MICHIGAN STATE UNIVERSITY OAKLAND ROCHESTER

1962 CATALOG 1964

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MICHIGAN STATE UNIVERSITY OAKLAND

Catalog 1962-1964

Rochester

ALFRED J. MONETTA, JR. 10161 Elizabeth Lake Road Union Lake 5, Michigan

UNIVERSITY CALENDAR

1962 - 1963

FALL SEMESTER

September 4	Tuesday	Convocation exercises
September 5 and 6	Wednesday and	Orientation and
	Thursday	Registration
September 7	Friday	Classes begin
November 22	Thursday	Thanksgiving recess
November 26	Monday	Classes resume
December 21	Friday	Last day of classes
	WINTER SEMES	TED
B 1		
December 28	Friday	Registration
January 2	Wednesday	Classes begin
April 18	Thursday	Last day of classes
	SPRING SEMES	TER
April 24	Wednesday	Registration
April 25	Thursday	Classes begin
May 30	Thursday	Memorial Day recess
May 31	Friday	Classes resume
July 4	Thursday	Independence Day recess
July 5	Friday	Classes resume
August 9	Friday	Last day of classes

1963 - 1964

FALL SEMESTER

September 3 September 4 and 5	Tuesday Wednesday and Thursday	Convocation exercises Orientation and Registration
September 6	Friday	Classes begin
November 28	Thursday	Thanksgiving recess
December 2	Monday	Classes resume
December 20	Friday	Last day of classes
December 30 January 2 April 17	WINTER SEMES Monday Thursday Friday	TER Registration Classes begin Last day of classes
	SPRING SEMESTER	
April 24 April 27 August 7	Friday Monday Friday	Registration Classes begin Last day of classes

TABLE OF CONTENTS

About Michigan State University Oakland 3
Its Program; The Three-Semester Plan; Its Resources; Its Governance
The Faculty
The Baccalaureate Curriculum 25
Degree Requirements; University Courses; Major Programs of Instruction
Student Services
Academic Advising; Counseling and Testing; Placement Office; Health Service
Housing
Student Life
Admissions, Registration and Graduation 41 Requirements for Admission; Foreign Students; Course and Credit System; Grades; Graduation Requirements
Tuition and Fees
General Scholarships; Special and Endowed Scholarships; Loans; Part-time Employment
Courses of Instruction
Administration
Map Inside Back Cover
Index

ABOUT MICHIGAN STATE UNIVERSITY OAKLAND

Its Program

Michigan State University Oakland is a state-supported, liberal arts-centered institution situated midway between Rochester and Pontiac, twenty-five miles north of Detroit. It offers undergraduate programs in all major disciplines of the liberal arts and sciences, and preparation in three professional areas: business administration, engineering science, and teacher education. Every student, no matter what his special interests, must take approximately one half of his work in a prescribed list of studies which the University conceives to be the basis of a liberal education.

Enrollment has grown from 570 students, when MSUO opened its doors in 1959, to about 1,400 students for the 1962-1963 school year. The first senior class will be graduated in April, 1963.

MSUO's primary concern is in creating an effective and stimulating community of learning. Everything else is secondary to this. A variety of extracurricular activities and interests is available to round out, to balance, and to support the learning experience. While there are no football or basketball teams, fraternities or sororities, ROTC, or physical education courses, there are comprehensive, well-planned, and competently staffed intramural and individual sports programs. Participation in them is completely voluntary. They are programs built around the student as participant rather than as spectator. In addition, many other kinds of activities compete for the attention of all interested students. They include clubs, drama and debate groups, student publications, and cultural and social events. In place of fraternities, MSUO offers a new kind of student housing which provides for small group living, but without the undemocratic philosophy of the fraternity.

For the high calling in which MSUO is engaged, it has assembled an exceptional faculty of the highest competence. It is composed of young and vigorous teacherscholars whose average age is just under thirty-five and who have been attracted here from the great universities of the country. Over eighty percent of them have their earned doctorates, one of the highest percentages in the country.

For adults who are not baccalaureate candidates, the University also has a Continuing Education program. This Division provides nearly eighty noncredit courses in a wide range of professional and cultural subjects. It also sponsors professional conferences and institutes on the campus.

The Three-Semester Plan

MSUO is one of the pioneers in putting an entire program on year-round operation. Under what is known as the three-semester plan, students attend classes for three fifteen-week semesters a year and graduate in two and two-thirds years instead of the traditional three and three-fourths years.

A student thus gets a year's earlier start either in a career job or in graduate study. The result is a substantial and long-term financial gain, regardless of the sacrifice of summer earnings. Telescoping the college span grows increasingly important since nearly thirty per cent of today's college graduates continue their educations, and that figure is rising.

From society's point of view, the three-semester plan means that one-third more students can be accommodated in the same number of classrooms and with only a modest increase in staff.

Its Resources

The University grounds consist of the 1,600-acre Meadow Brook Farms estate given by Mr. and Mrs. Alfred

G. Wilson, who also donated \$2,000,000 for the first academic buildings, North and South Foundation Halls. The campus occupies the northwest portion of this great estate and is growing out from there.

NORTH FOUNDATION HALL contains administrative and faculty offices, lecture halls, offices for student publications, and the health service.

SOUTH FOUNDATION HALL contains classrooms, the language laboratory, music rooms, faculty offices, and the Continuing Education offices.

THE KRESGE LIBRARY, a \$1,500,000 air-conditioned structure given by the Kresge Foundation, has a capacity of nearly 300,000 volumes and study space for 1,200 students. The building can be expanded to three times its present size.

THE SCIENCE BUILDING, a \$2,000,000 building provided by the Michigan Legislature, is the first structure on the campus to be built with state monies. It is a clean and functional structure with the most modern facilities for physics, chemistry, mathematics and engineering science programs. It has eighty rooms, including two large lecture halls, a mathematics and science research reading room, classrooms of multiple sizes, and both teaching and faculty research laboratories.

THE OAKLAND CENTER, a \$1,300,000 structure, is a hub of campus life. This building, made possible by the Oakland County Board of Supervisors and by a federal loan, provides dining facilities, private dining and meeting rooms, offices for student activities, and some recreational facilities. The University book store is housed here. Most of the lectures, concerts, and other cultural events are held here, as are student dances and other social functions.

ANIBAL HOUSE and FITZGERALD HOUSE are the first units of a new kind of student residence. They accommodate forty-eight students in each wing. Two wings joined by a resident adviser's apartment constitute each house. Each student is thus a member of a smaller, more congenial group than would be the case in a large, impersonal dormitory. Besides providing parallel advantages of fraternities and sororities, these houses also offer a natural and easy basis for academic and intramural, as well as social groupings. Anibal House is the residence for women, Fitzgerald House for men.

THE INTRAMURAL SPORTS AND RECREATION BUILDING, begun in the fall of 1961, is scheduled for fall 1962 completion. This is a college gymnasium with a different emphasis, designed as the focal point of a recreation program for all of the students. Activities in seven different sports can be carried on simultaneously. The building provides a swimming pool with diving area, and courts for badminton, handball, squash, tennis, and basketball. It will also provide for a full range of other sports and activities, such as boxing, wrestling, fencing, gymnastics, weight lifting, and modern dance. Beyond the building are tennis courts and extensive additions to existing playing fields. In addition, a ski slope has been developed just to the south of the Intramural Building, complete with ski tow.

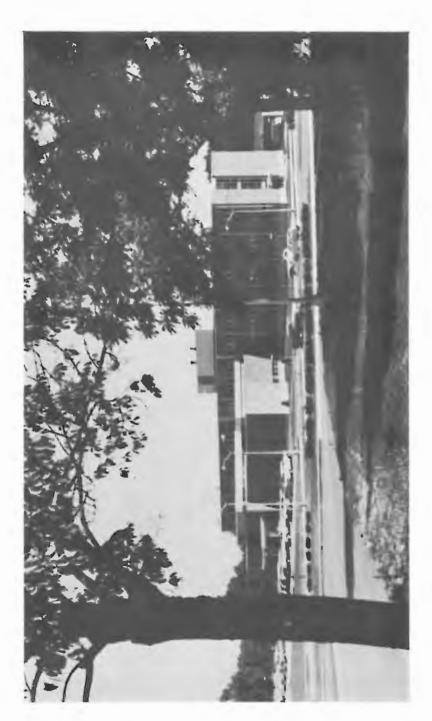
Its Governance

MSUO is related to Michigan State University. Both institutions have the same President and Board of Trustees. MSUO has its own Chancellor and its own separate, autonomous University organization responsible for developing this university's own individual role, character, and functions.

The MSUO Foundation is also deeply involved in the welfare of the University. The Foundation is comprised of leading citizens of southern Michigan who have been asked to serve on this advisory body. This body had a leading role in shaping the outlines and philosophy of the institution, and is active in fund raising and other efforts to benefit the University. Its Scholarship Committee has provided much of the money available for scholarships.















Intramural Sports and Recreation Building



15



National Science Foundation Conference at Meadow Brook Hall



Studio Art Class



- DURWARD B. VARNER Chancellor of the University B.A., Texas A & M; M.S., University of Chicago
- DONALD D. O'DOWD Dean of the University A.B., Dartmouth College; M.A., Ph.D., Harvard University
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THE BACCALAUREATE CURRICULUM

The University baccalaureate curriculum consists of programs in the liberal arts and sciences, and also of special preparation for careers in Business Administration, Engineering Science, and Elementary and Secondary School Teaching.

All are taught by the various departments of the three academic divisions of the University: Humanities, Social Sciences, and Science and Engineering. The Humanities Division includes the departments of: Art, Classical Languages (Latin and Greek), English, History, Modern Languages (Chinese, French, German, Russian and Spanish), Music, and Philosophy. The Social Sciences Division includes the departments of: Economics and Business Administration, Education, Political Science, Psychology, and Sociology and Anthropology. The Science and Engineering Division includes the departments of: Chemistry, Engineering Science, Mathematics, and Physics.

Degree Requirements

Every degree program consists of two complementary parts:

1. The University Courses

This is a plan of studies extending through the eighth semester which is intended to give all students a common intellectual experience. The requirements are called University Courses, which account for about fifty per cent or more of each student's curriculum.

The specific requirements are: Composition and Analysis of English Prose (Freshmen who demonstrate high proficiency in a placement examination may be exempted from this course); two semester courses of Literature in the Western Tradition, one of them UC 014 and the other UC 015 or any other literature course in any language; two semesters of the Development of Western Institutions and Social Ideas; two semesters of Area Studies (non-Western cultures); two

semesters of Social Science; one semester each of Art and of Music, two semesters from the Mathematics-Science sequence, and four semesters of Foreign Language. (In cases where a student's program requires him to take more than the thirty-one courses required for graduation, he may be exempted from one University Course, as specified by the department concerned. Majors in chemistry, physics, engineering science, and in the science and mathematics concentration in elementary education may fulfill the language requirement with a language 101-102 sequence.) To fulfill the requirements of state law, (PL 229), every student must demonstrate mastery of the form and function of federal, state, and local governments. Readings and examinations are given in the social science

courses. Those with three semester hours of credit in American government need not take an examination.

2. A major in one of the four areas listed below:

A. Liberal Arts and Sciences

Major programs are offered in seventeen different disciplines in the liberal arts and sciences. They are:

Art Mathematics
Chemistry Music
Classics: Greek and
Latin Philosophy
Physics

Economics Political Science
English Psychology
French Russian
German Spanish
History Sociology and

Anthropology

B. Business Administration

This major is unique among undergraduate business programs. It was developed with the aid of a Ford Fund grant, and in consultation with leading scholars in the field, and corporate executives. In philosophy and content, this program is in accord with the findings of two major studies of business education done for the Ford

Foundation and the Carnegie Corporation. Both studies note that a new kind of business preparation is needed today. The advances of knowledge and technologies, and the growing roles and responsibilities of business in the community and in the world demand broadly informed leaders with critical judgment and imagination.

The MSUO program thus emphasizes a liberal education that encourages the development of an analytical and enlightened person. It provides, through the University Courses required of all students, a broad foundation in the liberal arts. On this kind of foundation is built a major designed to prepare graduates who also have (1) a clear understanding of the role of corporate enterprise in our society and an awareness of the social responsibilities of corporations and of their executives; (2) a recognition of the significance of business, government, and labor as great power blocs in the economy; (3) knowledge of the factors involved in the decision-making processes of a successful business enterprise; (4) the ability to understand and to work with people, and (5) awareness that will enable them to apply the tools of other disciplines to the solution of business problems.

The program designed to accomplish these goals provides four semester courses in mathematics and statistics, starting with calculus, and four courses in the behavioral sciences (social psychology, sociology, and political science). It includes business and economics courses designed to prepare the student for creative management. The capstone is a case study course in which the student plans business operations and makes management decisions. The objective is not to provide a substitute for business experience, but rather to prepare him to profit to the fullest from his business experience and to continue his self-education throughout his career.

C. Engineering Science

Like the business program, the engineering science major is a new kind of program developed with the aid of some of the best minds in the field. A panel of leading engineering educators helped to outline a program that would prepare the future innovators and project directors in a profession continually being altered by the advance of knowledge.

The result is a curriculum concerned with the principles and implications of the fields of knowledge which are the basic ingredients of engineering, rather than with engineering's transitory techniques and skills.

Thus, every engineering science major gets a broad foundation in mathematics, physics, and chemistry, as well as in their engineering applications. He will be prepared to move in any direction that changing technologies of the future may dictate and will not be tied to any past period. He will be prepared particularly for graduate work or specialized training in a large corporation.

His courses will include the foundations of chemical, mechanical, and electrical engineering, for it is believed that all students should learn the fundamental principles of all three fields. A student will not start to specialize until he has mastered the basic skills in all three. In his senior year, the student will take a course in design in which he will amalgamate and use these principles in the solution of specific engineering problems.

The prospective engineer, like every other student, builds on the required foundation of liberalizing studies; for the engineer, no less than anyone else, is a citizen of the community and of the world. He is a man before and after he is an engineer, and he must be able to communicate with other men, not all of whom are engineers.

D. Teacher Education

A variety of programs is offered for prospective elementary and secondary school teachers, and students are certified immediately upon graduation to teach in Michigan and in other states with which Michigan has reciprocity. All of these programs seek to develop graduates who are both broadly educated and competently prepared in the particular subjects they plan to teach.

Prospective teachers take the liberal arts and science courses required of all students, and on this framework they build any one of a variety of majors. The Education department offers professional education courses, but the student's major and minor subjects are taught by the Liberal Arts departments.

Teacher preparation at MSUO has some unusual aspects. For one, it is a University-wide responsibility. rather than the exclusive concern of a single department. For another, students get a chance to discover as sophomores whether they really like and are suited for the teacher's life and work. This is done by assigning each to two one-hour observation periods a week in a nearby school classroom. This early exposure provides the student with a test of his career choice while there is still time to make a change of majors. It also provides some background experience for the senior year teaching internship, which normally is the student's first exposure to teaching. This observation period also helps make the teaching methods course itself more meaningful. Both the observation and the practice teaching periods are accompanied by weekly seminars in which discussions with other students and professors provide practical help with problems in the classroom.

