

University of Missouri—St. Louis



BULLETIN University of Missouri—St. Louis
St. Louis, Missouri

1968-69 General Catalog



THE UNIVERSITY OF MISSOURI - ST. LOUIS 1968-69 GENERAL CATALOG
INCLUDING DESCRIPTION OF COURSES*

Revised to March 8, 1968



- 303 **Literature of the Eighteenth Century (3)**
Prerequisite: Spanish 201. A study of the culture and literature of Spain during this century. Reading and discussion of representative writers: Feijoo, Luzan, Jovellanos, Cadalso, Forner, el Padre Isla, Quintana, Moratin and others.
- 306 **Literature of the Nineteenth Century (3)**
Prerequisite: Spanish 201. The poetry and the novel of the nineteenth century leading to the crisis of the Generation of '98 and their view of the "Spanish Problem."
- 307 **Novel and Essay of the Twentieth Century (3)**
Prerequisite: Spanish 201. Novelists: Unamuno, Blasco Ibanez, Valle Inclan, Azorin, Baroja, Perez de Ayala, Miro, Sender. Essayists: Unamuno, Azorin, Ortega, Entralgo, Marias, Aranguren.
- 310 **Drama and Poetry of the Twentieth Century (3)**
Prerequisite: Spanish 201. A study of the development and aesthetics of Spanish drama and poetry from 1900 until 1936, with emphasis on the contributions of major figures: Benavente, Grau, Garcia Lorca, Juan Ramon Jimenez, Antonio Machado and others.
- 315 **Contemporary Spanish Literature (3)**
Prerequisite: Spanish 201. A study of the Spanish novel, drama, and poetry from 1939 to the present, with emphasis on the contributions of major figures: Cela, Matute, Buero, Blas de Otero, Casona, Salinas, Bullen, Alberti and others.
- 318 **Spanish American Poetry and Essay of the Nineteenth Century (3)**
Prerequisite: Spanish 202. Study of representative selections from the works of major poets and essayists. Emphasis on *Modernismo*.
- 321 **Spanish American Novel and Short Story of the Nineteenth Century (3)**
Prerequisite: Spanish 202. Reading and analysis of representative figures and works from the novel and short story of this century.
- 324 **Spanish American Poetry and Essay of the Twentieth Century (3)**
Prerequisite: Spanish 202. A study of the leading poets and essayists as interpreters of contemporary man's dilemma and the "pathos" and "ethos" of contemporary Spanish American society.
- 327 **Spanish American Novel and Short Story of the Twentieth Century (3)**
Prerequisite: Spanish 202. A study of the leading prose fiction writers as interpreters of their society and the recent novel of universal themes.

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



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

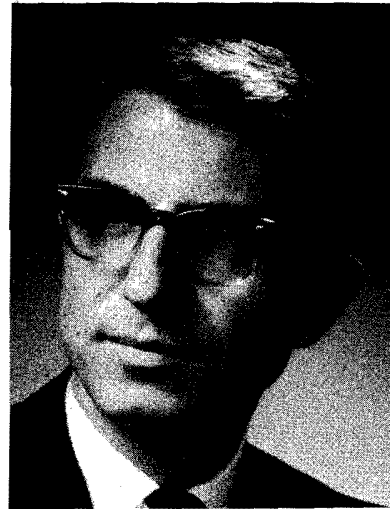
"Hitherto, our colleges and universities have been accessible only to the few, such are the expenses attending them. We therefore want a university with all the colleges attached, giving education of the highest order to all classes. We want ample grounds and buildings and libraries, and apparatus, and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

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

President John C. Weaver



Chancellor James L. Bugg, Jr.



- 102 Intermediate Spanish (3)**
Prerequisite: Spanish 101 or equivalent. Further development of language skills through the reading and discussion of literary texts. May be taken concurrently with Spanish 106, after consultation with instructor.
- 106 Composition and Conversation (3)**
Prerequisite: Spanish 102 or equivalent. A review of grammar and written composition combined with oral work and the discussion of topics assigned in advance. May be taken concurrently with Spanish 201.
- 107 Advanced Composition and Conversation (3)**
Prerequisite: Spanish 106 or equivalent. Continuation of Spanish 106, with emphasis on more advanced composition as an introduction to essay writing.
- 110 Spanish Literature in Translation (3)**
Prerequisite: Sophomore standing. Not open to Spanish majors. Lectures on the literature and culture of Spain from the Middle Ages to the contemporary period. Reading and discussion of works of representative Spanish writers: Cervantes, Calderon, Galdos, Unamuno, Ortega, Garcia, Lorca, Cela and others.
- 111 Spanish American Literature in Translation (3)**
Prerequisite: Sophomore standing. Not open to Spanish majors. Lectures on the literature and culture of Spanish America. Reading and discussion of works of representative poets, novelists and essayists of the contemporary period.
- 190 Senior Readings (3)**
Directed readings in an area mutually acceptable to the student and instructor. Required for all Spanish majors. Other seniors admitted by permission of instructor.
- 191 Senior Seminar on Hispanic Literature (3)**
Required of major students in the senior year. Subject to be announced every year by the instructor in charge of the seminar.
- 200 Syntax of the Spanish Language (3)**
Prerequisite: Spanish 107. Study of the syntactical and morphological characteristics of the Spanish language as seen in representative selections from Hispanic literature. Designed primarily and required for students majoring in Spanish. May be taken concurrently with any 200 level course.
- 201 Introduction to Hispanic Literature: Spain (3)**
Prerequisite: Spanish 102. Study of selected texts of Spanish writers from the Middle Ages to the present and the historical, cultural and political factors which influenced their writings. Required for Spanish majors.
- 202 Introduction to Hispanic Literature: Spanish America (3)**
Prerequisite: Spanish 201. Study of selected texts of Spanish American writers from the Colonial period to the present and the historical, cultural and political factors which influenced their writings. Required for Spanish majors.
- 264 The Curriculum and Methods of Teaching Foreign Languages (3) (Same as Education 264.)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the foreign language courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of foreign language.
- 300 Poetry and Drama of the Golden Age (3)**
Prerequisite: Spanish 201. Selective readings from the drama of Lope de Vega, Tirso de Molina, Ruiz de Alarcon, Calderon de la Barca and from the poetry of Garcilaso, Fray Luis de Leon, San Juan de la Cruz, Gongora, Lope de Vega, Quevedo.
- 301 Cervantes (3)**
Prerequisite: Spanish 201. A study of *Don Quixote* in relation with the author's life and with the cultural background of the Spanish Golden Age. Independent reading of other works of Cervantes.

- 311 **Criminology (3)**
Prerequisite: Sociology 1. Crime as a social phenomenon. The treatment of offenders. Theories of deviance and anti-social behavior.
- 314 **Sociology and the Family (3)**
Prerequisite: Sociology 1. Universal and variable aspects of family organization. Family role systems. Changes in family social structure.
- 316 **Urban Sociology (3)**
Prerequisite: Sociology 1. Urbanism as a world phenomenon; ecological, demographic and structural characteristics of cities. The sociological aspects of urban problems.
- 320 **Medical Sociology (3)**
Prerequisite: Sociology 1. The application of sociology in the field of health and human behavior. Patterns of medical care. Sociological aspects of mental illness.
- 327 **Race and Ethnic Relations (3)**
Prerequisite: Sociology 1. Cultural and social-psychological aspects of race and ethnic categories. Historical and contemporary perspectives.
- 328 **Personality and Culture (3)**
Prerequisite: Sociology 160. Analysis of behavior from the standpoint of interaction between psychological systems, sociological systems and cultural systems.
- 329 **Industrial Sociology (3)**
Prerequisite: Sociology 1. The work setting as a social system. Types of occupations and their sociological relevance.
- 330 **Organizational Analysis (3)**
Prerequisite: Sociology 1. The structural characteristics of formal and informal organizations. Rational and natural-system models. Pressures toward equilibrium and change.
- 331 **The Sociology of Art and Literature (3)**
Prerequisite: Sociology 1. The creative individual, his work and his public. Social pressures and rewards.
- 332 **The Sociology of Religion (3)**
Prerequisite: Sociology 1. Religion as a universal phenomenon. The effect of religion upon the individual and society. The organization of religious enterprises.
- 340 **Social Change (3)**
Prerequisite: Sociology 1. The relationship between structural change and alterations in culture. The individual, the group and the collectivity as agents of change.
- 350 **Special Readings (credit arranged)**
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.
- 379 **The Socio-Political Nature of Urban Regions (3) (Same as Political Science 379.)**
Prerequisite: Sociology 316 or Political Science 170 or 376. An interdisciplinary seminar providing the student with an opportunity to develop an understanding of the modern metropolis through the perspectives of sociology and political science.

SPANISH

Prerequisites in any language may be waived by consent of department.

- 1 **Elementary Spanish (4)**
Emphasis will be placed upon the speaking and understanding of Spanish and upon the acquisition of the fundamentals of grammar and syntax.
- 2 **Elementary Spanish (4)**
Prerequisite: Spanish 1 or equivalent. Continuation of Spanish 1.
- 101 **Intermediate Spanish (3)**
Prerequisite: Spanish 2 or equivalent. Grammar review and cultivation of language skills through the study of moderately difficult prose selections.

Table of Contents

Calendar	4	49	Department of
Board of Curators	5		Sociology and Anthropology
Administration	5	51	School of Business Administration
University of Missouri	8	54	School of Education
University of Missouri - St. Louis	8	60	Evening College
Admission	10	61	Description of Courses
Degrees	18	62	Art History
Fees and Expenses	20	95	Astronomy
Student Financial Aid	23	63	Biology
Student Affairs	25	65	Business Administration
Special Programs	28	68	Chemistry
General Regulations		70	Economics
and Requirements	31	73	Education
College of Arts and Sciences	33	77	English
Department of Biology	34	80	French
Department of Chemistry	35	81	German
Department of Economics	37	82	History
Department of English	38	85	Mathematics
Department of Fine Arts	40	88	Music
Department of History	41	90	Philosophy
Department of Mathematics	42	92	Physics
Department of Foreign Languages		95	Political Science
and Literatures	43	99	Psychology
Department of Philosophy	45	100	Russian
Department of Physics	46	101	Sociology and Anthropology
Department of Political Science	47	102	Spanish
Department of Psychology	48		

CALENDAR 1968-1969

First Semester

1968

September 5, 6, 9, 10, 11, 12	Thursday, Friday, Monday, Tuesday, Wednesday, Thursday, New Student Orientation
September 6	Friday, Registration, Day Students, Freshmen only
September 9	Monday, Registration, Day Students, Upperclassmen
September 11, 12, 16	Wednesday, Thursday, Monday, Evening College Registration
September 19	Thursday, Classwork begins, 7:40 a.m.
November 27	Wednesday, Thanksgiving vacation begins, 5:00 p.m.
December 2	Monday, Classwork resumes, 7:40 a.m.
December 18	Wednesday, Christmas vacation begins, 5:00 p.m.

1969

January 2	Thursday, Classwork resumes, 7:40 a.m.
January 15	Wednesday, Classwork First Semester ends, end of day
January 16	Thursday, Examinations begin
January 24	Friday, First Semester closes, end of day

Second Semester

January 28, 29, 30	Tuesday, Wednesday, Thursday, Evening College Registration
February 3	Monday, Registration, Day Students
February 4	Tuesday, Classwork begins, 7:40 a.m.
March 28	Friday, Spring vacation begins, 5:00 p.m.
April 7	Monday, Classwork resumes, 7:40 a.m.
May 9	Friday, Stop-Day
May 23	Friday, Classwork Second Semester ends, end of day
May 26	Monday, Examinations begin
May 30	Memorial Day, holiday
June 4	Wednesday, Second Semester closes, end of day
June 10	Commencement

Summer Session

June 16	Monday, Registration and Orientation
June 17	Tuesday, Classwork begins, 7:40 a.m.
July 4	Friday, Independence Day, holiday
August 8	Friday, Summer Session closes, end of day

111 Nineteenth Century Russian Literature in Translation (3)

Readings of representative works drawn from nineteenth century Russian literature after 1845. Course to focus upon works of Turgenev, Dostoyevsky, Tolstoy and Chekhov. Lectures and discussion.

SOCIOLOGY AND ANTHROPOLOGY

Prerequisites may be waived by consent of department.

- 1 **Introduction to Sociology (3)**
Study of human behavior as related to the human group. Principal sociological concepts and theories.
- 2 **Introduction to Sociology (3)**
Prerequisite: Sociology 1. Continuation of Sociology 1. Application of basic sociological principles to the problems of contemporary society.
- 10 **Introduction to Anthropology (3)**
Principles of physical anthropology. Fossil man, racial types, the origin and growth of civilization. Required of sociology and anthropology majors.
- 11 **Introduction to Anthropology (3)**
Continuation of Anthropology 10. Principles of social and cultural anthropology.
- 100 **Sociology Aspects of Social Work (3)**
Prerequisite: Sociology 1. An introduction to social work for students of sociology. Stress is placed upon uses of sociological theory, methods and research findings in various types of social service programs.
- 101 **Sociological Theory (3)**
Prerequisite: Sociology 2. The nature of sociological theory. A survey of theory from Comte through the Parsonian school. Required of sociology majors in sophomore or junior year.
- 102 **Research Methods (3)**
Prerequisite: Sociology 2. Research planning; the collection, analysis and presentation of data. Course includes practical experience in the conduct of a research project. Required of sociology majors in sophomore or junior year.
- 150 **Social Disorganization (3)**
May not be taken by students who have taken Sociology 2. Carries no credit toward a sociology major. A survey of contemporary social problems.
- 153 **Peoples and Cultures of the World (3)**
Prerequisites: Anthropology 10 and 11. 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: Psychology 2 or Sociology 2. Study of the interaction between the individual and his social environment. Examination of basic principles, concepts, methods.
- 190 **Junior Readings in Sociology (3)**
Prerequisites: Sociology 2, 101 and 102. A general survey of theory, methods, current research and perspectives in sociology. Required of sociology majors in junior year.
- 192 **Senior Readings (3)**
Prerequisite: Consent of instructor. Readings and discussions covering specific areas of student interest. Course includes the planning phase for senior thesis. Required of sociology and anthropology majors in senior year.
- 193 **Senior Seminar (Thesis Research) (3)**
Prerequisite: Sociology 192. Completion of a major report dealing with a subject chosen through student-staff consultation. Periodic conferences with designated faculty. Required of sociology and anthropology majors in senior year.
- 310 **Social Stratification (3)**
Prerequisite: Sociology 1. Theories of social stratification and an examination of current research. Changes in the occupational and hierarchical structure of contemporary society.

- 318 **Industrial Psychology (3) (Same as Business 318)**
Prerequisites: Psychology 201 or equivalent or Business 310. Activities of the applied psychologist. Selection and placement, testing and interviewing, personnel research. Morale, motivation and job satisfaction. Leadership skills and styles, creative management, industrial mental health. Psychology in advertising and marketing.
- 319 **General Experimental Psychology (3) (with laboratory)**
Prerequisite: Psychology 201. Study of various classical areas in psychology including reaction time, psychophysics, perception, psychomotor skills and autonomic reactions.
- 320 **General Experimental Psychology (3) (with laboratory)**
Prerequisite: Psychology 319. Continuation of Psychology 319.
- 345 **Abnormal Psychology (3)**
Prerequisite: 12 hours 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 (credit arranged)**
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.
- 357 **Psychology of Learning (4) (with laboratory)**
Prerequisites: Psychology 201 and 320. Lecture and laboratory in area of human learning (verbal and motor skills). Primary emphasis on methodology.
- 358 **Comparative Psychology (4) (with laboratory)**
Prerequisites: Psychology 201 and 320. Methods and techniques in the investigation of learning processes in infra-human organisms.
- 361 **History and Systems of Psychology (3)**
Prerequisite: 12 hours of psychology. Historical antecedents of contemporary scientific psychology, including a survey of systems and schools of psychology.
- 365 **Psychological Tests and Measurements (3)**
Prerequisites: Psychology 2 and 201. Survey of psychological testing, including intelligence, aptitudes, interests and personality. Critical consideration of criteria of adequate tests and measurements.

RUSSIAN

Prerequisites in any language may be waived by consent of department.

- 1 **Elementary Russian (4)**
Acquisition of basic language skills. Presentation of the sound system, basic vocabulary and grammar.
- 2 **Elementary Russian (4)**
Prerequisite: Russian 1 or equivalent. Continuation of Russian 1.
- 101 **Intermediate Russian (3)**
Prerequisite: Russian 2 or equivalent. Further presentation of the structure of Russian; development of oral and aural skills; elementary composition; readings of simplified texts.
- 102 **Intermediate Russian (3)**
Prerequisite: Russian 101 or equivalent. Continuation of Russian 101.
- 106 **Composition and Conversation (3)**
Prerequisite: Russian 102 or equivalent. Study of current Russian structure, usage and vocabulary. Practice in expository writing and speaking; problems of translation.
- 110 **Nineteenth Century Russian Literature in Translation (3)**
Readings of representative works drawn from the nineteenth century Russian literature up to 1845. Course to focus upon works of Pushkin, Lermontov and Gogol. Lectures and discussion.

The Board of Curators

Terms Expire December 31, 1969

Robert Neill St. Louis, Missouri
Avis Green Tucker Warrensburg, Missouri
William C. Meyers, Jr. Webb City, Missouri

Terms Expire December 31, 1971

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

Terms Expire December 31, 1973

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

Officers of the Board

Oliver B. Ferguson President, St. Louis, Missouri
William C. Meyers, Jr. Vice President, Webb City, Missouri
Mary Robnett Secretary, Columbia, Missouri
James P. Hickok Treasurer, St. Louis, Missouri

University of Missouri

Administration

John C. Weaver Ph.D., President
Elmer Ellis Ph.D., LL.D., L.H.D., President Emeritus
A. G. Unklesbay Ph.D., Vice President for Administration and Undergraduate Studies
Guy H. Entsminger M.Ed., Vice President for Development
C. B. Ratchford Ph.D., Vice President for Extension
Raymond E. Peck Ph.D., Vice President for Research and Graduate Studies
Irvin F. Coyle Ph.D., Assistant to the President
Dale O. Bowling B.S.B.A., Business Manager
R. H. Bezoni B.S.B.A., Comptroller
A. Lee Belcher Director, Employee Relations
Vernon E. Wilson M.D., Executive Director for Health Affairs
William D. Poore M.A., Director, Personnel Services
Tom Richter B.J., Director, University Information Services
Robert L. Morris B.J., Director, University Press
Sam B. Shirky A.M., Consultant, Technical Education Services
Jackson A. Wright L.L.D., General Counsel

University of Missouri - St. Louis

Administrative Officers

James L. Bugg, Jr.	Ph.D., Chancellor
Glen R. Driscoll	Ph.D., Dean of Faculties (effective July 1, 1968)
Susan Freegard	M.S., Lib.Sc., Librarian
Hilbert E. Mueller	Ed.D., Director of Admissions and Registrar
Donald A. Murry	Ph.D., Assistant to the Chancellor and Director of Research
John P. Perry	M.S., Business Officer
B. G. Schumacher	Ph.D., Director, Center for Community and Metropolitan Studies
Lewis J. Sherman	Ph.D., Director of Counseling (effective September 1, 1968)
Robert E. Smith	B.J., Assistant to the Chancellor for Public Information

University of Missouri - St. Louis

College of Arts and Sciences

Glen R. Driscoll	Ph.D., Dean (until July 1, 1968)
David L. Allen	M.A., Assistant to the Dean
Ethel Zucker	Academic Adviser
Myrna Harper	Administrative Secretary

School of Business Administration

Emery C. Turner	Ph.D., Acting Dean
Maxine Stokes	B.A., Academic Adviser
Elaine Botkin	Administrative Secretary

School of Education

George E. Mowrer	Ed.D., Acting Dean
E. Wayne Likens	Ed.D., Director of Student Teaching & Certification
Robert Russell	M.A., Academic Adviser
June Pettibone	Administrative Secretary

Evening College

Joy E. Whitener	Ed.D., Dean
Donald G. Bowling	M.A., Assistant to the Dean
Rickey L. George	M.S. Ed., Counselor
Mary Pogue	Administrative Secretary

Prerequisites may be waived by consent of instructor.

- 1 **General Psychology (3)**
A survey of the facts, principles and methods in the study of human behavior.
- 2 **General Psychology (3)**
Prerequisite: Psychology 1. Continuation of Psychology 1.
- 160 **Social Psychology (3) (Same as Sociology 160.)**
Prerequisite: Psychology 2 or Sociology 2. Study of the interaction between the individual and his social environment. Examination of basic principles, concepts, methods.
- 192 **Senior Readings (3)**
Prerequisite: Consent of department. Required for all senior psychology majors. Directed reading and research, one product of which shall be a formal paper.
- 193 **Senior Seminar (3)**
Prerequisite: Consent of department. Required for all senior psychology majors. Directed readings and research, one product of which shall be a formal paper.
- 201 **Psychological Statistics (4) (with laboratory)**
Prerequisite: Psychology 2. Statistical methods in psychological measurement, analysis of psychological data, frequency distribution analysis, sampling, tests of significance, correlational methods.
- 212 **Principles of Learning (3)**
Prerequisite: Psychology 2. A consideration of critical findings in learning.
- 215 **Psychology of Perception (3)**
Prerequisite: Psychology 2. Classical and current problems in psychophysics, sensory physiology and the developmental and comparative psychology of sensory processes.
- 270 **Child Psychology (3)**
Prerequisite: Psychology 2. Principles of biological, behavioral and personality development from conception to puberty.
- 271 **Adolescent Psychology (3)**
Prerequisite: Psychology 2. Principles of biological, behavioral and personality development from puberty to maturity.
- 290 **Psychology Readings (3)**
Prerequisites: Psychology 2 and consent of instructor. Readings on a topic mutually acceptable to student and instructor.
- 301 **Advanced Statistics and Experimental Design (3)**
Prerequisite: 12 hours of psychology, including Psychology 201. Statistical methods particularly useful in psychological research and the design of experiments appropriate to these methods.
- 310 **Motivation Theory (3)**
Prerequisite: 12 hours of psychology. Survey of current theoretical material in the area of motivation.
- 313 **The Psychology of Exceptional Children (3) (Same as Education 313.)**
Prerequisites: Education 102 and either Psychology 270 or Psychology 271. A study of the special psychological and educational problems of the child who deviates from the normal.
- 314 **Physiological Psychology (3)**
Prerequisites: 12 hours 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 hours of psychology. Structural and dynamic aspects of the human personality considered in the context of selected theoretical systems.

