in the original.

328 MEDIEVAL ROMANCE AND DRAMA (3)

Prerequisite: English 135 or equivalent. A study of representative metrical romances in translation. Also, a reading of selected English drama from its beginnings to 1580.

331 ELIZABETHAN POETRY AND PROSE (3)

Prerequisite: English 135 or equivalent. A survey of non-dramatic literature of the 16th century including Ascham, Elyot, Wyatt, Surrey, Spencer, Daniel, Drayton.

337 SHAKESPEARE AND THE ELIZABETHAN DRAMATISTS (3)

Prerequisite: English 135 or equivalent. Critical reading of the tragedies of William Shakespeare and contemporaries. Special attention to Shakespeare's development as a dramatist and to the intellectual milieu of the plays.

338 SHAKESPEARE AND THE ELIZABETHAN DRAMATISTS (3)

Prerequisite: English 135 or equivalent. Critical reading of the comedies and histories of William Shakespeare. Some selections from his contemporaries. Special attention to Shakespeare's development as a dramatist and to the intellectual milieu of the plays.

334 SEVENTEENTH CENTURY LITERATURE (3)

Prerequisite: English 135 or equivalent. Emphasis is on the non-dramatic literature of the 17th century. The principal figures are Milton, Donne, Herbert, Marvell and Dryden, with some attention to Bacon, Burton, Browne and the Commonwealth prose writers.

346 SEVENTEENTH AND EIGHTEENTH CENTURY DRAMA (3)

Prerequisite: English 135 or equivalent. Critical reading of the dramatic literature of the late Renaissance, Restoration, and Post-Restoration periods.

350 SPECIAL READINGS (1-3)

Prerequisite: 300-level course in area of proposed work and consent of instr. Individual work with conferences adjusted to needs of the student.

354 EIGHTEENTH CENTURY LITERATURE (3)

Prerequisite: English 135 or equivalent. Critical reading of selections from Pope, Swift, Addison, Steele, Gray, Johnson, Burke, and others.

363 THE ENGLISH NOVEL (3)

Prerequisite: English 10 and 12 or equivalent. Study of major English novels from the 18th Century. The approach is principally analytical with attention to historical development.

370 PROSE AND POETRY OF THE ROMANTIC PERIOD (3)

Prerequisite: English 135 or equivalent. Critical reading of selections from Blake, Wordsworth, Coleridge, Lamb, Hazlitt, Byron, Shelley, Keats, and others. Also, selected 18th Century writers serve as background material.

371 PROSE AND POETRY OF THE VICTORIAN PERIOD (3)

Prerequisite: English 135 or equivalent. Critical reading of selections from

REGISTRATION

Former students (not currently enrolled) should file requests for permits to enroll with the Director of Admissions at least 30 days in advance of registration in order to receive their permits before 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.

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.

ENGLISH

- 170 SECONDARY SCHOOL ADMINISTRATION FOR TEACHERS (2)
Prerequisite: Education 102 and 125. Problems of effective methods of school organization and management related to administration, finance, personnel, curriculum, guidance, in-service education, and evaluation.
- 325 TEACHING READING IN ELEMENTARY SCHOOL (3)
Prerequisite: Education 131. Objectives of reading instruction and standards of attainment; reading readiness; types of instruction; diagnosis and remedial techniques; the place of reading in the content subjects; cultivation of interests in independent reading.
- 10 COMPOSITION (3)
Theory and practice of writing expository prose. English 10 and 12 or the equivalent are prerequisite for all courses in literature and must be taken during freshman year.
- 12 LITERARY TYPES (3)
The student is introduced to all of the various literary types including poetry, drama, fiction, and the essay. This course may be taken concurrently with or preceding English 10 or in the semester immediately following English 10.
- 50 NARRATION (3)
Prerequisites: English 10 and 12 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 grade of C or better satisfy the English 10 and 12 requirement. Students who pass English 65GH with a B or better receive 3 hrs. additional credit for a total of 6 hrs. in composition and literature.
- 135 MAJOR BRITISH AUTHORS (3)
Prerequisite: English 10 and 12 or equivalent. Representative selections from principal English writers from the Old English Period to the present.
- 160 ADVANCED EXPOSITORY WRITING (3)
Prerequisite: English 10 and 12 or equivalent. Emphasis is placed upon developing the critical and analytical capabilities of the writer. Course offers an introduction to research methods.
- 175 AMERICAN LITERATURE (3)
Prerequisite: English 10 and 12 or equivalent. Representative selections from principal American writers from the 17th Century to the present.
- 190 READINGS IN AMERICAN LITERATURE (3)
Prerequisite: English 175 and consent of instr. Readings on a topic mutually acceptable to student and instructor.
- 191 READINGS IN ENGLISH LITERATURE (3)
Prerequisite: English 135 or equivalent and consent of instr. Readings on a topic mutually acceptable to student and instructor.
- 220 GROWTH AND STRUCTURE OF THE ENGLISH LANGUAGE (3)
English 10 and 12 or equivalent. The historical development of the language

EDUCATION

FEES, EXPENSES, FINANCIAL AID

All University fees must be paid in full at the time of registration. A student who in payment of student fees presents a check to the University which for any reason is not honored by the bank upon which it is drawn will be automatically suspended from the University and will be reinstated only upon payment of the amount of the check and a reinstatement fee of \$5.00. The University reserves the right to change fees and other charges at any time without advance notice.

Following is a list of the most common fees:

Incidental Fee

All students enrolled in the University are required to pay an Incidental Fee, Fall 1965, as follows:

Regular Semester (18 weeks)		Incidental Fee
Number of Hours Credit		
10 or more		\$115.00

Summer Session (8 weeks)		Incidental Fee
Number of Hours Credit		
5 or more		\$57.50

For any other sessions not specified above and for partial enrollments the Incidental Fee shall be calculated at the rate of \$11.50 per credit hour.

Non-Resident Tuition Fee

In all divisions of the University tuition is free to students who are residents of the state of Missouri. The nonresident fee for undergraduate students who are not residents of Missouri is:

Regular Semester (18 weeks)		Nonresident Fee
Number of Hours Credit		
10 or more		\$175.00

- 100 ORIENTATION (No Credit)
Lectures, visits to schools.
- 102 EDUCATIONAL PSYCHOLOGY (3)
Prerequisite: Psychology 2. Analysis of the application of scientific psychological principles and concepts which underlie education.
- 125 HISTORY OF AMERICAN EDUCATION (3)
Prerequisite: History 3 and 4. Comprehensive study of development of American education. Stresses American educational ideas, educational theory, American school system, and social and intellectual forces affecting American education.
- 131 TECHNIQUES OF ELEMENTARY SCHOOL TEACHING (2)
Prerequisite: Education 102 and 125. Social and psychological principles, and current educational practices relating to the organization of teaching materials, teacher-pupil interaction, and the instructional activities of elementary classroom teacher.
- 137 ELEMENTARY SCHOOL MUSIC (3) Same as Music 137
Prerequisite: sophomore standing. 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 experience with various media and materials. Stresses curriculum planning and the development of the elementary school program in art.
- 140 ELEMENTARY SCHOOL ORGANIZATION AND ADMINISTRATION (2)
Prerequisite: Education 102 and 125. Major problems of organization and management from viewpoint of teacher in elementary school. Analysis of social factors affecting elementary school and elementary education; examination of the formal and informal organizations in the school as they relate to management.
- 150 CHILDREN'S LITERATURE (2)
A course designed to provide a knowledge of the various types of children's literature; criteria for selecting and evaluating reading material.
- 153 PROBLEMS OF TEACHING MATHEMATICS IN ELEMENTARY SCHOOLS (2)
Prerequisite: Mathematics 15. Consideration of the new mathematics, problems of organizing and teaching the new mathematics in the elementary schools.
- 163 TECHNIQUES OF SECONDARY SCHOOL TEACHING (2)
Prerequisite: Education 102 and junior standing. Activities and interaction of teachers and pupils in development of conditions for learning in secondary schools. Analysis of teaching-learning process and investigation of studies of the teaching act.
- 169 EDUCATIONAL STATISTICS AND TEST CONSTRUCTION (3)
Prerequisite: Education 102 and either 131 or 163. Measures of central tendency and of variability, problem design, sampling theory, testing hypotheses and correlation. Techniques of utilizing education and achievement tests in the improvement of instruction. Principles and techniques of test construction.