Prospective elementary school teachers may choose to concentrate in any one of four areas:

General Classroom Teaching

Foreign Language

Mathematics and Science

Music

Prospective secondary school teachers have a choice of any one of twelve teaching majors:

Chemistry Latin

English Mathematics
French Music (vocal)

German Physics
History Russian
History and Social Sciences Spanish

Seven teaching minors are available to the prospective secondary school teacher:

Art History and Social

Chemistry Sciences
English Mathematics
History Physics

Sponsorship for Michigan Teacher Certification

The State Department of Public Instruction certifies teachers in Michigan. It issues Provisional Certification to candidates deemed qualified by colleges and universities. This Provisional Certificate can be converted to a permanent certificate after a period of teaching and additional studies. MSUO sponsors its graduates for the Provisional Elementary and the Provisional Secondary Certificates if the following requirements are met:

 Completion of the University baccalaureate with a teaching major and (where applicable) an appro-

priate minor.

2. An Internship grade of C or better.

3. Demonstrated proficiency in the use of English as determined by the English Department. Students should satisfy this requirement before the senior year to allow time to remove deficiencies.

Note: Those students planning to teach in a state other than Michigan should ascertain what special requirements and courses that state demands. It is the responsibility of the student in such cases to plan his program accordingly. In many states, reciprocity with Michigan exists.

Preparation for Professional and other Graduate Work

A broad liberal arts education with the appropriate specialization is excellent preparation for either medical school or law school. Admission requirements of the professional school where the student intends to enroll should be studied for guidance in laying out a program. Special faculty advisers have been named to provide counsel for students looking toward such careers.

Similarly, students planning to go to graduate school in pursuit of advanced degrees, whether for careers as

scholars and scientists, in college teaching, research, government service or other, will be well prepared in any one of the disciplines in the curriculum. Every student has a faculty adviser in his major subject. Each of these advisers is well qualified to help plan the program and choose the studies best suited for preparing the student for graduate study in his particular field of interest.

TYPICAL FRESHMAN PROGRAMS

Although the career goals of freshmen vary, and many courses of study are open to them, the University Courses required of all students provide a common core for the programs of all freshmen, and for many will constitute most of the first year's academic work. Because of this, it is possible to give examples of a typical freshman program. The chief differences depend on whether a student is going to major in mathematics or science, or in the humanities or social sciences. For purposes of illustration only, two freshman programs are outlined below; one in the mathematics and science area, and one in the humanities and social sciences. There would, of course, be variations of these for those interested in teacher education, business administration, or other particular programs, and every student should consult with his faculty adviser in making out his own program.

On Pages 55-58 is the complete list of University Courses. While the University Course listing includes all six of the languages available, a student is required to study only one language and literature other than English.

Science and Mathematics

First Semester

ENG 101 Composition and Analysis of English Prose

UC 034 Development of Western Institutions and Social Ideas

CHM 114 Introductory Chemistry*

MTH 154 Calculus

Second Semester

UC 014 Literature in the Western Tradition

UC 035 Development of Western Institutions and Social Ideas

CHM 115 Qualitative Inorganic Chemistry*

MTH 155 Calculus

A mathematics major may elect social science instead of chemistry.

Humanities and Social Science

First Semester

ENG 101 Composition and

Analysis of English Prose

UC 034 Development of Western Institutions and Social Ideas

Foreign Language* Social Science or Fine Arts* Second Semester

UC 014 Literature in the West-

ern Tradition

UC 035 Development of Western Institutions and Social Ideas

Foreign Language* Social Science or Fine Arts**

* Students will have the choice of seven languages: French, German, Russian, Spanish, Chinese, and Greek or Latin. Students will be placed according to their tested abilities. Economics majors are urged to take Math 125 and Math 131 instead of language.

^{**}Each student is required to enroll in his freshman or sophomore years in two semesters of social science and two semesters of fine arts. For certain major programs, the social science and fine arts courses should be taken in the freshman year. Each student should check this with his academic adviser.

When a student arrives on the MSUO campus, he finds that many persons are interested in helping him adjust to college life. The various student services and their operations are outlined in the sections following.

Academic Advising

Every student is assigned to a member of the faculty who serves as his faculty adviser. Whenever possible, the adviser represents the student's area of special academic interest. When the student enters his major area of study, he may be assigned to a new adviser in his major field. This change ordinarily takes place when a student has completed between twelve and sixteen courses. A student may ask the Dean of the University for a change of adviser at any time, but he must first obtain the assent of the prospective adviser.

All advisers are prepared to help with the selection of courses, the development of career interests, and academic problems. No student is permitted to register until he has met with his adviser. Faculty members serving as advisers work in cooperation with professionally trained people in the Office of Psychological Services.

Counseling and Testing

Help with testing and with problems of adjustment or personality is offered by the Office of Psychological Services. It provides personal counseling and advising on vocational as well as on personal and social problems, and will give tests to help determine aptitude and interests. It conducts all noninstructional testing and a summer orientation program for freshmen.

Placement Office

The University provides career placement information and assistance for its graduates. Contact is maintained with many organizations to give the graduate a variety of employment possibilities. Part-time student employment is handled by the Dean of Students office.

Health Services

A registered nurse is in attendance at the Health Service which can provide limited treatment in emergencies and help with minor health problems. The student residences are more accurately described as houses than dormitories since they accommodate forty-eight students to a wing instead of a hundred or more. This is an effort to provide the atmosphere and the benefits of small group living. Students live two to a room. There are twelve rooms on a floor and two floors in each wing. Two wings, with a lounge and a resident adviser's apartment linking them, constitute a house.

Policy

The University requires that all full-time, unmarried students under 21 years of age who do not commute from the residence of a legal guardian or a close relative must live in one of the student houses, unless room is not available. In that event, the student must live in University-approved housing off campus.

A student wishing to live with a close relative must file such a request with the Manager of Student Residences.

A list of approved off-campus housing is on file in the Office of the Manager of Student Residences.

Women students living on campus are required to be in their houses by 10:30 p.m. Sunday through Thursday; by 1 a.m. Friday, and 1:30 a.m. Saturday.

Accommodations

The first meal served each semester is breakfast on the first day of registration except during the fall semester when the first meal is served on day of convocation. The last meal is the evening meal on the last day of classes. Meals are served cafeteria style in the Oakland Center.

Rooms can be occupied the day preceding registration. At the end of the semester they must be vacated at 6 p.m. the day following the last day of classes, unless the student is enrolled for the succeeding semester. He may

then arrange with the Manager of Student Residences to live in his room between semesters. Personal belongings may be left in the houses between semesters.

Each occupant has a single bed, pillow, dresser, ward-robe, study desk with lamp, chair, wastebasket, book-shelves, and pegboard. A weekly change of linen (two sheets, one pillow case, and two bath towels) is provided. Each student must furnish his own blankets and bedspread. Lamps, electric blankets, clocks, radios, and record players are allowed subject to safety regulations.

Coin-operated washers and dryers are available on each floor, and ironing facilities are available at no cost.

Public telephones are available on each floor. Students may have private telephones in their rooms for a small monthly charge.

Cost

The fee for room and board is \$375 per semester. Twenty-one meals a week are served. Contracts for accommodations are made for the full academic year, and no refunds are made for meals missed. Payment may be made in full on registration day, or the fee may be paid in three equal parts on registration day and the first day of each of the next two months.

A request for a room reservation must be accompanied by a \$25 deposit which is refundable up to June 1, if the University is notified of a change in plans before that date. Any request for refund after June 1 will not be honored nor will reservation deposits made after June 1 be subject to refund if the student does not register or take up residence.

Room reservations are made in the order in which applications are received.

Since intellectual and personal development take place in the student's social, recreational and cultural activities as well as in his academic work, Michigan State University Oakland seeks to provide the opportunities and the climate that will foster this development. Students are encouraged to participate in some phase of a comprehensive program of sports and recreational activities, although there is no required physical education. Similarly, the pattern of extra-curricular experiences and activities in publications, discussion groups, student government, music, dramatics, and cultural offerings is intended to enhance the student's development.

Student Government

A Student Judiciary and a Student-Faculty University Council provide for the judicial functions of a student government, and a forum for discussion and proposal of and action on needs in University life.

Student Activities Council

The Student Activities Council organizes and develops the University's lecture-concert series, student dances, and one of the two annual University picnics. The SAC also stages the annual Snow Carnival with its election of a queen and her court, snow sculpture competition, skating and toboggan races and student-faculty ice hockey game. A dance at which the queen is crowned climaxes the Carnival.

Clubs and Organizations

The Associated Women Students seek to promote the interests of women students. One of its notable achievements has been sponsorship of the annual *Culture Internationale*, a week-long program featuring talks on world problems, displays of art, handicrafts, and foods from around the world, as well as costumes and entertainment. The AWS also functions as a link between the University

and new students in helping them to feel at home and to provide the friendship and counsel a newcomer appreciates.

Many academic clubs are active on the campus— Spanish, French, German, Philosophy, Science, Psychology, Art, and others. One of these, the Teacher Education Association, stages the other annual University picnic, a feature of which is an auction in which members of the administrative staff and faculty are sold into a day of servitude to the highest bidders. Each must discharge a chore or perform in a floor show.

Political interests are provided for by Young Democratic and Young Republican Clubs and a Socialist Study Club.

Religious Groups

There are also several religious groups on campus, including the Intervarsity, a nonsectarian club; the Newman Club, the MSUO Christian Federation, the Wesley Foundation and the Christian Science Organization. A request also has been made to B'nai B'rith for establishment of Hillel Foundation service.

Music

The University Chorus of 150 voices is the largest campus activity. Performances have included one of the "Messiah" and an appearance with the Minneapolis Symphony Orchestra. This year the Chorus is scheduled to perform with the Detroit Symphony Orchestra. There is also an octet, a dance band, a Hi-Fi Club, and a student-faculty group that was formed to play baroque music on the recorder and other instruments of earlier historical periods.

In addition, the University sponsors a regular lectureconcert series that includes several musical events. Last year, in addition to the Minneapolis Symphony, the series included appearances by Eugene List, Jennie Tourel, and Emil Danenberg.

Dramatics, Dance

The Meadow Brook Theater Guild is the principal dramatic group on the campus. Its principal production during the last year was "Alice in Wonderland." It also sponsored a performance of "Krapp's Last Tape," and its members were involved in the presentation of a Thirteenth Century Chinese play, "Lady Precious Stream," given in conjunction with *Culture Internationale*. Orchesis, the modern dance group, presents several programs during the course of the year.

Art Exhibitions

The Art Department sponsors several times a year showings of the work of outstanding artists. They are exhibited in the permanent University Art Gallery, located in North Foundation Hall. The University also has acquired, through gifts and permanent loans, the beginnings of what it hopes to make an outstanding permanent collection. The score of works so far acquired represent the work of some of today's best young painters, as well as of Matisse, Renoir, Rouault, Picasso, and Cezanne.

Lectures

As a part of the lecture-concert series, outstanding personalities in many fields are brought to the campus each year. They have included actor Basil Rathbone, rocket scientist Wernher von Braun, historian Jacques Barzun, and others. In addition, as part of the Western Institutions course, the faculty provides a series of collateral, noon-hour lectures that may range from medi-

eval music or the idea of courtly love to the structure of modern music or the cracking of the DNA code in genetics.

Movies

A student group arranges a year-long schedule of foreign and American film classics.

Student Publications

The Oakland Observer, the student newspaper, is a lively weekly publication. The Observer is independent editorially, controlled by an editorial board made up of the senior staff members, who are salaried. The editor is appointed each year by advisers with much newspaper experience. The Observer's editorial and business offices are located in North Foundation Hall. Facilities include a complete photographic laboratory.

The first issue of a literary magazine, Contuse, contains thirty-eight pages of essays, poems, short stories, and literary criticism. This publication is generated and edited by students, who hope to publish additional issues from time to time.

Students also publish a yearbook. Offices for this publication also are in North Foundation Hall, and, as is the case with The Observer, senior staff members are salaried.

Athletics

Athletic and recreational activities are voluntary. There are no physical education courses. And since the University has no intercollegiate teams, it provides instead a well-planned program of intramural sports and individual activities under the direction of a competent, professional staff. A number of leagues and tournaments for the various individual, dual, and team sports have been formed.

ADMISSIONS, REGISTRATION, AND GRADUATION

Requirements for Admission

The University considers the best preparation for its work a program of studies that provides fundamental training in English, foreign languages, social science, science and mathematics. A candidate for admission must be a graduate of an approved secondary school, should be in the top quarter of his graduating class and must have the recommendation of his secondary school principal endorsing him as a sound college risk. Out-of-state students must present College Entrance Examination Board or other nationally recognized test scores with their applications.

A candidate not in the top quarter of his class may apply to take a qualifying examination, the result of which is one of the criteria for determining admissibility.

Applicants must have a minimum of 16 Carnegie units of high school preparation (a unit is two semesters of a subject). It is strongly recommended that these include the following:

English—4 units

Foreign Language—2 units (in the same language)

Science—2 units (must include one laboratory science)

Social Science—2 units

Mathematics—3 units (Students planning majors in the sciences, mathematics, engineering, or business administration must present at least three years of mathematics—algebra, 1½ units; geometry, 1 unit; and trigonometry, ½ unit. For other majors 1 unit of algebra and 1 unit of geometry are required.)

Under the Michigan College Agreement, MSUO accepts students from among the *more* able graduates of accredited high schools without regard to the pattern of subject matter completed, provided they are recommended by their high school principals.

Application for Admission

Application forms, available from high school counselors or the University Registrar, should be completed and submitted as early as possible in the senior year, and in any case before the end of the school year.

Advanced Placement

Credit toward graduation is granted to students presenting evidence of satisfactory completion of courses in high school under the Advanced Placement Program of the College Entrance Examination Board. MSUO automatically gives credit for grades of 5 or 4 in the Advanced Placement examinations. If a grade of 3 or 2 is achieved, the examination is subject to review by the department concerned, which may grant advanced placement with or without credit toward graduation.

Transfer Admissions with Advanced Standing

A student is eligible to transfer to MSUO from another college only if he is entitled to an honorable dismissal without social or academic probation. He must complete an application form and request the registrar of his institution to send an official transcript of his record. Each application will be considered on its merits.

Credit is granted for individual courses passed with a grade of "C" or better at accredited institutions, provided that these courses fit into the MSUO curriculum.

Readmissions

A student whose registration at MSUO is interrupted for one or more semesters, spring semester not counted, must be readmitted. Application should be made at least one month before reentry.

Foreign Students

A student from abroad should write to the Office of Admissions, Michigan State University Oakland, Rochester, Michigan, at least a year before the time he hopes to be admitted. He will be sent instructions and an application, which he should complete and return at once. When the application is approved, he will receive a certificate of permission to enter the University. These forms will help the student in making application for his passport and a student visa.