- 261 **History of Political Thought (3)**
Study of political philosophy from Plato to Machiavelli.
- 262 **History of Political Thought (3)**
Study of political philosophy from Machiavelli to the present.
- 360 **American Political Thought (3)**
Prerequisite: Political Science 11. Development of political thought in America from colonial period to contemporary scene.
- 365 **Normative Political Philosophy (3)**
Prerequisite: Political Science 11. Analysis of the concepts of justice, liberty, equality, power and authority in political philosophy. Theories of revolution. General consideration of problems in normative political philosophy.
- 366 **Utopian Political Thought (3)**
Study of the utopian tradition in the history of political thought. Particular emphasis on utopian socialism, the communitarian movement and contemporary anti-utopian thought.
- 369 **The Marxist Heritage (3) (Same as Philosophy 369 and Economics 369)**
An interdisciplinary study of Marx and leading Marxists, designed to evaluate their influence on recent political, economic and social thought and institution.

GROUP VI: URBAN AND REGIONAL POLITICS

- 170 **State and Local Government (3)**
Prerequisite: Political Science 11 or consent of instructor. Origin, development and problems of state and local government in the American federal system, including the role of the United States Constitution as the framework for the federal system. Survey of the organization, functions and operation of state and local governments in the United States. This course meets both the general state requirement and the state education requirement.
- 376 **Community Politics (3)**
Prerequisite: Political Science 11. Examination of the structure and processes of politics in the urban community, with emphasis on their relationships to community power structures.
- 377 **Municipal Administration (3)**
Prerequisite: Political Science 11. Study of administrative organization and problems at the municipal level.
- 379 **The Socio-Political Nature of Urban Regions (3) (Same as Sociology 379.)**
Prerequisite: Political Science 170 or 376 or Sociology 316. An interdisciplinary seminar providing the student with an opportunity to develop an understanding of the modern metropolis through the perspectives of sociology and political science.

GROUP VII: INTERNATIONAL RELATIONS

- 180 **International Politics (3)**
Prerequisite: Political Science 11. Analysis of politics among nations: imperialism, balance of power, international morality, sovereignty, diplomacy; analysis of the problem of peace, disarmament, international organizations, world government.
- 382 **United States Foreign Policy (3)**
Prerequisite: Political Science 11. Examination of the factors influencing the formation and the execution of United States foreign policy and of specific contemporary foreign policies and problems.
- 385 **International Organization (3)**
Prerequisite: Political Science 11. Forms and functions of international organizations, with special reference to the United Nations and problems of international integration.

Extension Division

Virgil N. Sapp	B.S., Dean
Margaret C. Fagin	Ed.D., Director Continuing Education for Women
J. C. McCurdy	B.S. Ed., Extension Education Coordinator
D. Everett Thomas	M.Ed., Extension Education Coordinator
Kay Leori Walker	B.S., Extension Education Coordinator
Elizabeth Greenleaf	Administrative Secretary

Student Affairs

Harold W. Eickhoff	Ph.D., Dean
Robert L. Davenport	Ph.L., Assistant Dean
Charles G. Smith	M.S., Athletic Director
Veronica M. Murphy	M.Ed., Placement Director
Adeline Kettner	Administrative Secretary

Members of the Administrative Staff

Glenn R. Allen	M.S., Assistant Director of Admissions & Registrar
Dianne Baker	Administrative Secretary to Director of Public Information
Larry Bogue	B.S., Personnel Officer
Lois Brockmeier	B.A., Executive Secretary Alumni Activities
Donald Constantine	B.J., Associate Director of Public Information
George M. Dickerson	B.S., Manager, Campus Bookstore
Richard E. Dunlap	M.A., Assistant to Chancellor
Bonnielynn Gabriel	Administrative Secretary to Director of Research
Emory A. Jackson	B.S., Assistant Director of Admissions & Financial Aids
Stephanie Kries	M.A., Director, Student Activities
Bill Moody	B.S., Chief Accountant
Linda M. Mottin	B.S., Editor, University Publications
James Nelson	Chief, Traffic and Security
Frank F. Pershe	Ph.D., Associate Librarian
John D. Phillippe	Assistant Business Officer
Earl J. Reeves	Ph.D., Associate Director, Center for Community and Metropolitan Studies
Kenneth A. Smith	Superintendent, Physical Plant
Billie A. Snyder	Administrative Secretary to Chancellor
Robert E. Spitzfaden	Supervisor of Print Shop
Betty Wilbanks	Th.D., Assistant Librarian
Nancy Wright	Administrative Secretary to Business Officer

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 fifteen schools and colleges in Columbia and a separate School of Mines and Metallurgy in Rolla, founded in 1870.

In 1963, an historic and fundamental change added the former University of Kansas City and the Normandy Residence Center in St. Louis to the University of Missouri, which now embraces four campuses: 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 each of the four 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 of four campuses with a common policy on admission, fees, research, faculty and quality of education works to meet the changing demands of the future.

Today, in the University's classrooms, thousands of students are educated in a catalog of disciplines ranging from accounting to zoology, while each year the professional schools graduate a constantly increasing number of engineers, physicians, veterinarians, pharmacists, lawyers, journalists, educators, businessmen and other highly trained specialists. In the University libraries and laboratories a constant search continues 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.

UNIVERSITY OF MISSOURI - ST. LOUIS

The University of Missouri - St. Louis (UMSL) 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 School District in St. Louis County, 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 - St. Louis was established to serve the rapidly growing need of the state's largest metropolitan area for a state university campus providing education of high quality at moderate cost.

- 335 **Political Parties (3)**
Prerequisite: Political Science 11. Development, organization, functions, activities of major and minor political parties; pressure groups, election administration, especially in the United States.
- 336 **Interest Groups (3)**
Prerequisite: Political Science 11. Examination of the basis of power and methods of interest groups and of the points of access to and influence on public policy. Attention is given to the problems of defining power and comparing the behavior of groups with their statements of interest.
- 337 **Public Opinion and Communications (3)**
Prerequisites: Political Science 11. Analysis of the methodology and techniques of public opinion formation and the role of public opinion in the American political system. Communications is examined as a tool of opinion makers.
- 338 **Political Behavior (3)**
Prerequisite: Political Science 11. Economic, psychological and social dimensions of political behavior, political participation, leadership and elites; political attitudes; voting behavior and decision making processes.

GROUP III: PUBLIC ADMINISTRATION

- 340 **Public Administration (3)**
Prerequisite: Political Science 11. Survey of public administration, with reference to organization, financial administration, personnel management, judicial control of the administrative process.
- 343 **Public Policy and the Administrative Process (3)**
Prerequisite: Political Science 11. Analysis of the formulation of public policies through the administrative process.
- 345 **Business and Government (3) (Same as Economics 355.)**
Prerequisite: Economics 51. Relations between business firms and government at all levels. Questions of regulation, public ownership, guidelines and competition considered.

GROUP IV: COMPARATIVE POLITICS

- 150 **Comparative Government and Politics (3)**
Prerequisite: Political Science 11. Examination of theoretical approaches to the study of political systems and a study of selected foreign political systems with primary emphasis upon west European democratic systems.
- 255 **Asian Comparative Politics (3)**
Study of the political systems of Asia including China, Japan, India and Southeast Asia. Emphasis on the non-western political process. Fulfills non-western requirement.
- 352 **Politics of the Developing Areas (3)**
Prerequisite: Political Science 11. A comparative analysis of the political problems confronting the developing areas, with emphasis on dimensions of change and the development of unique institutions and approaches to political problems.
- 353 **Soviet Political System (3)**
Prerequisite: Political Science 11. Examination of government and politics in the Soviet Union dealing with themes such as the role of the Party, selection and socialization of elites, the role of ideology, interest groups and the formulation of policy, bureaucratization of social, economic and cultural life.

GROUP V: POLITICAL PHILOSOPHY AND THEORY

- 200 **Empirical Political Theory (3)**
Prerequisite: Political Science 11. Consideration of the elements of scientific method; scientific method and social phenomena; critics of the scientific approach in political science, nature and logic of explanatory theories, such as systems theory, structural-functional analysis and deductive theories.

- 12 **Government in Modern Society (3-4)***
Prerequisite: Political Science 11. Continuation of Political Science 11. Application of basic concepts of government to the study and analysis of the function of government in modern society, with special emphasis on the United States. Course fulfills the state requirement.
- 190 **Political Science Readings (3)**
Prerequisites: Political Science 11, consent of instructor and junior standing. Readings on topics mutually acceptable to student and instructor.
- 192 **Senior Readings (3)**
Prerequisite: Consent of department. 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 department. Required for all senior political science majors. Directed reading and research, one product of which shall be a formal paper.
- 390 **Special Readings (credit arranged)**
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.

**A student may register for a fourth hour of readings with the consent of the department.*

GROUP I: PUBLIC LAW

- 320 **The American Constitution (3)**
Prerequisite: Political Science 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 Science 11. Civil rights in the American constitutional context, emphasizing freedom of religion, freedom of expression, minority discrimination, loyalty and rights of defendants.
- 323 **The Judicial Process (3)**
Prerequisite: Political Science 11. Analysis of the role of the judiciary in policy formation.
- 325 **Jurisprudence (3)**
Prerequisite: Political Science 11. Development of law and legal systems; comparison of methods and procedure in making and enforcing law in Roman and common law systems; consideration of fundamental legal concepts; contributions and influence of schools of legal thought in relation to law and government.

GROUP II: POLITICAL PROCESS

- 315 **The American Presidency (3)**
Prerequisite: Political Science 11. Study of the constitutional, political, legislative and administrative roles played by the American chief executive in the development of public policy.
- 331 **Legislative Process (3)**
Prerequisite: Political Science 11. Congressional elections, constituent relations, policy making and leadership, relations between Congress and administrative and executive agencies; the committee system, seniority and procedure. Congress as an element in the party system.

The student body had grown to 350 by 1963, as UMSL became a part of the four-campus University of Missouri. The enrollment reached 6558 in the fall of 1967. The faculty, originally four full-time and eight part-time instructors, numbered 193 full-time and 80 part-time instructors in the fall of 1967.

Altered from a two-year to a four-year institution in 1963, the University of Missouri - St. Louis now has a full four-year program in both its Day and Evening Divisions, as well as a graduate program in education. The University of Missouri - St. Louis currently is divided into a College of Arts and Sciences, a School of Business Administration and a School of Education.

The campus is located in St. Louis County on the site of the former Bellerive Country Club. Some 128 acres of grass, trees and rolling hills allow ample room for expansion.

By Fall, 1968, students will be using the new Library and the Mathematics and Modern Languages Building, the two most recent additions to the campus. The three-building Benton Hall complex has housed classrooms, fully equipped laboratories and faculty, departmental and divisional offices since June, 1966. The Administration Building provides space for administrative offices, a student cafeteria, Student Association offices, research offices and statistics and psychology laboratories.

An ambitious construction program allows for the completion of five additional structures by 1971, including the Life Sciences Building, Student Union Building, J.C. Penney Education Building, a multi-purpose Gymnasium-Activities Building and a two-building structure to house social sciences and the Schools of Business Administration and Education.

The primary concerns of the University of Missouri - St. Louis are the discovery, the dissemination and the application of knowledge among the people of the metropolitan area of St. Louis and the State of Missouri. Its objective is academic excellence. All students are required to follow a curriculum that gives them a broad training in the liberal arts and sciences and depth in a major discipline of their choice.

The University of Missouri - St. Louis encourages students to qualify for advanced placement and credit, to enroll whenever possible in seminars, individual readings courses and courses emphasizing undergraduate research. Faced with the necessity of rapid expansion which will eventually bring more than 20,000 students to the campus, UMSL 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.



- 335 **Atomic and Nuclear Physics (3)**
Prerequisite: Physics 331. Applications of Schrodinger's equation to hydrogen-like atoms, atomic structure and spectra; nuclear masses, energy levels; alpha, beta, and gamma radiation, nuclear reactions, models of the nucleus. Three hours lecture and one hour discussion per week.
- 341 **Statistical Thermodynamics (3)**
Prerequisite: Physics 321 (Physics 321 may be taken concurrently). An introduction to ensemble theory applied to systems in equilibrium. Applications include Fermi-Dirac and Einstein-Bose statistics; specific heats of solids. Three hours lecture and one hour discussion per week.
- 351 **Elementary Solid State Physics (3)**
Prerequisite: Physics 331. Theoretical and experimental aspects of solid state physics, including one-dimensional band theory of solids; electron emission from metals and semiconductors; electrical and thermal conductivity of solids. Three hours lecture and one hour discussion per week.

ASTRONOMY

The following courses carry credit through the Department of Physics, University of Missouri - St. Louis. All courses in astronomy are offered at the McDonnell Planetarium.

- 1 **General Astronomy I (3)**
Prerequisite: Math 03 or equivalent. Study of earth structure, earth motions the moon, planets, asteroids, comets, meteors, the sun and stars. Origin and evolution of the solar system. History of astronomy from ancient times to present day. Planetarium observing session to be announced.
- 2 **General Astronomy II (3)**
Prerequisite: Math 03 or equivalent. (General Astronomy I is *not* a prerequisite.) A further study of general astronomy. Topics include multiple stars, variable stars, star clusters and associations, interstellar media, galaxies, cosmologies, the evolution of stars and the probability of life in the galaxy. Observing session.
- 11 **Introduction to Astronomy I (4)**
Prerequisites: Math 175, Physics 111 and Physics 15. An introduction to modern concepts of the physical nature of the astronomical universe. Topics to include instruments, stars, sun, nebula, star clusters, galaxies, various objects that make up the solar system and their motion. Designed to allow a student to continue a study of astronomy.
- 12 **Introduction to Astronomy II (4)**
Prerequisites: Math 175, Physics 111 and Physics 15. Introduction to Astronomy I. A continuation of Introduction to Astronomy I.
- 222 **Introduction to Celestial Mechanics I (3)**
Prerequisites: Math 301 (or concurrent registration). Topics include vectorial mechanics, central force motion, orbit determination, introduction to the digital computer, earth satellite theory.
- 223 **Introduction to Celestial Mechanics II (3)**
Prerequisites: Math 301 (or concurrent registration), Introduction to Celestial Mechanics I (or consent of instructor). A continuation of Introduction to Celestial Mechanics I.

POLITICAL SCIENCE

Prerequisites may be waived by consent of department.

UNGROUPED COURSES

- 11 **Government in Modern Society (3-4)***
Introduction to basic concepts of government and politics with special reference to the United States, but including comparative material from other systems. Course fulfills the state requirement.

- 241 **Thermal and Statistical Physics (3)**
Prerequisite: Physics 221. Introduction to statistical mechanics, laws of thermodynamics, kinetic theory. Three hours lecture and one hour discussion per week.
- 281 **Directed Readings in Physics (credit arranged)**
Prerequisite: Physics 111 and Physics 231 (Physics 231 may be taken concurrently). A study of the literature of physics. A paper is required on an approved topic. Hours arranged.
- 282 **History of Physics (3)**
Physics 111 and Physics 231. A study of the historical evolution of physics. Three hours lecture per week.
- 289 **Seminar (1)**
Presentation of selected papers by students and faculty members at weekly departmental meetings. May be taken twice for credit.
- 290 **Research (credit arranged)**
- 301 **Introduction to Mathematical Physics (3)**
Prerequisite: 16 hours of physics. A course covering mathematical techniques as applied to the equations of theoretical physics; calculus of variations; Green's functions; linear vector spaces; integral equations. Three hours lecture and one hour discussion per week.
- 305 **Physical Applications of Group Theory (3)**
Prerequisite: Physics 231. Elements of group theory and group representations. Point symmetry groups and applications to the physics of crystals. The rotation group in two and three dimensions with application to atomic and nuclear spectroscopy. Three hours lecture and one-hour discussion per week.
- 311 **Advanced Physics Laboratory I (1-3)**
Prerequisite: Physics 211 and 212, 221 and 223. Physics majors are introduced to the experimental techniques used in research. A student may be given a special problem or assigned to an existing research project. Hours arranged.
- 312 **Advanced Physics Laboratory II (1-3)**
Prerequisite: Physics 211 and 212, 221 and 223. Physics majors are introduced to the experimental techniques used in research. A student may be given a special problem or assigned to an existing research project. Hours arranged.
- 321 **Dynamics (3)**
Prerequisite: Physics 221, Math 301. Theory of small oscillations, perturbation methods, Lagrange's equations, Hamilton's equations, canonical transformations; Hamilton-Jacobi theory. Three hours lecture and one hour discussion per week.
- 323 **Electromagnetic Theory (3)**
Prerequisite: Physics 223, 301. Maxwell's equations, reflection and refraction, guided waves, radiation of electromagnetic waves and electromagnetic fields of moving charges. Three hours lecture and one hour discussion per week.
- 331 **Introduction to Quantum Mechanics (3)**
Prerequisite: Physics 301, 321, 323, 341 (Physics 323 may be taken concurrently). Elementary treatment of quantized mechanical systems, methods of Schrodinger's wave mechanics, operator techniques and perturbation theory. Three hours lecture and one hour discussion per week.
- 333 **Astrophysics I (3)**
Prerequisite: Physics 221, 223, 231. Application of basic physical principles to investigation of sun, planetary system, stars, galaxies and interstellar matter. (Will not be offered until 1969-1970). Three hours lecture and one hour discussion per week.
- 334 **Astrophysics II (3)**
Prerequisite: Physics 333. Continuation of Physics 333. (Will not be offered until 1970-1971). Three hours lecture and one hour discussion per week.

Inquiries regarding entrance should be addressed to the Director of Admissions, University of Missouri - 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. However, there is a possibility that all available spaces may be filled before the deadlines. Because available facilities are inadequate to provide for all qualified applicants for admission, processing periods and priorities have been established. (See Page 12) Admission can be determined only after all credentials are on file. The policies of the University of Missouri - St. Louis comply with the provisions under Title VI of the Civil Rights Act of 1964. No person in the United States shall, on the grounds of race, color or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity of the University.

All new students are required to submit application forms which may be obtained from the Director of Admissions. Official transcripts should be sent directly from each institution previously attended. 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.

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

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

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

FRESHMAN STUDENTS

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

Plan A: Graduates of fully accredited high schools may be admitted by certificate or transcript of record without examination. Applicants must have passed their high school courses with satisfactory marks. Admission by certificate is restricted to graduates of schools accredited by the University of Missouri, by other state universities of similar rank, by the North Central Association or by other recognized accrediting agencies.

Plan B: A student who is not a graduate of a four-year high school and who is at least eighteen years of age may qualify for admission to the freshman class by examination. The examination will presume training and experience compensating for the lack of formal training 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 Education Development tests prepared for the United States Armed Forces Institute.

MISSOURI FRESHMEN

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

Top Third: Applicants who rank in the upper third of their high school graduating class at the end of the sixth semester will be admitted between October 15 and January 1.

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

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

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

OUT-OF-STATE FRESHMEN

Residents of the Kansas City and St. Louis metropolitan areas, or applicants approved by the Committee on Admissions, are admitted on the same basis as Missouri residents. Out-of-state students must rank in the upper half of their high school graduating classes in order to be eligible for admission by certificate. Out-of-state applicants may be considered for admission with the completion of seven semesters of work, provided space is available.

- 102 Elementary Electronics II (3)**
Prerequisite: Physics 101. Continuation of Physics 101. Six hours laboratory per week.
- 111 Elementary Theoretical Physics I (3)**
Prerequisite: Physics 1 and Mathematics 80 or 101. A survey of the main areas of theoretical physics using elementary mathematical techniques. Three hours lecture plus one hour discussion per week.
- 112 Elementary Theoretical Physics II (3)**
Prerequisite: Physics 111 and Mathematics 175 or 101. Continuation of Physics 111. Three hours lecture plus one hour discussion per week.
- 180 Methods of Teaching Physics in Secondary Schools (3)**
Prerequisite: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of science.
- 200 Survey of Theoretical Physics (3)**
Prerequisites: Physics 111, or Physics 2 and Mathematics 201. A survey of the main areas of theoretical physics using relatively elementary mathematical techniques, including classical mechanics; electricity and magnetism; quantum mechanics; relativity; and statistical mechanics. Three hours lecture per week.
- 211 Intermediate Physics Laboratory I (1)**
Prerequisite: Physics 112. Experiments covering topics in classical and quantum physics with emphasis on experimental accuracy and modern laboratory techniques. Four hours laboratory per week.
- 212 Intermediate Physics Laboratory II (1)**
Prerequisite: Physics 112. Experiments covering topics in classical and quantum physics with emphasis on experimental accuracy and modern laboratory techniques. Four hours laboratory per week.
- 215 Electronic Instrumentation I (1-3)**
Prerequisite: Physics 102 and consent of department. Special topics in electronic instrumentation selected through consultation between student and instructor. Hours arranged.
- 216 Electronic Instrumentation II (1-3)**
Prerequisite: Physics 102 and consent of department. Special topics in electronic instrumentation selected through consultation between students and instructor. Hours arranged.
- 221 Mechanics (3)**
Prerequisite: Mathematics 301 and Physics 112 (Math 301 may be taken concurrently). Advanced course covering rigid-body dynamics, damped and undamped oscillatory motion, with an introduction to Lagrange's equations and variational principles. Three hours lecture and one hour discussion per week.
- 223 Electricity and Magnetism (3)**
Prerequisite: Physics 301 (May be taken concurrently). Electro-magnetic fields, including electrostatics, dielectric materials, solution to Laplace's equation, currents and magnetic fields, motion of charged particles, introduction to electro-magnetic waves. Three hours lecture and one hour discussion per week.
- 225 Physical Optics (3)**
Prerequisite: Physics 112. A basic study of light: interference, diffraction, crystal optics, reflection scattering and light quanta. Three hours lecture and one hour discussion per week.
- 231 Introduction to Modern Physics (3)**
Prerequisite: Physics 111. Introduction to modern physics for physics majors and students in other departments. Relativity, radiation and quanta, atomic and nuclear physics. Three hours lecture and one hour discussion per week.