Summer Session
(8 weeks)

- 51 GENERAL ECONOMICS (3)
Prerequisite: Economics 50. Contin. of Economics 50.
- 229 MONEY AND BANKING (3)
Prerequisite: Economics 51. American monetary and banking systems; their influence upon economic activities.
- 270 URBAN ECONOMICS (3)
Prerequisite: Economics 51. The process and impact of urban economic development.
- 290 ECONOMICS READINGS (3)
Prerequisite: Economics 51, junior standing, and consent of instr. Readings on a topic mutually acceptable to student and instructor.
- 315 PUBLIC REVENUES (3)
Prerequisite: Economics 51. Study of alternative methods of financing governments. Economic consequences of various government revenue and expenditure programs analyzed.
- 320 MACROECONOMIC THEORY (3)
Prerequisite: Economics 229. Analysis of influences underlying national income. Various theories of national income determination considered.
- 330 INTERNATIONAL ECONOMIC THEORY AND ANALYSIS (3)
Prerequisite: Economics 51. The theory of international trade, the theory of commercial policy, the balance of payments and monetary standards, and the theory of economic intzgration.
- 331 THE INTERNATIONAL ECONOMY (3)
Prerequisite: Economics 330. The balance of payments adjustment mechanism; price and exchange rate adjustments; income, expenditures and imports; capital transfers; fixed vs. flexible exchange rates. Current problems of commercial policy, attempts at regional economic integration and certain significant historical trends in international economic relations.
- 350 SPECIAL READINGS (cr. arr.)
Prerequisite: Permission of instructor. Unscheduled independent directed readings on a topic mutually acceptable to student and instructor. Taught by all staff.
- 351 INTERMEDIATE ECONOMIC THEORY (3)
Prerequisite: Economics 51. Mathematics 80 strongly advised. Analysis of influences and underlying economic value. The pricing process under various market conditions considered; functioning of enterprise system evaluated.
- 365 ECONOMETRICS (3)
Prerequisite: Economics 51 and Statistics 31. Application of statistical techniques to economic research problems.
- 366 ECONOMETRICS (3)
Prerequisite: Economics 365. Contin. of 365.
- 368 BUSINESS FLUCTUATIONS (3)
Prerequisite: Economics 229. Factual background, analysis of causes of economic fluctuations.
- 389 THEORY OF IMPERFECT COMPETITION (3)
Prerequisite: Consent of instr. Analysis of market structure influences upon competition.

Number of Hours Credit	Nonresident Fee
5 or more	\$87.50

For any other sessions not specified above and for partial enrollments the non-resident fee shall be calculated at the rate of \$17.50 per credit hour.

Student Union Fee

Each student registered for resident work in the University is required to pay a Student Union Fee as follows:

For one semester of 18 weeks (10 or more hours)	\$10.00
For one term of 8 weeks (5 or more hours)	\$ 5.00

For any other sessions not specified above and for partial enrollments the Student Union Fee shall be calculated at the rate of \$1.00 per credit hour or fraction thereof.

Student Activities Fee

Each student registered for resident work in the University is required to pay a Student Activities Fee as follows:

For one semester of 18 weeks (10 or more hours)	\$ 2.00
For one term of 8 weeks (5 or more hours)	\$ 1.00

For any other sessions not specified above and for partial enrollments the Activities Fee shall be calculated at the rate of \$.20 per credit hour.

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

Motor Vehicle Registration Fee

There will be a registration fee for each motor vehicle used by a student on the campus.

Refund of Fees

A student who pre-registers or enrolls on the regular registration days and pays the regularly established fees and who reduces his enrollment before the day classwork begins, so that his fees are reduced, shall be entitled to a full refund of the difference in fees.

Students leaving school or dropping courses for which they have paid fees, prior to the close of the first half of the term after their registration, will receive, upon written request to the Business Office, a refund of the fees paid in accordance with the following schedule:

Time of Withdrawal	Amount of Fee to be Refunded
Within the first one-eighth of term	80%
Within the second one-eighth of term60%
Within the third one-eighth of term40%
Within the fourth one-eighth of term	20%
After the first half of the term	no refund

STUDENT FINANCIAL AID

Financial aid is offered to students enrolled in the University of Missouri at St. Louis in the form of part-time employment, student loans, scholarships, and awards.

Scholarships

Curators Freshman Scholarships and Awards

Valedictorians of the high schools in the City of St. Louis, St. Louis County, Jefferson County, Franklin County, Lincoln County, and St. Charles County will be offered a Curators Scholarship equivalent to the incidental fee for two semesters. All others who rank in the upper one-third in class average and in the upper one-third on the state-wide test are granted a Certificate of Recognition by the University. Any recipient of such a certificate who is in need of financial assistance in order to attend the University of Missouri at St. Louis may apply for a Curators Freshman Award.

Eve and Stuart Symington Scholarship Award

This loan and scholarship fund has been established for Political Science majors.

272 BIOCHEMISTRY (3)

Prerequisite: Chemistry 261 and Chemistry 263. The isolation, chemical characterization, and function of the structural and catalytic components of living cells and subcellular particles.

289 SEMINAR (1)

All chemistry majors must enroll as hearers in Chemistry 289 during both semesters of their junior year; all chemistry majors must take Chemistry 289 for credit during both semesters of their senior year. Presentation of selected papers by students and faculty members at weekly departmental meetings.

290 RESEARCH (cr. arr.)

324 INSTRUMENTAL ANALYSIS (3)

Prerequisites: Chemistry 222, 232, and 233 (Chemistry 232 may be taken concurrently). Modern instrumental methods including refractometry, polarimetry, spectrophotometry, nuclear magnetic resonance, and others. 2 hrs. lect. and 3-1/2 hrs. lab.

325 QUALITATIVE ORGANIC ANALYSIS (4)

Prerequisite: Chemistry 262. Laboratory and instrumental methods for the systematic identification of organic compounds.

333 THERMODYNAMICS (3)

Prerequisite: Chemistry 232. Derivation and development of the fundamental relationships of thermodynamics; quantitative heat and work relationships and applications to physical and chemical equilibrium. 3 hrs. lect.

341 ADVANCED INORGANIC CHEMISTRY (3)

Prerequisite: Chemistry 232 (may be taken concurrently). A systematic study of the behavior and reactions of the elements; emphasis on correlation of chemical properties with theoretical concepts. 3 hrs. lect.

352 RADIOCHEMISTRY (3)

Prerequisite: Chemistry 232. Properties of radioactive nuclei, nature of radioactivity, nuclear reactions, and applications of nucleonics to chemistry.

361 ADVANCED ORGANIC CHEMISTRY (3)

Prerequisite: Chemistry 262. Presents advanced material in organic reactions, natural products, and synthetic methods. 3 hrs. lect.

366 PHYSICAL ORGANIC CHEMISTRY (3)

Prerequisites: Chemistry 262 and 232 (Chemistry 232 may be taken concurrently). Theory of organic chemistry, conformational analysis, reaction mechanisms, tautomerism, and other advanced topics. 3 hrs. lect.

371 ADVANCED BIOCHEMISTRY (3)

Prerequisites: Chemistry 272. Selected advanced topics in the chemistry of life processes. 3 hrs. lect.

381 SPECIAL TOPICS (3)

Prerequisite: permission of instructor. A reading and seminar course in selected advanced topics.