Registration and Orientation

Information regarding registration procedures and orientation for freshmen and transfer students will be furnished by mail approximately three weeks before the beginning of the semester in which the student is to enter the University.

Course and Credit System

The unit of credit is the course which is one semester of a subject. All courses are valued alike, regardless of the number of class meetings per week or per semester. For transcript purposes only, each course is accorded four semester credits.

Normally, a student may take only four courses a semester, but any student in good standing may register for a fifth course in any two of his last four semesters. Only as a result of a successful Petition of Exception will a student be permitted to take a fifth course at another time. Forms and details concerning Petitions of Exception are available from the Registrar.

Change of Courses

To drop a course, a student must have the permission of both the instructor and the academic adviser.

Courses approved for dropping before the close of the second week of classes will not be entered on the student's record. Courses dropped after that time but before the beginning of the seventh week of the semester will receive an N grade. After this date, a student may not drop a course. A grade of F is given if a course is dropped without official approval.

No addition of courses or change of sections initiated by the student can be made after the end of the second week of classes.

Repeating Courses

A student may repeat a failed course no more than twice. Each grade received will be used in computation of the grade point average. A course may not be repeated for credit if the grade earned was a D or better.

Grades and Grade Point System

Grades are as follows:

A — Excellent F — Failure

B — Good I — Incomplete

C — Average N — No grade

D — Poor (Lowest passing grade)

I (Incomplete) is a temporary grade given only after the thirteenth week for work which is passing but unfinished because of prolonged illness or other satisfactory reasons. It must be removed by completing the required work before the close of the next semester in which the student is enrolled or an F will be recorded for the course. The grade

of N (no grade) is given only during the first six weeks when a student drops a course or officially withdraws from school. The grade point system is used to indicate the scholastic standing of the student, as follows:

Four points are allowed for each semester hour of A; three for B; two for C; and one for D. No points are given for F, I, or N. Thus, each grade of A is 16 points, B is 12, etc. To compute the grade point average, the total grade points earned are divided by the total semester hours attempted. Courses for which grades of I or N are reported are not used in this computation. A student may be placed on probation or asked to withdraw from the University if his grade point average does not meet the minimum requirements.

Academic Record

A report of the student's grades earned in each course is sent to the student at the end of each term.

A student may be warned, placed on probation, or suspended from the University if his work is not satisfactory.

A permanent record of all the student's courses, credits and grades earned is kept at the Registrars Office. Copies of the permanent record are available to the student upon request and payment of a small service charge.

Withdrawal

A student withdrawing from the University must do so through the Office of the Dean of Students. The withdrawal must be presented to the Registrar for recording and to the Director of Business Affairs for any possible refund. Grades and refunds are determined according to the effective date of the withdrawal. Students who fail

to follow this procedure must obtain permission of the Dean of the University to register again.

Upon official voluntary withdrawal from the University grades will be assigned as follows:

- a. before the end of the first two weeks of classes no grades will be recorded.
- b. from the third week through the sixth, a grade of N will be given.
- c. after the sixth week, a grade of N or F will be assigned by the instructor in consultation with the Dean of Students.

Requirements for Major Standing

A student must have passed 14 courses before he may be formally admitted to major standing. It is the student's responsibility to apply for major standing before completing his fourteenth course. A student may be admitted to major standing if he has passed with at least a 2.0 average all courses prerequisite to the major. For a more detailed listing of requirements, see the separate supplement entitled *Programs for Majors*.

Graduation Requirements

In order to graduate, a student must:

- I. Have passed at least 31 courses and have fulfilled all residence requirements.
- II. Have a cumulative grade point average of at least 2.0.
- III. Have completed and passed all prescribed University Courses.
- IV. Have completed and passed all requirements for an elected major.

Tuition Charges

Tuition is assessed each semester on the basis of the credit value of the courses carried, as follows:

	Full Time 12 or more credits	Part Time 4-8 credits			
Michigan Residents	\$163	\$ 7	2	\$10	9
Out-of-State Residents		184		27	,
(All fees are payable a		including	g 1	those o	of
Veterans under Public	Law 550.)				

Other Fees

Processing Fee

A fee of \$10 must accompany all applications for admission. This is a processing fee and is not refundable.

Tuition Deposit

Within three weeks after notification of admission, a deposit of \$50 must be paid which will be applied to tuition. One half of this deposit is refundable if a student notifies the University before April 1 that he does not intend to enroll. No refunds will be made after that date.

Room Deposit

Requests for room reservations must be accompanied by a \$25 deposit which is refundable up to June 1, if the University is notified. Deposits made after June 1 are not refundable.

Late Credential Fee

A fee of \$5 is charged students who fail to file credentials before 5 p.m., seven days before the first day of registration.

Late Registration Fee

Students registering or paying fees after the regular registration date are required to pay an additional, nonrefundable fee of \$15 for the first day, plus \$5 a day until a maximum of \$25 is reached.

Repeat Course Fee

An additional fee of \$5 per credit is charged for all courses repeated.

Refunds of Fees

A student who withdraws voluntarily before the eighth week of the semester will receive a refund of one half of his course fees. The student must present to the Registrar's office an official withdrawal slip, his fee receipt, and his identification card. No refund will be given after this time.

A student dropping a course (before the eighth week) which puts him in a lower fee category will receive a refund of half the difference between the two fee groups. No refund will be given after this time.

Out-of-State Tuition Rules

- A resident of Michigan is defined as a person who has has resided in this state six months immediately preceding his first enrollment.
- 2. No one may gain or lose the status of a resident while a student at the University.
- 3. The residence of a minor shall be the same as his legal guardian *except* where guardianship has been established in this state for the purpose of evading the fee.
- 4. Aliens who have secured their Declaration of Intent papers and have otherwise met the residence requirements shall be considered residents.
- The residence status of any person other than a parent or legal guardian who may furnish funds for payment of University fees shall in no way affect the residence status of the student.

Veterans

Students eligible to attend the University under Public Laws 550 or 894 must obtain a "Certificate for Education and Training" from the Veterans' Administration. Under Public Law 550, the veteran pays his own fees and buys his own books. Reimbursement is obtained by filling out a monthly Report of Attendance Form at the Registrar's office.

ESTIMATED EXPENSES

The cost of attending MSUO is moderate. For a commuter student \$303 per semester may cover all costs: tuition, books, lunches, and transportation.

The basic costs for a Michigan student living on campus would be about \$578 per semester for tuition, books, room, and board. For an out-of-state student they would be about \$851 per semester.

Since under the three-semester plan a student goes to school three semesters a year instead of two, the eight terms are telescoped into two and two-thirds years. Thus, the costs are more in each of the first two calendar years, but the total remains the same.

A table of estimated basic expenses for a semester, which does not include such things as laundry, transportation to and from home for students living on campus, clothing or incidental spending money, follows:

	Michigan	Out-of-State
Commuter	Resident	•
Tuition\$163	\$163	\$436
Books and Supplies 40	40	40
Board and Room	375	375
Lunches and Local		
Transportation 100		
\$303	\$578	\$851

A limited number of scholarships is available for deserving students. The University also has low-cost loan funds as well as a certain number of part-time jobs.

Scholarships are awarded each year to promising entering students and to enrolled students of high academic achievement who demonstrate financial need. About 160 students are currently getting such help. The great part of the funds available for this aid have been raised by the MSUO Foundation Scholarship Committee, a group of prominent women in the greater Detroit area.

Donors who have provided full scholarships, either tuition or Foundation awards (worth up to \$500 a semester) are listed. In addition, scores of other individuals, groups, and companies have provided funds for other awards in varying amounts to help deserving students. Unless otherwise noted, all scholarships are awarded by a University scholarship committee. MSUO is a member of the College Scholarship Service and determinations of need are based on the standards set by CSS.

A scholarship may be renewed each year throughout the recipient's college career if he maintains a satisfactory record. Awards available in the various categories are listed below.

For Freshmen:

Nearly sixty awards up to the full amount of tuition are made each year. The amount of the award is based on need.

The MSUO Foundation provides ten scholarships worth up to \$1,000 each annually for students who have demonstrated outstanding ability in high school. Candidates must take a competitive examination.

For Sophomores and Upperclassmen:

Approximately a dozen awards, covering tuition, are made each year to students who have completed at least one year of academic work at MSUO and who do not hold scholarships.

For Junior College Students:

One tuition scholarship is given a graduate of each accredited public junior college in Michigan who has at least a "B" average in all academic subjects and presents letters of recommendation.

Special and Endowed Scholarships

Alfred G. Wilson Scholarship:

The MSUO Foundation Scholarship Committee awards an annual \$1,000 scholarship to an entering freshman in honor of the late Alfred G. Wilson.

The Charles Evans Hughes Scholarships:

One award having a value of \$1,000 a year is made annually to an outstanding entering student who intends to go into law or government service.

These scholarships are being provided by Mrs. William T. Gossett, honoring her father, the late Chief Justice of the United States. Winners of these awards will be known as the Charles Evans Hughes Scholars.

Mr. and Mrs. Roger M. Kyes Scholarship in English: One award worth approximately \$400 a year is given annually to a student majoring in English.

Pontiac Central High School Scholarship:

Established by Pontiac Central students, this award worth approximately \$250 a year, is made annually on the basis of competitive examination. Both entering and enrolled students who are graduates of that high school are eligible.

Village Woman's Club of Birmingham Scholarship: A tuition scholarship is given each year to a woman student from the Birmingham-Bloomfield Hills-Pontiac area.

Mildred Byars Matthews Memorial Scholarship in Art History:

This fund has been established by staff and faculty members of the University in honor of a former Art Department colleague. Gifts are being received to create an endowed scholarship for an outstanding art history major, to be awarded annually.

General Motors Scholarships

Three awards are made each year to entering students under the nationwide scholarship program of the General Motors Corporation. Each award is worth from \$200 to \$2,000 a year, depending on need.

Other Scholarship Donors (\$250 or more)

Roy and Florence Abernethy Foundation

Charles F. Adams

Mr. and Mrs. Don E. Ahrens

American Business Women's Association, Tipacon Chapter

American Tool and Manufacturing Pontiac Chapter No. 69

The General Henry H. Arnold Educational Fund, Air Force Aid Society

Armada Lions Club

Wilbur S. Awrey

Baldwin Rubber Company

Beta Sigma Phi

John S. Bugas Fund

Business and Professional Women's Club, Royal Oak

Campbell Ewald Foundation

Detroit Bank and Trust Company

Edward N. Cole

Elaine and Walter Carey Foundation

Mrs. Jesse Chamberlain

Mr. and Mrs. L. L. Colbert

Community National Bank (Board of Directors)

Consumers Power Company

Mrs. D. H. Curry

Ray R. Eppert

Eurpac Service, Inc.

Exchange Club of Brooklands

The Firestone Tire and Rubber Company

Max M. Fisher

Harold A. Fitzgerald

Ford Educational Assistance and Incentive Donation Program

Russell G. Ford

Jerrold A. Frost

General Motors Girls' Club of Pontiac

John F. Gordon

Gossett Fund

Mr. and Mrs. Graham J. Graham

Hanley Dawson Chevrolet Inc.

Mr. and Mrs. Jack W. Haupt

H. E. Howlett Memorial (Community National Bank)

Junior League of Birmingham

Lambda Chi Omega

R. C. Mahon Foundation

Manufacturers National Bank

Howard L. McGregor Memorial

Michigan Tractor and Machinery Company

Million Dollar Round Table Foundation

National Bank of Detroit (Rochester)

The Nichols Company Southfield Rotary Club Mr. and Mrs. Ralph Norvell I. Thomas Smith - Dura Oxford Child Study Club I Corporation Fund Pontiac Oakland Town Hall Inc. Trumbull Foundation The Pontiac Press Urban League Scholarship Fund of Pontiac Pontiac PTA Council George A. Wasserberger Pontiac Rotary Club No. 1296 Wayne Oakland Bank Pontiac State Bank Charles L. Wilson Putnam Tool Company Women's National Farm and Reuther Labor Foundation Garden Club (Lake Angelus) Reynolds Metals Company Women's National Farm and Richardson Foundation Garden Club (Pontiac) Rochester Area Ministerial Women's National Farm and Association Garden Club (Rochester) Women's National Farm and Rochester Junior Women's Club Garden Club (Union Lake) Royal Oak Daily Tribune Wyman Furniture Company Mr. and Mrs. Fred W. Sanders Mr. and Mrs. Theodore Yntema John W. and Madeline Schenefield Victor M. Zink William and Sarah Seidman Foundation Zonta Club of Pontiac

There are also several anonymous donors.

Loans

Three loan funds are available, one for long-term and two for short-term assistance. All are available to students in good standing on the basis of need.

National Defense Education Act funds:

These monies provide for loans up to \$1,500 per year. The three percent interest rate and the ten-year repayment period begin a year after the student leaves college (or graduate school). No interest accrues nor are payments required during military service. In the event of the borrower's death or total disability, the obligation is cancelled. Up to one-half of the obliga-

tion may be forgiven—at the rate of ten percent per year—for teaching in a public school.

The Pontiac Kiwanis Club Loan Fund:

This provides for short-term loans to students or staff. Interest is one percent per year. These loans are available to sophomores and upperclassmen.

The Joan Selby Fund:

This fund is intended primarily to provide adult students with short-term loans, also at one percent, but its resources are also available to other students.

Part-time Employment

Although demand almost always exceeds supply, oncampus jobs of varying kinds and durations have been provided for over 200 students at some time during each school year. Many of these have been for special occasions or tasks. Students who wish employment should register with the Dean of Students' office, which is the clearing house for both on- and off-campus jobs. No student is permitted to work more than twenty hours a week on a campus job, and all are discouraged from working more than fifteen.

A student who works two hours a day or ten hours a week may earn from \$140 to \$190 per semester, depending on the type of work.

COURSES OF INSTRUCTION

Credits

All courses are assigned four semester hours of credit unless otherwise indicated. A course sequence joined by hyphens must be taken in the order indicated. Each course in such a sequence is regarded as prerequisite to that succeeding, except by permission of the department. Prerequisite course requirements may be waived by permission of the department.

Course Numbers

Course numbers separated by commas indicate related courses which may be taken in any order. Departmental or program requirements, however, may govern the order in certain cases.

The Registrar reserves the right to cancel a course in which there

is insufficient registration.

Courses numbered 100-199 normally are taken by students in the first and second semesters, 200-299 courses in the third and fourth semesters, 300-399 courses in the fifth and sixth semesters, and 400-499 courses in the seventh and eighth semesters.

Requirements for Majors, and Major Standing:

Requirements for a major and for a teaching major in each discipline precede the course listings for each department.

Admission to major standing requires the passing of fourteen courses. It is the student's responsibility to apply to the department concerned

for major standing before completing his fourteenth course.