- 321 **Metaphysics (3)**
A study devoted to clarifying the responding constructively to selected metaphysical issues, including causality, necessity, freedom, being and identity.
- 325 **Recent Ethical Theory (3)**
Intensive study of major contributions to twentieth century ethics, including works by Moore, Dewey, Ross, Stevenson and Hare.
- 330 **Philosophy of Language (3)**
A systematic analysis of language and its uses, meaning and its various modes, definition, metaphor and symbolism.
- 335 **Philosophical Issues in the Social Sciences (3)**
A detailed analysis of issues raised by the social sciences, including the logical characterization of explanations, predictions, laws and theories; types of reductionism; and objectivity, values and the empirical basis of the social sciences.
- 350 **Special Readings (credit arranged)**
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.
- 360 **Advanced Formal Logic (3)**
Rigorous study of major-developments in a variety of contemporary logical systems. Emphasis is given to theoretical problems in logic, and some attention to philosophical issues arising from logic.
- 369 **The Marxist Heritage (3) (Same as Political Science 369 and Economics 369.)**
An interdisciplinary study of Marx and leading Marxists, designed to evaluate their influence on recent political, economic and social thought and institutions.

PHYSICS

Prerequisites may be waived by consent of department.

- 1 **Foundations of Modern Physical Theory (3)**
Prerequisite: Mathematics 03 or equivalent. An introduction to fundamental principles underlying the foundations of physics. Recommended for any student interested in physics, with special sections designed for elementary education majors. Four hours multi-media per week.
- 2 **Applications of Modern Physical Theory (3)**
Prerequisite: Physics 1. Continuation of Physics 1 designed for students who plan to pursue a career in medicine or in one of the medically-oriented professions. No credit for students majoring in physics or chemistry. Three hours lecture per week.
- 3 **Demonstration Experiments in Physical Theory (2)**
Prerequisites: Physics 1 (Physics 1 may be taken concurrently). Laboratory course designed to accompany Physics 1. No credit for students majoring in physics or chemistry. Four hours lab per week.
- 10 **Experimentation in Physics (2)**
Prerequisite: Mathematics 12. Laboratory course designed to help the student discover how experimental techniques may be used to obtain meaningful information about nature. Four hours laboratory per week.
- 15 **Introductory Physics Laboratory (2)**
Prerequisite: Physics 10, 111 (Physics 111 may be taken concurrently). Set of experiments selected from certain areas of physics, utilizing the methods developed in Physics 10. Four hours laboratory per week.
- 101 **Elementary Electronics I (3)**
Prerequisite: Physics I (may be taken concurrently). Primarily a laboratory study of characteristics of standard circuit elements, amplifier circuits, power supplies, operational amplifiers, digital and switching circuits, servo systems, shielding and noise problems, transducers and oscilloscopes. Six hours laboratory per week.

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.

It is recommended that every freshman entering for the first time present scores from the American Colleges Tests (ACT). The ACT is administered at approximately thirty testing centers, four of which are in the St. Louis area. There are testing centers in other states as well.

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

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

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

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

Preparation for College Applicants must present 15 acceptable high school units, excluding physical education and military science. The minimal recommended pattern is: English-4 units; mathematics-2 units, excluding general mathematics; science-1 unit of laboratory science; social studies-1 unit. For students planning to pursue a liberal arts degree, two units in one foreign language is recommended.

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

Advanced Standing for Freshmen The University of Missouri - St. Louis grants advanced standing in the form of credit hours to entering freshmen who, on the basis of performance on comprehensive examinations, demonstrate proficiency in certain college-level courses such as English, mathematics, history, biology, 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, New Jersey, 08540. Code Number is 6889.

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

TRANSFER STUDENTS

Admission Transfer students from other colleges and universities must submit an application for admission, a high school transcript and an official transcript from each college attended. All credentials submitted become the property of the University of Missouri - St. Louis.

Out-of-state undergraduate applicants must submit a \$10 non-refundable transcript evaluation fee with their application for admission. Transfer students are admitted according to the priority system that follows.

Students whose grade point average is 3.0 or higher, (based upon the University of Missouri - St. Louis 4-point system), will be admitted at any time. Students whose grade point average is 2.5 or higher will be accepted at any time during the semester prior to that for which entrance is requested. Students whose grade point average is 2.0 or higher may be accepted at any time during the last half of the semester prior to that for which entrance is requested. No student requesting transfer from another college or university whose grade point average is below 2.0 will be admitted.

Advanced Standing Advanced standing in the form of credit hours may be allowed for work satisfactorily completed in another college or university of recognized standing insofar as such work satisfies the requirements of the division of the University in which the student registers. Courses with grades of "D" are not accepted. Advanced standing for the work of the senior year will not be granted. Claims for advanced standing, in order to receive recognition, must be made by the student within one semester after entrance.

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

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

- 220 **Problems in the Philosophy of Education (3)**
Critical study of selected issues in education, especially as they are related to contemporary philosophy.
- 225 **Philosophy of Art (3)**
A study of issues concerning the definition of art, meaning and truth in the arts, aesthetic experience, taste and appreciation and the criticism of art.
- 230 **Social and Political Philosophy (3)**
Major philosophical theories regarding the basis of human communities, the aims which they serve and the role of politics in securing these aims.
- 250 **Philosophy of Science (3)**
An examination of logical and methodological problems related to the sciences, including the structure of scientific explanations, laws and theories; methods of concept formation; and confirmation and the problem of induction.
- 260 **Philosophy of History (3)**
A systematic study of issues relating to historical explanation, objectivity and the meaning of world history.
- 265 **Philosophy of Law (3)**
An examination of typical problems raised by law, including the basis of legal obligations and rights, relations between law and morality, the logic of legal reasoning and the justification for assigning responsibility and punishment.
- 301 **Plato and Neo-Platonism (3)**
An intensive study of Plato's writings, with special emphasis on his ethics, theory of knowledge and metaphysics, and of selected philosophers on whom Plato has had a significant influence.
- 302 **Aristotle and His Influence (3)**
A detailed critical study of Aristotle's metaphysics, physics, psychology and ethics, together with an attempt to assess his influence on later philosophy.
- 305 **Modern Rationalism (3)**
An examination of rationalism as a modern philosophical tradition, especially its classical formulations by Descartes, Spinoza and Leibniz.
- 306 **British Empiricism (3)**
An investigation of the sources of empiricism as a philosophy, its classical development by Locke, Berkeley and Hume and a few of its more recent manifestations.
- 307 **Kant's Philosophy and the Modern World (3)**
The critical idealism of Kant, with special reference to his theory of knowledge and moral philosophy. Study of Kant's impact on epistemology, ethical theory, and recent conceptions of science and mathematics.
- 308 **Hegel and the Idealist Tradition (3)**
Absolute idealism as developed by Hegel, Fichte and their followers. Concentration on metaphysics and theory of knowledge, together with an exploration of Hegel's influence on pragmatism, existentialism and British philosophy.
- 310 **Pragmatism (3)**
An intensive study of pragmatism as developed by Peirce, James, Dewey and more recent proponents.
- 315 **Existentialism and Phenomenology (3)**
Critical study of the major existentialist philosophers from Kierkegaard to the present, together with the phenomenology of Husserl and his followers.
- 318 **Philosophy of Mind (3)**
Analysis of mental concepts, such as consciousness, perception, action and intention, as a basis for understanding the relation between mind and body, the basis of personal identity and knowledge of other minds.
- 320 **Theories of Knowledge (3)**
A systematic study of major philosophical theories regarding the sources, methods and grounds of knowledge.

Prerequisites may be waived by consent of department.

- 50 **Major Questions in Philosophy (3)**
Critical exploration of fundamental questions concerning human nature, value judgment, knowledge, reality and religious experience.
- 60 **Logic and Language (3)**
A study of reasoning, emphasizing ways of clarifying language and thought through detection of ambiguity, vagueness and fallacies.
- 101 **Approaches to Ethics (3)**
Prerequisite: Freshmen admitted by consent of department. Traditional and contemporary approaches to an understanding of moral choice and appraisal, the conditions of moral conduct and relations between individual and social ethics.
- 102 **Philosophy of Religion (3)**
Prerequisite: Freshmen admitted by consent of department. A philosophical investigation of problems posed by religion, such as the nature of religious faith, action and experience; the relation of faith and reason; alternative concepts of deity; and the problem of evil.
- 105 **Philosophical Ideas in Literature (3)**
Prerequisite: Freshmen admitted by consent of department. Critical reading and discussion of selected literary works in terms of the philosophical problems they present.
- 160 **Formal Logic (3)**
Prerequisite: Freshmen admitted by consent of department. An introductory formal study of deductive inference in syllogistic and contemporary logic. Emphasis is placed on contemporary problems, including the logical structure of language and construction of proofs.
- 170 **Asian Philosophy (3)**
Prerequisite: Freshmen admitted by consent of department. Critical study of selected philosophical classics of India and China.
- 192 **Senior Readings (3)**
Required for all senior majors in philosophy. Directed readings on a topic mutually acceptable to student and instructor.
- 193 **Senior Seminar (3)**
Required for all senior majors in philosophy. Subject to be announced each year by instructor in charge of seminar.
- 201 **Ancient Philosophy (3)**
Prerequisite: Freshmen admitted by consent of department. The principal philosophical doctrines of the ancient world, from the Pre-Socratics to Plotinus. Emphasis is placed on the philosophies of Plato and Aristotle.
- 202 **Medieval and Renaissance Philosophy (3)**
Critical study of major philosophical issues and contributions, from Augustine to the Renaissance.
- 203 **Early Modern Philosophy (3)**
Principal figures in the development of rationalism, empiricism and skepticism in early modern Europe, from Descartes to Kant.
- 204 **Nineteenth Century Philosophy (3)**
Study of the conflict of idealistic, materialistic, utilitarian and irrationalist philosophies of the nineteenth century, from Kant to J.S. Mill and from Hegel to Nietzsche.
- 205 **Twentieth Century Philosophy (3)**
The major issues and trends in contemporary philosophy, presented through selected readings from pragmatism, logical positivism, process philosophy, linguistic analysis and existentialism.

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

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

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

GRADUATE STUDENTS

Admission to the Graduate program is arranged through the Admissions Office, 125 Administration Building. Graduation with a satisfactory record is required from a college or university accredited by the Missouri College Union, the North Central Association of Colleges and Secondary Schools, or other similar regional accrediting associations. However, admission to the Graduate program does not in itself entitle the student to candidacy for an advanced degree. For more details on graduate courses available at UMSL, see page 56.

STUDENTS FROM OTHER COUNTRIES

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

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

All students will be required to take *The Test of English as a Foreign Language*. (TOEFL). Applicants should write to: Test of English as a Foreign Language, Educational Testing Service, Princeton, New Jersey.

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

THE EVENING PROGRAM

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

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

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

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

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

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

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

- 112 **Theory of Music (3)**
Prerequisite: Music 111 or consent of department. Continuation of Music 111.
- 121 **Form and Analysis (2)**
Prerequisite: Music 112. Study of basic musical forms and structures.
- 122 **Form and Analysis (2)**
Prerequisite: Music 121. Emphasis upon the larger musical forms. Introduction of contemporary structure.
- 134 **Introduction to the Theory of Music (2)**
An introductory course in the rudiments of music, specifically designed to meet the needs of the elementary classroom teacher. Systematic training in the fundamentals of music and their application. The course will not apply toward requirements for a music major.
- 137 **Elementary School Music (2)**
Prerequisite: Music 134 or consent of department. Basic musical preparation for all students preparing for elementary school teaching. Development of the elementary school music program, with emphasis on selection of music and methods of teaching music to children. This course will not apply toward requirements for a music major.
- 141 **Orchestration (2)**
Prerequisite: Music 112. Scoring for various instrumental ensembles including full orchestra; score analysis.
- 151 **Conducting (2)**
Prerequisite: Music 112 or consent of department. Techniques and problems in conducting. Discussion and study of musical terminology. Rehearsal procedures for vocal and instrumental organizations.
- 192 **Senior Readings (3)**
Prerequisite: Consent of department. Required of all senior music majors. Directed readings and research in an area mutually acceptable to the student and instructor.
- 193 **Senior Seminar (2)**
Prerequisite: Consent of department. Required of all senior music majors. Directed reading and research, one product of which shall be a formal paper.
- 321 **Music of the Middle Ages and Renaissance (3)**
Prerequisite: Music 1 or consent of department. A detailed study of styles and forms from the beginnings of polyphony to the close of the sixteenth century.
- 322 **Music of the Baroque Period (3)**
Prerequisite: Music 1 or consent of department. A detailed study of musical style from 1600 to 1750. The rise of the new style, national styles in the seventeenth century and the culmination of the Baroque period.
- 323 **Music of the Romantic Period (3)**
Prerequisite: Music 1 or consent of department. Composers, forms and styles from Beethoven through the early twentieth century. Late eighteenth century background of romantic music, nationalistic currents and impressionism.
- 325 **Music of the Classic Period (3)**
Prerequisite: Music 1 or consent of department. A detailed study of music, including the style galant and the growth of the classical style; the works of Haydn, Mozart and early Beethoven.
- 326 **Music of the Twentieth Century (3)**
Prerequisite: Music 1 or consent of department. A detailed study of trends in contemporary music; post-romanticism and neo-romanticism; nationalism; impressionism, expressionism, twelve-tone technique, neo-classicism.

MUSIC

Prerequisites may be waived by consent of department.

Applied Music

Courses 45, 46, 115, 116, 135, 136, 155 and 156

One hour of credit will be granted for a minimum of one half-hour lesson each week and one hour of daily practice. Applied study is offered in the following areas: baritone, bassoon, clarinet, flute, french horn, oboe, organ, percussion, piano, saxophone, string bass, trombone, trumpet, tuba, viola, Violin, violoncello and voice.

40 University Chorus (1)

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

41 The Missouri Singers (1)

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

50 Instrumental Ensemble (1)

Prerequisite: Consent of instructor. Open to all qualified students who play a wind, percussion or stringed instrument.

60 Collegium Musicum (1)

Prerequisite: Consent of instructor. Performance of music for chamber ensemble with particular emphasis on the Renaissance and Baroque periods.

Music History, Literature, Theory

1 Introduction to Music Literature (3)

Introduction to the study of musical style, including a detailed study of selected works from the Renaissance to the twentieth century. This course will not apply toward requirements for a music major.

2 Introduction to Symphonic Literature (3)

Orchestral music from the Baroque era to the present time; concerto grosso and suite; program music; the symphony. This course will not apply toward requirements for a music major.

3 Theory of Music (3)

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

4 Theory of Music (3)

Prerequisite: Music 3 or consent of department. Continuation of Music 3.

5 Introduction to Non-Western Music (3)

A survey of the music of the Asian and African continents, with emphasis upon the function of music in the various cultures.

101 History of Western Music (3)

Prerequisite: Sophomore standing or consent of department. A general survey of the history of western music from the Greek period to the eighteenth century. Evolution of forms, styles and media. Attention to harmonic and contrapuntal devices, orchestration and other stylistic features of the time.

102 History of Western Music (3)

Prerequisite: Sophomore standing or consent of department. Continuation of Music 101 to the present.

111 Theory of Music (3)

Prerequisite: Music 4 or consent of department. Altered chords and modulation. Application of vocabulary and techniques to music of the eighteenth and nineteenth centuries. Composition in simple forms.

OTHER STUDENTS

Visiting Student Admission Students who do not wish to earn a degree from the University of Missouri - St. Louis may be admitted by certification as a Visiting College Student. Admission requires certification by the student's college or university that he is in good standing and has permission to enroll in approved course work and transfer the credit back to that institution. Visiting College Student admission is limited to the summer session 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 of the school or college and the instructor 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 instructor and his dean, his attendance record in the course justifies such action.

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

REGISTRATION

Former students (not currently enrolled) should file requests for permits to enroll with the Director of Admissions at least thirty days in advance of 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 (See page 4).

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.



- 311 Advanced Calculus II (3)**
Prerequisite: Mathematics 310. Continuation of Mathematics 310.
- 316 Functions of a Complex Variable (3)**
Prerequisite: Mathematics 310. Complex numbers and their geometrical representation, point sets, analytic functions of a complex variable, complex integration, Taylor and Laurent series, Residue Theorem, conformal mapping.
- 320 Mathematical Statistics (3)**
Prerequisite: Mathematics 250 or consent of department. Introduction to theory of probability and statistics using concepts and methods of the calculus.
- 323 Numerical Analysis (3)**
Prerequisite: Mathematics 201. Finite differences, numerical differentiation, integration, solution of equations and differential equations. Special reference to use of high speed computers.
- 335 Theory of Numbers (3)**
Prerequisite: Mathematics 250 or consent of department. Properties of the integers, multiplicative functions, congruences, primitive roots, quadratic residues.
- 340 Introduction to Abstract Algebra (3)**
Prerequisite: Mathematics 250 or consent of department. Introduction to theory of groups, rings, integral domains, fields and polynomials over a field.
- 341 Linear Algebra and Matrices (3)**
Prerequisite: Mathematics 250 or consent of department. A brief introduction to groups, vector spaces, matrices, determinants, bilinear and quadratic forms and quadratic forms under groups.
- 350 Special Readings (credit arranged)**
Prerequisites: Mathematics 250 and consent of instructor.
- 358 Mathematical Logic (3)**
Prerequisite: Mathematics 250 or Philosophy 360 or consent of department. A study of the logic of mathematics by the axiomatic method, with a development of the propositional calculus and restricted predicate calculus, emphasizing its application to the foundations of mathematics.
- 362 Projective Geometry (3)**
Prerequisite: Mathematics 250 or consent of department. Analytic approach to the study of projective spaces. Theorems of Desargues, Pascal and Brianchon. Projective properties of conics.
- 366 Foundations of Geometry (3)**
Prerequisite: Mathematics 250 or consent of department. A development of portions of Euclidean geometry from a selected set of axioms, including a discussion of consistency, independence, categoricity and completeness of the axioms.
- 367 Introduction to Non-Euclidean Geometry (3)**
Prerequisite: Mathematics 250 or consent of department. A summary of the history of the non-Euclidean geometries and a study of hyperbolic plane geometry.
- 380 Introduction to Topology (3)**
Prerequisite: Mathematics 250 or consent of department. A study of topological spaces, including the concepts of limit, continuity, connectedness, compactness, etc. Special emphasis placed on, and examples taken from, the space of real numbers.
- 410 Theory of Functions of a Real Variable (3)**
Prerequisite: Mathematics 310. The real number system, properties of functions of one or more real variables, mapping theorems. Introduction to measure and integration theory.
- 448 Topics in Algebra (3)**
Prerequisites: Mathematics 340 and 341 and consent of department. Topics selected from the areas of groups, rings, fields, algebras and other algebraic systems. May be taken more than once for credit with consent of department.

- 80 Analytic Geometry and Calculus I (5)**
Prerequisites: Mathematics 10 and 11 or Mathematics 12; or four high school units of mathematics, including two units of algebra and $\frac{1}{2}$ unit of trigonometry and a satisfactory score on the mathematics placement examination. Introduction to analytic geometry, differential calculus and integral calculus. Courses 80, 175 and 201 are a sequence of courses which have integrated the material formerly contained in courses in plane and solid analytic geometry and differential and integral calculus.
- 101 Survey Calculus (4)**
Prerequisite: Same as for Mathematics 80. Introduction to plane analytic geometry and a study of the basic techniques of the differential and integral calculus with application to various areas. No credit for mathematics majors. Credit not granted for both Mathematics 80 and 101. Mathematics 101 may not be used to satisfy the prerequisite for Mathematics 175.
- 104 Fundamentals of Digital Computer Programming (3)**
Prerequisite: Mathematics 10 or equivalent. 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: Mathematics 80. Selected topics from plane analytic geometry and calculus.
- 201 Analytic Geometry and Calculus III (5)**
Prerequisite: Mathematics 175. Solid analytic geometry and selected topics in calculus.
- 222 Digital Computer Methods (2)**
Prerequisite: Mathematics 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 Mathematics 104.
- 230 Theory of Equations (3)**
Prerequisite: Mathematics 175 or consent of department. Solution of algebraic equations, systems of equations, relations among the roots and numerical methods.
- 250 Introduction to Abstract Mathematics (3)**
Prerequisite: Mathematics 201. An introduction to some of the fundamental ideas of abstract mathematics.
- 289 Mathematics Seminar (0-1)**
Required of all mathematics majors in each of their last two semesters. Credit will be given in any semester in which a formal paper is presented.
- 301 Differential Equations (3)**
Prerequisite: Mathematics 201. Common types of ordinary differential equations, including many applied problems, operational methods. Brief introduction to partial differential equations, boundary value problems.
- 303 Applied Mathematical Analysis I (3)**
Prerequisite: Mathematics 201. Topics selected from advanced calculus, in particular vector analysis, line and surface integrals, Jacobians; and topics selected from complex analysis, in particular analytic functions, integrations, power series, residue theory, conformal mapping. May not be taken for credit in addition to Mathematics 310 and may not be used to fulfill the analysis requirement for a mathematics major.
- 304 Applied Mathematical Analysis II (3)**
Prerequisite: Mathematics 301 and Mathematics 303 or 310. Fourier series, integrals and transforms, applications to boundary value problems in partial differential equations, Bessel functions, Legendre, Laguerre and Hermite polynomials.
- 310 Advanced Calculus I (3)**
Prerequisite: Mathematics 250 or consent of department. Limits, continuity and differentiability of functions of one and several variables, sequences and series, the Riemann-Stieltjes integral.

The University offers a bachelor of science (B.S.) degree in chemistry, business administration and education, and a bachelor of arts (A.B.) degree.

The bachelor of arts candidate may select a major in biology, chemistry, economics, English, French, German, history, mathematics, music, philosophy, physics, political science, psychology, sociology or Spanish.

UNIVERSITY GENERAL EDUCATION REQUIREMENTS FOR ALL BACCALAUREATE DEGREES

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

II. Each student must complete at least forty-two hours chosen from the following three areas, with a minimum of at least three courses from each area: Humanities, Science & Mathematics and Social Science.

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

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

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

VI. Each student must have been in residence for at least twenty-four of his last thirty hours, except under unusual circumstances to be decided by the dean.