ECONOMICS

50 GENERAL ECONOMICS (3)

Prerequisite: Mathematics 10 or equivalent. Introduction to the subject of economics with emphasis on fundamental principles and their application to questions of policy.

economic and management circumstances within the company, industry and economy.

CHEMISTRY

- 1 GENERAL CHEMISTRY (3)
Presentation of inorganic, organic, physical, and analytical chemistry for the general student. 3 hrs. lect. per week.
- 3 GENERAL CHEMISTRY LABORATORY (2)
Lab. course to accompany Chemistry 1. 3-1/2 hrs. lab.
- 11 INTRODUCTORY CHEMISTRY (5)
Prerequisite: either (a) 2-1/2 units of high school mathematics, or (b) Mathematics 10 (may be taken concurrently), or (c) Chemistry 1 (2 hours of credit are awarded to students who have taken Chemistry 1). Presents an introduction to inorganic, analytical, and physical chemistry. 3 hrs. lect., 1 hr. discussion and 3-1/2 hrs. lab.
- 12 QUALITATIVE ANALYSIS (5)
Prerequisite: Chemistry 11. The chemistry of electrolytes in solution, with laboratory in qualitative analysis. 3 hrs. lect. and 3-1/2 hrs. lab.
- 222 QUANTITATIVE ANALYSIS (5)
Prerequisite: Chemistry 12. Principles and practice of quantitative analytical methods. 2 hrs. lect. and 7 hrs. lab.
- 231 PHYSICAL CHEMISTRY I (3)
Prerequisites: Chemistry 261 and Physics 12. Principles of physical chemistry including thermodynamics, theory of gases, phase equilibria, kinetics, crystal structure, spectroscopy, and quantum mechanics. 3 hrs. lect.
- 232 PHYSICAL CHEMISTRY II (3)
Prerequisites: Chemistry 231. Contin. of Chemistry 231. 3 hrs. lect.
- 233 LABORATORY IN PHYSICAL CHEMISTRY I (2)
Prerequisites: same as Chemistry 231. Must be preceded or accompanied by Chemistry 231. 3-1/2 hrs. lab.
- 234 LABORATORY IN PHYSICAL CHEMISTRY II (2)
Prerequisites: same as Chemistry 232; must be preceded or accompanied by Chemistry 232. 3-1/2 hrs. lab.
- 261 ORGANIC CHEMISTRY (3)
Prerequisite: Chemistry 12. Systematic presentation of structural concepts in aliphatic and aromatic systems. 3 hrs. lect.
- 262 ORGANIC CHEMISTRY (3)
Prerequisite: Chemistry 261. A systematic study of organic reactions and reaction mechanisms; synthetic organic methods. 3 hrs. lect.
- 263 LABORATORY IN ORGANIC CHEMISTRY (2)
Prerequisites: same as Chemistry 261; must be preceded or accompanied by Chemistry 261. 7 hrs. lab.
- 264 LABORATORY IN ORGANIC CHEMISTRY (2)
Prerequisite: same as Chemistry 262; must be preceded or accompanied by Chemistry 262. 7 hrs. lab.

Normandy Kiwanis Club Scholarship

The Normandy Kiwanis Club awards one or more scholarships annually to residents of the Normandy School District who enroll as freshmen in the University of Missouri at St. Louis. Recipients are awarded \$250; one-half is payable at the beginning of the fall semester and the other half at the beginning of the winter semester.

St. Louis City Panhellenic Scholarships

Two full expense scholarships are awarded to two high school senior girls who have been accepted by the University of Missouri at St. Louis.

Greater St. Louis Science Fair Scholarship

This scholarship carries a stipend equal to the Incidental Fees for attendance at the University of Missouri at St. Louis. It will be awarded as a four-year scholarship. Winners of prizes for exhibits in the Greater St. Louis Science Fair who are Missouri residents enrolled as students in Missouri high schools and ranking in the upper one-third of their class may be considered for the scholarships. High school students recommended for these scholarships shall be selected by a Scholarship Board set up by the management of the Greater St. Louis Science Fair organization. The Committee on Scholarships and Loans selects the recipients of the scholarships from those persons recommended to it by the Science Fair Scholarship Board.

The John F. Kennedy Memorial Scholarship

Sponsored by the United Young Democrats of St. Louis County, this scholarship provides \$200 toward the payment of Incidental Fees and is awarded on the basis of scholarship and need. The award is open to all students.

The Student Association Scholarship

Sponsored by the Student Association of the University of Missouri at St. Louis, this award provides for a \$100 scholarship for payment toward Incidental Fees. It is awarded on the basis of scholarship and need and is open to entering first semester freshmen.

Student Loans

All the student loan funds, including those available under the provisions of the National Defense Education Act, are administered in the Office of Aids and Awards, University of Missouri, Columbia, under the direction of the Student Loan Committee appointed by the president of the University. Application forms and further information about loans may be obtained from the Office of Admissions, Room 125, University of Missouri at St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121.

STUDENT AFFAIRS

The philosophy of student activities is simply an extension of the educational philosophy of the University of Missouri at St. Louis. All activities are measured by the manner in which they promote the growth of responsibility in students.

Student Government

All students enrolled at the University are members of the Student Association, the governing body of which is the Senate. The executive board is composed of a president, vice-president, secretary and treasurer; the president presides over the Senate. As the representative body of the students, the Senate charters all non-academic organizations on campus.

Elections are held twice each academic year. In the spring, sophomore and upper class senators and the executive board members are elected for the following academic year. Freshman senators are elected during the early weeks of the fall semester. Representation on the Senate is determined by academic class (freshman, sophomore, etc.) and is proportional. As the student body of the St. Louis campus grows the proportion of representation changes.

Student Activities

The University of Missouri at St. Louis offers a wide range of activities. In addition to an intramural program, the basketball team, a member of the Greater St. Louis College Conference, and the wrestling team provide opportunities for the sports-minded.

Each year the Senate sponsors a series of dances, climaxed in the spring by the Inaugural Ball, when the new officers of the Student Association are installed. The Student Association also sponsors the Purple Onion, which provides an opportunity for students to perform in a night club setting. The Lecture and Concert Series at the University, which brings outstanding speakers, musicians and orchestral groups to the campus, is also supported by the S. A.

There is a growing number of subject matter clubs on campus, such as Business and Philosophy. Students who do not find an organization of their preference may form their own by drafting a constitution and petitioning the Senate for recognition. Once recognized, an organization becomes eligible for inclusion in the Student Association budget. All money in the S. A. treasury comes from the students' \$2 per semester activity fee and a cash refund from the Book Store.

The Newspaper

Students interested in journalism can test their abilities by writing for the student newspaper. The newspaper is tabloid size and published bi-weekly during the school year. All stages of production except the actual printing, from layout to photography, headline writing to art work, are handled by the students.