Typical programs for the third through the eighth semesters are not given because programs will vary widely depending on the requirements of the student's major and his own needs and interests. The courses required for a major in any given discipline are listed in a paragraph preceding the course descriptions for that department, and the student can by consulting them and the University Course listings see the outlines of his program. His academic adviser will help him plan his schedule of courses. For a more detailed listing of requirements and schedules, see the separate supplement entitled *Programs for Majors*.

UNIVERSITY COURSES

ENG 101 Composition and Analysis of English Prose

Instruction and practice in expository writing and in the critical analysis of expository prose. Classwork centers around reading and discussion and the frequent writing of short essays. The preparation of at least one research paper is required.

UC 014, 015 Literature in the Western Tradition

A series in which the student studies critically the literary traditions, forms, and conventions of the West so that he may acquire a foundation for literary taste and an understanding of ideas, emotions,

and values as expressed in literature. UC 014 deals with representative contemporary works—British, American, and Continental. UC 015 deals with representative and older British and Continental works.

UC 034-035 Development of Western Institutions and Social Ideas

An exploration of the development of characteristic political, social, and economic institutions of Western society in the context of those ideas which have been advanced to explain, understand, or justify them. Beyond providing a sense of fact, the course develops the skills of critical inquiry into complex historical and philosophical situations. UC 034 starts with representative ancient ideas, as interpreted in the European Middle Ages, and closes with the era of the French Revolution. UC 035 considers the Nineteenth and Twentieth Centuries.

UC 047 Introduction to Art

An interpretation of major styles and ideas in world painting, sculpture, and architecture. No practice of studio art is required. Note: Prospective art majors should take UC 047 in the first or second semester.

UC 049 Introduction to Music

An introduction to the techniques of listening to great music, and a study of its elements, forms, and styles. Begins at the level of the student lacking previous musical experience. Note: Prospective music majors should consult with the Music Department before registering for this course.

SOCIAL SCIENCE SEQUENCE

UC 052 Introduction to Political Science

A survey of the main concepts and modes of analysis in political science. Such themes as political power, ideologies, authority, law, constitutions, public opinion, political parties, and interest groups are presented. Particular countries (e.g., Great Britain, Russia, and the U.S.) are studied to illustrate various types of government. Note: Prospective political science majors should take this course in the first or second semester.

UC 054 Introduction to Social Psychology

Observational, experimental, and analytical techniques for the objective study of relationships among men and the effects of these relationships upon the participants in them. The analysis of social functions and roles; the study of the development and change of attitudes, beliefs, and values; the influence of social groups on the individual; and the development of personality in relation to the social milieu are considered. Required of all teaching candidates, who should take this course in one of the first two semesters. Note:

Prospective psychology majors should not take UC 054, but should take instead PSY 246-247.

UC 056 Introduction to Economics

Topics include national income and employment, money and banking, government expenditures and taxes, inflation and deflation, economic growth, prices in competitive and monopolistic markets, labor problems, and international trade. Note: Prospective economics or business administration majors should take this course in the first or second semester.

UC 058 Introduction to Sociology

Study of society with emphasis on American life, and of cultural anthropology. An important part of the course is the student's own research. Note: Prospective sociology majors should take this course in the first or second semester.

LANGUAGES

French, German, Greek, Latin, Russian, Spanish and Chinese are offered. For course descriptions see subsequent section. German 101-102 is available for those students who take two rather than four courses in a foreign language to fulfill the University Course prescription.

AREA STUDIES

A study of important areas of human civilization not included in, or differing significantly from, the civilizations of Europe and North America.

Courses in two areas, China and India, are offered. Students may take either UC 062 or UC 066 for the first course.

For the second course, two options are available:

 Continue the study of China or India by taking UC 063 or UC 067

OF

Change to another area by taking UC 066 to follow UC 062, or UC 062 to follow UC 066.

UC 062 China, Introduction

Traditional Chinese civilization and its modern transformations in an interdisciplinary, analytical approach.

Prerequisites: UC 035 and Social Science Sequence

UC 063 China, Special Problems

Intensive study of aspects of Chinese history, society, or civilization. Prerequisite: UC 062

UC 066 India, Introduction

Traditional Hindu civilization and its modern transformations in an interdisciplinary, analytical approach.

Prerequisites: UC 035 and Social Science Sequence

UC 067 India, Special Problems

Intensive study of aspects of Indian history, society, or civilization. Prerequisite: UC 066

SCIENCE AND MATHEMATICS

The Science and Mathematics requirement may be fulfilled by two courses chosen from the following three: UC 085, UC 086, UC 087. This requirement also may be met by two departmental courses in science or one course in science and one in mathematics.

UC 085 Mathematics

A course for nonscience majors which reveals the creative and deductive nature of mathematics. The emphasis is on illustrative topics rather than on basic skills. Not open to those with credit for MTH 125, 131, 154, 214, or 216, except by permission of the Instructor.

Prerequisite: Two years of high school mathematics

UC 086, UC 087 Science

Courses for nonscience majors which provide knowledge and appreciation of science through readings, discussions, demonstrations, and laboratory work. Selected topics from the life sciences are presented in UC 086, and topics from the physical sciences are presented in UC 087. The courses may be taken independently of each other. Not open to those with credit for CHM 114, PHY 251, or any laboratory science course.

Prerequisite: Two years of high school mathematics

DEPARTMENTAL COURSES

ART

Requirements for a Major in Art History:

Nine departmental courses, exclusive of University Courses. At least one, but no more than three, courses are to be drawn from the studio area. This requirement may be fulfilled with the Connoisseurship, Materials, and Conservation Laboratory (ART 308) normally taken in the fourth semester.

Requirements for a Major in Studio Art:

Nine departmental courses, including the practice of painting, sculpture, and printmaking. Three courses must be in art history, including the Connoisseurship, Materials, and Conservation Laboratory (ART 308).

Requirements for a Teaching Minor:

Four studio and history courses, beyond UC 047, for a teaching minor in art. Two of these courses must be ART 333 and 381.

ART 226 Introduction to Studio Arts

Fundamental technique of drawing, painting and three-dimensional construction.

Prerequisites: Open to Art Majors and Minors who have completed UC 047 and one course in Art History; and, with permission of the Department, open to others who have completed UC 047 and one course in Art History

ART 308 Connoisseurship, Materials, and Conservation Laboratory

Theories and techniques of determining the authenticity of works of art. Methods of conserving masterpieces are also studied. Prerequisite: Major Standing in Art

ART 326 Painting

Study and practice of painting in oil, water color, and related media. Designed mainly for Art Majors and Minors.

Prequisites: UC 047, ART 226, and one course in Art History

ART 328 Sculpture

The study of techniques of creative work in third-dimensional and relief form using traditional and recent media.

Prerequisites: Major Standing in Art and completion of two studio

courses

ART 333 Art of the U.S.A.

American art from the Colonial settlements to the end of the Nineteenth Century, with emphasis on the relation to European, especially English, art and the developments from those influences. Prerequisite: UC 047

ART 351 Primitive Art

The major artistic styles of Africa, Oceania, and the Americas. Influences of primitive art upon recent Western art are considered. Prerequisite: UC 047

ART 361 Architecture and Sculpture of the Middle Ages

A study of major cathedrals and sculptural styles of Medieval Europe and their relation to secular architecture and decoration. Prerequisite: UC 047

ART 369 Renaissance Art

An investigation of architecture, painting, and sculpture of the Fifteenth and Sixteenth Centuries in Italy and Northern Europe. Emphasis is given to the major artistic figures and their relationship with the development of Renaissance art. Such topics as humanism, the revival of classical antiquity, perspective, and the graphic arts are considered.

Prerequisite: UC 047

ART 371 English Art, 1550-1850

Architecture, painting, and sculpture in England from the introduction of Renaissance art in the reign of Elizabeth I to the Great Exhibition of 1851. In addition to a survey of English art, special attention is given to such major figures as Inigo, Jones, Wren, Adam, Reynolds, Gainsborough, Constable, and Turner.

Prerequisite: UC 047

ART 381 Art of the Twentieth Century

A study and interpretation of modern art in Europe and the United States from 1905 to the present. Painting and sculpture are emphasized and the contributions of Picasso, Matisse, and the early masters of abstract style are discussed.

Prerequisite: UC 047

ART 383 Modern Architecture

Architecture in Europe and America from the late Nineteenth Century to the present, coupled with an investigation of the sources of the modern architectural tradition and idiom.

ART 426 Advanced Painting

The development of techniques and ideas in creative painting. Prerequisites: Major Standing in Art and completion of two studio courses

ART 480 Seminar in Art History

Individually assigned topics in various areas of the history of art. Prerequisite: Permission of the Department

ART 491 Special Problems in Art

A program of individual research and reading designed for advanced art majors. May be taken for one or more semesters. May be taken for 4 or 8 credits per semester.

Prerequisite: Art majors may apply to the Department for admission during their sixth semester.

CHEMISTRY

Requirements for a Major in Chemistry:

Nine departmental courses in chemistry and five collateral courses in mathematics and physics. The collateral courses include MTH 154, 155, and 256, and PHY 251-252. All the mathematics courses are to be completed before the fifth semester.

Requirements for a Teaching Major:

Eight courses in chemistry, plus a minor, requiring five courses in physics or mathematics, or a group minor requiring six courses in physics and mathematics, or other minors may be arranged in consultation with the Department. Twenty semester credits in education also are required.

Requirements for a Teaching Minor:

Five courses in chemistry.

CHM 114 Introductory Chemistry

An introduction to the study of gases, liquids, solids, chemical periodicity, atomic structure, bonding, nuclear chemistry, stoichiometry, and chemical equilibria.

Prerequisite: Three years of high school mathematics. Concurrent

registration in MTH 154 is strongly recommended.

CHM 115 Qualitative Inorganic Chemistry

Applications of solution equilibria, coordination theory, kinetics, thermodynamics, and phase equilibria to inorganic chemistry. The laboratory work includes synthetic preparations, as well as the separation, purification, and identification of unknown substances. Prerequisite: CHM 114. Concurrent registration in MTH 155 is strongly recommended.

CHM 226 Analytical Chemistry

Theory and application of modern analytical procedures. Gravimetric, volumetric, electrometric, conductometric, and spectrophotometric methods are included.

Prerequisites: CHM 115 and MTH 154

CHM 234 Organic Chemistry

Aliphatic and aromatic compounds, functional groups, reaction mechanisms, streochemistry, rearrangements, polymers, and natural products. Laboratory work includes synthetic organic preparations. Prerequisite: CHM 226

CHM 335 Organic Chemistry

A continuation of CHM 234. The laboratory work includes qualitative organic analysis.

Prerequisites: CHM 234 and CHM 341

CHM 341 Physical Chemistry

Interpretation of chemical properties with special emphasis on thermodynamics, homogeneous and heterogeneous equilibria, kinetics, and molecular structure. Includes laboratory.

Prerequisites: CHM 226 and MTH 155

CHM 405 Selected Topics

Designed for chemistry majors. May be taken for one or two semesters.

Prerequisite: Permission of the Department

CHM 416 Inorganic Chemistry

The development of atomic theory, chemical periodicity, coordination compounds, and nonaqueous systems. Laboratory work includes synthetic inorganic preparations.

Prerequisite: CHM 226

CHM 442 Physical Chemistry

A continuation of CHM 341.

Prerequisites: CHM 341 and MTH 258

CHM 490 Research

Library and laboratory practice in research. May be taken for 4 or 8 credits per semester. May be taken for one or more semesters. Prerequisite: Permission of the Department

CHINESE

See Modern Languages and Literatures, Pages 75-76.

CLASSICAL LANGUAGES AND LITERATURES

Requirements for a Major in Classical Languages:

Nine courses beyond the University Course Language Requirement. They include LTN 320, 414 and 415; GRK 114-115, 214, 215, and two courses in Classics. A major planning graduate work in Classics should also complete one course in Latin literature, two courses in Greek, and two courses in Classics.

Requirements for a Major in Latin:

Nine courses in Latin and Classics, beyond the University Course language requirements. They are three semester of LTN 320; LTN 414-415; and four courses in Classics.

Requirements for a Teaching Major in Latin:

Eight courses in Latin and Classics beyond the University Course language requirement. They are two semesters of LTN 320; LTN 414-415; and four courses in Classics. Twenty semester credits in education also are required.

CLS 111, 112 Classical Literature in Translation

A series devoted to the major writers of Greece and Rome. Either semester may be elected independently.

Prerequisite: UC 014

CLS 115 Classical Mythology

The principal Greek and Roman myths and their uses in classical and post classical art and literature.

Prerequisite: UC 014

CLS 117 The Classical Tradition

A study of the classical influences on Western culture. Some attention is given to the visual arts, but the emphasis is on classical traditions in European literature.

Prerequisite: UC 014

GRK 114-115 Elementary Greek

Classical Greek. Elements of grammar and some connected reading will be studied. May be conducted as a tutorial.

GRK 214-215 Intermediate Greek

Review of grammar, exercise in prose composition, and the reading of simple literary works, ordinarily Plato's *Apology*, selections from Herodotus, and selected books of Homer's *Iliad*. May be conducted as a tutorial.

Prerequisite: GRK 115

GRK 320 Selections from Greek Literature

Greek drama and history. Selected dramas of Aeschylus, Sophocles, Euripides, and Aristophanes, and selections from Herodotus and Thucydides. May be conducted as a tutorial. May be taken for one or more semesters.

Prerequisite: GRK 215

GRK 414-415 A Survey of Classical Greek Literature

Readings in classical Greek literature from Homer to the Hellenistic Age. Selections will be chosen to illustrate the historical development of Greek literature. May be conducted as a tutorial. Prerequisite: GRK 320

LTN 114-115 Elementary Latin

The first semester is devoted to elements of grammar; the second semester to a review of grammar, exercises in composition, and the reading of simple selections from Latin prose and poetry.

LTN 214-215 Intermediate Latin

The first semester is devoted to selections from Cicero, Catullus, and Horace; the second semester to the reading of extensive selections from Virgil's Aeneid.

LTN 320 Selections from Latin Literature

A detailed study of selected works by major Latin writers. May be conducted as a tutorial. May be taken for one or more semesters. Prerequisite: LTN 215

LTN 414-415 A Survey of Classical Latin Literature

Readings will be selected from representative writers of the Republic and Empire and will be chosen to illustrate the historical development of Latin literature.

Prerequisite: LTN 320

ECONOMICS AND BUSINESS ADMINISTRATION

Requirements for a Major in Economics:

Six departmental courses, beyond UC 056. These include EB 216, 217, and 480; and either EB 303 or 322. Of the remaining courses one must have as prerequisite EB 216 and another must have as prerequisite EB 217. Two semester's work in another social science and two semesters of collateral work in mathematics (MTH 125 and 131) also are required. Prospective majors are advised to take the social science sequence, including UC 056, in their first two semesters. MTH 125 and 131 should be taken in the first two semesters. Requirements for a Major in Business Administration:

Eight courses in Business Administration beyond UC 056. These include EB 301, 335, and 442. In related social science areas, four courses are required: UC 054, PSY 261; and two courses in economics,

EB 216 and 217. Three courses in mathematics are required: MTH 125, 131, and 321. Prospective majors are advised to take UC 054 and UC 056, and MTH 125 and 131, in their first two semesters.