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



- 368 **Rise of Industrial America (3)**
Prerequisites: History 3 and 4 or consent of department. History of American business, industry and labor.
- 375 **Nineteenth Century Diplomatic History (3)**
Prerequisites: History 1 and 2 or History 3 and 4. The foreign policy and diplomacy of nations in the nineteenth century, with central emphasis on Europe and the New Imperialism. Particular attention to the role of ideas in shaping foreign policy.
- 376 **Twentieth Century Diplomatic History (3)**
Prerequisites: History 1 and 2 or History 3 and 4. The foreign policy and diplomacy of nations in the twentieth century, with central emphasis on America and the New Diplomacy. Particular emphasis on the role of ideas in shaping foreign policy.
- 437 **Britain and the Commonwealth (3)**
The origin and development of the British Commonwealth system, with emphasis on its political, economic and intellectual aspects.
- 490 **Graduate Readings in History (3)**
Prerequisite: Consent of instructor. Intensive readings in primary and secondary materials in an area mutually acceptable to student and instructor.

MATHEMATICS

Prerequisites may be waived by consent of department.

- 03 **Basic Algebra (3)**
Fundamentals of algebra for students who have two years or less of mathematics in high school, excluding general mathematics. No credit toward a degree.
- 10 **College Algebra (3)**
Prerequisite: 2½ high school units of mathematics, including 1½ units of algebra and a satisfactory score on the mathematics placement examination, or Mathematics 03. 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)**
Prerequisites: Mathematics 10 or 2½ high school units of mathematics and a satisfactory score on the mathematics placement examination. Introduction to trigonometric, inverse trigonometric, logarithmic and exponential functions.
- 12 **College Algebra and Transcendental Functions (5)**
Prerequisite: 2½ high school units of mathematics, including 1½ units of algebra and a satisfactory score on the mathematics placement examination or Mathematics 03. A combination of Mathematics 10 and 11.
- 15 **Mathematics: Ideas and Structure (3)**
Prerequisite: Two high school units in mathematics, excluding general mathematics, or Mathematics 03. 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.
- 50 **Structure of Mathematical Systems I (3)**
Prerequisites: One unit high school algebra and one unit high school geometry. A study of mathematical systems, elementary logic, natural numbers, sets, construction of the integers. Recommended for elementary education students.
- 51 **Structure of Mathematical Systems II (3)**
Prerequisites: Mathematics 50. A continuation of Mathematics 50 to include a study of the rational and real number systems. An intuitive study of elementary geometry. Introduction to the deductive theory of geometry.

- 332 **Europe in the Nineteenth Century (3)**
Prerequisites: History 1 and 2 or consent of department. The major political, economic and intellectual developments in Europe from the Congress of Vienna to the outbreak of World War I.
- 333 **Europe in the Twentieth Century (3)**
Prerequisites: History 1 and 2 or consent of department. The impact of World Wars I and II; the search for equilibrium.
- 334 **Europe in the Early Middle Ages (3)**
Prerequisites: History 1 and 2 or consent of instructor. Fall of the Roman Empire, the Byzantine Empire and reconstruction in the West.
- 335 **Europe in the High Middle Ages and the Renaissance (3)**
Prerequisites: History 1 and 2 or consent of instructor. Continuation of History 334. The Renaissance in Italy and the West.
- 340 **History of Science (3)**
Prerequisites: One laboratory science and six hours of history. The origins of science and scientific methodology. The interaction of science and non-science. Emphasis upon the Greeks, the Renaissance, the seventeenth century and the nineteenth century.
- 350 **Special Readings (credit arranged)**
Prerequisite: Consent of instructor. Independent study through readings, reports and conferences.
- 351 **American Intellectual History (3)**
Prerequisites: History 3 and 4 or consent of department. American intellectual development to 1865.
- 352 **American Intellectual History (3)**
Prerequisites: History 3 and 4 or consent of department. Continuation of History 351.
- 353 **United States History: Colonial America to 1763 (3)**
Prerequisites: History 3 and 4 or consent-of department. English background of colonization. Rise of distinctive New England and southern societies. English colonial policy to the Peace of Paris.
- 354 **United States History: Revolution and the New Nation, 1763-1815 (3)**
Prerequisites: History 3 and 4 or consent of department. The new colonial policy of Britain. Revolution and the new nation. Hamiltonians and Jeffersonians.
- 355 **United States History: Jacksonian Democracy and Sectional Conflict 1851-1865 (3)**
Prerequisites: History 3 and 4 or consent of department. The Era of Good Feelings; the Age of Jackson; Manifest Destiny; sectional and cultural conflict; the Civil War.
- 356 **United States History: Civil War to World War I (3)**
Prerequisites: 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)**
Prerequisites: History 3 and 4. A continuation of History 356 to the present.
- 360 **American Frontier History (3)**
The frontier considered as a factor in the development of American institutions. Frederick Jackson Turner and his critics. The westward course of settlement. The passing of the frontier.
- 365 **American Urban History (3)**
Prerequisites: History 3 and 4 or consent of department. Continuation of History 365 to the present.
- 367 **Growth of the American Economy (3)**
Prerequisites: History 3 and 4 or consent of department. Economic factors in the development of American institutions, from the colonial period to the present. Emphasis is on banking, transportation, agriculture and international trade.

All University fees must be paid in full at the time of registration as a condition of admission to classes. Students who preregister must pay fees by the announced deadline or the advance registration will be cancelled and the student will be required to register again and pay fees during the regular registration period as indicated on the University calendar. Registration is not complete until all fees are paid.

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

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

The University reserves the right to change fees and other charges at any time without advance notice. The most common fees are:

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

Regular Semester	
Hours Credit	Incidental Fee
9 or more	\$165.00
Summer Semester	
5 or more	\$ 82.50

For any other sessions not specified above and for partial enrollments the Incidental Fee shall be calculated at the rate of \$20.00 per credit hour.

Pre-Payment on Incidental Fee Students accepted for admission are required to make an advance deposit on the Incidental Fee. This payment is non-refundable, but may be used as part payment of fees if the applicant enrolls in the University within a year following payment.

Non-Resident Tuition Fee A Non-Resident Tuition Fee in addition to the Incidental Fee and other required fees, must be paid by any student who at the time of registration has not been a resident of Missouri for a period of at least one year immediately preceding such registration.

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

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

Regular Semester	
Hours Credit	Non-Resident Fee
1-6	No Fee
7	\$ 75.00
8	150.00
9	200.00
10 or more	250.00

Hours Credit	Non-Resident Fee
Summer Session	
1-3	No Fee
4	\$ 67.50
5 or more	125.00

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

For one semester of 18 weeks (10 or more hours)	\$ 15.00
For one term of 8 weeks (5 or more hours)	\$ 7.50

For any other sessions not specified above and for partial enrollments the Student Union & Activities Fee shall be calculated at the rate of \$1.50 per credit hour or fraction thereof.

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

1. For Music Majors: A single fee of \$45 per semester to cover all required applied music.
2. For Non-Music Majors: A fee of \$45 per semester for each area in which the student enrolls for applied music, the defined areas being piano, voice, woodwinds, brass, percussion and strings.

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

Petition Fee Any student dropping 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.

Student Insurance An accident and sickness insurance plan is available at low cost to students and their dependents. This optional insurance plan is offered to help pay the expense of hospitalization and emergency medical care and treatment while the student is at the University, and to give further protection while the student is away from the University such as on weekends and during the summer months. Information concerning premiums and coverage is available upon request from the Cashier's Office.

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

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

- 2 **European Civilization (3)**
Continuation of History 1 to the present.
- 3 **American Civilization (3)**
Evolution of the cultural tradition of the Americas from earliest times to the mid-nineteenth century, with emphasis on the relationship of ideas and institutions to the historical background. Course fulfills the state requirement.
- 4 **American Civilization (3)**
Continuation of History 3 to the present. Meets the state requirement.
- 192 **Senior Readings (3)**
Prerequisite: Consent of department. Required for all senior history majors. Directed readings in an area mutually acceptable to student and instructor.
- 193 **Senior Seminar (3)**
Prerequisite: Consent of department. Required for all senior history majors. Directed reading and research, one product of which shall be a formal paper.
- 210 **Asian Civilization (3)**
Prerequisite: Sophomore standing. The development of Asian civilization from earliest times to the Manchu conquest.
- 211 **Asian Civilization (3)**
Prerequisite: Sophomore standing. Either 210 or 211 may be taken separately. Continuation of History 210, with emphasis on the Asian response to the Western incursion.
- 220 **The Ancient Near East and Greece (3)**
A cultural survey of the civilizations of the Near East and Greece up to the fourth century B.C., with emphasis on social and economic trends.
- 221 **The Hellenistic World and the Roman Empire (3)**
Major political events and social and economic survey analyzing the rise, decline and fall of the Roman Empire.
- 265 **The Curriculum and Methods of Teaching History and Social Studies (3)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the history and social studies courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of history and social studies. May not be counted toward a major in history.
- 315 **Twentieth Century Southeast Asia (3)**
Prerequisite: Junior standing or consent of instructor. Emphasis on the decline of colonialism, the wars of national liberation and the new nations of Southeast Asia today.
- 316 **Twentieth Century East Asia (3)**
Prerequisite: Junior standing or consent of instructor. Emphasis on Japanese expansion, the Chinese revolutions and the rise of Mao.
- 320 **The History of England from the Tudor kings to the Congress of Vienna (3)**
Prerequisites: History 1 and 2 or consent of department. A study of the development of the English state and system of government, economics and culture (1485-1815).
- 321 **The History of England from the Congress of Vienna to the Present Day (3)**
Prerequisites: History 1 and 2 or consent of department. A continuation of History 320.
- 330 **Europe in the Seventeenth Century (3)**
Prerequisites: History 1 and 2 or consent of department. The growth of the modern state system; the origins of modern science.
- 331 **Europe in the Eighteenth Century (3)**
Prerequisites: History 1 and 2 or consent of department. The Old Regime, the Enlightenment, the French Revolution and Napoleon.

- 191 **Senior Seminar (3)**
Required for all senior German majors. Subject to be announced every year by the instructor in charge of seminar.
- 200 **Syntax of the German Language (3)**
Prerequisite: German 107. Study of the syntactical and morphological characteristics of the German Language as seen in representative selections from German literature. Designed primarily and required for students majoring in German. May be taken concurrently with any 200 level course.
- 201 **Introduction to German Literature (3)**
Prerequisite: German 102. Study of selected texts of German writers from the origins to 1800, and the historical, cultural and political factors which influenced their writings. Required for German majors.
- 202 **Introduction to German Literature (3)**
Prerequisite: German 201. Continuation of German 201. Selected texts from 1800 to the present, and the historical, cultural and political factors which influenced their authors. Required for German majors.
- 264 **The Curriculum and Methods of Teaching Foreign Languages (3) (Same as Education 264.)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the foreign language courses in the school curriculum, with emphasis on the selection and organization of material and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of foreign language.
- 300 **German Literature of the Eighteenth Century (3)**
Prerequisite: German 202. Enlightenment, Empfindsamkeit and Storm and Stress as reflected in literature. Selections from Lessing, Klopstock, Herder, Nicolai, Lenz and others.
- 310 **German and English Romanticism (3) (Same as English 310.)**
Comparative study of prominent Romantic writers in English and German literature. Knowledge of German not required. Recommended for German majors after taking German 202.
- 315 **German Lyric Poetry from the Eighteenth Century to the Present (3)**
Prerequisite: German 202. Analysis and interpretation of poems by Goethe, Holderlin, Novalis, Heine, Rilke, Benn and others.
- 320 **The German *Novelle* and Drama of the Nineteenth Century (3)**
Prerequisite: German 202. A critical examination of representative works by Grillparzer, Hebbel, Keller, Stifter, Storm, Mayer, Hauptmann and others, with emphasis on literary movements and techniques of the period.
- 330 **The German *Novelle* and Drama of the Twentieth Century (3)**
Prerequisite: German 202. A critical examination of major works by Hofmannsthal, Mann, Kafka, Brecht, Durrenmatt, Boll and others, with emphasis on movements and literary techniques employed in the encounter with twentieth century reality.
- 340 **Goethe (3)**
Prerequisite: German 200. A detailed study of the author's life through the medium of his major works. Emphasis on the reading of Part I and II of Faust.

HISTORY

Prerequisite may be waived by consent of department.

- 1 **European Civilization (3)**
Evolution of European cultural tradition from earliest times to mid-seventeenth century. The relationship of ideas and institutions to the general historical background.

Refund of Fees

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

STUDENT FINANCIAL AID

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

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

These scholarships and awards are administered under separate quotas. They are not transferable from one campus to another. Therefore, the student should apply directly to the Chairman of the Committee on Curators Scholarships at Columbia, Kansas City, Rolla or St. Louis depending upon where he plans to attend.

Curators Freshman Scholars Program Curators Freshman Scholars will be selected in recognition of outstanding academic achievement in high school and on potential for academic achievement in college. These scholars will be chosen on the basis of high school rank and scores on a standardized test of academic aptitude. Students of highest academic promise in Missouri high school graduating classes will be offered the designation of Curators Freshman Scholar. For each Missouri high school graduating class the number of Curators Freshman Scholar designations offered will be at the rate of one scholar for every one hundred students or fraction thereof.

Need is not a factor in this selection and no application is required, but the card which accompanies the certificate of recognition must be returned within thirty days of the date issued.

The full amount of the incidental fee will be waived for each Curators Freshman Scholar for his freshman year in the University.

University Scholars Program University Scholars will be selected in recognition of outstanding academic achievement in college. University students classified as sophomores, juniors or seniors will be designated University Scholars provided they have achieved a specified high cumulative collegiate grade point average (limited to approximately the top five per cent of each class). Students transferring to the University of Missouri - St. Louis from other institutions of higher education will be eligible for the designation of University Scholar provided their cumulative collegiate grade point average meets the established standards. University Scholars will be designated annually after the close of the regular academic year.

University Waiver of Fees Program To the degree possible within budgetary limits and for the purpose of assisting deserving Missouri students to attend the University, the incidental fee will be waived in whole or in part for those undergraduate students who meet specified academic standards and who evidence financial need. The amount of the incidental fee that is waived will depend upon the degree of financial need. The financial need assessment will be made through the Financial Aids Office on this campus.

The incidental fees will be waived (in whole or in part) for:

a) Entering freshmen with the following qualifications: 1. Missouri resident; 2. Graduation from an accredited Missouri high school; 3. Rank in the top one-fourth of high school graduating class; 4. Rank in the top one-fourth on statewide tests; 5. NEED of financial assistance. The applicant is advised to discuss the matter with his counselor. Application blanks must be completed in detail; additional information may be attached.

b) Upperclassmen - sophomores through seniors must have achieved a specified cumulative grade point average as set by the University of Missouri - St. Louis. Students transferring from other institutions of higher education will be considered on the same basis as continuing students. Students' eligibility for waiver of incidental fees will be determined annually after the close of the regular academic year.

For detailed information on financial aid please write for our *Financial Aid Bulletin*. Address:

The University of Missouri - St. Louis
Student Financial Aids
Room 125, Administration Building
8001 Natural Bridge Road
St. Louis, Missouri 63121

- 351 **Seventeenth Century French Drama (3)**
Prerequisite: French 201. Critical reading of selected plays by Corneille, Moliere and Racine.
- 352 **Seventeenth Century Prose and Poetry (3)**
Prerequisite: French 201. A critical study of representative prose writers and poets. Particular emphasis upon Pascal and Descartes.
- 353 **Eighteenth Century French Literature (3)**
Prerequisite: French 201. The philosophic movement. Selected works from Montesquieu, Voltaire, Diderot and Rousseau.
- 361 **Nineteenth Century French Literature: Romanticism (3)**
Prerequisite: French 201. Critical reading of selected works from poetry, the drama and the novel. May be taken concurrently with French 202.
- 362 **Nineteenth Century French Literature: Realism and Naturalism (3)**
Prerequisite: French 201. The development of Realism and Naturalism. Particular emphasis upon Flaubert, Balzac and Zola.
- 371 **Twentieth Century French Literature: The Novel (3)**
Prerequisite: French 202. A study of the novel from Proust and Gide to the present.
- 372 **Twentieth Century French Literature: The Theater (3)**
Prerequisite: French 202. A study of the leading dramatists, with special emphasis upon Anouilh, Claudel, Giraudoux, Camus and Sartre.

GERMAN

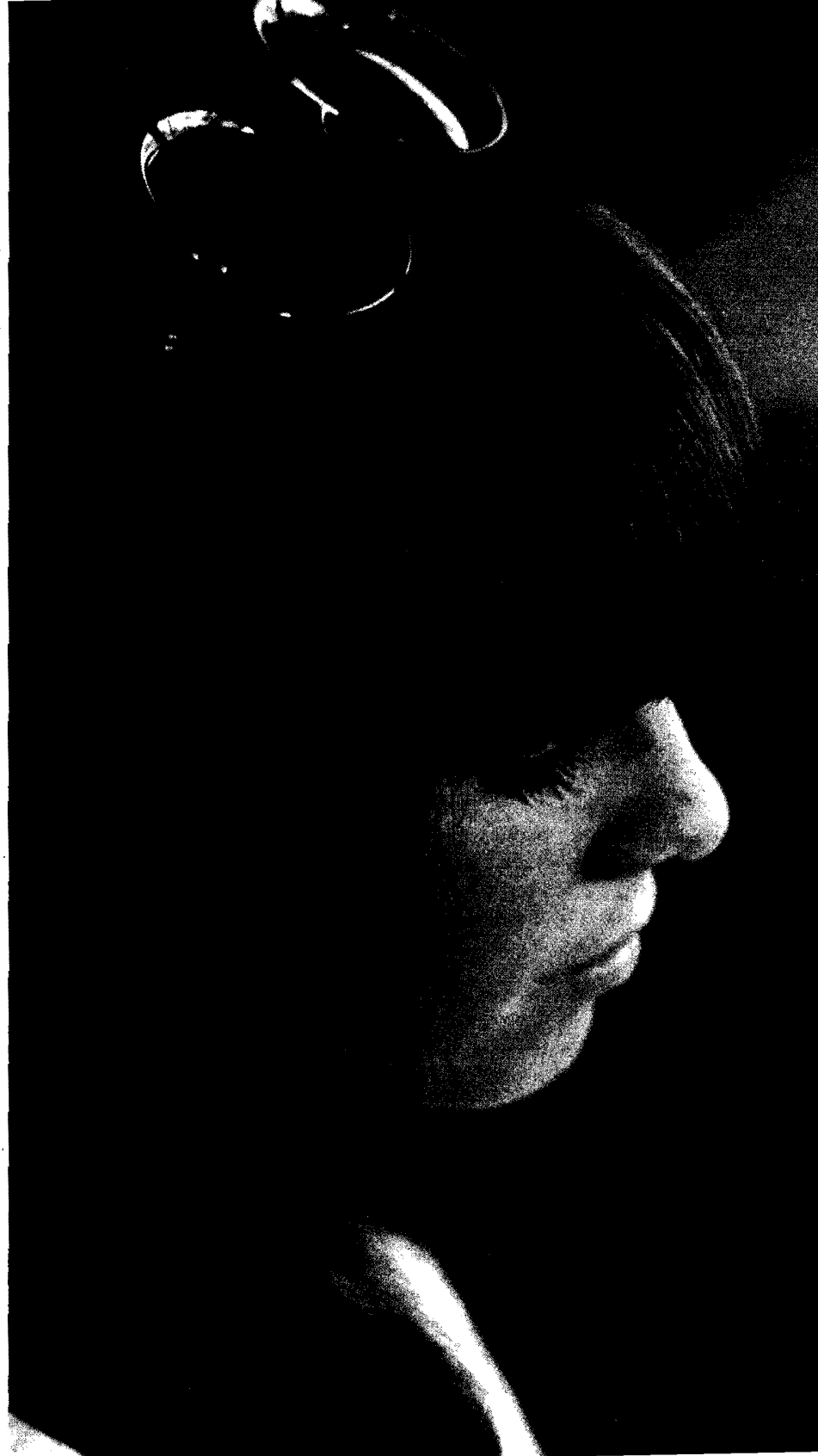
Prerequisites in any language may be waived by consent of department

- 1 **Elementary German (4)**
Emphasis will be placed upon the speaking and understanding of German and upon the acquisition of the fundamentals of grammar and syntax.
- 2 **Elementary German (4)**
Prerequisite: German 1 or equivalent. Continuation of German 1.
- 101 **Intermediate German (3)**
Prerequisite: German 2 or equivalent. Grammar review and cultivation of language skills through the study of moderately difficult prose selections.
- 102 **Intermediate German (3)**
Prerequisite: German 101 or equivalent. Further development of language skills through the reading and discussion of literary texts. May be taken concurrently with German 106, after consultation with instructor.
- 106 **Composition and Conversation (3)**
Prerequisite: German 102 or equivalent. A review of grammar and written composition combined with oral work and the discussion of topics assigned in advance. May be taken concurrently with German 201.
- 107 **Advanced Composition and Conversation (3)**
Prerequisite: German 106 or equivalent. Continuation of German 106, with emphasis being placed upon more advanced composition as an introduction to essay writing.
- 110 **Masterpieces of German Literature in Translation (3)**
Prerequisite: Sophomore standing. Not open to students majoring in German. Representative readings in German literature from the beginnings to the present. Emphasis to be placed upon German literature in the general context of European culture.
- 190 **Senior Readings (3)**
Required for all senior German majors. Directed readings in an area mutually acceptable to student and instructor. Other seniors admitted by permission of the instructor.

FRENCH

Prerequisites in any language may be waived by consent of department.