- 204 CORPORATE FINANCE (3)
Prerequisite: Accounting 37, Economics 51. A study of institutions, instruments, techniques and methods of analysis in financing private enterprise.
- 217 INTERMEDIATE ACCOUNTING (3)
Prerequisite: Accounting 37. Study of accounting theory in depth with emphasis on financial accounting.
- 256 BUSINESS LAW (3)
Prerequisite: Accounting 37, 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.
- 302 MANAGERIAL ACCOUNTING (3)
Prerequisite: Accounting 37 and Economics 51. Development and interpretation of accounting data for administrative economic decisions. Accounting techniques to control costs, protect assets and analyze revenues and profits are among the topics included.
- 308 PRODUCTION MANAGEMENT (3)
Prerequisite: Industrial Management 202. Integration of principles of management and economics to develop analytical approaches to production management. Role of production management philosophy explored.
- 310 PERSONNEL MANAGEMENT (3)
Prerequisite: Economics 51. 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: Marketing Principles 106. An extension in depth of the investigation of marketing solution to complex problems of merchandising, channel selection, brand policy, price policy, sales promotion, advertising and personal selling.
- 321 COST ACCOUNTING (3)
Prerequisite: Managerial Accounting 302 or Intermediate Accounting 217 or permission of dept. Emphasizes use of accounting techniques to promote efficiency by tracing costs to personnel, processes and products. Different systems analyzed to understand their strengths, weaknesses and applications.
- 322 ADVANCED ACCOUNTING (3)
Prerequisite: Intermediate Accounting 217. Study of consolidated statements, governmental accounts, accounting for foreign exchange and other special topics.
- 334 INVESTMENTS (3)
Prerequisite: Corporate Finance 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

- 224 GENETICS (3)
Prerequisite: Biology 213. The fundamental principles of inheritance, including classical genetic theory as well as recent advances in the molecular basis of heredity. 3 hrs. lect.
- 226 GENETICS LABORATORY (2)
Prerequisite: Biology 12; must be accompanied by or preceded by Biology 224. Laboratory to accompany Biology 224. 3-1/2 hrs. lab.
- 235 ANIMAL DEVELOPMENT (5)
Prerequisite: Biology 224. Anatomical and physiological aspects of the embryonic development of animals.
- 237 PLANT DEVELOPMENT (5)
Prerequisite: Biology 224. Anatomical and physiological aspects of the embryonic development of plants.
- 246 EVOLUTION (3)
Prerequisite: Biology 235 or 237. The course and mechanisms of organic evolution.
- 289 SEMINAR (1)
All biology majors must enroll as hearers in Biology 289 during both semesters of their junior year; all biology majors must take Biology 289 for credit during both semesters of their senior year. Presentation of selected papers by students and faculty members at weekly departmental meeting.
- 290 RESEARCH (cr. arr.)

BUSINESS ADMINISTRATION

- 31 ELEMENTARY STATISTICS (3)
Prerequisites: Soph. standing and Math. 10. Introduction to descriptive statistics including collection, organization, and presentation of data; averages; dispersion. Introduction to statistical inference, probability, index numbers, time series, correlation.
- 36 ELEMENTARY ACCOUNTING I (3)
Prerequisite: Soph. standing. Includes rules of bookkeeping, the accounting cycle, generally accepted accounting principles, financial statement preparation and analysis, and problems of income computation and asset valuation.
- 37 ELEMENTARY ACCOUNTING II (3)
Prerequisite: Accounting 36 or equivalent. Contin. of study of generally accepted accounting principles. Accounting problems and techniques for partnerships, corporations, and manufacturing endeavors are emphasized.
- 106 PRINCIPLES OF MARKETING (3)
Prerequisite: Accounting 37, Economics 51. Study of marketing institutions and marketing functions. A development of the implications and interrelationship of product policy, pricing, distribution channels, demand analysis and selling strategy.
- 202 INDUSTRIAL MANAGEMENT (3)
Prerequisite: Accounting 37, Economics 51. Principles of industrial organization and management; their application to production, personnel and materials.

The Yearbook

The Landmark is the yearbook of the University of Missouri at St. Louis. Students with past yearbook experience, or those who simply have an interest in publication, are invited to join the Landmark staff.

Student Court

The Student Court provides an excellent opportunity for student self-government. It hears and passes judgment on all discipline cases which are non-academic. It is composed of five members: a chief justice and four associate justices. They are appointed by the Student Association president, with the consent of the Senate.

ASTRONOMY

SPECIAL PROGRAMS

Honors Program

All students who maintain a grade average of "B" or higher and entering freshmen who ranked in the upper 15 per cent of their high school classes and the upper 15 per cent on the Freshman Placement Tests are eligible to enroll in honors courses.

A high school senior may enroll in a college course for credit with the approval and recommendation of his principal. This credit may be applied as advanced standing after the student has been admitted to the University of Missouri at St. Louis.

The Evening Program

The Evening Program of the University of Missouri at St. Louis offers four well-defined areas of service to the students of the metropolitan St. Louis area:

1. A regular degree granting program in education, history, English, mathematics and business. The same general policies in effect for the Day Program are applicable to the Evening Program. For admission policies see Page 12. Those people who find it necessary to work in the daytime may earn a degree by enrolling in the program.
2. Graduate level courses offered in cooperation with the Graduate School of the University of Missouri, Columbia. These courses are of special benefit to teachers working on advanced degrees while pursuing a full-time occupation.
3. Courses which will meet teacher certification requirements within the state of Missouri.
4. A non-degree program which provides courses that do not carry college credit but can be taken by anyone not working toward a degree.

Cooperative Graduate Program With The University of Missouri, Columbia

Enrollment increases in graduate level extension courses offered at St. Louis and requests from teachers' organizations in the St. Louis area have suggested the desirability of establishing a Graduate Program on the St. Louis campus of the University of Missouri. The Graduate Program will be under the direction of the Graduate School on the Columbia campus and will offer resident graduate credit to those who qualify for admission to the program. Because of limitations in class-

The following courses will meet at McDonnell Planetarium. Astronomy 1 and 2, together with Biology 1, will satisfy the General Education Requirement in Science. Astronomy 1, together with Biology 1 and 3, will also satisfy the General Education Requirement in science. Astronomy 11 and 12 will satisfy the entire General Education Requirement in science.

- 1 GENERAL ASTRONOMY (3)
Prerequisite: three years of high school mathematics and one year of high school physics or chemistry. The first half of a terminal course for non-science majors, with emphasis on the historical and cultural aspects of astronomy. Three class hours per week, plus observing periods to be arranged.
- 2 GENERAL ASTRONOMY (3)
Prerequisite: General Astronomy 1. Contin. of General Astronomy 1.
- 11 INTRODUCTION TO ASTRONOMY (3)
Prerequisite: Math 175, and Physics 12 or Chemistry 12. Introduction to modern concepts of the physical nature of the astronomical universe. Topics include instruments, stars, sun, nebulae, star clusters, galaxies, and various objects that make up the solar system, and their motions. Designed to allow a student to continue the study of astronomy. 3 hours plus observing sessions to be arranged.
- 12 INTRODUCTION TO ASTRONOMY (3)
Prerequisite: Astronomy 11. Contin. of Astronomy 11.

BIOLOGY

- 1 GENERAL BIOLOGY (3)
A survey of biology with emphasis on fundamental principles. 3 hrs. lect.
- 3 GENERAL BIOLOGY LABORATORY (2)
Laboratory course to accompany Biology 1. 3-1/2 hrs. lab. per week.
- 11 INTRODUCTORY BIOLOGY (5)
Biology 11-12 provides a two semester sequence giving an intensive introduction to animal and plant life. Prerequisite: Chemistry 11 (may be taken concurrently). 3 hrs. lect. and 3-1/2 hrs. lab.
- 12 INTRODUCTORY BIOLOGY (5)
Contin. of Biology 11. Prerequisite: Biology 11. 3 hrs. lect. and 3-1/2 hrs. lab.
- 202 COMPARATIVE VERTEBRATE ANATOMY (5)
Prerequisite: Biology 12. A comparative study of the organ systems of the different classes of vertebrates, with special reference to evolution and adaptation. 2 hrs. lect. and 7 hrs. lab.
- 213 GENERAL PHYSIOLOGY (5)
Prerequisite: Biology 12. Physicochemical properties and functions of living cells and organ systems. 3 hrs. lect. and 3-1/2 hrs. lab.

Prerequisites

A minimum grade of C shall be required to meet the prerequisite requirement for any course except with permission of the department in which the second course is to be taught. Prerequisite course requirements within the department being described are noted solely by number; specific course prerequisites in other departments of the University are preceded by the abbreviation of the department, e.g., Chem. 11 (Chemistry course 11). General nonspecific requirements are designated thus: gen. chem. 10 hrs. (general chemistry 10 semester credit hours). An academic standing prerequisite is stated by class, as sr. 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 Chem. 1 (a grade of C or better in Chemistry course 1). GPA refers to grade point average.