EB 216 Micro-Economic Analysis

Analysis of prices, output, and distribution at the level of the individual firm.

Prerequisites: UC 056 and MTH 131

EB 217 Macro-Economic Analysis

Study of factors determining the level of national income and employment.

Prerequisites: UC 056 and MTH 125

EB 301 Accounting and Statistical Techniques

Accounting systems for individual firms and the national economy. Use of statistical techniques to solve problems faced by firms and industries.

Prerequisites: UC 056 and permission of the Instructor

EB 303 Business Fluctuations and Economic Forecasting

Analysis and empirical testing of business-cycle theories. Preparation of economic forecasts for the individual firm and the national economy.

Prerequisite: EB 217

EB 322 Capital Markets

Corporate and public finance, and the operation of major financial institutions and markets.

Prerequisite: EB 217

EB 323 International Trade and Finance

Principles of international trade and finance, postwar international economic problems and policies. (Not offered in 1962-63)

Prerequisite: EB 216

EB 324 Business in the American Economy

Public attitudes toward and government regulation of business; social and legal responsibilities of business.

Prerequisite: EB 216

EB 325 Industrial Organization

Resource patterns, production processes (including technology and economics of scale), and managerial organization as related to the size of firms and the location of industries.

Prerequisite: EB 216

EB 333 Labor-Management Relations

Analysis of management-employee relations in modern industry; public policy in labor-management areas.

Prerequisites: UC 056 and permission of the Instructor

EB 334 Business Enterprise

Origin and evolution of contemporary business institutions; social, philosophic, legal, and economic foundations of the modern corporation.

Prerequisites: UC 056 and permission of the Instructor

EB 435 Business Policies

Financial, economic, and other management tools used to analyze business case studies.

Prerequisites: EB 216 and EB 217

EB 442 Operations Research

Operations research techniques are used in exploring problems selected from the several functional areas of business.

Prerequisites: EB 216 and EB 217

EB 480 Seminar

Theses, individual topics and readings. Prerequisite: Permission of the Department.

EDUCATION

Requirements for Certification:

All teaching majors must take ED 244-245, and 455 to meet Michigan Teacher Certification Code requirements. Prospective elementary school teachers must add ED 331 and 433, while prospective secondary teachers must add ED 428.

See specific departmental listings for secondary teaching majors and minors.

Elementary School Teaching Majors:

The general program for elementary teachers consists of: ENG 301 or 303, HST 214-215, MTH 314-315 and 316; two science courses including SCI 305, plus an approved elective in history or social science.

The science and mathematics concentration for elementary or junior high school teachers consists of CHM 114 and 115, MTH 314-315 and 316, SCI 305, plus two more science courses, and two mathematics or additional science courses.

For the modern language concentration for elementary or junior high school teachers: four language courses beyond the four required in the University Courses, MTH 314, and SCI 305.

A school vocal music program for elementary teachers is described under MUSIC.

ED 244 Social and Philosophic Issues in Education

Education is treated both as a social phenomenon and as an embodiment of philosophic commitments. Basic concepts studied in the social sciences are examined with special attention to their pertinence to education. Such questions as the nature of reality, knowledge, and values are examined from widely differing points of view in order to analyze controversial issues in theory and practice.

Prerequisites: UC 054 and UC 014

ED 245 Psychological and Field Studies in Education

Psychological factors involved in learning and development are examined in lectures, class discussions, and extensive field observations in schools.

Prerequisite: ED 244

ED 331 Teaching of Reading

Intensive preparation for the teaching of reading skills in the elementary grades. Identification of reading readiness, problems of program construction and a variety of teaching methods are among the topics of the course.

Prerequisite: ED 245

ED 428 Teaching of the Major Field

Content and methodology appropriate to the student's major field. Organization of programs and courses, bibliography of the field, and techniques of instruction receive special emphasis.

Prerequisites: ED 245, Major Standing, and permission of the student's Major Department

ED 433 Teaching in the Elementary School

The content and methodology of instruction in the elementary school. It is designed to supplement specialized courses in the various teaching fields.

Prerequisites: ED 245, Major Standing, and permission of the Director of the Teacher Education Program

ED 455 Internship (8 credits)

Supervised teaching in the public schools. Students spend approximately fifty days in public school classrooms and participate in such further activities as a supervising teacher may direct. The course includes a seminar dealing with problems of instruction.

Prerequisites: ED 245, Major Standing, and permission of both the student's Major Department and the Director of the Teacher Edu-

cation Program.

Note: Since the Internship requires full-time work for ten weeks, students should plan to complete all courses with the exception of *Teaching of the Major Field* (ED 428) no later than the seventh semester. In some cases it may be possible to take one additional course during this semester, but generally such will not be the case. Arrangements for housing during Internship should be made in consultation with the Office of the Dean of Students.

ENGINEERING SCIENCE

Requirements for a Major in Engineering Science:

Nine departmental courses, plus MTH 154-155, 258-259, and 373, PHY 251-252-253, and CHM 114 and 115

ES 223 Statics and Dynamics

A continuation of the vector mechanics in PHY 251, including the conditions of equilibrium, structural mechanics, friction, kinematics, Newton's Laws, momentum, energy, and rotation.

Prerequisite: PHY 251

ES 343 Thermodynamics

The laws of thermodynamics, entropy, cyclic processes, reactions, equilibrium, and mixtures.

Prerequisites: CHM 114 and PHY 251

ES 344-345 Electricity and Magnetism

AC and DC circuits; electrostatics, magnetostatics, and an introduction to Maxwell's Equations; with laboratory.

Prerequisites: PHY 252 and MTH 258

ES 354-355 Transport Processes

Topics in the kinematics and dynamics of perfect, compressible, and viscous fluids; turbulence; momentum and energy transport; static and dynamic heat flow; with laboratory.

Prerequisites: ES 343 and MTH 259

ES 431-432 Structure of Matter

An introduction to the physics of crystalline and amorphous solids, with applications to the strength and other properties of engineering materials: with laboratory.

Prerequisites: ES 223 and PHY 252; PHY 253 is also recommended

ES 446-447 Electronics

Vacuum tubes, transistors, and electronic circuits; with laboratory. Prerequisite: ES 345

ES 484 Analysis and Design of Systems

A seminar on the design of equipment and systems; topics to be chosen by the instructor.

Prerequisite: ES 431

ES 495 Special Topics

Prerequisite: Permission of the instructor

ENGLISH LANGUAGE AND LITERATURE

Requirements for a Major in English:

Nine departmental courses, eight of which are specified, including ENG 201, 205, 206, 224, 303, and three from the following: ENG 255, 258, 261, 271, and 285. At least two courses on the third- or fourth-year level in the literature of a foreign language, classical or

modern, are required. (Most graduate schools require a reading knowledge of French and German for the Ph.D. in English, and a few require Latin as well.)

Requirements for a Teaching Major:

Eight courses, including ENG 205, 224, and 303, plus either ENG 201 or 206; in addition three courses must be chosen from ENG 255, 258, 261, 271, 285, plus an eighth course selected from other English courses. Twenty semester credits in education also are required. Requirements for a Teaching Minor:

Two departmental courses beyond the University Course require-

ments.

ENG 201 Chaucer

The major works, with emphasis on The Canterbury Tales and Troilus and Criseyde.

Prerequisite: UC 014

ENG 205 Shakespeare

A selection of the Plays. Prerequisite: UC 014

ENG 206 Milton

Selected early poems, including "On the Morning of Christ's Nativity", "Comus", "Lycidas", some of the sonnets and prose treatises, including Areopagitica, Paradise Lost, Paradise Regained, and Samson Agonistes.

Prerequisite: UC 014

ENG 224 The American Renaissance

Studies of five American writers of the period 1820-1870. Selected works of Emerson, Hawthorne, Thoreau, Melville, and Whitman will be read and discussed in detail.

Prerequisite: UC 014

ENG 225 American Literature Since 1870

A study of authors selected for their work in fiction, poetry, and other genres. Among those authors who may be included are Howells, Parkman, Twain, Dickinson, Henry James, Robinson, Crane, Cather, Glasgow, O'Neill, Santayana, and Faulkner.

Prerequisite: UC 014

ENG 231 Imaginative Writing

A course designed to provide potential writers of fiction, poetry, and drama with an opportunity to develop technical proficiency and receive criticism of work in progress. Those desiring to enroll should submit samples of their work during the semester preceding that in which the course is given.

Prerequisite: Permission of the instructor

ENG 255 Literature of the English Renaissance

Selected poetry, prose, and drama, exclusive of Shakespeare.

Prerequisite: UC 014

ENG 258 Literature of the Eighteenth Century

The chief works in the periods of Dryden, Swift, Pope, Congreve, Goldsmith, and Johnson, and consideration of their social and literary backgrounds.

Prerequisite: UC 014

ENG 261 The Romantic Period

Poets of the Romantic Period—Wordsworth, Coleridge, Scott, Byron, Shelley, Keats—with some attention to the pre-Romantics, Burns and Blake. Their poetry and its relation to the intellectual currents of the time will be considered.

Prerequisite: UC 014

ENG 271 Victorian Literature

A selection of fiction, prose, and poetry of the middle and late Nineteenth Century. Representative authors include Dickens, Thackeray, Meredith, Tennyson, Browning, and Arnold.

Prerequisite: UC 014

ENG 285 Modern British Writers

The principal works, themes, and techniques of British writers from Hopkins to Eliot. Special attention will be given to the works of Joseph Conrad, W. B. Yeats, James Joyce, and T. S. Eliot.

Prerequisite: UC 014

ENG 301 The Nature of Language

An introduction to principles of linguistics: the description, comparison, and history of languages, the grammar of English, problems of usage, dialect geography, differences between speech and writing, techniques of language teaching and learning, and the relationship of language to culture.

Prerequisite: UC 014

ENG 303 The Structure of English

A detailed description of the structure of American English from the phoneme to the sentence. An analysis of the sound structure of the language from parts of speech and syntactic patterns to the relationship of grammar to style. The contributions of linguistic scholars are surveyed.

Prerequisite: UC 014

ENG 305 History of English Language

A detailed survey of the English language from its beginnings to modern times.

Prerequisite: UC 014

ENG 480 Seminar

Intensive reading and research designed particularly for English majors.

Prerequisite: Permission of the Instructor

FRENCH

See Modern Languages and Literatures, Pages 76-78

GERMAN

See Modern Languages and Literatures, Pages 78-80

GREEK

See Classical Languages and Literatures, Pages 62-63

HISTORY

Requirements for a Major in History:

Eight departmental courses, beyond the University Course requirements, one of which must be a 400-level course. Normally, work in more than one field of history is involved. Every major must complete at least a year's work in a language beyond the University Course requirements. This may be either a continuation, at the literature level, of the language already studied or a year's work in the study of a second language.

Requirements for a Teaching Major:

Eight departmental courses, exclusive of the University Courses. One of the eight must be a 400-level course. If the student elects a minor in English, he may replace one term of Area Studies with an appropriate course in non-Western history, art, or music. Twenty semester credits in education also are required.

Requirements for a Teaching Minor:

Two courses in American history in addition to UC 034-035 and two courses in the area studies sequence.

Requirements for a Teaching Major in History and Social Science: Ten courses, including three in history, of which two must be HST 214-215, plus one of the three following areas of concentration:

(1) Five courses in economics, including UC 056, plus two courses in political science, including UC 052; or two courses in sociology, including UC 058.

(2) Five courses in political science, including UC 052, and two courses in economics, including UC 056, or two courses in sociology, including UC 058.

(3) Five courses in sociology, including UC 058, and two courses in political science, including UC 052, or two courses in economics, including UC 056.

Twenty semester credits in education also are required.

HST 214, 215 Introduction to American History

HST 214 is a survey of American political, economic, and intellectual history from the Colonial period to the close of the Civil War. HST 215 is a survey of modern America: Reconstruction, industrial growth, the experiment with imperialism, the progressive era, domestic reform, and world conflict.

Prerequisite: UC 035

HST 234, 235 History of England and British Expansion

HST 234 considers the period of Roman rule in Britain, the period of the invasions, the establishment of Norman order, the evolution of late medieval political and social institutions, and concludes with the Tudor and Stuart revolutions in government and society.

HST 235 starts with the Hanoverian monarchs (since 1714), analyzing the arrival of industrial production in England and the effects of this change on society and politics, the age of reform in the Nineteenth Century, the growth and the development of the empire, and Britain's role in the world politics of the Twentieth Century.

Prerequisite: UC 035

HST 247 Europe and the Rise of the Modern State, 1450-1715

A study of the politics of state building within the context of European economic and social development in the Fifteenth, Sixteenth, and Seventeenth Centuries.

Prerequisite: UC 035

HST 248 Europe in the Age of Liberal Revolutions, 1715-1870

The basic political, social, and economic transformations of Europe from the hierarchical society of the Eighteenth Century to the recognizably modern Europe of 1870.

Prerequisite: UC 035

HST 249 The European Political Crisis, 1870 to the Present

An interpretive analysis, emphasizing the tensions within European society among advocates of the "old regime," "the revolutionary tradition," and newer systems hostile to both.

Prerequisite: UC 035

HST 308 History of Colonial Society, 1607-1750

The course of European expansion and colonization in the New World, the development of political ideas and institutions in British America, and the economic foundations and social evolution of the thirteen mainland colonies.

Prerequisite: HST 214

HST 309 The Age of the American Revolution, 1750-1790

The structure of colonial society, the effects of British policy on American life, the growth of revolutionary movements, the advent of political independence, the consequences of revolution, and the adoption of the 1787 Constitution.

Prerequisite: HST 214

HST 311 The Age of Jackson

The economic, political, and social development in the United States from 1824 to 1861, emphasizing the changing nature of political parties, material and intellectual influences shaping American democracy, westward expansion and sectional conflict, and the origins of the Civil War.

Prerequisite: HST 215

HST 312 The Civil War and Reconstruction

Secession, wartime problems of the Union and the Confederacy, principal military campaigns, the Reconstruction Era and the creation of a new Union, the significance of the Civil War and Reconstruction in American history.

Prerequisite: HST 215

HST 331 Tudor England

The political, social and cultural life of England in the age of the Tudor dynasty. Emphasis is on individual reading, discussion, and special reports.

Prerequisite: HST 234

HST 332 Stuart England

The revolutionary period of Seventeenth Century England: Political and cultural aspects will be emphasized. Emphasis is on individual reading, discussion and special reports.

Prerequisite: HST 234

HST 341 Postwar Europe in Its World Setting

A study of both Eastern and Western Europe since World War II, stressing the problems of reconstruction and readaptation to an altered world power structure. Special attention is paid to the problem of European unification.