- 1 Elementary French (4)**
Emphasis will be placed upon the speaking and understanding of French and upon the acquisition of the fundamentals of grammar and syntax.
- 2 Elementary French (4)**
Prerequisite: French 1 or equivalent. Continuation of French 1.
- 101 Intermediate French (3)**
Prerequisite: French 2 or equivalent. Grammar review and cultivation of language skills through the study of moderately difficult prose selections.
- 102 Intermediate French (3)**
Prerequisite: French 101 or equivalent. Further development of language skills through the reading and discussion of literary texts. May be taken concurrently with French 106, after consultation with instructor.
- 106 Composition and Conversation (3)**
Prerequisite: French 102 or equivalent. A review of grammar and written composition combined with oral work and the discussion of topics assigned in advance. May be taken concurrently with French 201.
- 107 Advanced Composition and Conversation (3)**
Prerequisite: French 106 or equivalent. Continuation of French 106, with emphasis being placed upon more advanced composition as an introduction to essay writing.
- 110 French Literature in Translation (3)**
Prerequisite: Sophomore standing. Not open to French majors. Lectures on the literature and culture of France from the Middle Ages to the contemporary period. Reading and discussion of selected masterpieces, with particular emphasis upon Classicism, Romanticism and Realism.
- 190 Senior Readings (3)**
Directed readings in an area mutually acceptable to student and instructor. Required for all senior French majors. Other seniors admitted by permission of instructor.
- 191 Senior Seminar (3)**
Required for all senior French majors. Subject to be announced every year by instructor in charge of seminar.
- 200 Syntax of the French Language (3)**
Prerequisite: French 107. Study of the syntactical and morphological characteristics of the French language as seen in representative selections from French literature. Designed primarily and required for students majoring in French. May be taken concurrently with any 200 level course.
- 201 Introduction to French Literature (3)**
Prerequisite: French 102 or equivalent. Designed to acquaint the student with the development of French literature from the *Chanson de Roland* to the Age of Enlightenment. Critical reading of representative texts.
- 202 Introduction to French Literature (3)**
Prerequisite: French 201. Continuation of French 201. Selected readings from the Romantic period to the present.
- 264 Curriculum and Methods of Teaching Foreign Languages (3) (Same as Education 264.)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the foreign language courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of foreign language.



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

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

UMSL Student Association The UMSL Association incorporates all registered students on campus. The association, in its present form, was organized in 1965. Its structure was designed to allow the student fullest participation in the activities of the campus community.

Student Senate The Senate is the legislative body of the UMSL Student Association. Senate members are elected each spring by the Chancellor's Advisory Council from a slate of students nominated by each class. The executive officers of the Student Association are elected by the Senate from among its own members.

Chancellor's Advisory Council The Chancellor's Advisory Council is made up of the president of each class, the chief justice of the student court, nine students appointed by the Chancellor, and the student body president. The council advises the Chancellor.

Student Union Board The Student Union Board is involved with the activity function of the UMSL Student Association. The board plans all social events and serves as coordinator for the activities planned by all campus groups. In addition, it has the responsibility for Association-sponsored concerts and lectures, Homecoming, all campus queen contests, assemblies and mock conventions. The Student Union Board is responsible for the social events of new student orientation, the inaugural ball and all school dances. Generally, the board sets the activities calendar for the year.

University Committees A unique facet of the Student Association is student participation on University committees where students share full membership with members of the faculty and administration. Members of committees are nominated by the Senate and approved by the Council.

Student Organizations A variety of student organizations offer a unique opportunity for students to actively shape university life. All campus organizations operate within the framework of student government. Any new organization wishing to be recognized must first petition the Student Senate. Student organizations are many and varied. They include several service organizations, musical organizations, social fraternities and sororities, community action groups, political organizations, departmental clubs and religious organizations.

- 344 Seventeenth Century Literature (3)**
Prerequisite: English 135 or equivalent. The non-dramatic literature of the period, including the metaphysical and cavalier poets and the major prose writers of the age, exclusive of Milton. The transition from the Renaissance to the Restoration.
- 345 Milton (3)**
Prerequisite: English 135 or equivalent. All the minor poems and the three longer poems with some attention to the major prose. Milton and his relation to the politics, theology and literature of the seventeenth century.
- 346 Seventeenth and Eighteenth Century Drama (3)**
Prerequisite: English 135 or equivalent. Critical reading of the dramatic literature of the Restoration and Post-Restoration periods.
- 350 Special Readings (1-3)**
Prerequisites: 300-level course in area of proposed work and consent of instructor. 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)**
Prerequisites: English 10 and 12 or equivalent. Study of major English novels from the eighteenth century. The approach is principally analytical, with attention to historical development.
- 370 Prose and Poetry of the Romantic Period (3)**
Prerequisite: English 135 or equivalent. Critical reading of selections from Blake, Wordsworth, Coleridge, Lamb, Hazlitt, Byron, Shelley, Keats and others. Also selected eighteenth 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 Tennyson, Browning, Arnold and others, in addition to selections from the major prose writers.
- 372 The Later Nineteenth Century (3)**
Prerequisite: English 135 or equivalent. Critical examination of the literature of England, 1870-1914. Swinburne, Hopkins, Hardy, Housman, James, Conrad, Butler, Shaw, Wilde and others.
- 373 Major American Writers I (3)**
Prerequisites: English 10 and 12 or equivalent. American literature of the nineteenth century centering around such figures as Emerson, Hawthorne, Melville, Poe and Whitman.
- 374 Major American Writers II (3)**
Prerequisites: English 10 and 12 or equivalent. American literature of the late nineteenth and twentieth centuries centering around such figures as James, Dickinson, Crane, Jeffers, Faulkner and others.
- 375 American Fiction to World War I (3)**
Prerequisite: English 10 and 12 or equivalent. Development of the novel and short story in America through World War I. Emphasis is upon fiction representative of Romanticism, Realism and Naturalism.
- 376 American Fiction after World War I (3)**
Prerequisite: English 10 and 12 or equivalent. Recent development and the style and structure of American fiction.
- 383 Modern Fiction (3)**
Prerequisite: English 135 or 175 or equivalent. Critical reading and analysis of selected British and American fiction of the twentieth century.
- 384 Modern Poetry (3)**
Prerequisite: English 135 or 175 or equivalent. Critical reading and analysis of selected British and American Poetry of the twentieth century.

FINE ARTS

(See Art History, p. 62 and Music, p. 88)

- 190 **Readings in American Literature (3)**
Prerequisites: English 175 and consent of instructor. Readings on a topic mutually acceptable to student and instructor.
- 191 **Readings in English Literature (3)**
Prerequisites: English 135 or equivalent and consent of instructor. Readings on a topic mutually acceptable to student and instructor.
- 192 **Senior Readings (3)**
Prerequisite: Consent of department. Required for all senior Arts and Sciences English majors. Directed readings in an area mutually acceptable to student and instructor.
- 193 **Senior Seminar (3)**
Prerequisite: Consent of department. Required for all senior Arts and Sciences English majors. Directed reading and research, one product of which shall be a formal paper.
- 220 **Growth and Structure of the English Language (3)**
Prerequisites: English 10 and 12 or equivalent. The historical development of the language 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.
- 262 **The Curriculum and Methods of Teaching English (3) (Same as Education 262.)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the English courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of English.
- 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 135 or equivalent. Course is concerned primarily with Chaucer's poetry, but concentrates on the *Canterbury Tales* in particular. All readings in the original.
- 325 **Medieval English Literature (3)**
Prerequisite: English 135 or equivalent. A survey of English literature from *Beowulf* through Malory, exclusive of Chaucer.
- 331 **Elizabethan Poetry and Prose (3)**
Prerequisite: English 135 or equivalent. A survey of non-dramatic literature of the sixteenth century, including Ascham, Elyot, Wyatt, Surrey, Spenser, Daniel and Drayton.
- 337 **Shakespeare: Tragedies and Romances (3)**
Prerequisite: English 135 or equivalent. The development of Shakespeare's concept of tragedy and tragi-comedy from *Titus Andronicus* to *The Tempest*. The plays will be related to the social and literary milieu of the period.
- 338 **Shakespeare: Comedies and Histories (3)**
Prerequisite: English 135 or equivalent. Shakespeare's early work for the theater with some attention to the sonnets and longer poems. A historical background for a study of all the plays, including discussions of Elizabethan society, the world of the state and Shakespeare's biography.
- 339 **Tudor and Stuart Drama (3)**
Prerequisite: English 135 or equivalent. A survey of the dramatic writings of the period from the interludes of John Heywood to the closing of the theaters in 1642, with particular attention to the plays of Marlowe, Jonson, Webster and Ford. Though Shakespeare will not be studied in this course, connections between his works and those of his contemporaries will be discussed.

Alumni Association Membership in the Alumni Association is open to all graduates and former students of UMSL. The Alumni Association was formed to promote the interests of UMSL and to establish mutually beneficial relations between UMSL and its alumni. Social activities during Homecoming weekend will provide an opportunity for the alumni to meet again with one another and return to the campus to see the newest developments. The association also encourages alumni to participate in continuing education programs offered by the Extension Division.

Athletics and Recreation UMSL is in its third year of inter-collegiate sports competition against four-year institutions. Varsity competition is offered in basketball, cross country, golf and tennis. Soccer and baseball are club sports.

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

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

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



GRADUATE PROGRAM

A graduate program in education is available. For more information, see page 56.

CENTER OF COMMUNITY AND METROPOLITAN STUDIES

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

In pursuit of the research function, members of the Center are involved in both basic and applied research and have an opportunity to develop their own particular fields of interest as well as working cooperatively on inter-disciplinary research projects. Through its emphasis on inter-disciplinary cooperation the Center seeks to promote a more complete and more coordinated approach to urban problems.

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

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

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

Anyone interested in further information about the Center of Community and Metropolitan Studies should contact the Center at the University of Missouri - St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121.

PRE-LAW PROGRAM

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

- 360 **Principles and Procedures for Student Personnel Work (3)**
Prerequisite: Education 251 or 271 or equivalent. Student personnel work in educational institutions—objectives of student personnel work, certain pertinent techniques.
- 362 **Occupational and Educational Information (3)**
Prerequisite: Education 360. Nature, use of occupational and educational information. Characteristics, requirements of occupations and training opportunities.

ENGLISH

Prerequisites may be waived by consent of department.

- 10 **Composition (3)**
Theory and practice of writing expository prose. English 10 and 12 or the equivalent are prerequisites 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 hours additional credit for a total of 6 hours in composition and literature.
- 101 **Effective Speaking (3)**
Prerequisite: Sophomore standing. Emphasis on effective oral communication, formal and informal. Theories and techniques of argument and persuasion, organization, evidence, delivery.
- 115 **Commercial Writing (3)**
Prerequisites: English 10 and 12 or equivalent. Emphasis is placed upon news writing, newspaper feature writing, magazine article writing and book reviewing.
- 120 **Classical Literature in Translation (3)**
Prerequisites: English 10 and 12 or equivalent. A study of classical literature from Homer through Quintilian, including such major figures as Sophocles, Plato, Aristotle, Cicero and Vergil.
- 125 **Literature of the Old Testament (3)**
Prerequisites: English 10 and 12 or equivalent. A comprehensive understanding of the *Old Testament*, its literary background and significance for western civilization.
- 135 **Major British Authors (3)**
Prerequisites: 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)**
Prerequisites: 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 seventeenth century to the present.

- 310 Group Intelligence Testing (3)**
Prerequisites: Education 102 and Education 330 or equivalent. A study of the principles of psychometrics and a critical examination of various group tests of ability.
- 311 Individual Intelligence Testing (3)**
Prerequisite: Education 310 or equivalent. Study of the Stanford-Binet Scale and other individual tests of intelligence. Practice in administering and interpreting the tests.
- 313 The Psychology of Exceptional Children (3)**
Prerequisite: Education 102. A study of the special psychological problems of the child who deviates from the normal.
- 315 Principles of Early Childhood Education (3)**
Prerequisites: Education 102 and 125. A study of the values and basic principles underlying good schools for young children. Intensive examination of planning daily programs, organizing the learning environment, developing the curriculum and units of work. An investigation of good learning situations for pre-school and primary children.
- 316 Creative Experiences for Young Children (3)**
A study of and experiences with materials, techniques and resources for promoting effective, cognitive and motor development through the use of art media, songs and rhythms, play and creative dramatics.
- 317 Exploring the Physical World With Young Children (3)**
A study of and experiences with materials, techniques and resources for broadening the child's awareness and understanding of nature, science, spatial and quantitative relationships and the world of places and things.
- 318 Exploring the Social World With Young Children (3)**
A study of and experiences with materials, techniques and resources for furthering the child's mastery of the skills of communication; his understanding of people, social roles, society and various cultures; his ability to develop satisfying relationships with peers and adults.
- 320 Comparative Education (3)**
Prerequisite: Education 125. A comparative study of representative systems of education in South America, Europe and Asia in contrast with the American system.
- 322 The Origin of Modern Education (3)**
Prerequisite: Education 125. A study of education practices and theory from ancient times to present. Emphasizes the historical setting of present-day education.
- 325 Teaching Reading in the Elementary School (3)**
Prerequisites: Education 102 and senior standing. Objectives of reading instruction and standards of attainment; reading readiness; types of instruction; diagnosis and remedial techniques; the place of reading in the content subject; cultivation of interests in independent reading.
- 330 Educational Statistics (3)**
Prerequisites: Education 102, 131 or 163. Statistical methods for teachers, supervisors, superintendents and beginning graduate students. Frequency distributions, measures of central tendency, variability, sampling and correlation.
- 350 Elementary School Curriculum (3)**
Prerequisite: Education 131. Survey of modern educational thought with regard to objectives, content, methods in elementary school curriculum.
- 352 Secondary School Curriculum (3)**
Prerequisites: Education 163. For secondary school principals, teachers and superintendents. Sources, scope and organization of the curriculum, modern trends and methods of investigation.

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

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

The Pre-Law Committee maintains information on the Law School Admission Test and a collection of law school catalogs in the Department of Political Science. These materials are available for study by individual students.

PRE-MEDICAL SCIENCES PROGRAM

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

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

Chemistry 11, 12, 222, 261, 262 and 263 (Total 23 hours)

Physics 1, 2 and 3 (Total 8 hours)

Biology 11, 12, 202 and 204 (Total 15 hours)

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

PRE-PHARMACY PROGRAM

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

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

Freshman Year			
Chemistry 11	5	Chemistry 12	5
Physics 1	3	Physics 2	3
Physics 3	2	Mathematics 11	3
Mathematics 10	3	English 12	3
English 10	3		<u>14</u>
	<u>16</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			<u>15</u>
Science 11	3		
	<u>16</u>		

RESERVE OFFICERS TRAINING PROGRAM

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

The Air Force has a two-year program. All interested students are encouraged to contact the office of Air Force Aerospace Studies at Washington University (telephone VO 3-0100, extension 4567) at the earliest opportunity.

Air Force and Army 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.

A total of 12 hours of credit in advanced Air Force ROTC and Army ROTC may be counted toward a degree.

- 263 The Curriculum and Methods of Teaching Arts (3)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of art courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of art. Recommended to be taken concurrently with student teaching.
- 264 The Curriculum and Methods of Teaching Foreign Language (3) (Same as Modern Languages 264.)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the foreign language courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of foreign language. Recommended to be taken concurrently with student teaching.
- 265 The Curriculum and Methods of Teaching History and Social Studies (3) (Same as History 265.)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the history and social studies courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of history and social studies (not counted as credit for a major in history). Recommended to be taken concurrently with student teaching.
- 266 The Curriculum and Methods of Teaching Mathematics (3)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the mathematics courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of mathematics. Recommended to be taken concurrently with student teaching.
- 267 The Curriculum and Methods of Teaching Music (3)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the music courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of music. Recommended to be taken concurrently with student teaching.
- 268 The Curriculum and Methods of Teaching Physical Sciences (3)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the physical science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of science. Recommended to be taken concurrently with student teaching.
- 269 The Curriculum and Methods of Teaching the Life Sciences (3)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the life science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of science. Recommended to be taken concurrently with student teaching.
- 271 Laboratory: Secondary School Student Teaching (6)**
Prerequisites: Education 163, a near major in the subject matter area and senior standing with GPA of 2.000 or better. Classroom experience and student teaching in the secondary school under University supervision. Individual work and group conferences.

- 152 **Teaching of Social Studies in the Elementary School (3)**
Prerequisites: Completion of social science requirements in general education. A study of elementary school social studies emphasizing the current social studies curricular content, methods of teaching and instructional materials. Analysis of modern national movements affecting objectives, materials and teaching techniques.
- 153 **Teaching Mathematics in the Elementary School (3)**
Prerequisite: Completion of mathematics requirements in general education. Organization and implementation of a modern elementary school mathematics program.
- 155 **Physical Education Activities in the Elementary School (2)**
Objectives of physical education for the elementary school child with applications of choice of activities, organization of program, theory, practices.
- 163 **Techniques of Secondary School Teaching (2)**
Prerequisites: 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 art.
- 170 **Secondary School Administration for Teachers (2)**
Prerequisites: 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.
- 231 **Advanced Typewriting (5)**
Prerequisite: Intermediate typing or equivalent. An intensive course on all forms of typewritten work including business and professional papers and forms, with emphasis on speed and accuracy. Training in the use of office machines, mimeograph, duplicators, dictating and transcribing machines, adding machines, calculators, etc. (For Business Education majors only.)
- 233 **Filing Systems and Records Management (2)**
Prerequisite: Advanced Typing. Comprehensive study of basic filing rules; analysis and application of various record systems in the business office.
- 235 **Advanced Stenography and Secretarial Practice (6)**
Prerequisite: Intermediate shorthand and transcription or equivalent. Intensive practice in speed dictation, reading, transcription, with attention to methods of establishing, standardizing and controlling administrative systems, including forms control, charting work-flow and office manuals. (For business education majors only.)
- 251 **Laboratory: Elementary School Student Teaching (6)**
Prerequisites: Education 140, 153, 325 and senior standing with GPA of 2.000 or better. Classroom experience and student teaching in the elementary school under University supervision. Individual work and group conferences.
- 261 **The Curriculum and Methods of Teaching Business and Commerce (3)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the business and commercial courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of business and commerce. Recommended to be taken concurrently with student teaching.
- 262 **The Curriculum and Methods of Teaching English (3) (Same as English 262.)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the English courses in the school curriculum with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the fields of English. Recommended to be taken concurrently with student teaching.

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

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

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

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

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

Graduation The last year of work, (24 credit hours in one academic year), must be done in residence, except under unusual circumstances to be decided by the dean.

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

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

The faculty may decline to recommend a student for a degree because of lack of moral qualification, 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 - 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 next course is to be taught.

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

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

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

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

Normally the office of the dean will not approve the withdrawal from the following:

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

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

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

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

Prerequisites may be waived by consent of department.

- 57 **Geography—Regions and Nations of the World (3)**
Introductory survey of world geography designed for general education. Presents essential characteristics and major problems of Europe, Soviet Union, Orient, Pacific World, Middle East, Africa, Latin America, Anglo-America.
- 100 **Orientation (0)**
Lectures and visits to schools. Required for preparing to teach. This should be taken in the first semester of the junior year.
- 102 **Educational Psychology (3)**
Prerequisites: General Psychology 1 and 2. Transfer students who have taken a comprehensive three-hour general psychology class at another institution, upon recommendation of the instructor, may be admitted to the class. Any student who has junior standing or above may, with the consent of the instructor, enroll concurrently in Psychology 2 and Educational Psychology.
- 110 **Elements of Health Education (2)**
Basic school health for all teachers. Considers health as it relates to the school and the child and its interrelationship between the two.
- 125 **History of American Education (3)**
Prerequisite: At least one course in American history. A student deficient in this area who has an excellent background in related disciplines, may, with the permission of the instructor, enroll in this course. A comprehensive study of development of American education. Stresses American and other educational ideas, educational theory, American school system and social and intellectual forces affecting American education.
- 126 **Education and Culture (3)**
Prerequisites: Six hours in social sciences. A study of American education and its relation to American culture, with particular emphasis on American values, institutions and subcultures. Recommended for all beginning education students.
- 131 **Techniques of Elementary School Teaching (2)**
Prerequisites: 102 and 125. Social, psychological principles and current educational practices relating to the organization of teaching materials, teacher-pupil interaction and the instructional activities of elementary classroom teachers.
- 137 **Elementary School Music (2)**
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 School (3)**
A study of art principles; provides laboratory experiences with various media and materials. Stresses curriculum planning and developments of the elementary school program in art.
- 140 **Elementary School Organization, Management and Techniques of Teaching (3)**
Prerequisites: Education 102, and 125 or 126. Organization and management of the elementary classroom emphasizing social factors affecting elementary schools. Formal and informal organizations in the school relating to administrative-teacher-pupil interactions and teaching-learning environment and general techniques of teaching.
- 150 **Children's Literature and Language Arts (3)**
A course designed to provide a knowledge of the various types of children's literature; criteria for selecting and evaluating reading material. An introduction into the problems of teaching the language arts in the elementary schools.
- 151 **Teaching of Science in the Elementary School (3)**
Prerequisites: Completion of science requirements in general education. A study of elementary school science emphasizing the current science curricular content, methods of teaching and instructional materials. Analysis of modern national movements affecting objectives, materials and teaching techniques. A science course for teachers may be substituted for this course.

- 338 **Comparative Economic Systems (3)**
Prerequisite: Economics 51. Economic structure and operating principles of the U. S., Soviet and other selected modern economies as responses to fundamental economic problems.
- 339 **The Soviet Economy (3)**
Prerequisite: Economics 51. Survey of operating principles, organization and performance of the Soviet economy; problems in planning and rapid industrialization.
- 340 **Theory of Economic Growth (3)**
Prerequisite: Economics 51. Analysis of factors affecting the economic growth of a nation: labor, capital and technology. Discussion of formal growth models as well as policy implications. Focus on the advanced nations of the world.
- 341 **Economic Development: Problems and Policies (3)**
Prerequisite: Economics 340 or Economics 51 and consent of instructor. Application of the theory of economic growth to developing countries. Emphasis on problems of capital formation, education and economic relations with other countries.
- 350 **Special Readings (credit arranged)**
Prerequisite: Consent of instructor. Unscheduled, independent directed readings on topics mutually acceptable to student and instructor.
- 355 **Business and Government (3)**
Prerequisite: Economics 51. Relations between business firms and government at all levels. Questions of regulation, public ownership, guidelines and competition considered.
- 356 **Industrial Organization (3)**
Prerequisite: Economics 51. Analysis of the economic factors influencing industrial structure, and the conduct and performance associated with various market structures.
- 360 **Managerial Economics (3) (Same as Business Administration 360)**
Prerequisite: Economics 51. Application of economic theory to decision-making in the business firm. Discussion of price and output determination under various business conditions, as well as factors affecting wages, interest and profit.
- 363 **Labor Economics (3)**
Prerequisite: Economics 51. Forms of labor organization, state and federal labor legislation and policies of labor unions. Emphasis on an application of economic theory to the relations of labor and business.
- 364 **Manpower Policies**
Prerequisite: Economics 51. Analysis of the allocation of human resources with emphasis on the economic theory of labor markets in both the short and the long run. Discussion of the operation of the labor market in specific occupations.
- 365 **Economic Statistics and Econometrics (3)**
Prerequisites: Economics 51 and Statistics 31. Application of statistical techniques to economic research problems.
- 366 **Econometrics (3)**
Prerequisite: Economics 365. Continuation of Economics 365.
- 368 **Business Cycles and Forecasting (3) (Same as Business Administration 368)**
Prerequisite: Economics 220. Discussion of factors affecting economic conditions, short-term fluctuations in business activity and plans and policies for economic stabilization. Emphasis on problems and techniques of forecasting.
- 369 **The Marxist Heritage (3) (Same as Political Science 369 and Philosophy 369)**
An interdisciplinary study of Marx and leading Marxists, designed to evaluate their influence on recent political, economic and social thought and institutions.
- 371 **Issues in Urban Economics (3)**
Prerequisite: Economics 317 or 270. Problems of public policy in the city as it relates to education, housing, transportation, recreation and their financing. Recent government policies concerning the city and its surrounding areas will be emphasized.