ART

- 1 MASTERPIECES OF ART (3)
No prerequisites. Illustrated discussion with examples from varied historic and contemporary art fields on the nature of art, functions and methods of creative expression.
- 101 HISTORY OF WESTERN ART (3)
Prerequisite: soph. standing or consent of dept. Illustrated lectures and discussion of the architecture, sculpture, painting of Greece, Rome, and Medieval Europe.
- 102 HISTORY OF WESTERN ART (3)
Prerequisite: soph. standing or consent of dept. Illustrated lectures and discussion of the general development of art and architecture from the 14th century to the present.
- 120 CLASSICAL ART AND ARCHAEOLOGY: GREECE (3)
Prerequisite: soph. standing or consent of dept. A general survey of the development of material culture in Greece from the earliest times to the Hellenistic period.
- 121 CLASSICAL ART AND ARCHAEOLOGY: ROME (3)
Prerequisite: soph. standing or consent of dept. A general survey of the development of material culture in the Roman world from the earliest times through the early Empire.
- 139 ART ACTIVITIES FOR ELEMENTARY SCHOOLS (3)
See Education. (Same as Education 139.)

room space, library facilities and staff availability, a restricted program will be offered initially.

Additional information about the Graduate Program may be obtained from:

Dr. Adolph Unruh
Chairman, Department of Education
University of Missouri at St. Louis
8001 Natural Bridge Road
St. Louis, Missouri

Dr. H. W. Schooling
Dean of the College of Education and
Director of the Summer Session
University of Missouri
Columbia, Missouri

Dr. Henry E. Bent
Dean of the Graduate School
University of Missouri
Columbia, Missouri

Air Force Reserve Officers Training Program

Students interested in a reserve officer training program may enroll with the Air Force detachment on regular registration day. This program is offered on the campus of Washington University in St. Louis.

Air Force officials are on the University of Missouri campus during the regular registration period to discuss the program with interested students. Enrollment is completed at that time.

GENERAL REGULATIONS AND REQUIREMENTS

Requirements in American History, Institutions and National and State Constitutions

Each student who expects to complete an undergraduate degree in the University of Missouri must present as a requirement for graduation a course or courses in this area, taken at the University of Missouri or at other colleges or universities within the state of Missouri. The requirement can be satisfied by credit in one of the following courses: History 20, American History (3); Political Science 202, State and Local Government (3). If a student is working for two baccalaureate degrees, this requirement will apply to the first degree only. The transfer student should inquire at the Admissions Office to determine whether he has satisfied this requirement.

Program of Studies; 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 carry more than 16 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 9 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 2 credit hours will meet two periods per week for a semester; a 5-hour course will meet five periods per week for a semester. The lecture or recitation period is 50 minutes in length and the usual laboratory period an hour and 50 minutes.

Grading System

The grades used to report courses taken toward a bachelor's degree are A, B, C, D, and F. The grade A indicates superior work; the grade B, above average work; and C, average work. The grade of D indicates that the student's work is below average, the grade F that the work done is undeserving of credit.

DESCRIPTION OF COURSES

All courses offered at the University of Missouri 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 which lists the specific courses to be offered for that semester with the time of meeting, the building, and room number of each course.

This "General Catalog Including Description of Courses" includes only those courses given on the campus, University of Missouri at St. Louis. Separate catalogs are issued by the University of Missouri in Columbia, University of Missouri at Rolla, and the University of Missouri at Kansas City.

The University reserves the right to cancel without notice any course listed in the "General Catalog Including Description of Courses" or in the "Schedule of Courses" for any semester or to withdraw any course which does 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 "dept. consent" or "consent of instr." 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 (cr. arr.) (credit to be arranged) or by the minimum and maximum credit, as Research (2-8).

- b. All psychology majors must take:
 - Psychology 1 and 2 (preferably in the freshman year) 6 hours
 - Psychology 201 (preferably in the sophomore year) 3 hours
 - Psychology 301 3 hours
 - Psychology 319 or Psychology 357 4 hours
 - Psychology 192 3 hours
 - Psychology 193 3 hours
 - Psychology Electives 10 hours
- c. Students must have 12 hours of Psychology to be admitted to any 300 level course. This means each student must elect one 3 hour course at the sophomore level in addition to the requirements in "b" above.
- d. Psychology majors must take a minimum of 14 credit hours of work at the 300 level in the Department of Psychology.

SOCIOLOGY-ANTHROPOLOGY

The requirements for the A.B. degree with a major in sociology are:

- I. General Education requirements: 55 hours. See page 29.
- II. General area requirements:
 - Sociology and Anthropology majors are strongly advised to take at least 6 hours in one or more of the following departments: Economics, Political Science, Philosophy, and Psychology.
- III. Departmental requirements: 36 hours.
 - a. Majors may choose a program emphasizing either Sociology or Anthropology. Either avenue will provide a basis for graduate study in the field chosen.
 - b. A major in either Sociology or Anthropology consists of a minimum of 36 semester hours, but students may elect to take additional work in the Department to a maximum of 45 hours.
 - c. Sociology majors must take Introduction to Sociology (6 hours); Introduction to Anthropology (6 hours); Social Disorganization (3 hours); Social Psychology (3 hours); Collective Behavior (3 hours); Population and Society (3 hours); Senior Readings (3 hours); Senior Seminar (3 hours). The remaining 6 hours may be chosen from among any of the departmental courses numbered 100-399.
 - d. Anthropology majors must take Introduction to Anthropology (6 hours); Introduction to Sociology (6 hours); Peoples and Cultures of the World (3 hours); Race and Ethnic Relations (3 hours); Senior Readings (3 hours); Senior Seminar (3 hours). The remaining 6 hours may be chosen from among any of the departmental courses numbered 100-399.

Graduation

The last year of work must be done in residence, and the student must have carried a full schedule during that time, except under unusual circumstances to be decided by the dean.

Each student must complete a minimum of 120 semester hours with a minimum average grade of 1.75 for the first two years and a 2.0 for the last two years, except that any student who maintains a minimum 2.0 average during the sophomore year will be given an additional semester in which to achieve a 1.75 cumulative average. At least 45 of the 120 hours must be above the introductory level.

The faculty may decline to recommend a student for a degree because of lack of moral qualifications even though the student has completed all the formal requirements for the degree.

Extension Course Credit

A maximum of 30 semester hours of correspondence or extension courses from an accredited institution will be accepted toward an undergraduate degree, provided the work parallels the courses offered by the University of Missouri at St. Louis and has the approval of the major department and the Divisional Dean.

Prerequisites

A minimum grade of C shall be required to meet the prerequisite requirement for any course except with permission of the department in which the second 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 at 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 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 with a grade of "Excused" until 4 weeks after the semester begins, so long as total enrollment does not fall below the 10 hour minimal requirement. 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 beginning of the fifth week of a semester, or the second week of a summer session, a student may withdraw from a course with the approval of his adviser and of the dean with a grade of "Excused," provided he is receiving a passing grade at the time of his withdrawal. Otherwise, he will receive a grade of "F".

Any student who ceases to attend classes but fails to drop officially shall receive a grade of F.

Academic Honesty

Academic dishonesty is considered the worst offense at the University of Missouri at St. Louis. Those guilty of a dishonesty are automatically dismissed from the University. Plagiarism is considered a dishonest act.

New Student Orientation

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

European

History 1 and 2	6 hours
History 3 and 4	6 hours
European History at the 300 level	12 hours
American History at the 300 level	6 hours
Senior Year General Education requirements	6 hours
	<hr/>
	36 hours

- d. Every history major must take a directed readings course (3 hours) and a departmental seminar (3 hours) during his senior year. A formal paper will be required in the seminar. In addition he must satisfactorily pass both a written and an oral examination in the field of the major.