Prerequisite: UC 035

HST 342 The Rise of Modern Nationalism

The emergence of European nationalism from the time of the French Revolution, specific nationality and minority problems, and the spread of nationalist ideologies to the non-European world. Prerequisite: UC 035

HST 371 Chinese History

Analysis of the major patterns and problems of China's development up to the Twentieth Century, with special emphasis on social and institutional history.

Prerequisite: UC 062

HST 411 Senior Seminar in American History

Reading and research in selected topics.

Prerequisite: Open to history majors who have taken HST 214, 215

HST 431 Senior Seminar in British History

Selected topics for individual research in British cultural, social, and political history, Sixteenth to the late Nineteenth Century. Prerequisite: Open to history majors who have completed two courses in British history

HST 441 Senior Seminar in European History

Reading and research in selected topics.

Prerequisite: Open to history majors who have completed two courses in European history

HST 481 Seminar in Historiography

Reading and research in topics analyzing the literature of historical inquiry and writing from the Greeks to the present.

Prerequisite: Four history courses

HST 491 Directed Studies in History

A program of directed individual research and reading designed for advanced history majors. May be taken for one or more semesters. May be taken for 4 or 8 credits per semester.

Prerequisite: History majors may apply to the Department for ad-

mission during their sixth semester

LATIN

See Classical Languages and Literatures, Page 63.

MATHEMATICS

Requirements for a Major in Mathematics:

Nine courses in mathematics, plus CHM 114-115 or PHY 251-252, plus three courses in a subject area closely related to mathematics, either in the physical sciences or the social sciences.

Requirements for a Teaching Major:

Eight courses in mathematics, plus a minor requiring five courses in physics or chemistry, or a group minor requiring six courses in physics and chemistry, or other minors arranged in consultation with the Department. Twenty semester credits in education also are required.

Requirement for a Teaching Minor:

Five courses in mathematics.

MTH 125 Introduction to Probability and Statistics

Elementary set theory, sample spaces, combinatorics, random variables, Chebyshev's inequaliy, Bernoulli trials, binomial distribution, joint distribution, introduction to statistics, and introduction to stochastic processes.

Prerequisite: Three years of high school mathematics

MTH 131 Elements of Calculus

The basic concepts, theorems, and applications of calculus, including material on functions of more than one variable and infinite series. Credit cannot be earned for both MTH 131 and 154 or 155. Prerequisite: Three years of high school mathematics

MTH 154-155 Calculus

A comprehensive study of analytic geometry, limits, differentiations, and integration for functions of one real variable.

Prerequisite: Three years of high school mathematics, including trigonometry

MTH 258 Advanced Calculus

A study of infinite series, multiple integration, differential calculus of scaler and vector fields, line integrals, and surface integrals. Prerequisite: MTH 155

MTH 259 Advanced Calculus

A study of linear differential equation, Fourier series, partial differential equations, and numerical methods.

Prerequisite: MTH 155

MTH 314 Structure of Number Systems

Emphasizes the logical structure of the real number system. Properties of the natural numbers, integers, rational numbers, and real numbers are carefully proved. Computational techniques and methods which pertain to the mathematics of the elementary grades. Prerequisite: Two years of high school mathematics

MTH 315 Algebraic Structures

From properties of numbers, algebraic concepts are developed; examples of other algebraic systems are investigated to show the generality and structure of algebra.

Prerequisite: MTH 314

MTH 316 Geometric Structures

Selected topics from Euclidean geometry, finite projective and finite affine geometry, analytic geometry, set theory and combinatorial topology. Includes an analysis of axiom systems, ruler and compass constructions, equations of lines, circuits and graph theory. Prerequisite: Two years of high school mathematics

MTH 321 Mathematical Statistics

A study of continuous random variables. Includes the law of large numbers, central limit theorem, estimation of parameters, testing of statistical hypothesis, and regression.

Prerequisites: MTH 125 and MTH 131, or MTH 155

MTH 361 Geometry

Special topics from projective, affine, non-Euclidean, and advanced Euclidean geometry.

Prerequisite: MTH 155

MTH 365 Foundations of Mathematics

A careful study of axioms. Includes consistency, independence, completeness, categoricalness and models. Material on cardinal and ordinal numbers, and types of infinity is part of the course. Prerequisite: Permission of the Department

MTH 373 Linear Algebra

Finite-dimensional vector spaces, linear transformations, matrices, linear equations, quadratic forms, eigenvalues.

Prerequisite: MTH 155

MTH 374 Modern Algebra

A development of the important properties of algebraic structures. Includes groups, rings, integral domains, fields, and boolean algebras. Prerequisite: MTH 373

MTH 405 Special Topics

Prerequisite: Permission of the Department

MTH 451 Foundations of Analysis

A rigorous study of continuity, differentiation, Riemann-Stieltjes integral, and uniform convergence for real-valued functions of a real variable.

Prerequisite: MTH 259

MTH 461 Topology

Elementary point-set topology with an introduction to homotopy theory.

Prerequisite: MTH 374

MODERN LANGUAGES

Requirements for a Major in Modern Languages:

Nine courses in the chosen language and its literature (except Chinese) beyond the University Course requirements. Ordinarily, these include 261-262, 271-272, plus five courses in literature at the 300-499 level. Majors are urged to elect courses in other literatures, history, philosophy, art, and linguistics, related to their major. Those planning to do graduate work are strongly urged to begin work in a second foreign language. Prospective majors should have completed at least two years of a single language in high school wherever possible.

Requirements for a Teaching Major:

Eight courses in the chosen language and its literature beyond the University Course requirements. Ordinarily these include 261-262, 271-272, plus four courses in language and literature at the 300-499 level. Twenty semester credits in education also are required.

Requirements for a Teaching Minor:

The Department does not offer a formal teaching minor but students with special language backgrounds who wish to present a teaching minor should contact the Department for permission.

CHINESE

CHE 114-115 Elementary Chinese

An introduction to modern Mandarin Chinese (Kuo-yü), emphasizing both conversation and reading.

CHE 214-215 Intermediate Chinese

Continued study of Kuo-yü with increasing emphasis on reading and composition. May be conducted as a tutorial. Prerequisite: CHE 114-115 or permission of the instructor.

FRENCH

FRH 109-110 First Year French

Elements of grammar, pronunciation, and conversation with extensive reading and translation of graded texts. Not ordinarily open to students who have had two or more years of secondary school preparation. Admission contingent upon departmental testing. To be followed by FRH 209-210.

FRH 114-115 First Year French

Devoted to aural-oral adaptation, the study of fundamental speech patterns, practice in writing, and the reading of graded texts. Not ordinarily open to students who have had two or more years of secondary school preparation. Admission contingent upon departmental testing. To be followed by FRH 214-215.

FRH 209-210 Second Year French

Review of grammar, practice in writing and speaking. Extensive reading and translation of literary and cultural texts.

Prerequisite: FRH 110 or an appropriate placement examination score

FRH 214-215 Second Year French

Devoted to aural-oral adaptation. Review of grammar essentials and more intensive practice in developing speaking and writing skills combined with reading of literary and cultural texts.

Prerequisite: FRH 115 or an appropriate placement examination score

FRH 261-262 French Composition and Conversation

Devoted to increasing the student's command of the language and familiarizing him with idiomatic French. Intensive practice in oral and written composition as well as translation. Techniques of textual analysis and exposition are introduced. Conducted primarily in French.

Prerequisite: FRH 210 or FRH 215, or a satisfactory high school entrance record. Especially qualified freshmen may be admitted.

FRH 271, 272 Introduction to French Literature

The study of masterpieces of French literature. Classwork and oral and written reports in French.

Prequisite: FRH 210 or FRH 215, or a satisfactory high school entrance record. Especially qualified freshmen may be admitted.

FRH 301 French Phonetics and Diction

Elements of the sound system of French with intensive oral practice based on practical and cultural topics. Some written work. Designed primarily for students planning to teach French at the elementary and secondary levels.

Prerequisite: FRH 262

FRH 411 Literature of the French Renaissance

Philosophical and esthetic ideas in the works of the principal authors of the period, including Marot, Marguerite de Navarre, Rabelais, the Pleiade, Montaigne, and d'Aubigne. Conducted in French.

Offered in alternate years. Prerequisite: FRH 272

FRH 421, 422 Seventeenth Century French Literature I and II

FRH 421 deals with the development and character of French classicism. Descartes, Pascal, the novels of D'Urfe and Mme. de La Fayette, the theatre of Corneille and Racine.

FRH 422 is principally a study of Moliere and LaFontaine. Selections from the great prose writers: La Rochefoucauld, Mme. de Sevigne, Bossuet, La Bruyere, Fenelon, Saint-Simon, Bayle, and Fontenelle. These courses are offered in alternate years; conducted in French.

Prerequisite: FRH 272

FRH 431, 432 Eighteenth Century French Literature I and II

FRH 431 deals with the development of the philosophical spirit from Bayle to Voltaire. The interplay between France and England. The comedy of Marivaux and Beaumarchais and developments in the novel.

FRH 432 deals with political, social, and ethical thought of the Enlightenment. The Encyclopedists and later *Philosophes*. Primarily a study of Montesquieu, Diderot, and Rousseau, including the origins of Romanticism. These courses are conducted in French and are offered in alternate years.

Prerequisite: FRH 272

FRH 441, 442 Nineteenth Century French Literature I and II

FRH 441 is concerned with the flowering of Romanticism and the beginnings of Realism. Novelists, dramatists, poets, and essayists, including Chateaubriand, Lamartine, Hugo, Vigny, Musset, Nerval, and Stendhal.

FRH 442 deals with the realistic novel, review of the Parnassian poets and the problem play, and the esthetics of naturalism. The relation of literature to the philosophical, political, and social ideas of the time. Primarily a study of Balzac, Flaubert, Zola, the Goncourts, and de Maupassant.

Offered in alternate years. Prerequisite: FRH 272

FRH 443 French Poetry of the Symbolistic Movement

The esthetics and poetic innovations of Symbolism. Study of the theoretical writings and poetry of Baudelaire, Verlaine, Rimbaud, and Mallarme. Review of the legacy of Symbolism. Conducted in French. Offered in alternate years.

Prerequisite: FRH 272

FRH 451 Twentieth Century French Novel

Developments in the novel since the turn of the century. Primarily a study of Proust, Gide, Maurice, Malraux, Camus, Sartre, and representative authors of the new school. Conducted in French.

Offered in alternate years. Prerequisite: FRH 272

FRH 452 Twentieth Century French Theatre

Drama since the Theatre Libre. Theatrical innovations and reforms of Copeau, Jouvet, Baty, Dullin, and others. Primarily a study of Claudel, Giraudoux, Anouilh, Montherlant, Camus, Sartre, and the recent experiments of Ionesco and Beckett. Conducted in French. Offered in alternate years.

Prerequisite: FRH 272

FRH 453 Twentieth Century French Poetry

French poetry since the turn of the century. The legacy of Symbolism, Dadaism, Surrealism, la poesie pure, and the principal themes of contemporary poetry. Primarily a study of Apollinaire, Claudel, Valery, Eluard, Aragon, and St. John-Perse. Conducted in French. Offered in alternate years.

Prerequisite: FRH 272

FRH 490 Seminar in French Literature

Study of individual authors, selected themes or critical problems. Prerequisites: Major Standing in French and permission of the Instructor

GERMAN LANGUAGE AND LITERATURE

GRM 101-102 Reading in German

Designed to help students acquire a reading knowledge of German. Material ranges from elementary and intermediate texts of general interest to specialized texts in the student's major field. This course may not be offered as partial fulfillment of the degree requirement in foreign languages by students who must take the regular two-year sequence, but may be taken as an elective with special permission.

GRM 114-115 First Year German

Devoted to aural-oral adaptation, the study of fundamental speech patterns, practice in writing, and the reading of graded texts. Not ordinarily open to students who have had two or more years of secondary school preparation.

GRM 214-215 Second Year German

Review of grammar essentials and more intensive practice in developing speaking and writing skills combined with reading of literary and cultural texts.

Prerequisite: GRM 115 or an appropriate placement examination score

GRM 261-262 German Composition and Conversation

Devoted to increasing the student's command of the language and familiarizing him with idiomatic German. Intensive practice in oral and written composition as well as translation. Techniques of textual analysis and exposition are introduced. Conducted primarily in German.

Prerequisite: GRM 215 or a satisfactory high school entrance record. Especially qualified freshmen may be admitted.

GRM 271, 272 Introduction to German Literature

Masterpieces of German literature. Classwork and oral and written reports in German.

Prerequisite: GRM 215 or a satisfactory high school entrance record. Especially qualified freshmen may be admitted.

GRM 301 German Phonetics and Diction

Elements of the sound system of German with intensive oral practice based on practical and cultural topics. Some written work. Designed primarily for students planning to teach German at the elementary and secondary levels.

Prerequisite: GRM 262

GRM 305 Introduction to Germanic Philology

Historical development of the German language, the sound shifts, linguistic changes, dialects. Offered in alternate years.

Prerequisite: GRM 262

GRM 421, 422 The Age of Goethe

GRM 421 deals with representative works of Goethe I and II (exclusive of Faust), Schiller, and their contemporaries, which exemplify the intellectual and artistic currents of the Enlightenment, Storm and Stress, and Classicism.

GRM 422 is a detailed study of Faust I and II, its position in German literature and its importance as a masterpiece of world literature. Prerequisite: GRM 272.

GRM 431 German Romanticism

The poetry and prose of Romanticism, the philosophical bases for the movement, its origins, development, and decline. Offered in alternate years.

Prerequisite: GRM 272

GRM 432 German Prose of the Nineteenth Century

The novels and Novellen from Poetic Realism to the end of the century are examined in detail. Offered in alternate years.

Prerequisite: GRM 272

GRM 433 Kleist, Grillparzer, Hebbel

Intensive reading in the works of these dramatists, with emphasis on textual interpretation, philosophic and esthetic explication, and criticism. Offered in alternate years.

Prerequisite: GRM 272

GRM 434 Naturalism, Impressionism, Expressionism

German literature of the era 1880-1920, with analysis of selected texts from these periods. Offered in alternate years.

Prerequisite: GRM 272

GRM 451 Modern Prose Fiction

A survey of novels and Novellen from World War I to the present, stressing developments in these genres since World War II.

Offered in alternate years. Prerequisite: GRM 272

GRM 490 Germanistisches Proseminar

Intensive investigation of some special aspects of German literature, stressing research and independent study.

Prerequisites: Major Standing in German and permission of the Instructor

RUSSIAN LANGUAGE AND LITERATURE

RUS 114-115 First Year Russian

Devoted to aural-oral adaptation, the study of fundamental speech patterns, practice in writing, and the reading of easy Russian texts. Not ordinarily open to students who have had two or more years of secondary school preparation.

RUS 214-215 Second Year Russian

Review of grammar essentials and more intensive practice in developing speaking and writing skills combined with reading of literary and cultural texts.