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

The College places heavy emphasis on independent work for students whose ability permits them to take advantage of such experience. All students must engage in a readings-seminar-research experience in the field of their major during the senior year. An interdisciplinary curriculum has been designed for students who are interested in such a course of study.

The College recognizes its unique urban location and cooperates with the teaching-research Center for Metropolitan and Community Studies to take advantage of urban opportunities. All departments orient some teaching and research toward the urban milieu of which the College is a part. In many instances students may design a major around an interdisciplinary urban curricular core.

The College offers numerous off-campus courses in the metropolitan area through the auspices of the Extension Division.

Students may pursue academic majors in the following areas: biology, chemistry, economics, English, French, German, history, mathematics, music and music history, philosophy, physics, political science, psychology, Spanish and sociology.

DEPARTMENT OF BIOLOGY

Biology Faculty

Frank H. Moyer, Ph.D., coordinator, professor
 Lawrence D. Friedman, Ph.D., associate professor
 Monroe Strickberger, Ph.D., associate professor
 Muriel B. Babcock, Ph.D., assistant professor
 R. George Babcock, Ph.D., assistant professor
 Richard A. Barr, Ph.D., assistant professor
 James F. Heisinger, Ph.D., assistant professor
 Ronald D. MacLeod, Ph.D., assistant professor
 Robert K. Rose, M.S., instructor

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

General Education Requirements All biology majors must take the requisite courses to fulfill the general education requirement for the A.B. degree. For a listing of these courses, see page 19. The departmental requirement in biology and chemistry, as stated below, may be used to satisfy the science requirement.

Biology Credit The biology major must complete 33 hours of biology, with work in the following courses: Biology 11, 12, 213, 215, 224, either 235 and 237 or 255 and 257, 289 (all biology majors must enroll in Biology 289 for credit during both semesters of the senior year), and eight additional elective hours in biology at the 200 level or higher.

- 190 **Readings in Economics (3)**
 Prerequisite: Economics 51. Readings on topics mutually acceptable to the students and the instructor.
- 191 **Senior Seminar in Economics (3)**
 Prerequisite: Economics 51, 190 and senior standing. Seminar for economics majors in which the senior paper will be written. Directed research, writing and presentation of findings.
- 220 **Money and Banking (3)**
 Prerequisite: Economics 50. Factors influencing bank reserves and the money supply. Ability of the Federal Reserve System and the Treasury to control these factors. Introduction to monetary theory: integration of monetary phenomena with national income theory. Analysis of current policy issues.
- 240 **Economic Development (3)**
 Prerequisite: Economics 51. Survey of economic growth as applied to underdeveloped countries. Analysis of development policies and programs with emphasis on specific case studies.
- 250 **Intermediate Economic Theory: Macroeconomics (3)**
 Prerequisite: Economics 51. Study of national income, expenditure and the forces determining the level of economic activity. Special emphasis on the theory of income determination and its application to public policy.
- 251 **Intermediate Economic Theory: Microeconomics (3)**
 Prerequisite: Economics 51. Analysis of prices in terms of equilibrium of the business firm and consumer demand in markets of varying degrees of competition. Determination of wages, rents, interest and profit.
- 270 **Urban and Regional Economics (3)**
 Prerequisite: Economics 51. The economics of location, population growth and transportation systems, with special emphasis on the urban region.
- 280 **History of Economic Thought (3)**
 Prerequisite: Economics 51. The evolution of economic thought from the ancients through post-Keynesian theory.
- 316 **Public Finance: Federal (3)**
 Prerequisite: Economics 51. The nature and scope of public finance. Analysis of expenditure, revenue and financial administration of the federal government, with emphasis on current problems.
- 317 **Public Finance: State and Local (3)**
 Prerequisite: Economics 50. A study of expenditures, taxation and financial administration of state and local governments, with emphasis on problems of current interest. Special attention given to research methods, as well as financial relations between various levels of government.
- 321 **Monetary Theory (3)**
 Prerequisite: Consent of instructor. Demand for money; determination of interest rates, prices and income; decision-making under conditions of uncertainty; term structure of interest rates. Other topics of mutual interest.
- 328 **Financial Markets Analysis (3)**
 Prerequisite: Economics 220. Flow of funds in the U. S. economy. Analysis of sources and uses of funds in various sectors. Introduction to the theory of portfolio choice.
- 330 **International Economic Analysis I (3)**
 Prerequisite: Economics 51. The theory of international trade, the theory of commercial policy, economic integration and economic development. Emphasis is on the theoretical framework of analysis.
- 331 **International Economic Analysis II (3)**
 Prerequisite: Economics 50. The balance of payments, the theory of foreign exchange, monetary standards and international liquidity. Emphasis is on the payments adjustment mechanism, international monetary institutions and alternative monetary systems.

- 325 **Qualitative Organic Analysis (3)**
Prerequisite: Chemistry 264. Laboratory and instrumental methods for the systematic identification of organic compounds. One hour lecture and seven hours laboratory per week.
- 333 **Thermodynamics (3)**
Prerequisite: Chemistry 232. Selected advanced topics including solid-state, nonequilibrium, and statistical thermodynamics. Three hours lecture per week.
- 336 **Introduction to Quantum Chemistry (3)**
Prerequisite: Chemistry 231 or consent of instructor. A brief but quantitative introduction to the application of quantum mechanics to problems in chemistry, covering the uncertainty principle, operators, solution of Schroedinger's equation for simple systems, perturbation theory, variation method, interaction of radiation with matter, atomic and molecular structure and theory of collisions. Three hours lecture per week.
- 341 **Advanced Inorganic Chemistry (3)**
Prerequisite: Chemistry 232 (may be taken concurrently). A systematic study of the structure and properties of the elements and their compounds, with emphasis on the correlation of chemical properties with theoretical concepts. Three hours lecture per week.
- 352 **Nuclear Chemistry (3)**
Prerequisite: Chemistry 232. Properties of radioactive nuclei, nature of radioactivity, nuclear reactions and applications of nucleonics to chemistry. Three hours lecture per week.
- 361 **Advanced Organic Chemistry (3)**
Prerequisite: Chemistry 262. Contemporary developments in the study of the structure of carbon compounds and the mechanism of their reactions. Topics include natural products, heterocyclic compounds, stereochemistry and photochemistry. Three hours lecture per week.
- 363 **Advanced Organic Synthesis (2)**
Prerequisite: Chemistry 264. Advanced synthetic methods of organic chemistry. One hour lecture and seven hours laboratory per week.
- 366 **Physical Organic Chemistry (3)**
Prerequisites: Chemistry 262 and Chemistry 232 (may be taken concurrently) Advanced topics in the theory of organic chemistry, including conformational analysis, reaction kinetics and mechanisms and tautomerism. Three hours lecture per week.
- 371 **Advanced Biochemistry (3)**
Prerequisite: Chemistry 272. Selected advanced topics in the chemistry of life processes. Three hours lecture per week.
- 381 **Special Topics (3)**
Prerequisite: Consent of instructor. A reading and seminar course in selected advanced topics. Three hours lecture per week.

ECONOMICS

Prerequisites may be waived by consent of instructor.

- 50 **Principles of Economics I (3)**
Prerequisite: Mathematics 10 or Mathematics 15 or 1½ high school units in algebra. Introduction to the subject of economics, with emphasis on the operation of the national economy, money and banking and international economic relations.
- 51 **Principles of Economics II (3)**
Prerequisite: Economics 50. Continuation of Economics 50, with emphasis on the theory of the firm, price determination and resource allocation.

Chemistry Credit The biology major must complete 20 hours of chemistry, with work in the following courses: Chemistry 11, 12, 222, 261 and 263.

Comprehensive Examination All biology majors must pass a comprehensive 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 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 recommend comparative anatomy for admission. Premedical students majoring in biology should therefore include Biology 202 and 204 among their biology electives.

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.

DEPARTMENT OF CHEMISTRY

Chemistry Faculty

Charles W. Armbruster, Ph.D., chairman, associate professor
Robert W. Murray, Ph.D., professor
Alan F. Berndt, Ph.D., associate professor
David W. Larsen, Ph.D., associate professor
Thomas L. Westman, Ph.D., associate professor
Lawrence Barton, Ph.D., assistant professor
Eric Block, Ph.D., assistant professor
Dennis J. Diestler, Ph.D., assistant professor
Joseph Feder, Ph.D., assistant professor
David L. Garin, Ph.D., assistant professor
Warren Groves, Ph.D., assistant professor
Marcel L. Halberstadt, Ph.D., assistant professor
Jane A. Miller, Ph.D., assistant professor
Robert I. Stearns, Ph.D., assistant professor

Chemistry Faculty

Stuart W. Weidman, Ph.D., assistant professor

Alex Wolberg, Ph.D., assistant professor

Linda S. Whatley, Ph.D., visiting assistant professor

Said. I. Raziq, M.S., instructor

Jack L. Coombs, B.A., laboratory stores manager

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

General Education Requirements All chemistry majors must complete the requisite courses to fulfill the general education requirements for the A. B. degree. For a listing of these requirements, see page 19. The departmental requirements stated below satisfy the science and mathematics requirements.

Departmental Requirements The candidate for the A. B. degree with a major in chemistry must complete the following:

Chemistry - 33 hours including 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).

Mathematics - 15 hours including Mathematics 80, 175 and 201.

Physics - 10 hours (Physics 2 and 3 are not applicable)

Language Requirements German or Russian must be used to fulfill the language requirement. In rare instances French may be substituted, but only with departmental approval. Spanish does not satisfy this requirement for chemistry majors.

Comprehensive Examination All chemistry majors must pass a comprehensive examination during their senior year.

The requirements for the B. S. degree with a major in chemistry are as follows:

General Education Requirements All chemistry majors must complete the requisite courses to fulfill the general education requirements for the A. B. degree. For a listing of these requirements, see page 19. The departmental requirements stated below satisfy the science and mathematics requirements.

Departmental Requirements The candidate for the B.S. degree with a major in chemistry must complete the following:

Chemistry - 46 hours including Chemistry 11, 12, 222, 231, 232, 233, 234, 261, 262, 263, 264, 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), 324, 341 and three additional elective hours in chemistry at the 200 level or higher.

- 222 **Quantitative Analysis (5)**
Prerequisite: Chemistry 12. Principles and practice of gravimetric, volumetric, and instrumental quantitative analytical methods. Two hours lecture and seven hours laboratory per week.
- 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. Three hours lecture per week.
- 232 **Physical Chemistry II (3)**
Prerequisite: Chemistry 231. Continuation of Chemistry 231. Three hours lecture per week.
- 233 **Laboratory in Physical Chemistry I (2)**
Prerequisite: Chemistry 231 (may be taken concurrently). Experiments designed to illustrate principles introduced in Chemistry 231. One hour lecture and seven hours laboratory per week.
- 234 **Laboratory in Physical Chemistry II (2)**
Prerequisite: Chemistry 232 (may be taken concurrently), Chemistry 233. Experiments designed to illustrate principles introduced in Chemistry 232. One hour lecture and seven hours laboratory per week.
- 261 **Structural Organic Chemistry (3)**
Prerequisite: Chemistry 12. An introduction to the structure, properties, synthesis and reactions of aliphatic and aromatic carbon compounds. Three hours lecture per week.
- 262 **Organic Reactions (3)**
Prerequisite: Chemistry 261. A systematic study of organic reactions and their mechanisms; organic synthetic methods. Three hours lecture per week.
- 263 **Techniques of Organic Chemistry (2)**
Prerequisite: Chemistry 261 (may be taken concurrently). An introduction to laboratory techniques and procedures of synthetic organic chemistry. One hour lecture and seven hours laboratory per week.
- 264 **Synthetic and Analytical Methods of Organic Chemistry (2)**
Prerequisite: Chemistry 262 (may be taken concurrently), Chemistry 263. Advanced techniques; synthesis; separation and identification of organic compounds by classical and instrumental techniques. One hour lecture and seven hours laboratory per week.
- 272 **Biochemistry (3)**
Prerequisite: Chemistry 263. The isolation, chemical characterization and function of the structural and catalytic components of living cells and subcellular particles. Three hours lecture per week.
- 274 **Biochemical Techniques (2)**
Prerequisite: Chemistry 272 (may be taken concurrently). Laboratory study of biochemical processes in cellular and subcellular systems with emphasis on the isolation and purification of protein (enzymes) and the characterization of catalytic properties. One hour lecture and three and one-half hours laboratory per week.
- 289 **Seminar (1)**
Presentation of papers by students, faculty and invited speakers. All chemistry majors must enroll as hearers during both semesters of their junior year; all majors must also enroll for credit during both semesters of their senior year.
- 290 **Chemical Research (credit arranged)**
Prerequisite: Consent of instructor. Independent laboratory and library study of fundamental problems in chemistry in conjunction with faculty member.
- 324 **Instrumental Analysis (3)**
Prerequisite: Chemistry 22, 234. Modern instrumental methods, including nuclear magnetic resonance, polarimetry, spectrophotometry, X-ray diffraction and others. Two hours lecture and three and one-half hours laboratory per week.

- 368 **Business Fluctuations and Forecasting (3)** (Same as Economics 368.)
Prerequisite: Economics 229. Discussion of factors affecting economic conditions, short-term fluctuations in business activity and plans and policies for economic stabilization. Emphasis on problems and techniques of forecasting aggregate and industry demand.
- 370 **Organization Theory and Structure (3)**
Prerequisite: Personnel Management 310. Organizational structure, executive behavior and their inter-relationships are examined. Focus is on the emerging research relevant to the behavior of people in organization structures and the role of administrators in recognizing, modifying and interacting within such structures.
- 375 **Operations Research (3)**
Prerequisites: Statistics 31, Calculus 80 and junior standing. Development of optimum methods and models for management control and decision-making. Based on newer methods of quantitative and statistical analysis and mathematical programming.
- 380 **International Business (3)**
Prerequisite: Economics 51. U.S. in the world economy; emerging nations; foreign exchange market; foreign investment; commercial documents; world trade; management of enterprises abroad.
- 391 **Business Policy and Administration (3)**
Prerequisite: Senior standing, Marketing 106, Finance 204 and Management 310. Comprehensive cases are used to examine the dynamics of business management. The role of high echelon management in the administrative process is integrated with the diverse functions of business to develop an operational system. Particular attention is given the formulation of a policy framework, planning and implementing executive action. Both team and individual analyses and reports are utilized with class evaluation and recommendations.

CHEMISTRY

Prerequisites may be waived by consent of department.

- 1 **General Chemistry (3)**
Presents a broad introductory survey of chemical principles. Chemistry 1 may be applied toward the fulfillment of the general education requirement in science. However, it does not satisfy the prerequisites of any other course (except Chemistry 3) in chemistry. Three hours lecture per week.
- 3 **General Chemistry Laboratory (2)**
Prerequisite: Chemistry 1 (may be taken concurrently). Experiments designed to illustrate the principles treated in Chemistry 1. Three and one-half hours laboratory per week.
- 11 **Introductory Chemistry (5)**
Prerequisite: Mathematics 10 (may be taken concurrently) or equivalent. Presents an introduction to the fundamental laws and theories of chemistry. Laboratory experiments are designed to demonstrate chemical principles and to develop skills in laboratory procedures. Three hours lecture and one hour discussion per week, three and one-half hours laboratory biweekly.
- 12 **Qualitative Analysis (5)**
Prerequisite: Chemistry 11 or advanced placement. A study of the chemistry of electrolytic solutions and the principles of chemical equilibrium. Laboratory work deals with the descriptive chemistry and identification of common ionic species. Three hours lecture and three and one-half hours laboratory per week.
- 180 **Methods of Teaching Chemistry in Secondary Schools (3)**
Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the science courses in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation.

Mathematics - 15 hours including Mathematics 80, 175 and 201. Additional courses (e.g., Differential Equations, Mathematics 301) are recommended for majors specializing in physical chemistry.

Physics - 10 hours (Physics 2 and 3 are not applicable.)

Science Electives - A total of five additional elective hours in the fields of astronomy, biology, chemistry, mathematics or physics.

Language Requirement German and Russian are the only foreign languages which may be used to satisfy the language requirement for the bachelor of science in chemistry degree. German is preferred.

Comprehensive Examination All Chemistry majors must pass a comprehensive examination during their senior year.

DEPARTMENT OF ECONOMICS

Economics Faculty

Ingo Walter, Ph.D., chairman, assistant professor

Sioma Kagan, Ph.D., professor*

Joseph P. McKenna, Ph.D., professor

Elizabeth M. Clayton, Ph.D., assistant professor

E. David Emery, Ph.D., assistant professor

John H. Hand, Ph.D., assistant professor

John F. Haneski, Ph.D., assistant professor

Robert Kirk, Ph.D., assistant professor

Kern O. Kymn, Ph.D., assistant professor

William E. Mitchell, Ph.D., assistant professor

Donald A. Murry, Ph.D., assistant professor

Herbert D. Werner, Ph.D., assistant professor

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

General Education Requirements The economics major must complete 42 hours of general education requirements. For a listing of these requirements, see page 19.

General Area Requirements An economics major is required to complete the following courses: Business 36-Elementary Accounting I; Business 31-Elementary Statistics. Mathematics 80-Analytic Geometry and Calculus I recommended. Depending on the student's interests, electives should be chosen from such related fields as business administration, history, mathematics, philosophy, political science, psychology and sociology-anthropology. All electives will be selected in consultation with the student's adviser.

Departmental Requirements An economics major is required to complete 33 hours of departmental requirements, with all of the following courses: Economics 50-Principles of Economics I; Economics 51-Principles of Economics II; Economics 220-Money and Banking; Economics 250-Intermediate Economic Theory: Macroeconomics; Eco-

*Primary appointment, School of Business Administration.

nomics 251-Intermediate Economic Theory: Microeconomics; Economics 190-Readings in Economics; Economics 191-Senior Seminar in Economics. An economics major must complete satisfactorily Economics 191 during his senior year. In the course of the seminar, he will prepare a senior paper which he will present to seminar students as well as interested members of the staff. He must indicate competence both in the area of his chosen topic and in the general area of economics within which it lies.

Comprehensive Examination At the end of his senior year each economics major must pass a written comprehensive examination designed to test his competence in general economic theory, policy and institutions.

DEPARTMENT OF ENGLISH

English Faculty

Charles T. Dougherty, Ph.D., chairman, professor
 B. Bernard Cohen, Ph.D., professor
 William C. Hamlin, Ph.D., professor
 G. Bert Carlson, Ph.D., assistant professor
 James Hazen, Ph.D., assistant professor
 Valerie Lagorio, Ph.D., assistant professor
 Eugene Murray, Ph.D., assistant professor
 John T. Onuska, Ph.D., assistant professor
 James E. Tierney, Ph.D., assistant professor
 Jane Williamson, Ph.D., assistant professor
 Dwight A. Williams, Ph.D., assistant professor of speech
 Peter Wolfe, Ph.D., assistant professor
 Jerome Grollman, M.H.L., visiting assistant professor
 David L. Allen, M.A., instructor
 Susan Bobrow, M.A., instructor
 Mary Burger, M.A., instructor
 Philip Dacey, M.A., instructor
 Ann Fischer, M.A., instructor
 Nancy Glenn, M.A., instructor
 William Gunlock, M.A., instructor
 Mary Vera Jackson, M.A., instructor
 Gerald Knoll, M.A., instructor
 Thomas Lyons, M.A., instructor
 Jane Parks, M.A., instructor
 John Schaeffer, M.A., instructor
 Clyde Tracy, M.A., instructor

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

General Education Requirements The English major must complete 42 hours of general education requirements. For a listing of these requirements, see page 19.

- 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 solutions to complex problems of merchandising, channel selection, brand policy, price policy, sales promotion, advertising and personal selling.
- 318 Industrial Psychology (3) (Same as Psychology 318)**
 Prerequisites: Psychology 201 or equivalent or Business 310. Activities of the applied psychologist. Selection and placement, testing and interviewing, personnel research. Morale, motivation and job satisfaction. Leadership skills and styles, creative management, industrial mental health. Psychology in advertising and marketing.
- 321 Cost Accounting (3)**
 Prerequisite: Managerial Accounting 302 or Intermediate Accounting 217 or consent of department. Emphasizes use of accounting techniques to promote efficiency by tracing costs to personnel, processes and products. Different systems analyzed to understand their strength, 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.
- 323 Accounting: Income Taxes (3)**
 Prerequisite: Accounting 217 or Accounting 302. Problems in computing taxable income under existing federal and state laws for individuals, proprietors, partners and corporations. Includes the preparation of returns and important topics in income exclusions, exemptions, personal and business deductions, tax credits and other subjects.
- 331 Auditing (3)**
 Prerequisite: Intermediate Accounting 217. Fundamental audit techniques for verification, analysis and interpretation of accounting records and financial statements. Includes developing audit evidence, working papers and audit reports. Standards of professional competence, ethics and independence are examined.
- 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 economic and management circumstances within the company, industry and economy.
- 350 Financial Policies (3)**
 Prerequisite: Corporate Finance 204. The intensification and application of the concepts developed in Finance 204. Special emphasis is given to the development of top management policies and their application toward complex problems of finance. Techniques for identifying and dealing with these problems before they become acute will be investigated. Cases will be integrated with appropriate outside reading.
- 360 Managerial Economics (3) (Same as Economics 360)**
 Prerequisite: Economics 51. Application of economic theory to decision-making in the business firm. Discussion of price and output determination under various business conditions, as well as factors affecting wage, interest and profit.