POLITICAL SCIENCE

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

- I. General Education requirements: 55 hours. See page 29.
- II. General area requirements: 21 hours.

All political science majors are required to take Elementary Logic; at least one course in Economics, Psychology, Sociology, and Philosophy (other than Logic); and at least one upper division course in two of these fields.

- III. Departmental requirements: 33 hours.

- a. A major in Political Science consists of 33 hours, but students may elect to take additional Political Science courses up to a maximum of 45 credit hours.
- b. All majors must take Political Science 11, 12*, 192, 193, 361, 362, and at least one course in five of the following six fields:

Public Administration	State and Local Government
Constitutional Law	International Relations
Political Parties	Comparative Government

*Students enrolled before September 1965 may substitute Political Science 1 or 20 for Political Science 11 and 12.

PSYCHOLOGY

The requirements for the A.B. degree with a major in psychology are:

- I. General Education requirements: 55 hours. See page 29.
- II. General area requirements:

- a. German and French are the only acceptable foreign languages for Psychology majors. Other languages may be taken as electives if desired.
- b. Psychology majors are urged to follow the Chemistry 11-12 sequence and the Biology 11-12 sequence. However, the General Education requirements in science (Biology 1 and Chemistry 1) will be acceptable. Note: Biology 11 and 12 are prerequisites for Psychology 314.
- c. The Psychology Department recommends that rather than electing an excessive number of hours in Psychology, students should elect courses in the following areas: Mathematics, Chemistry, Biology, Sociology, Anthropology, Literature, and Philosophy.

- III. Departmental requirements: 32 hours.

- a. A major in Psychology consists of 32 hours. Additional hours may be elected.

DIVISION OF SOCIAL SCIENCE

ACADEMIC MAJORS

ECONOMICS

The requirements for the A.B. degree with a major in economics are:

- I. General Education requirements: 55 hours. See page 29.
- II. General area requirements:
An Economics major will take electives commensurate with his interests and subject to the approval of his adviser. It is recommended that these electives be taken from such related fields as Business History, Mathematics, Philosophy, Political Science, Psychology, Sociology-Anthropology and Statistics.
- III. Departmental requirements: 33 hours.
All Economics majors are required to take Economics 50, 51, 192, 193, 229, 320, 351 and an additional 12 hours in Economics.

HISTORY

The requirements for the A.B. degree with a major in history are:

- I. General Education requirements: 55 hours. See page 29.
- II. General area requirements: 21 hours.
 - a. History majors must take a minimum of 9 hours of work in Philosophy and Literature, with at least one course in each. These hours may be used to fulfill the General Education requirements in Humanities.
 - b. History majors must take a minimum of 6 hours in Economics and 6 hours in Political Science. These hours may be used to fulfill the General Education requirements in the Social Sciences.
- III. Departmental requirements: 36 hours.
 - a. A major in History consists of 36 hours, but students may elect to take additional work in History up to a maximum of 45 hours.
 - b. No later than the beginning of the fifth semester history majors must choose between a major program with a humanistic emphasis and a program with a social science emphasis. In consultation with his adviser each student will elect a large block of courses in the area of his chosen emphasis.
 - c. History majors may emphasize either American History or European History in their major program as follows. Specific courses will be chosen in consultation with the student's adviser.

American

History 1 and 2	6 hours
History 3 and 4	6 hours
American History at the 300 level	12 hours
European History at the 300 level	6 hours
Senior Year General Education requirements	<u>6</u> hours
	36 hours

DEGREES

The University offers a Bachelor of Arts (A.B.) degree, a Bachelor of Science in Chemistry (B.S.) degree, and a Bachelor of Science in Business Administration (B.S.) degree.

The Bachelor of Arts candidate may select a major in: Biology, General Business, Chemistry, Economics, English, French, German, History, Mathematics, Philosophy, Physics. Political Science, Psychology, Sociology, Spanish.

Students who are preparing to teach will obtain a degree in one of the above subject matter areas.

General Education Requirements for the Bachelor of Arts Degree

I. GENERAL REQUIREMENTS

- A. Each student must complete 120 semester hours with a minimum average grade of 1.75 for the first two years, except that any student who maintains a minimum 2.0 average during the sophomore year will be given an additional semester in which to achieve a 1.75 cumulative average. At least 45 of the 120 hours must be above the introductory level.
- B. Each student must have been in residence for the last full year before graduation and must have carried a full schedule during that time, except under unusual circumstances to be decided by the Dean.

II. MAJOR FIELD REQUIREMENTS

- A. Each student shall choose a major subject matter field.
- B. Specific requirements for the major will be determined by individual departments except that no student may count fewer than 30 or more than 45 hours in his major field toward graduation.

III. SPECIFIC REQUIREMENTS

- A. Basic English
 1. A total of 3 hours of English Composition, with a grade of C or better. Failure to obtain a C or better will necessitate repetition of the course until at least a C grade is achieved. No student will be allowed to repeat the English Composition course more than twice after initial failure.

2. Three hours of literary types, in which the student is to be introduced to all of the various literary types.

B. Humanities

A total of 9 hours, to be taken from at least two of the following areas: Art History, Literature, Music History, Philosophy. Literature is understood to include German, French and Spanish, as well as English and American literature. When literature courses are established in classical or modern languages these shall be included.

C. Foreign Language

A total of 14 hours in a foreign language or its equivalent in proficiency as determined by examination. It is strongly recommended that wherever possible, students shall begin a foreign language at the time of first registration.

D. Science

1. A minimum of 8 hours, to consist of one lecture course in the physical sciences (3 hours), one lecture course in the life sciences (3 hours), plus one laboratory course (2 hours) in either the physical or life sciences.
2. This requirement may be met by taking the introductory ten-hour sequence in any one laboratory science.

E. Mathematics

All students will be required to take a course in Mathematics.

F. Social Sciences

A total of 9 hours, to be taken from at least two of the following areas: Economics, Political Science, Psychology, Sociology-Anthropology.

G. History

A total of 6 hours.

H. State Requirement

A course in either American History or American Government which will satisfy the requirement of the State of Missouri.

I. Non-Western Area

A minimum of 3 hours of work in either Asian or African studies.

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	<u>3</u>		
	16		<u>14</u>

Sophomore Year

Chemistry 261	3	Chemistry 262	3
Chemistry 263	2	Chemistry 264	2
Biology 11	5	Chemistry 222	5
Economics 50	3	Biology 12	5
History 3 or Political Science 11	<u>3</u>		
	16		<u>15</u>

Senior Year

Chemistry 341	3	Chemistry 324	3
Chemistry 289	1	Chemistry 289	1
Advanced Chemistry	3	German 203	3
German 103	3	Electives	8
Electives	<u>5</u>		<u>8</u>
	15		15

UNDERCLASS PROGRAMS

PRE-MEDICAL SCIENCES

The University of Missouri at 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 vary, and students are cautioned to consult the catalogs of the institutions to which they expect 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, and 202 (Total 15 hours)

In addition to the courses specified above, the following courses are strongly recommended to all pre-medical students:

Chemistry 264 and 272

Biology 213, 224, 226 and 235

Psychology 1 and 2

Since students will normally apply to professional schools during their junior year, and since admission to professional schools will not be confirmed until after successful completion of the science requirements for admission, students are encouraged to fulfill this requirement before the end of their junior year. In order to complete the requirement by this time pre-medical students will normally take Chemistry 11 and 12 and Biology 11 and 12 during their freshman year.

PRE-PHARMACY

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 at Kansas City:

J. Senior Year Requirements

1. A course in directed readings or research in the major field.
2. A minimum of two hours of seminar in the major field in which a formal paper is required.
3. Each student shall pass a comprehensive examination in the field of his major. The examination may be written or oral or both.