Prerequisite: RUS 115 or an appropriate score on placement examination

RUS 261-262 Russian Composition and Conversation

Devoted to increasing the student's command of the language and familiarizing him with idiomatic Russian. Intensive practice in oral and written composition as well as translation. Techniques of textual analysis and exposition. Conducted primarily in Russian.

Prerequisite: RUS 215 or a satisfactory high school entrance record.

Especially qualified freshmen may be admitted.

RUS 271, 272 Introduction to Russian Literature

The study of masterpieces of Russian literature. Classwork and oral and written reports in Russian.

Prerequisite: RUS 215 or a satisfactory high school entrance record. Especially qualified freshmen may be admitted.

RUS 301 Russian Phonetics and Diction

Elements of the sound system of Russian with intensive oral practice based on practical and cultural topics. Some written work. Designed primarily for students planning to teach Russian at the elementary and secondary levels.

Prerequisite: RUS 262

RUS 425 Pushkin and His Time

Primarily a study of Pushkin's works. Includes selections by Pushkin's predecessors and contemporaries such as Derzhavin, Batyushkov, Zhukovsky, Venevitinov, Delvig, and Maratynsky. Conducted in Russian. Offered in alternate years.

Prerequisite: RUS 272

RUS 431 Russian Poetry of the Nineteenth Century

Russian poetry from Pushkin to the beginning of symbolism with special emphasis on Lermontov, Tiutchev, Fet, Tolstoy, and Nekrassov. Conducted in Russian. Offered in alternate years. Prerequisite: RUS 272

RUS 432 Russian Realism from Gogol to Gorky

Development of ideas and the evolution of style in the novel and short story from Gogol to Gorky (excluded). Includes selections from Herzen, Goncharov, Turgenev, Saltykob-Shchedrin, Leskov, Garshin, and Korolenko. Conducted in Russian. Offered in alternate years.

Prerequisite: RUS 272

RUS 433 Survey of Nineteenth Century Russian Drama

Principal dramatic works from Griboyedov through the turn of the Century. Includes review of the development of dramatic techniques. Conducted in Russian. Offered in alternate years.

Prerequisite: RUS 272

RUS 441 Tolstoy

Study of Tolstoy's novels, short stores, and essays. Tolstoy the moralist and the influence of his philosophy on Russian thought and letters. Conducted in Russian. Offered in alternate years. Prerequisite: RUS 272

RUS 442 Dostoevsky

Study of Dostoevsky's literary and ideological evolution. The influence of Dostoevsky as psychological novelist and moral philosopher on Russian thought and letters. Conducted in Russian. Offered in alternate years.

Prerequisite: RUS 272

RUS 443 Chekhov and Gorky

Study of prose and dramatic writings of Chekhov and Gorky with emphasis on the development of ideas in the late Nineteenth and early Twentieth Centuries. Conducted in Russian. Offered in alternate years.

Prerequisite: RUS 272

RUS 447 Early Soviet Writers and Russian Emigres

Selected works of writers of the 1920's and 1930's, such as Sholokhov, Leonon, Bunin, Remizov, and Zaitsev. Conducted in Russian. Offered in alternate years.

Prerequisite: RUS 272

RUS 451 Contemporary Soviet Literature

Study of the literary situation shortly before and since World War II. Includes writers such as K. Simonov, Tvardovsky, Ehrenburg, V. Grossman, V. Panova, Pasternak, and others. Conducted in Russian. Offered in alternate years.

Prerequisite: RUS 272

RUS 490 Seminar in Russian Literature

Intensive investigation of some aspect of Russian literature. Prerequisites: Major Standing in Russian and permission of the Instructor

SPANISH LANGUAGE AND LITERATURE

SPN 109-110 First Year Spanish

Elements of grammar, pronunciation, and conversation with extensive reading and translation of graded texts. Not ordinarily open to students who have had two or more years of secondary school preparation. Admission contingent upon departmental testing. To be followed by SPN 209-210.

SPN 114-115 First Year Spanish

Devoted to aural-oral adaptation, the study of fundamental speech patterns, practice in writing, and the reading of graded texts. Not ordinarily open to students who have had two or more years of secondary school preparation. Admission contingent upon departmental testing. To be followed by SPN 214-215.

SPN 209-210 Second Year Spanish

Review of grammar, practice in writing and speaking. Extensive reading and translation of literary and cultural texts.

Prerequisite: SPN 110 or an appropriate score on a placement examination

SPN 214-215 Second Year Spanish

Devoted to aural-oral adaptation. Review of grammar essentials and more intensive practice in developing speaking and writing skills combined with reading of literary and cultural texts.

Prerequisite: SPN 115 or an appropriate score on a placement ex-

SPN 261-262 Spanish Composition and Conversation

Devoted to increasing the student's command of the language and familiarizing him with idiomatic Spanish. Intensive practice in oral and written composition as well as translation. Techniques of textual analysis and exposition are introduced. Conducted primarily in Spanish.

Prerequisite: SPN 210 or SPN 215, or a satisfactory high school entrance record. Especially qualified freshmen may be admitted.

SPN 271, 272 Introduction to Spanish Literature

The study of masterpieces of Spanish literature. Classwork and oral and written reports in Spanish.

Prerequisite: SPN 210 or SPN 215, or a satisfactory high school entrance record. Especially qualified freshmen may be admitted.

SPN 301 Spanish Phonetics and Diction

Elements of the sound system of Spanish with intensive oral practice based on practical and cultural topics with some written work. Designed primarily for students planning to teach Spanish at the elementary and secondary levels.

Prerequisite: SPN 262

SPN 411 Cervantes

Detailed study of the literary value and philosophical connotations of the Quijote. The Novelas Ejemplares and dramatic works, especially the Entremeses. Conducted in Spanish. Offered in alternate years.

Prerequisite: SPN 272

SPN 421 Spanish Novel of the Golden Age

A detailed study of the picaresque novel, the pastoral novel of Montemayor, and selections from other prose writers, including Vélez de Guevara and Zayas. Conducted in Spanish. Offered in alternate years.

Prerequisite: SPN 272

SPN 422, 423 Spanish Drama of the Golden Age I and II

SPN 422 places special emphasis on the role of Lope de Vega in the development of Spanish drama. Includes Tirso de Molina and the Don Juán legend, Ruiz de Alarcón, Guillén de Castro and others. Conducted in Spanish.

SPN 423 places special emphasis on Calderón. Includes Rojas Zorrilla, Moreto, Quiñones de Benavente, and selections from the autos sacrementales. Conducted in Spanish.

Conducted in Spanish. Offered in alternate years.

Prerequisite: SPN 272

SPN 431 The Romantic Movement in Spanish Literature

Developments in drama, poetry, and the novel. Includes Martínez de la Rosa, Hartzenbusch, Duque de Rivas, Espronceda, Zorrilla,

Fernández y González, Gil y Carrasco, and others. Conducted in Spanish. Offered in alternate years.

Prerequisite: SPN 272

SPN 432 Spanish Realism and Naturalism

Emphasis on novelists such as Fernán Caballero, Galdós, Pardo Bazán, Palacio Valdés. Selections from principal poets and dramatists, including Bácquer, Echegaray, and others. Conducted in Spanish. Offered in alternate years.

Prerequisite: SPN 272

SPN 441 The Generation of 1898

New modes of thought and aspirations as reflected in the works of novelists, poets, and thinkers such as Baroja, Azorín, Valle-Inclán, Pérez de Ayala, Unamuno, Ortega y Gasset, Maeztú, and M. Machado. Conducted in Spanish.

Prerequisite: SPN 272

SPN 451 The Modernista Movement in Spanish-American

Principally a study of the prose and poetry of Rubén Darío and his influence. Selections from authors such as Gutierrez Nájera, Martí, Rodó, Santos Chocano, and Amado Nerva. Conducted in Spanish. Offered in alternate years.

Prerequisite: SPN 272

SPN 461 Modern Spanish-American Literature

Selected works of Spanish-American authors after the "modernista" movement, including Jose Vasconcelos, Alfonso Reyes, Horacio Quiroga, Rómulo Gallegas, Gabriela Mistral, and Pablo Neruda. Conducted in Spanish. Offered in alternate years.

Prerequisite: SPN 272

SPN 471 The Contemporary Spanish Novel

Esthetic innovations and themes in the works of authors such as Cela, Zunzunegui, Laforet, Gironella, Goytisolo, and others. Conducted in Spanish. Offered in alternate years.

Prerequisite: SPN 272

SPN 490 Seminar in Spanish Literature

Study of individual authors, selected themes or critical problems. Prerequisites: Major Standing in Spanish and permission of the Instructor

MUSIC

Prospective music majors should consult the Music Department before or during their first semester registration.

Requirements for a Major in Music Theory and Composition:

Nine departmental courses beyond UC 049, of which six are in music theory and composition, and three are in music history and literature. Co-requisites include keyboard proficiency meeting the standards recommended by the National Association of Schools of Music. This requirement may be satisfied by passing a qualifying examination before the end of the fourth semester or completion of MUS 371-372 with a grade of "C" or better. Students electing to satisfy the requirement by taking MUS 371-372 must so indicate to the Music Department at the time of their first semester registration, so that keyboard instruction can begin the first semester. Participation each semester in at least one recognized performing group at the University is also required. German is the recommended language for satisfying the University Course language requirements.

Requirements for a Major in Music History and Literature:

Nine departmental courses beyond UC 049, of which five are in music theory and composition, and four are in music history and literature. Other requirements are the same as for the preceding major.

Requirements for a Teaching Major in Vocal Music:

Eight departmental courses in addition to MUS 352 are required. Students should not register for UC 049 and may use MUS 352 to satisfy the University Course requirement. Of the eight departmental courses, five are in music theory, two are in music history and literature, and MUS 351. Other requirements are the same as for the Music Theory Major. Twenty semester credits in education also are required. This major will normally certify students for both elementary and secondary school teaching.

MUS 111 Beginning Musicianship

An introduction to the techniques of reading and writing music, notation, pitch, and rhythmic organization, elementary sight singing, dictation, and keyboard familiarity. An elective course for nonmusic majors.

MUS 211-212-311-312 Music Theory

A four-semester sequence designed to develop sound musicianship, with constant emphasis on its usefulness in study, performance, and teaching. Included are such topics as music reading, ear training and dictation, written harmony, keyboard harmony, form and analysis, and arranging.

Prerequisite: Permission of the Instructor

MUS 321 Music History and Literature to 1800

History and literature of music through the Eighteenth Century classicism. Suggested as an elective for nonmusic majors. Prerequisite: UC 049

MUS 322 Music History and Literature since 1800

History and literature of music from 1800 to the present. Suggested as an elective for nonmusic majors,

Prerequisite: Permission of the Instructor

MUS 331 Opera and Music Drama

A study of music drama from the lyric drama of the ancient Greeks to the present. Suggested as an elective for nonmusic majors.

Prerequisite: UC 049

MUS 332 Symphonic Music

A study of symphonic music from the pre-classic compositions of C.P.E. Bach to the present. Suggested as an elective for nonmusic majors.

Prerequisite: UC 049

MUS 351-352 Vocal and Choral Techniques

The methods and materials of singing in groups and individually. Includes singing lessons as well as the subject matter contained in courses usually called choral conducting, choral literature, vocal methods, and vocal materials.

Prerequisites: MUS 312 and MUS 321

MUS 371-372 Keyboard Technique

Designed to develop the basic keyboard facility essential to the equipment of any musician and to acquaint him with keyboard literature. Students planning to register for this course should indicate such intention to the Music Department at the time of their first registration in the University.

Prerequisite: Permission of the Instructor

MUS 411-412 Advanced Music Theory

An integrated study of the materials of music and the techniques of its composition. Includes elementary and advanced aspects of courses usually called form and analysis, counterpoint, orchestration, and composition.

Prerequisite: MUS 312

MUS 424 Music in the Baroque Era

History of music from the beginning of the Monodic Revolution, c. 1600, through the death of Handel. Suggested as an elective for nonmusic majors.

Prerequisite: UC 049

MUS 426 Music in the Classic and Romantic Eras

History of music from the early rococo style through Wagner. Suggested as an elective for non-music majors.

Prerequisite: UC 049

MUS 428 Post-Romantic and Contemporary Music

History of music since Wagner. Suggested as an elective for non-music majors.

Prerequisite: UC 049

PHILOSOPHY

Requirements for a Major in Philosophy:

Nine departmental courses, including PHL 201, 204, 205, 206, and 490. Knowledge beyond the elementary level in at least one area outside philosophy is required. This condition normally is met by taking four or more courses in the same field exclusive of the University Courses. These are chosen by the student in consultation with his adviser.

In conjunction with PHL 490, each major must pass an oral examination on the work of one major philosopher whom he has chosen with the approval of the Department.

PHL 201 Introduction to Philosophical Thinking

Several problems within the scope of philosophical inquiry are intensively examined. Different problems are chosen each year, but typical examples are: the nature and grounds of political obligation; the possibility of demonstrating God's existence; grounds for belief in the evidence of the senses. The emphasis is on active critical and constructive philosophical thinking on the part of the students. Prerequisite: UC 034

PHL 204, 205, 206 Introduction to Systematic Philosophy

The development of systematic philosophical thought in the Western world from the age of pre-philosophical mythical and religious thinking in the Mediterranean region to the present time. The three terms are as follows: the classical Greco-Roman period, from Homer to Boethius (PHL 204); the religious period, from St. Augustine to Leibniz (PHL 205); the scientific period, from Francis Bacon to the present (PHL 206). Each term may be taken separately, although together they present a continuous development. Extensive reading is done in original writings of major philosophers. Prerequisite: UC 035

PHL 301, 302 Introduction to Logic

The first semester deals with traditional theories of logic and language; concentrating on those of Aristotle and J. S. Mill. The second semester is on the theories and problems of the last hundred years, including the development of a degree of facility with symbolic techniques.

Prerequisite: Major Standing in any department. PHL 201 is recommended.

PHL 317 Ethics

The questions of right action, of duty and obligation, and of the best life for man are discussed, with the aid of readings in major examples of ethical analysis, from the time of the ancient Greeks to the present. An effort is made to evaluate conflicting ethical theories. Prerequisite: Major Standing in any department. PHL 201 is recommended.

PHL 319 Esthetics

The significance of the literary, visual, and musical arts for a philosophical understanding of man is developed through inquiry into the factors entering into the creating and the intelligent judgment of a work of art, such as Aristotle's Poetics, Kant's Critique of Esthetic Judgment, R. G. Collingwood's Principles of Art, and Dewey's Art as Experience, but a constant effort is made to keep philosophical principles in relation to actual art works.

Prerequisites: UC 014, and UC 047 or UC 049. PHL 201 is recommended.