- 37 **Elementary Accounting II (3)**
Prerequisite: Accounting 36 or equivalent. Continuation of study of generally accepted accounting principles. Accounting problems and techniques for partnerships, corporations and manufacturing endeavors are emphasized.
- 104 **Fundamentals of Digital Computer Programming (3) (Same as Math 104)**
Prerequisite: Mathematics 10 or equivalent. Principles of programming digital computers in machine, symbolic and algebraic languages.
- 106 **Principles of Marketing (3)**
Prerequisites: Accounting 37 and 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)**
Prerequisites: Accounting 37 and Economics 51. Principles of industrial organization and management and their application to production, personnel and materials.
- 204 **Corporate Finance (3)**
Prerequisites: Economics 51 and Accounting 37. The study of a firm's need for funds; the institutions, instruments and markets concerned with raising such funds; and the techniques of analysis used to determine how effectively these funds, once raised, are invested within the firm.
- 217 **Intermediate Accounting (3)**
Prerequisite: Accounting 37. Study of accounting theory in depth with emphasis on financial accounting.
- 256 **Business Law (3)**
Prerequisites: Accounting 37 and Economics 51. Introduction to legal instruments and statutes centering on such things as contracts, agencies, partnerships, unincorporated organizations, corporations, negotiable instruments, bailment, personal and real property, bankruptcy and receivership. Includes a survey of Federal regulatory legislation to motivate and preserve competition and to protect the public.
- 270 **Advertising (3)**
Prerequisite: Principles of Marketing 106. Topics included are the advertising agency and media, use and expedience analysis, consumer motivation and appeal evaluation, measuring advertising effectiveness and the social and legal aspects of advertising.
- 275 **Marketing Research (3)**
Prerequisite: Principles of Marketing 106. Techniques of gathering and analyzing data for marketing decisions. Identification of fundamental problems including geographic, demographic and psychographic market segmentation. Methods of sampling, quantification and statistical analysis are developed as a means of contributing to decisions in pricing, advertising, packaging, product development, consumer motivation and other complex marketing problems.
- 302 **Managerial Accounting (3)**
Prerequisites: 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.

Department Requirements All requirements for the English major hereafter stated are understood to include English 10 and 12 or English 65GH.

The English Department stipulates the following course requirements for all students seeking the bachelor of arts degree in English:

1. No fewer than 36 nor more than 45 hours in English will be accepted toward graduation as an English major (bachelor of arts).

2. At least 27 hours will be taken beyond the introductory level.

3. All students majoring in English will take the following specific courses:

a. English 135 –Major British Writers . . .	3 hours
b. English 175 –American Literature . . .	3 hours
c. English 220 –Growth and Structure of the English Language . . .	3 hours
Total	9 hours

4. All students majoring in English will take at least one course in each of the following periods:

a. Middle English Literature	3 hours
b. Sixteenth Century English Literature (Shakespeare may be included in this period) . . .	3 hours
c. Seventeenth Century English Literature . . .	3 hours
d. Eighteenth Century English Literature . . .	3 hours
e. Nineteenth Century English Literature . . .	3 hours
f. Major American Writers or Modern Literature . . .	3 hours

Total 18 hours

Specific courses will be selected with the assistance of a departmental adviser.

5. At the senior level, all students seeking the bachelor of arts degree in English will take the following courses:

a. Senior Readings	3 hours
b. Senior Seminar	3 hours

Total 6 hours

Electives These hours are to be chosen with the assistance of the departmental adviser. Although no minors as such are required, each student must develop a supporting concentration of 12 hours *beyond the general education requirements* to be approved by the English Department in no more than two of the following areas: philosophy, history, art history, music history, anthropology, languages and political science, or as approved.

In the case of a student preparing to teach at the elementary or secondary level, the School of Education requirements would fulfill the "minor" requirement as outlined above.

DEPARTMENT OF FINE ARTS

Fine Arts Faculty

Kenneth E. Miller, Ph.D., chairman, associate professor of music
Ronald K. Arnatt, M.B., associate professor of music
Edward L. Kottick, Ph.D., associate professor of music
Warren T. Bellis, M.M., assistant professor of music
Michael B. Harper, M.A., instructor in art history
Theodore Lucas, M.A., instructor in music
Nancy McBride, M.A., instructor in art history

The department of fine arts offers a major in music or music history and literature. A major in art is not offered; however, the program includes courses in art history which are applicable to the general education requirements.

Music The requirements for the A.B. degree with a major in music or music history and literature are:

General Education Requirements The music major must complete 42 hours of general education requirements. For a listing of these requirements, see page 19.

General Area Recommendations It is recommended that the major fulfill his language requirement in French or German, his history requirement with six hours of European civilization and his laboratory science requirement in the field of physics.

Departmental Requirements Every major must elect a minimum of ten additional hours in the College of Arts and Sciences, of which at least four hours shall be in the humanities.

Every major will be required to participate in an approved ensemble each semester of his course of study, to appear in performances at the discretion of the department and to pass an examination in keyboard proficiency during the period of undergraduate study.

A departmental major consists of the course requirements as listed below, but students may elect to take additional work in the major up to a maximum of 45 hours. Specific courses will be chosen in consultation with the student's adviser.

Music

Music Theory 3, 4, 111, 112	12 hours
Music History and Literature 101, 102	6 hours
Advanced Music Theory	2 hours
Music History and Literature at the 300 level	3 hours
Conducting 151	2 hours
Major applied area and ensemble	12 hours
Senior year requirements 192, 193	5 hours
	<u>42 hours</u>

- 321 Advanced Genetics (3)**
Prerequisite: Biology 224. Selected topics in genetic theory. Three hours lecture per week.
- 322 Cytogenetics (3)**
Prerequisite: Biology 224. Structure and composition of cytoplasm and nuclei and structure and replication of chromosomes. Analysis of cell cycles and their experimental modification with drugs and radiations. Chromosome behavior and its relation to heredity, speciation and the evolution of sexual dimorphism. Cytology of reproduction. Three hours lecture per week.
- 323 Advanced Genetics Laboratory (2)**
Prerequisite: Biology 321 (may be taken concurrently). Instrumentation and experimental studies in genetic analysis. Three and one-half hours laboratory per week.
- 324 Cytogenetics Laboratory (2)**
(Must be taken concurrently with Biology 322). Laboratory to accompany Biology 322. Three and one-half hours laboratory per week.
- 330 Analysis of Vertebrate Development (2)**
Prerequisites: Biology 235 and 237. An experimental approach to the factors governing growth, development and reproduction of vertebrates. Two hours lecture per week.
- 332 Analysis of Vertebrate Development Laboratory (3)**
Prerequisite: Biology 330 (may be taken concurrently). Instrumentation and experimental studies in vertebrate development. Seven hours laboratory per week.
- 334 Analysis of Invertebrate Development (3)**
Prerequisites: Biology 235 and 237. An experimental approach to the study of the factors governing growth, development and reproduction of invertebrates. Three hours lecture per week.
- 336 Analysis of Invertebrate Development Laboratory (2)**
Prerequisite: Biology 334 (may be taken concurrently). Instrumentation and experimental studies in invertebrate development. Three and one-half hours laboratory per week.
- 350 Analysis of Plant Development (2)**
Prerequisites: Biology 255 and 257. An experimental approach to the study of the factors governing growth, development and reproduction in plants. Two hours lecture per week.
- 352 Analysis of Plant Development Laboratory (3)**
Prerequisite: Biology 350 (may be taken concurrently). Instrumentation and experimental studies in plant development.

BUSINESS ADMINISTRATION

Prerequisites may be waived by consent of department.

- 31 Elementary Statistics (3)**
Prerequisites: Sophomore standing and Mathematics 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: Sophomore 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.

- 226 **Genetics Laboratory (2)**
Prerequisite: Biology 224 (may be taken concurrently). Laboratory to accompany Biology 224. Three and one-half hours laboratory per week.
- 235 **Animal Development (3)**
Prerequisites: Biology 213 and 224. Anatomical and physiological aspects of the embryonic development of animals. Three hours lecture per week.
- 237 **Animal Development Laboratory (2)**
(Must be taken concurrently with Biology 235.) Laboratory to accompany Biology 235. Three and one-half hours laboratory per week.
- 246 **Evolution (3)**
Prerequisite: Biology 235 or 255. The course and mechanisms of organic evolution. Three hours lecture per week.
- 250 **Plant Structure (3)**
Prerequisite: Biology 12. Morphological and anatomical studies of the members of the plant kingdom. Three hours lecture per week.
- 252 **Plant Structure Laboratory (2)**
(Must be taken with Biology 250.) Laboratory to accompany Biology 250. Three and one-half hours laboratory per week.
- 255 **Plant Development (2)**
Prerequisites: Biology 213 and 250. Anatomical and physiological aspects of the growth and development of plants. Two hours lecture per week.
- 257 **Plant Development Laboratory (3)**
(Must be taken concurrently with Biology 255.) Laboratory to accompany Biology 255. Seven hours laboratory per week.
- 260 **Microtechnique (2)**
Prerequisite: Biology 213. Technical aspects of preparation of biological material for proper microscopic study. Two hours lecture per week.
- 262 **Microtechnique Laboratory (3)**
(Must be taken concurrently with Biology 260.) The preparation of specimens for microscopical study. Includes wholemount techniques, sectioning, routine staining methods and histochemical procedures. Seven hours laboratory per week.
- 289 **Seminar (1)**
Required of all biology majors during both semesters of their senior year. Presentation of selected papers by students.
- 290 **Research (credit arranged)**
- 310 **Cellular Biology (3)**
Prerequisites: Biology 213, 215 and 224. Cellular metabolism and structure. Three hours lecture per week.
- 312 **Cellular Biology Laboratory (2)**
Prerequisite: Biology 310 (may be taken concurrently). Instrumentation and experimental techniques in cellular biology. Three and one-half hours laboratory per week.
- 313 **Comparative Animal Physiology (3)**
Prerequisites: Biology 213 and 215. The evolutionary relationships of animals considered in terms of physiological and biochemical characteristics. Three hours lecture per week.
- 315 **Comparative Animal Physiology Laboratory (2)**
Prerequisite: Biology 313 (may be taken concurrently). Analysis of physiological processes and their adaptive significance in specific environments. Three and one-half hours laboratory per week.
- 316 **Microbiology (3)**
Prerequisites: Biology 213 and 224. A study of microorganisms, their metabolism and their interaction with other forms of life. Three hours lecture per week.
- 318 **Microbiology Laboratory (2)**
Prerequisite: Biology 316 (may be taken concurrently). Experimental studies and procedures of microbiological techniques. Three and one-half hours laboratory per week.

Music History and Literature

Music Theory 3, 4, 111, 112, 131, 141	16 hours
Music History and Literature 101, 102	6 hours
Music History and Literature at the 300 level	9 hours
Piano	8 hours
Senior year requirements 192, 193	5 hours
	<hr/>
	44 hours

Comprehensive Examination Every major will be required to pass a comprehensive examination in the field of the major.

Standards of achievement in applied music, piano proficiency and entrance requirements are on file. The major should familiarize himself with these requirements.

DEPARTMENT OF HISTORY

History Faculty

James Neal Primm, Ph.D., chairman, professor
James L. Bugg, Jr., Ph.D., professor
Glen R. Driscoll, Ph.D., professor
Gilman Ostrander, Ph.D., professor
Roy Gene Burns, Jr., Ph.D. associate professor
Lyle Dorsett, Ph.D., associate professor
Harold Eickhoff, Ph.D., associate professor
James D. Norris, Ph.D., associate professor
Armand D. Erickson, M.A., assistant professor
Norma Erickson, Ph.D., assistant professor
Henry E. Friedlander, Ph.D., assistant professor
Susan Hartmann, Ph.D., assistant professor
William Maltby, Ph.D., assistant professor
Richard W. Resh, Ph.D., assistant professor
Arthur H. Shaffer, Ph.D., assistant professor
Blanche M. Touhill, Ph.D., assistant professor
Dolores Williams, Ph.D., assistant professor
Robert Nelson, M.A., instructor
Linda Resh, M.A., instructor
Andrew Southern, B.A., instructor

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

General Education Requirements The history major must complete 42 hours of general education requirements. For a listing of these requirements see page 19. It is recommended that students fulfill their social science requirement by taking courses in economics, political science or sociology.

Departmental Requirements The history major must complete 36 hours of departmental requirements. Students may elect to take additional work in history up to a maximum of 45 hours.

History majors may emphasize American, Asian or European history in their major program as follows. Specific courses will be chosen in consultation with the student's adviser.

American History

History 1 and 2	6 hours
History 3 and 4	6 hours
American history at the 300 level	12 hours
Other than American at the 300 level	6 hours
History 192 and 193	6 hours

Asian History

History 1 and 2	6 hours
History 3 and 4	6 hours
Asian history	12 hours
Other than Asian at the 300 level	6 hours
History 192 and 103	6 hours

European History

History 1 and 2	6 hours
History 3 and 4	6 hours
European history at the 300 level	12 hours
Other than European at the 300 level	6 hours
History 192 and 193	6 hours

Comprehensive Examination History majors must pass a comprehensive examination during the senior year.

DEPARTMENT OF MATHEMATICS

Mathematics Faculty

Deborah T. Haimo, Ph.D., professor
 E. Z. Andalafte, Ph.D., associate professor
 Raymond Balbes, Ph.D., assistant professor
 Patrick Cassens, Ph.D., assistant professor
 Ronald Irwin, Ph.D., assistant professor
 Wayne L. McDaniel, Ph.D., assistant professor
 Said Sidki, Ph.D., assistant professor
 Frederick W. Wilke, Ph.D., assistant professor
 Ruth Boothby, M.A., instructor
 Robert C. C. Chen, M.A., instructor
 W. James Dillon, M.A., instructor
 Robert F. Emnett, M.S., instructor
 Owen M. Gleeson, M.S., instructor
 Dorothy Hain, M.A., instructor
 Frank Luebbert, M.S., instructor
 Michael Scroggins, M.A., instructor
 Carol Sipe, M.A., instructor
 Harold Tessereau, M.A., instructor
 Timber Zwonkin, M.A., instructor

340 Modern Art (3)

Prerequisite: Art 1 or consent of department. The sources of the modern movement in the nineteenth century beginning with Neo-Classicism and Romanticism, the subsequent development of Impressionism and Post-Impressionism, and finally the twentieth century with Cubism, Expressionism and Abstract Art.

BIOLOGY

Prerequisites may be waived by consent of department.

- 1 **General Biology (3)**
 Emphasis on fundamental principles of biology. Biology 1 can be applied toward fulfillment of the general education requirement in science. Biology 1 does not satisfy the prerequisite requirements of other courses in biology. Students who plan to pursue a career in medicine or one of the medically oriented professions should enroll in Biology 11/12 rather than Biology 1. Three hours lecture per week.
- 3 **General Biology Laboratory (2)**
 Prerequisite: Biology 1 (may be taken concurrently). Laboratory course to accompany Biology 1. Biology 3 can be used to fulfill the general education requirement in a laboratory science. Biology 3 does not meet the prerequisite requirements of other courses in biology. Three and one-half hours laboratory per week.
- 11 **Introductory Biology I (5)**
 Prerequisite: Chemistry 11 (may be taken concurrently). Biology 11/12 provides a two-semester sequence giving intensive introduction to the general properties of living systems, both plant and animal. Three hours lecture and three and one-half hours laboratory per week.
- 12 **Introductory Biology II (5)**
 Prerequisite: Biology 11. Continuation of Biology 11. Three hours lecture and three and one-half hours laboratory per week.
- 180 **Methods of Teaching Biology in Secondary Schools (3)**
 Prerequisites: Education 163 and a near-major in the subject matter. A study of the scope and sequence of the science course in the school curriculum, with emphasis on the selection and organization of materials and methods of instruction and evaluation. Attention is also directed toward learning the techniques and research tools of the scholar in the field of science.
- 202 **Comparative Anatomy (2)**
 Prerequisite: Biology 12. A study of the microscopic and macroscopic structures of the different phyla of the animal kingdom. Special reference is given to the evolution of form and function. Two hours lecture per week.
- 204 **Comparative Anatomy Laboratory (3)**
 (Must be taken concurrently with Biology 202.) Anatomical study of the animal kingdom. Seven hours laboratory per week.
- 213 **General Physiology (3)**
 Prerequisites: Chemistry 261 (may be taken concurrently) and Biology 12. The basic functional aspects of organ systems in relation to the physicochemical properties of protoplasm. Three hours lecture per week.
- 215 **General Physiology Laboratory (2)**
 (Must be taken concurrently with Biology 213.) Instrumental and experimental studies in physiology. Three and one-half hours laboratory per week.
- 224 **Genetics (3)**
 Prerequisite: Biology 12. The fundamental principles of inheritance, including classical genetic theory as well as recent advances in the molecular basis of heredity. Three hours lecture per week.

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

ASTRONOMY

(See PHYSICS, page 95)

ART HISTORY, THEORY

Prerequisites may be waived by consent of department.

- 1 **Masterpieces of Art (3)**
Illustrated discussion with examples from varied historic and contemporary art fields on the nature of art, functions and methods of creative expression. No credit for art history majors.
- 101 **History of Western Art (3)**
Prerequisite: Sophomore standing or consent of department. Illustrated lectures and discussion of the architecture, sculpture, painting of Greece, Rome and Medieval Europe. Required for the major in art history.
- 102 **History of Western Art (3)**
Prerequisite: Sophomore standing or consent of department. Illustrated lectures and discussion of the general development of art and architecture from the fourteenth century to the present. Required for the major in art history.
- 123 **Classical Art and Archaeology of Greece and Rome (3)**
Prerequisite: Sophomore standing or consent of department. A general survey of the development of material culture in Greece and Rome from the earliest times through the Hellenistic Period and through the early Roman Empire. Required for the major in art history.
- 139 **Art Activities for Elementary Schools (3)**
A study of art principles; provides laboratory experiences with various media and materials. Stresses curriculum planning and development of the elementary school program in art.
- 310 **Medieval Art (3)**
Prerequisite: Art 1 or 101. The secular as well as religious art of the Middle Ages from the early Christian era through the late Gothic Period.
- 320 **Renaissance Art (3)**
Prerequisite: Art 1 or 102. The artistic culture of Western Europe during the fifteenth and sixteenth centuries from the development of the new style in Italy to its spread throughout Europe.
- 325 **Baroque Art (3)**
Prerequisite: Art 1 or 102. Art in Europe from the sixteenth century to the end of the eighteenth century, with emphasis on the painters Rembrandt, Velasquez, Poussin, the sculptor Bernini and the architectural undertaking of the Palace of Versailles.
- 330 **American Art (3)**
Prerequisite: Art 1 or consent of department. A survey of the art of the United States, both as an extension of the European tradition and for its original contributions.

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

General Education Requirements All mathematics majors must take the requisite courses to fulfill the general education requirements for the desired degree. For a listing of these courses, see page 19. 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 chairman.

Departmental Requirements The mathematics major must complete six three-hour courses numbered above 201, including courses from each of the following areas, with at least two courses from some one area:

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

The student shall complete two sequences of at least nine 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; Astronomy 11 and 12 and above; philosophy, including 250 and 360; economics, including 365 and 366; or other areas approved by the Mathematics Department.

During the senior year, the student must complete at least one semester of Mathematics 350, special readings, for 1-3 hours credit.

During the last two semesters, the student shall enroll in Mathematics 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 credit for mathematics seminar in any semester in which he presents a formal paper.

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

Students preparing for graduate study in mathematics are strongly advised to complete Mathematics 310, 311, 340 and 341.

DEPARTMENT OF MODERN FOREIGN LANGUAGES AND LITERATURES

Modern Foreign Languages and Literatures Faculty
Enrique Noble, Ph.D., chairman, professor of Spanish
Marcus Allen, Ph.D., associate professor of French
Marion Holt, Ph.D., associate professor of Spanish
Vladimir N. Butkoff, M.A., assistant professor of Russian

Robert I. Cloos, Ed.D., assistant professor of German
 John A. Creviere, Ph.D., assistant professor of French
 Kay Ellen Cushman, Ph.D., assistant professor of French
 Mary Guckel, Ph.D., assistant professor of German
 Paul Hoffman, M.A., assistant professor of German
 Betty Osiek, Ph.D., assistant professor of Spanish
 Zenaida Gutierrez-Vega, Ph.D., assistant professor of Spanish
 Alexandra Butkoff, B.A., instructor of Russian
 Madelaine Dethier, M.A., instructor of French
 Anthony W. Integlia, M.A., instructor of Spanish
 Kenneth W. Koenig, M.A., instructor of French
 David O. Lipp, M.A., instructor of German
 Michael J. Mahler, M.A., instructor of Spanish and director of language lab
 William H. Marda, M.A., instructor of German
 John Pisoni, M.A., instructor of German
 Noemi Ramirez, M.A., instructor of Spanish
 Elba Remmling, M.A., instructor of Spanish
 Guy Rossetti, M.A., instructor of Spanish
 Patricia Walker, M.A., instructor of French
 Harriet Waller, M.A., instructor of French
 Anne Weitzel, M.A., instructor of French
 Nancy Whiteside, M.A., instructor of Spanish

The Department of Modern Foreign Languages and Literatures offers work leading to the degree of bachelor of arts and a major in a foreign language and literature for secondary school teachers in education. The requirements are:

General Education Requirements The language major must complete 42 hours of general education requirements. For a listing of these requirements, see page 19.

Departmental Requirements The language major must complete 36 hours of the language and literature: 101, 102, 106, 107, 190, 191, 200, 201, 202; and three other literature courses (9 hours) on the 300 level. However, it is recommended that the major student take additional work in literature courses on the 300 level, up to a maximum of 45 hours. (Although the language major is encouraged to prepare himself as thoroughly as possible, the total of 36 hours may be reduced in proportion to the degree of his success achieved on a placement test taken upon his entrance to the University.)

Comprehensive Examination All language majors must pass a written and oral comprehensive exam during the senior year.

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 listing the specific courses to be offered for that semester with the time of meeting, the building and room number of each course.

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

The University reserves the right to cancel without notice any course listed in the *General Catalog* or in the *Schedule of Courses* for any semester or to withdraw any 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. Upper-class students are admitted to courses in this series only with the approval of the dean of the division in which the course is offered.