Requirements for the Bachelor of Science in Business Administration

- I. General Education: All general education requirements for the Bachelor of Arts degree except the modern foreign language sequence must be completed. Additional courses in the science and the quantitative areas may be substituted for the language sequence.
- II. Courses serving as prerequisites must be passed with a grade of "C" or above.
- III. A candidate for graduation must present a 2.0 departmental grade point average.
- IV. A minimum of 22 hours must be completed as follows:
 - a. The 8 hour science requirement of the general education requirements.
 - b. An additional 14 hours must be completed (which may be in lieu of the foreign language) in some combination of one or more of the areas described as follows:
 1. All mathematics courses for which credit is received (to include digital computer programming).
 2. A minimum in mathematics of Calculus 80 must be completed to receive a Bachelor of Science degree in Business Administration.
 3. All science courses.
 4. All statistics courses for which credit is offered. (Credit will not normally be granted for more than one elementary statistics course.)
 5. Courses in Business and Economics (or in related disciplines upon approval of the department chairman) that have mathematics prerequisites and are quantitatively oriented. Such courses will be designated by the faculty.

Requirements for the Bachelor of Science in Chemistry

I. GENERAL EDUCATION

All of the general education requirements for the Bachelor of Arts degree must be met by candidates for the Bachelor of Science in Chemistry degree.

II. FOREIGN LANGUAGE

German is the only foreign language which may be used to satisfy the language requirement of the Bachelor of Science in Chemistry degree.

III. CHEMISTRY

A total of 46 hours: Chemistry 11, 12, 222, 231, 232, 233, 234, 261, 262, 263, 264, 289*, 324, 341, and 3 elective hours at the 200 level or higher.

IV. MATHEMATICS

A total of 15 hours: Mathematics 80, 175, and 201.

V. PHYSICS

A total of 10 hours: Physics 11 and 12.

VI. SCIENCE ELECTIVES

A total of 5 hours in the departments of biology, chemistry, mathematics or physics.

Senior Year

Physics 289	1	Physics 289	1
Physics 365	5	Physics 336 or 356	3
Electives	<u>9</u>	Electives	<u>12</u>
	15		16

BACHELOR OF SCIENCE IN CHEMISTRY

- I. General Education requirements: All of the general education requirements for the Bachelor of Arts degree must be met by candidates for the Bachelor of Science in Chemistry degree. The science and mathematics requirements are satisfied by III, IV, V and VI below.
 - II. Language requirement: German is the only foreign language which may be used to satisfy the language requirement for the Bachelor of Science in Chemistry degree.
 - III. 46 hours of chemistry: Chemistry 11, 12, 222, 231, 232, 233, 234, 261, 262, 263, 264, 289 (all juniors enroll in Chemistry 289 as Hearers and all seniors enroll for credit), 324, 341 and 3 elective hours at the 200 level or higher.
 - IV. 15 hours of mathematics: Mathematics 80, 175, and 201.
 - V. 10 hours of physics: Physics 11 and 12.
 - VI. Science electives: A total of 5 hours in the departments of biology, chemistry, mathematics, or physics.
- The following is a suggested sequence leading to the B.S. in Chemistry degree:

Freshman Year

Chemistry 11	5	Chemistry 12	5
Mathematics 80	5	Mathematics 175	5
English 10	3	English 12	3
History 3 or Political		Elective	3
Science 11	<u>3</u>		
	16		<u>16</u>

Sophomore Year

Chemistry 261	3	Chemistry 262	3
Chemistry 263	2	Chemistry 264	2
Physics 11	5	Physics 12	5
Mathematics 201	<u>5</u>	Chemistry 222	<u>5</u>
	15		15

Junior Year

Chemistry 231	3	Chemistry 232	3
Chemistry 233	2	Chemistry 234	2
Chemistry 289	H	Chemistry 289	H
German 1	4	German 2	4
Electives	<u>6</u>	Electives	<u>6</u>
	15		15

*All juniors enroll in Chemistry 289 as Hearers and all seniors enroll for credit.

PHYSICS

The requirements for the A.B. degree with a major in physics are:

- I. General Education requirements: All physics majors must complete the requisite courses to fulfill the general education requirement for the A.B. degree. The departmental requirement stated in II, III and IV below may be used to satisfy the science and mathematics requirements.
- II. 34 hours of physics: Physics 11, 12, 211, 212, 221, 224, 261, 272, 289 (All physics majors must enroll as hearers in Physics 289 during both semesters of their junior year, and all physics majors must take Physics 289 for credit during both semesters of their senior year), either 336 or 356, and 365.
- III. 18 hours of mathematics: Mathematics 80, 175, 201, and 301.
- IV. 10 hours of chemistry: Chemistry 11 and 12.
- V. Language requirement: German, Russian, or French must be elected to satisfy the language requirement; other languages may not be applied toward the A.B. degree in physics.
- VI. Comprehensive Examination: All physics majors must pass a comprehensive examination during their senior year.

The following is a suggested sequence leading to the A.B. degree with a major in physics:

Freshman Year			
Chemistry 11	5	Chemistry 12	5
Mathematics 80	5	Mathematics 175	5
English 10	3	English 12	3
History 20 or Political Science 11	<u>3</u>	Elective	3
	16		<u>16</u>
Sophomore Year			
Physics 11	5	Physics 12	5
Mathematics 201	5	Mathematics 301	3
Modern Language 1	4	Modern Language 2	4
Elective	<u>3</u>	Elective	<u>3</u>
	17		15
Junior Year			
Physics 211	1	Physics 212	1
Physics 221	3	Physics 224	3
Physics 261	3	Physics 272	3
Physics 289	H	Physics 289	H
Modern Language 103	3	Modern Language 203	3
Elective	<u>5</u>	Elective	<u>5</u>
	15		15

DIVISION OF BUSINESS

The Division of Business offers work leading to two degrees: the Bachelor of Arts and the Bachelor of Science in Business Administration. The Bachelor of Science degree represents a balanced educational program combining the essence of 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 of Accounting, Economics, Finance, Management, or Marketing. The degree is designed to educate a graduate to render both an initial and long range contribution to society and to develop fully his own potential in an economic environment. In addition, the curriculum in Business Administration offers an excellent foundation for work toward an L.L.B. degree or graduate work in Business and Economics.

Academic Major in Business Administration

The requirements for the A.B. degree with a major in Business Administration are:

- I. General Education requirements: All Business majors must complete the requisite courses to fulfill the general education requirements for the A.B. degree.
- II. Economics 50 and 51.
- III. The following courses are required:
 - Accounting 36 - Principles of Accounting
 - Accounting 37 - Principles of Accounting
 - Statistics 131 - Elementary Statistics
 - Accounting 302 - Managerial Accounting
 - Management 106 - Principles of Marketing
 - Management 310 - Personnel Administration
 - Management 202 - Industrial Management
 - Finance 204 - Corporate Finance
 - Management 256 - Business Law
- IV. In addition to the core courses itemized in "III" above the student is required to complete a minimum of 9 hours and a maximum of 18 in the Department of Business Administration, specializing to the extent he desires.
- V. At least one 3 hour senior level seminar and a research paper.
- VI. Courses serving as prerequisites must be passed with a grade of "C" or above.
- VII. A candidate for graduation must present a 2.0 departmental grade point average.

For information about the Bachelor of Science in Business Administration degree see page 31.

DIVISION OF TEACHER EDUCATION

The Division of Teacher Education has been organized to supervise and direct the preparation of teachers. Programs for educating teachers for elementary schools and for secondary schools are available at the University of Missouri at St. Louis. All students preparing for teaching must meet the requirements for the A.B. degree including the requirements in general education and those for a major.

The program for the education of elementary school teachers varies considerably from that of the secondary school teachers. The former includes many additional requirements and it is necessary to plan the four-year program carefully with an adviser. Failure to do so may result in inappropriate course selections. This program may require one term of summer school in addition to the regular four-year degree program.

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

Students who expect to teach in high schools are advised to earn strong majors in their chosen subject matter areas. They should, therefore, consult with their advisers before enrolling to assure themselves of appropriate selections from among the curricular offerings.

- II. 33 hours of chemistry: Chemistry 11, 12, 222, 231, 232, 233, 261, 262, 263, and 289 (All chemistry majors must enroll as hearers in Chemistry 289 during both semesters of their junior year, and all chemistry majors must take Chemistry 289 for credit during both semesters of their senior year).
- III. 15 hours of mathematics: Mathematics 80, 175 and 201.
- IV. 10 hours or physics: Physics 11 and 12.
- V. Language requirement: German must be used to fulfill the language requirement. In rare instances French or Russian may be substituted for German, but only with departmental approval. Spanish does not satisfy this requirement for chemistry majors.
- VI. Comprehensive examination: All chemistry majors must pass a comprehensive examination during their senior year.

The following is a suggested sequence leading to the A.B. degree with a major in chemistry:

Freshman Year

Chemistry 11	5	Chemistry 12	5
Mathematics 10	3	Mathematics 80	5
Mathematics 11	3	History 3 or Political	
English 10	3	Science 11	3
	—	English 12	3
	14		16

Sophomore Year

Chemistry 261	3	Chemistry 262	3
Chemistry 263	2	Chemistry 222	5
Mathematics 175	5	Mathematics 201	5
German 1	4	German 2	4
	14		17

Junior Year

Chemistry 289	H	Chemistry 289	H
Physics 11	5	Physics 12	5
German 103	3	German 203	3
Electives	6	Electives	6
	14		14

Senior Year

Chemistry 231	3	Chemistry 232	3
Chemistry 233	3	Chemistry 289	1
Chemistry 289	1	Electives	12
Electives	9		—
	15		16

6. Because an important area of biology consists of the study of living organisms in their natural environment, biology majors are encouraged to attend a summer session at a field biology station. This would ordinarily be done between the junior and senior years. Many biological stations offer financial support in the form of summer fellowships.

The following is a suggested sequence leading to the A.B. degree with a major in biology:

Freshman Year			
Chemistry 11	5	Chemistry 12	5
Biology 11	5	Biology 12	5
English 10	3	English 12	3
History 3 or Political Science 11	3	Elective	3
	<u>3</u>		<u>16</u>
Sophomore Year			
Chemistry 261	3	Chemistry 222	5
Chemistry 263	2	Biology 224	3
Biology 213	5	Modern Language 2	4
Modern Language 1	4	Elective	3
	<u>14</u>		<u>15</u>
Junior Year			
Biology 235 or 255	5	Biology 246	3
Biology 289	H	Biology 289	H
Modern Language 103	3	Modern Language 203	3
Electives	6	Elective	9
	<u>14</u>		<u>15</u>
Senior Year			
Biology 289	1	Biology 289	1
Advanced Biology	3	Advanced Biology	2
Electives	12	Electives	12
	<u>16</u>		<u>15</u>

CHEMISTRY

The requirements for the A.B. degree with a major in chemistry are:

- I. General Education requirements: All chemistry majors must complete the requisite courses to fulfill the general education requirements for the A.B. degree. The departmental requirement stated in II, III, and IV below may be used to satisfy the science and mathematics requirements.

DIVISION OF MATHEMATICS AND PRE-ENGINEERING

The Division of Mathematics offers work leading to the Bachelor of Arts degree. Requirements for the A.B. degree with the major in mathematics are:

- I. General Education requirements: All mathematics majors must take the requisite courses to fulfill the general education requirements for the A.B. degree. (The student's foreign language requirement shall be completed in German, French or Russian, except by prior permission of the student's adviser and department chairmen.)
- II. Six 3-hour courses numbered above 201, including courses from each of the following areas, with at least two courses from some one area:
 - A. Algebra-Number Theory: Math 335, 340, 341
 - B. Analysis: Math 310, 316
 - C. Geometry: Math 366, 367
 - D. Applied Math-Probability-Statistics: Math 320, 323
- III. The student shall complete two sequences of at least 9 hours each in 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 such department. Related sequences may be chosen from Physics 11 and 12 and above; Chemistry 11 and 12 and above; Philosophy, including 340 and 351; Economics, including a course in mathematical economics; or other areas approved by the Mathematics Department.
- IV. During his senior year, the student must complete at least one semester of Math 350, Special Readings, for 1-3 hours credit.
- V. During his last four semesters the student shall enroll in Math 289, Mathematics Seminar. In each of the last two semesters the student must give oral presentations which may be on topics covered in his Special Readings course. The student will receive a credit for Mathematics Seminar in any semester in which he presents a formal paper.
- VI. 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.
- VII. For secondary school teachers the following statement will replace II above: Six 3-hour courses numbered above 201, including courses from each of the areas listed A, B, C, and D above, and including a course in History of Mathematics or Survey of Mathematical Thought.

Bachelor of Arts Degree
Major in Mathematics
Typical Curriculum

Freshman Year

English 10	3	English 12	3
French or German 1	4	French or German 2	4
Math 80	5	Math 175	5
Chemistry 11	5	Chemistry 12	5
	<u>17</u>		<u>17</u>

Sophomore Year

Math 201	5	Math 301	3
Physics 11	5	Physics 12	5
French or German 103	3	French or German 203	3
History	3	History	3

Junior Year

Math Seminar	0	Math Seminar	0
Math 310 or 316	3	Math 320 or 323	3
Physics or Chemistry elective	5	Math 366 or 367	3
Math 340 or 341	3	Social Science	3
Humanities	3	Humanities	3
	<u>3</u>	Elective	3
	14		<u>15</u>

Senior Year

Math 350	1-3	Math Seminar	1
Math Seminar	1	Humanities	3
Math Elective	3	Math Elective	3
Social Science	3	Social Science	3
Electives	6	Electives	5
	<u>14-16</u>		<u>15</u>

DIVISION OF SCIENCE

The Division of Science offers work leading to two degrees: the Bachelor of Arts, and the Bachelor of Science in Chemistry. The Division also offers a two year pre-pharmacy curriculum and advises students who plan to enter medical schools, dental schools or schools of veterinary medicine.

ACADEMIC MAJORS

BIOLOGY

The requirements for the A.B. degree with a major in biology are:

- I. General Education requirements: All biology majors must take the requisite courses to fulfill the general education requirement for the A.B. degree. The departmental requirement stated in II and III below may be used to satisfy the science requirement.
- II. 33 hours of biology: Biology 11, 12, 213, 224, either 235 or 255, 246, 289 (all biology majors must enroll as hearers in Biology 289 and must take Biology 289 for credit during both semesters of their senior year), and 5 additional elective hours in biology at the 200 level or higher.
- III. 20 hours of chemistry: Chemistry 11, 12, 222, 261, and 263.
- IV. Comprehensive examination: All biology majors must pass a comprehensive oral and written examination during their senior year.

RECOMMENDATIONS:

1. The admission requirements of many graduate schools, medical schools and dental schools include 8-10 hours of physics. Biology majors contemplating graduate or professional training should therefore plan to elect either the Physics, 1, 2, and 3 sequence, or preferably, the Physics 11, 12 sequence.
2. Some graduate schools require a knowledge of calculus. Consequently, it is desirable for biology majors to take the calculus sequence through Mathematics 201.
3. Additional work in chemistry, particularly Chemistry 262, 264, and 272, is strongly recommended.
4. In most graduate schools the language requirement must be met with German or French specifically. For this and other reasons it is desirable for biology majors to fulfill the language requirement for the A.B. degree by studying one of these two languages.
5. Most medical schools require Comparative Anatomy for admission. Pre-medical students majoring in biology should therefore take Biology 202 as their biology elective.