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

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

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

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



The Evening College of the University of Missouri - St. Louis was established to provide, at moderate cost, a quality program of higher education for those students who are unable to attend or who cannot be accommodated in day classes.

The Evening College offers several well-defined areas of service to the students of the St. Louis Metropolitan Area:

1. A regular degree granting program consisting of the bachelor of arts, bachelor of science in business administration and bachelor of science in education degrees conforming to the same policies and standards as the Day Program.

Students should consult the appropriate department of the Evening College Dean's Office for information concerning available majors.

2. Graduate level courses leading to a master's degree in education.
3. Courses offered each semester which will meet teacher certification requirements within the state of Missouri. A special adviser for certification is on duty during the evening hours.
4. Pre-professional courses.
5. Courses that carry college credit which may be taken by students not working toward a degree; a service for persons wishing to maintain or improve their professional competence or broaden their educational background.
6. A counseling and advising service available without charge during the evening hours to assist students in preparing programs appropriate to their needs.

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

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

Students planning to do graduate work should confer with their advisers in the department about requirements in German, French, Russian or Spanish.

The student seeking the B.S. degree in education with a major in a foreign language and literature must take the course in the Curriculum and Methods of Teaching Foreign Language 264.

Recommendations 1. It is strongly recommended that a language major take a minimum of 15 hours of another language beyond elementary courses 1 and 2.

2. It is also recommended that a language major take as much work as possible in the related areas of history, English literature, philosophy, art and music.

3. The language major is encouraged to investigate the various programs which will enable him to travel abroad during the summer preceding the senior year. This program must be approved by the department.

DEPARTMENT OF PHILOSOPHY

Philosophy Faculty

James F. Doyle, Ph.D., chairman, associate professor

Edward B. Costello, Ph.D., associate professor

Donald E. Damhorst, Ph.D., associate professor

J. Ronald Munson, Ph.D., assistant professor

John M. Walker, Ph.D., assistant professor

Kay Bikson, M.A., instructor

John E. Clifford, M.A., instructor

William J. DeAngelis, M.A., instructor

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

General Education Requirements The philosophy major must complete 42 hours of general education requirements. For a listing of these requirements see page 19.

Departmental Requirements The major student should complete a minimum of 30 hours and a maximum of 45 hours in philosophy. Course work in philosophy must include: one logic course above the 100 level; at least three courses from 201-205 history of philosophy sequence; Senior Readings 192; Senior Seminar 193; four additional courses, at least three of which must be at the 300 level.

Comprehensive Examination Every major will be required to pass a comprehensive examination in the field of the major.

Majors in philosophy who plan to enter graduate study in this field should confer with their departmental adviser about specific course requirements.

DEPARTMENT OF PHYSICS

Physics Faculty

William W. Eidson, Ph.D., chairman, professor

Corneliu Eftimiu, Ph.D., associate professor

James C. Gravitt, Ph.D., associate professor

John S. Rigden, Ph.D., associate professor

Bob L. Henson, Ph.D., assistant professor

Robert Hight, Ph.D., assistant professor

Charles N. Inskip, Ph.D., assistant professor

Philip B. James, Ph.D., assistant professor

Jacob J. Leventhal, Ph.D., assistant professor

Sue Gronemeyer, A.M., instructor

Robert E. Hubbard, director of physics laboratories

Bachelor of Arts The bachelor of arts degree with a major in physics is designed to provide the student with a broad academic experience and prepare him for graduate study. The requirements for the A.B. degree with a major in physics are:

General Education Requirements All physics majors must complete the requisite courses to fulfill the general education requirements for the A.B. degree. For a listing of these courses see page 19. The departmental requirements stated below may be used to satisfy the science and mathematics requirements.

Departmental Requirements The physics major must complete 35 hours of physics: Physics 1, 10, 15, 111, 112, 211, 212, 221, 223, 231, 241, 281 (total of three hours credit), 289 (all physics majors must enroll in Physics 289 as hearers during both semesters of their junior year, and all physics majors must take Physics 289 for credit during both semesters of their senior year), 301. Physics 290 (total of three credit hours) may be substituted for Physics 281.

The physics major must complete 21 hours of mathematics: Mathematics 80, 175, 201, 222 and 301. Students with experience in digital computer programming may be excused from Mathematics 222.

The physics major must complete 10 hours of chemistry: Chemistry 11 and 12.

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.

Comprehensive Examination All physics majors must take a comprehensive examination during their senior year.

Astronomy The Department of Physics, in cooperation with McDonnell Planetarium, offers six courses in astronomy for degree credit. The courses meet at McDonnell Planetarium in Forest Park, and are taught by the Planetarium's staff of instructors. For a listing of available courses, see page 95. Students desiring more information on these astronomy offerings should contact the Department of Physics.

Ed 151-Teaching of Science in the Elementary

School 3 hours

Ed 152-Teaching of Social Studies in the Elementary

School 3 hours

Ed 153-Teaching Mathematics in the Elementary

School 3 hours

Ed 155-Physical Education Activities in the

Elementary School 2 hours

Ed 325-Teaching Reading in the Elementary School 3 hours

Ed 251-Elementary School Student Teaching 6 hours

Area of Concentration Twelve semester hours must be taken in courses above the introductory level which are not used to meet the requirements in general education, professional education or related areas. The courses are not to be taken in more than three departments.

Electives The elementary education major should complete eight hours of electives.

SECONDARY EDUCATION

The general education requirements are the same as those for the bachelor of arts degree, except that a foreign language is not required. For a listing of these requirements, see page 19.

Students preparing to teach in the high schools may major in any one of the several disciplines offered. For example, a major may be earned in any one of the sciences (biology, chemistry, physics); in a foreign language (French, Spanish, German); in one of the social sciences (economics, political science, sociology-anthropology); in history, mathematics or English.

General Education Requirements The secondary education major must complete 42 hours of general education requirements. For a listing of these requirements, see page 19.

Professional Education The major student must complete the following required courses in professional education:

Ed 100-Orientation of Teaching 0 hours

Ed 102-Educational Psychology 3 hours

Ed 110-Elements of Health Education 2 hours

Ed 125-History of American Education or

Education 126-Education and Culture 3 hours

Ed 163-Techniques of Secondary School Teaching 2 hours

Ed 170-Secondary School Administration for Teachers 2 hours

Ed 261-9-Special Methods Course by Department 3 hours

Psychology 271-Adolescent Psychology 3 hours

Ed 271-Secondary School Student Teaching 6 hours

Academic Majors The academic major will be defined cooperatively by the major department and the School of Education faculty. At least 30 hours are required for a major.

For detailed information about academic majors and their specific requirements, the student is urged to consult the Assistant Dean of the School of Education to select an adviser in his academic area.

education or related areas. Courses are not to be taken in more than three departments.

Electives The early childhood education major should complete 14 hours in electives.

ELEMENTARY EDUCATION

The requirements for the bachelor of science in education with a major in elementary education are as follows:

General Education Requirements The elementary education major must complete 55 hours of general education requirements:

English

English 10-Composition 3 hours

English 12-Literary Types 3 hours

English 101-Speech 3 hours

Mathematics

Math 50-Structure of Mathematical Systems I . . . 3 hours

Math 51-Structure of Mathematical Systems II . . . 3 hours

Science

Biological Science 3 hours

Physical Science 3 hours

Science lab 2 hours

Non-Western Study

One three-hour course 3 hours

Humanities

11 semester hours in three departments; Music 134 is required 11 hours

Social Science

12 semester hours in three departments; Psychology 1 and 2 are required, and a course in state and local government is recommended 12 hours

History

American history required. This will meet state requirements for such a course 6 hours

General Area Requirements The following related area courses are required:

Psychology 270-Child Psychology 3 hours

Music 137-Elementary School Music 2 hours

Art 139 Art-Activities for Elementary Schools . . . 3 hours

Education 57-Regions and Nations of the World . . 3 hours

Professional Education The elementary education major must complete 34 hours in the courses described as follows:

Ed 110-Elements of Health Education 2 hours

Ed 102-Educational Psychology 3 hours

Ed 125-History of American Education or Ed 126-Education and Culture

Ed 140-Elementary School Organization, Management and Techniques of Teaching 3 hours

Ed 150-Children's Literature and Language Arts . . 3 hours

DEPARTMENT OF POLITICAL SCIENCE

Political Science Faculty

Robert S. Sullivant, Ph.D., chairman, professor

Werner F. Grunbaum, Ph.D., professor

Bill G. Schumacher, Ph.D., professor

Joe H. Bindley, Ph.D., associate professor

Edwin H. Fedder, Ph.D., associate professor

Earl J. Reeves, Ph.D., associate professor

Lyman T. Sargent, Ph.D., assistant professor

James Solem, M.A.P.A., assistant professor

Hampton T. Davey, M.A., instructor

Stephen E. C. Hintz, M.A., instructor

Joyce R. Lilie, M.A., instructor

Stuart A. Lilie, M.A., instructor

The Department of Political Science offers work leading to two undergraduate degrees: an A.B. degree in the College of Arts and Sciences and a B.S. degree in the School of Education. The requirements for the A.B. degree with a major in political science are:

General Education Requirements The political science major must complete 42 hours of general education requirements. For a listing of these requirements, see page 19.

General Area Requirements The political science major must complete a minimum of nine hours in economics, philosophy, psychology or sociology, chosen from at least two fields. These hours may be used in partial satisfaction of the general education requirements in the humanities and social sciences. Each student is urged to elect at least one course in statistics or accounting. As early as possible each student should determine if he expects to continue in graduate work in political science or law, or is preparing for government service, foreign service or elementary or secondary school teaching, and should consult with his adviser regarding other recommended electives.

Departmental Requirements The political science major must complete a minimum of 36 hours and a maximum of 45 hours in political science, to include the following:

1. The introductory sequence, Government in Modern Society-Political Science 11 and 12. Six hours.
2. History of Political Theory-Political Science 262. Three hours.
3. At least one course in five of the following seven fields. (In Political Philosophy and Theory the requirement is satisfied by the required course in the History of Political Thought.) 12 hours.

Group I: Public Law

Group II: Political Process

Group III: Public Administration

Group IV: Comparative Politics

Group V: Political Philosophy and Theory

Group VI: Urban and Regional Politics

Group VII: International Relations

4. A two-course sequence in the senior year including a course in prescribed readings (Political Science 192) and a senior seminar (Political Science 193) in which the student must prepare a senior thesis and must pass a comprehensive, departmental, written examination. Six hours.

5. Electives in political science. 9-18 hours.

The requirements for the B.S. degree in the School of Education are the same as above except:

1. A block of 14 hours in a single discipline may be substituted for the language requirement.

2. The major requires only 30 hours in political science.

3. The two-course sequence in the senior year (Political Science 192 and 193) is not required. Each student in education must pass, however, the departmental comprehensive examination.

DEPARTMENT OF PSYCHOLOGY

Psychology Faculty

Alan Gerald Krasnoff, Ph.D., chairman, professor

Edmund S. Howe, Ph.D., professor

Arthur L. Irion, Ph.D., professor

Lewis J. Sherman, Ph.D., professor

Frederick J. Thumin, Ph.D., associate professor

John Julian Boswell, Ph.D., assistant professor

Theresa S. Howe, Ph.D., assistant professor

Donald Dennis Lisenby, Ph.D., assistant professor

Samuel J. Marwit, A.B., assistant professor

Milton E. Strauss, Ph.D., assistant professor

James T. Walker, Ph.D., assistant professor

D. J. Zerbolio, Jr., Ph.D., assistant professor

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

General Education Requirements The psychology major must complete 42 hours of general education requirements. For a listing of these requirements, see page 19.

General Area Requirements French, German and Russian are the only acceptable foreign languages for psychology majors. Other languages may be taken as electives if desired.

Psychology majors are urged to follow the Chemistry 11-12 sequence and the Biology 11-12 sequence. However, the general education requirements in science will be acceptable. (Note: Biology 11 and 12 are prerequisites for Psychology 314.)

The Psychology Department recommends that rather than electing an excessive number of hours in psychology, students elect courses in the following areas: anthropology, biology, chemistry, literature, mathematics, philosophy and sociology.

Departmental Requirements A major in psychology consists of 32 hours, but additional hours in psychology may be elected to a maximum of 45 hours.

English

English 10-Composition 3 hours

English 12-Literary Types 3 hours

English 101-Speech 3 hours

Mathematics

Math 50-Structure of Mathematical Systems I 3 hours

Math 51-Structure of Mathematical Systems II 3 hours

Science

Biological Science 3 hours

Physical Science 3 hours

Science lab 2 hours

Non-Western Study

One three-hour course 3 hours

Humanities

11 semester hours in three departments; Music 134 is required 11 hours

Social Science

12 semester hours in three departments, Psychology 1 and 2 are required, and a course in state and local government is required 12 hours

History

American history is required. This will meet state requirements for such a course 6 hours

General Area Requirements The major student must complete six semester hours in courses related to education, including:

Psychology 270-Child Psychology 3 hours

Sociology 314-Sociology of the Family 3 hours

Departmental Requirements The major in early childhood education must complete 33 semester hours in the following courses:

Ed 102-Educational Psychology 3 hours

Ed 125-History of American Education or
Education 126-Education and Culture 3 hours

Ed 140-Elementary School Organization, Management
and Techniques of Teaching 3 hours

Ed 150-Children's Literature and Language Arts 3 hours

Ed 315-Principles of Early Childhood Education 3 hours

Ed 316-Art, Music, Play and Creative Experience 3 hours

Ed 317-Exploring the Physical World with Young
Children 3 hours

Ed 318-Exploring the Social World with Young
Children 3 hours

Ed 325-Teaching Reading in the Elementary School
(Special section for early childhood majors)

Ed 251-Elementary School Student Teaching 6 hours

Area of Concentration The major student must complete 12 semester hours in courses above the introductory level which are not used to meet the requirements in general education, professional

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, thereby requiring the student to complete more than the minimum of 120 semester hours for the degree. The program in early childhood education also requires careful planning.

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

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

GRADUATE PROGRAM

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

For details of the programs see the Graduate Bulletin UMSL or contact either the Dean, School of Education, the Director of Admissions or the Graduate Dean. For further information on admission to the graduate program, see page 15.

Teacher Certification In cooperation with the Missouri State Department of Education, the School of Education, University of Missouri - St. Louis, is responsible for recommending students for teacher certification. All requests and inquiries regarding certification should be made to the Office of Teacher Certification.

Admission Students seeking admission to the School of Education must present better than a "C" average, not less than 54 hours of credit with not more than nine hours of deficiencies in the general education requirements for admission. Admission forms and information may be obtained from the Admissions Office.

Applicants must have official transcripts forwarded to the Director of Admissions. Former students and students currently enrolled must file a request for a permit to enroll.

EARLY CHILDHOOD EDUCATION

The requirements for the bachelor of science in education with a major in early childhood education are as follows:

General Education Requirements The major student must complete 55 semester hours of general education requirements, as follows:

All psychology majors must take:

Psychology 1 and 2 (preferably in the freshman year)	6 hours
Psychology 201 (preferably in the sophomore year)	4 hours
Psychology 319 and 320 (preferably in the junior year)	6 hours
Psychology 361 (preferably in the senior year)	3 hours
Psychology 192 (for seniors only)	3 hours
Psychology 193 (for seniors only)	3 hours
Electives in psychology	<u>7 hours</u>
	32 hours

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY

Sociology and Anthropology Faculty

Richard F. Larson, Ph.D., acting chairman, associate professor

Jerome Himelhock, Ph.D., professor

Solomon Sutker, Ph.D., professor

Norman B. Johnston, Ph.D., associate professor

Sara Smith Sutker, Ph.D., associate professor

Harry H. Bash, M.A., assistant professor

Richard C. Gilman, Ph.D., assistant professor

Edward C. Lehman, Jr., Ph.D., assistant professor

John J. Lennon, Ph.D., assistant professor

Paul L. Chassy, instructor

Richard A. Ferrigno, M.A., instructor

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

General Education Requirements The major student must complete 42 hours of general education requirements. For a listing of these requirements, see page 19.

General Area Requirements Sociology majors are strongly advised to take at least six hours in one or more of the following areas: economics, political science, philosophy and psychology. Economics 50 and 371 are strongly recommended for those sociology majors intending to enter social work.

Departmental Requirements The major must complete 30 hours of course work in the major field. Majors may choose a program emphasizing either sociology or anthropology. Either avenue will provide a basis for graduate study in the field chosen.

A major consists of a minimum of 30 semester hours.

A major in sociology must complete satisfactorily each of the following:

Introduction to Sociology	6 hours
Social Theory	3 hours
Research Methods	3 hours
Senior Seminar	3 hours
Senior Thesis	3 hours
Electives in sociology or anthropology	<u>12 hours</u>
	30 hours

Comprehensive Examination Departmental majors will be required to pass a written comprehensive examination during the second semester of the senior year. The examination will test the student's grasp of theory, methods and contemporary research findings. As partial preparation for the examination, a basic reading list will be provided each major.

George E. Mowrer, Ed.D., acting dean, professor, chairman,
Counselor Education Department
Richard Burnett, Ed.D., professor, associate director of Reading
Clinic
H. E. Mueller, Ed.D., professor
Wallace Ramsey, Ed.D., professor
Harold W. Richey, Ph.D., professor
Ivan Russell, Ph.D., professor, chairman, Foundations Department
Arthur E. Smith, Ph.D., professor
Joy E. Whitener, Ed.D., professor
King M. Wientge, Ed.D., professor
Margaret C. Fagin, Ed.D., associate professor
Arthur H. Hafner, Ed.D., associate professor
John S. Rigdon, Ph.D., associate professor
John Shultz, Ph.D., associate professor
Harold E. Turner, Ed.D., associate professor, chairman, Curric-
ulum and Instruction Department
Henry Weinstock, Ed.D., associate professor
Robert Ira Cloos, Ed.D., assistant professor
E. Richard Dustin, Ph.D., assistant professor
Allen H. Holmes, Ph.D., assistant professor
Alice E. Klein, Ph.D., assistant professor
E. Wayne Likens, Ed.D., assistant professor, director of Student
Teaching and Certification
Jon Clark Marshall, Ed.D., assistant professor
Jane A. Miller, Ph.D., assistant professor
Robert E. Rea, Ph.D., assistant professor
Virgil N. Sapp, B.S., assistant professor
Charles Smith, M.S., assistant professor
Paul D. Travers, Ed.D., assistant professor
Blanche M. Touhill, Ph.D., assistant professor
Jane Williamson, Ph.D., assistant professor
Aline L. Crawford, M.A., instructor
Rickey George, M.S. in Ed., instructor
Robert K. Rose, M.A., instructor
Charlotte Twomey, M.S., instructor
Elizabeth Patti Watson, M.S. in Ed., instructor, supervisor, Student
Teaching
Edith M. Young, M.Ed., instructor
Charles E. Garner, Ed.D., visiting professor
Robert R. Russell, M.A., adviser in Education, Degree and Certifi-
cation Requirements

The School of Education curriculum includes work leading toward a bachelor of science in education on the pre-school, elementary and secondary levels.



Business Administration Faculty

Emery C. Turner, D.B.A., acting dean, professor of accounting
 Sioma Kagan, Ph.D., professor of international business
 Barkev Kibarian, Ph.D., professor of marketing
 Edwin J. Gross, Ph.D., associate professor of marketing
 Helmut R. Kollai, Ph.D., associate professor of management
 William K. Saigh, Ph.D., associate professor of marketing
 George C. Witteried, M.B.A.: J.D., associate professor of industrial relations
 Ronald E. Carlson, M.B.A.: C.P.A., assistant professor of accounting
 Vincent B. D'Antoni, D.B.A., assistant professor of finance
 Donald H. Driemeier, D.B.A., assistant professor of finance
 Richard W. Furst, D.B.A., assistant professor of finance
 Edwin A. Hopper, M.B.A.: C.P.A., assistant professor of accounting
 Walter D. Johnson, M.A., assistant professor of statistics
 Robert A. Schuchardt, D.B.A., assistant professor of accounting
 Lee Young, M.B.A.: C.P.A.: L.L.M., assistant professor of law and taxation
 John J. Brasch, M.B.A., instructor of marketing
 David R. Ganz, M.A., instructor of accounting
 Norma J. Gross, B.S.: C.P.A., instructor of accounting
 Nicholas A. Kargas, M.S.: C.P.A., instructor of accounting
 Robert E. Markland, M.B.A., instructor of management

The School of Business Administration offers work leading to two degrees: the bachelor of arts and the bachelor of science in business administration. Both degrees represent a balanced educational program combining a liberal arts education with the important core courses of a professional education in business administration. There is ample opportunity within this curriculum to concentrate in one of the traditional areas 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.

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

General Education Requirements All business administration majors must complete the requisite courses to fulfill the general education requirements for the A.B. degree. For a listing of these requirements, see page 19.

Departmental Requirements The business major must complete the following courses:

Economics 50 and 51; Accounting 36 - Principles of Accounting; Accounting 37 - Principles of Accounting; Statistics 31 - 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; Management 391 - Business Policy and Administration.

In addition, the major must complete an additional 15 hours in the Department of Business Administration, specializing to the extent he desires. He must also complete at least one three hour senior level seminar and a research paper (normally satisfied by Management 391).

A candidate for graduation must present a grade of "C" or above in courses serving as prerequisites, and a 2.0 departmental grade point average.

The Bachelor of Science Degree The general education requirements for the degree of bachelor of science in business administration are the same as the general education requirements for the degree of bachelor of arts in business administration, with one important exception.

The student must complete a minimum of an additional 14 total hours in mathematics, science and/or other quantitative subjects beyond the eight hour science and three hour mathematic provision in the general education requirements. This requisite effectively represents a 25 hour minimum in mathematics, science and/or other quantitative subjects and may be substituted for the 14 hour modern foreign language portion of the general education requirements.

Additional requirements for the B.S. degree with a major in business administration include:

1. At least eight hours of science as prescribed in the general education requirements on page 19.
2. A minimum of Calculus 80 in the area of mathematics.
3. Enough additional hours to bring the total hours to 25, from any combination of courses in the areas of mathematics, science, statistics (to include Elementary Statistics 31), computer science or in business, economics and other disciplines that offer courses which develop quantitative applications for decision-making. The quantitative courses in business, economics and related disciplines will be designated by the faculty and communicated in the course schedules and by student advisers.