PHL 321 Theories of Justice, Power, and Freedom

The meanings of these three central concepts in political philosophy, together with several closely related concepts such as those of law, authority and the like, are examined and analyzed through intensive readings in classic writings of political philosophers and through study of especially crucial problems such as the question of segregation. Three main branches of political thought are dealt with: the classical tradition, stemming from Aristotle; the modern Continental European tradition, stemming from Rousseau, Hegel and Marx; and the modern Anglo-American democratic tradition, stemming from Locke, Madison, and others.

Prerequisite: UC 035

PHL 325 Philosophy of Religion

Various approaches to religious faith and worship in the Western world will be examined, from the traditional arguments for a benevolent Deity to the theories of modern psychologists and anthropologists. A few of the great classics of religious literature — for example, the Book of Job, St. Augustine's Confessions, Pascal's Pensées —will be read and discussed. The approaches of present-day existentialism and positivism to religion will be considered. The course does not strive to produce or confirm any particular point of view other than that of enlightened interest.

Prerequisite: Major Standing in any department. PHL 201 is recommended.

PHL 327 Philosophy of History

A study of various views of the nature and significance of the historical perspective on human affairs as these views are related to general philosophical problems of man, society, time, and truth. The presuppositions of orthodox historians, as well as those of speculative historians such as Toynbee and Spengler, are examined.

Prerequisite: Major Standing in any department. PHL 201 is recommended.

PHL 341 Pragmatism

A critical examination of America's only native philosophical movement, concentrating on the work of five men: Charles Sanders Peirce, William James, Dewey, George Herbert Mead, and Clarence

Irving Lewis. The course is philosophical rather than historical, having as its goal an evaluation of pragmatism as a significant philosophical position.

Prerequisite: Major Standing in any department. PHL 201 and PHL

206 are recommended.

PHL 355 Existentialism

A study of the several types of modern existentialist philosophy, on the basis of readings in the works of Kierkegaard, Sartre, Camus, Jaspers, Heidegger, and Marcel. An attempt is made to remove misconceptions concerning existentialism, and to discover its positive contributions.

Prerequisite: Major Standing in any department. PHL 201 and PHL

206 are recommended.

PHL 365 Plato

A close study of the major dialogues of Plato, with special attention to the later, more didactic ones, and to the view of the world that emerges from them.

Prerequisite: PHL 204

PHL 366 Aristotle

A careful study of the major works of Aristotle, with special attention to his theoretical works and to the theory of nature and mind that is worked out in them.

Prerequisite: PHL 204

PHL 381 Kant

An intensive study of Kant's major works: The Critique of Pure Reason, the Critique of Practical Reason, and the Critique of Judgment. An attempt is made to indicate and assess the profound influence of the Critique of Pure Reason in particular on modern philosophy.

Prerequisite: PHL 206

PHL 490 Philosophical Research

The goal of the study of philosophy is the independent practice of philosophical inquiry. In this final phase of the program for philosophy majors, students have an opportunity to formulate philosophical questions and to progress toward carefully considered solutions. The research is carried on in consultation with and under the supervision of a staff member, and the results are embodied in a written paper.

Prerequisite: Major Standing in Philosophy.

PHYSICS

Requirements for a Major in Physics:

Nine courses in physics and six collateral courses in mathematics and chemistry. The four courses in mathematics must include MTH 258; the two courses in chemistry are CHM 114-115.

Requirements for a Teaching Major:

Eight courses in physics, plus a minor which may consist of five courses in mathematics, or a group minor requiring six courses in mathematics and chemistry. Twenty semester credits in education also are required.

Requirements for a Teaching Minor:

Five courses in physics.

PHY 251-252-253 Physics

An introduction to mechanics, heat, sound, electricity and magnetism, optics, and modern physics for students majoring in mathematics, science, or engineering science; with laboratory.

Prerequisites: MTH 154 for PHY 251; MTH 155 for PHY 252

PHY 344-345 Electricity and Magnetism

AC and DC circuits, electrostatics, magnetostatics, and Maxwell's equations; with laboratory.

Prerequisites: PHY 252 and MTH 258

PHY 361 Mechanics

Statics and dynamics of particles and rigid bodies.

Prerequisites: PHY 251 and MTH 258

PHY 421 Thermodynamics

The laws of thermodynamics and their applications to pure substances and special systems; with laboratory.

Prerequisite: PHY 252

PHY 432 Optics

The fundamental principles of physical optics and optical instruments. Huygens' Principle, the interference and diffraction of light, the electromagnetic theory of light, Fresnel's equations, reflection, refraction scattering, and polarization of light; with laboratory. Prerequisite: PHY 252

PHY 446-447 Electronics

Study of the characteristics, design, and application of electronic circuits and components; with laboratory.

Prerequisites: PHY 344 for PHY 446; PHY 345 for PHY 447

PHY 473 Modern Physics

Topics in atomic physics, quantum mechanics, and nuclear physics; required of all Liberal Arts physics majors.

Prerequisites: PHY 253 and MTH 258

PHY 490 Independent Study and Research

Individual readings, conferences, and laboratory work on advanced problems in physics. This course is intended only for students who have shown ability and a thorough understanding of the fundamentals of physics and mathematics.

Prerequisite: Permission of the Department

PHY 495 Special Topics

Prerequisite: Permission of the Department

POLITICAL SCIENCE

Requirements for a Major in Political Science:

Nine courses; seven in the Department, including UC 052, and two courses selected from the following: Statistics, PHL 321, senior essay, or any cognate course.

PS 204-205 American Government and Politics

Designed to explore and analyze the organization and operation of American government and politics. PS 204 is devoted to an intensive study of the major characteristics of the American governmental and political system. PS 205 is composed of independent readings and discussions of the major classics in the field.

Prerequisite: UC 052

PS 213 World Politics

Intensive interdisciplinary study of concepts and hypotheses basic to the understanding and analysis of relations among nations. The class engages in a mock U.N. exercise and in the analysis of a number of actual cases to gain experience in the application of the hypotheses studied.

Prerequisite: UC 052

PS 301-302 Comparative Politics

A sequence normally begun in the fifth semester, designed to apply analytical political theory to a study of various types of political systems, both European and non-European.

PS 301 deals with Western-style democracy and concentrates on the British parliamentary system. Some attention also is given to other Continental systems.

PS 302 analyzes authoritarian and dictatorial systems, and gives particular attention to the Nazi and fascist systems of Europe and recent dictatorships in Latin America.

Prerequisite: UC 052

PS 315 Opinion, Politics, and Diplomacy in the United States

Study of the foreign policy issues and challenges confronting the United States in the Nuclear Age, in the light of the historical evolution of American diplomacy, and of the limitations imposed upon foreign policy-makers by public opinion and the exigencies of domestic politics.

Prerequisite: PS 213

PS 421 Systematic Political Analysis

Analysis of systematic theories formulated by contemporary political scientists.

Prerequisite: UC 052

PS 441 Law and Politics

The exploration of the role of judges and courts in the American political system.

Prerequisite: UC 052

PS 480 Senior Essay

Individual projects to be arranged with the political science staff.

Prerequisite: Permission of the Department

PSYCHOLOGY

Requirements for a Major in Psychology:

Nine departmental courses, including PSY 246-247. Normally, PSY 351, 353, 361, and 363 are included in the major program. Students planning to major in psychology are advised not to take UC 054.

PSY 246-247 Foundations of Contemporary Psychology

An introduction both to basic principles and the most recent formulations in psychology. Topics include the central psychological processes of attending, perceiving, learning, thinking, remembering, as well as a study of social behavior and the development and organization of personality.

PSY 247 may not be elected by students who have had UC 054.

PSY 251 Abnormal Psychology

The psychodynamics of abnormal behavior, clinical types, methods of investigation, and principles of psycho-therapy. Occasional field trips to nearby institutions.

Prerequisite: UC 054

PSY 261 Foundations of Organizational Behavior

Empirical and theoretical approaches to understanding human behavior in complex organizations.

Prerequisite: UC 054

PSY 351 Experimental Psychology

Techniques and findings in the investigation of the basic psychological processes of sensation, perception, learning, memory, and thinking are studied.

Prerequisite: Two courses in psychology

PSY 353 Motivation and Personality

The study of the nature of motivation and emotion, and the organization of personality, with emphasis on research approaches and methods of measurement.

Prerequisite: Three courses in psychology

PSY 361 Statistics and Research Design

A survey of the principal statistical procedures commonly employed in research in the social sciences. Emphasis is given to the design of experimental studies, problems of sampling and control of variables, and psychological measurement.

Prerequisite: Two years of high school mathematics are recom-

PSY 363 Research Projects

A course providing opportunity for individual projects of research in the fields of perception, learning, motivation, personality, or social psychology.

Prerequisite: Three courses in psychology including PSY 361, or

permission of the Department

PSY 421 Advanced Experimental Psychology

Empirical and theoretical investigation of issues in learning, perception, thinking, physiological psychology, and animal behavior, with research projects.

Prerequisites: PSY 351, 361, and 363

PSY 423 Advanced Social Psychology

Problems of human social behavior are approached through intensive study of the research literature and by carrying out further research. Prerequisite: Three courses in psychology including PSY 361

PSY 427 Human Personality

The development and functioning of the adult person, with emphasis on experimental and clinical approaches to understanding.

Prerequisite: Four courses in psychology including PSY 353 and 361

PSY 431 Historical and Contemporary Issues

Major theoretical issues in psychology, approached by the study of their historical background, with intensive reading in the current literature.

Prerequisites: Major Standing in psychology and permission of the Department

PSY 435 Psychology of Communication

Selected topics from among the following: the nature and origin of language, structural syntactics and semantics and their psychological significance, translation, persuasion, mass communication, including its sources, determinants, organization, messages, audience, and effects.

Prerequisite: Three courses in psychology including PSY 361

PSY 490 Individual Research

Individual research projects under supervision of a member of the Department. May be taken for one or two semesters.

Prerequisite: Permission of the Instructor

PSY 495 Special Topics

Seminar for majors.

Prerequisites: Major Standing in psychology and permission of the Instructor

SCIENCE

SCI 305 Science in the Elementary School

Designed for students in elementary education programs. This is an interdepartmental course offered under the auspices of the Division of Physical Sciences.

Prerequisite: Major Standing in elementary education

RUSSIAN

See Modern Languages and Literatures, Pages 80-82.

SOCIOLOGY AND ANTHROPOLOGY

Requirements for a Major in Sociology and Anthropology: Seven departmental courses, including UC 058.

SOC 203 Human Origins

Traces the physical and cultural development of man from the time of his appearance, through the Paleolithic and Neolithic Ages, to the Bronze Age. Trends in physical evolution are included and theories of human evolution and human genetics are discussed.

SOC 254 American Community

The social analysis of small towns, cities, and suburban communities in the United States. Family organization, social class, clubs and other associations, religion, political belief and behavior, and occupations are included. Students carry out research.

Prerequisite. UC 058

SOC 255 Industrial Sociology

Areas included are: the relationship between industrial and business organizations and other parts of the community; the history of industrial sociology; the study of occupations with emphasis on the social characteristics, work-linked behavior, and rationale held by members of different occupational groups; the social structure business and industrial organizations, labor unions, and informal work groups; and the direction of occupational life in America. Students carry out research in one of these areas.

Prerequisite. UC 058

SOC 351 Social Organization

The comparative study of family and kinship, social class and caste, associations, and political organization with emphasis on non-European societies. Theories accounting for cultural differences in social organization are considered. Students carry out research on social organizations.

Prerequisite: UC 058

SOC 411 Theory and Method in Sociology and Cultural Anthropology

A number of "classics" in sociology and cultural anthropology by such men as Durkheim, Weber, Parsons, Redfield, Tylor, Boas, Kroeber, and Radcliffe-Brown are read. Emphasis is on theories accounting for similarities and differences in culture and for culture changes. Prerequisites: UC 058 and permission of the Instructor

SOC 421 Social Research

Comprehensive survey of the various research strategies and techniques in sociological research. Emphasis will be placed on the methodological problems in current social research.

Prerequisite: Permission of the Instructor.

SOC 471 **Principles of Social Work**

A preprofessional course in social work, designed as an introduction to the field. Emphasis is on theories which underlie practice. Prerequisites: UC 058 and permission of the Instructor

SOC 473 Readings in Sociology

A tutorial course in which the student will pursue a course of reading and discussion with the instructor.

Prerequisites: UC 058 and permission of the Instructor

SPANISH

See Modern Languages and Literatures, Pages 82-84.

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INDEX

Academic Divisions	25
Academic Probation	45
Activities	
Administrative Officers	98
Admission Requirements	41-42
Advanced Placement	
Advising and Counseling	33
Anthropology	94
Area Studies	
China	
India	58
Art	,
Art Exhibitions	
Associated Women Students	
Athletics	
Baccalaureate Curriculum	25
Book Store	
Buildings	
Business Administration	
Change of Courses	
Chemistry	
Chinese	
Chorus	38
Classical Languages and Literatures	57, 62-63
College Scholarship Service	5 0
Continuing Education	4,5
Counseling	33
Course and Credit System	43, 55
Courses of Instruction	55-95
Degree Requirements	25-30, 46
Deposits	47
Dining Facilities	
Dramatics	39
Dropping Courses	
Economics and Business Administration	
Education	-
Certification Requirements	
See also Majors, Teaching and Minors, Teaching.	
Employment, Student	34. 54

Engineering Science	27-28, 66-67
English Language and Literature	55-56, 67-69
Enrollment	3
Estimated Expenses	49
Exemptions	26
Faculty	4, 19-24
Faculty Offices	5
Fees	47
Financial Aids	50
Food Services	
Foreign Students	43
French	
Freshman Programs, Typical	31-32
General Information	3-6
German	57, 78-80
Governance	
Grades, and Grade Point System	44-45
Graduate School Preparation	30
Graduation Requirements	
Greek	57, 62-63
Health Services	
History	
Housing, Campus	5, 35, 36, 37, 47
Housing, Off-Campus	
Language Laboratory	
Latin	
Lecture-Concert Series	
Library	
Literary Magazine	40
Loans	
Location	3, inside back cover
Majors, Requirements for	55
Art History	58
Art, Studio	58
Business Administration	63
Chemistry	60
Classical Languages	62
Economics	
Engineering Science	
English	
History	

Latin	62
Mathematics	73
Modern Languages	57, 75
Music History and Literature	85
Music Theory and Composition	84-85
Philosophy	87
Physics	89
Political Science	91
Psychology	
Sociology and Anthropology	94
Major Standing, Requirements for	46, 55
Majors, Teaching	
Chemistry	60
Elementary	65
English	68
History	70
History and Social Science	70
Latin	62
Mathematics	73
Modern Languages	75
Physics	90
Vocal Music	85
Mathematics	58, 73-75
Minors, Teaching	
Art	58
Chemistry	60
English	68
History	70
Mathematics	73
Modern Language	
Physics	90
Modern Language	75-84
Movies	
MSUO Foundation	6, 50, 51
Music	
Music Rooms	
National Defense Education Act Loans	
Newspaper, Student	
North Foundation Hall	
Oakland Center	
Oakland Observer	
Oakland Observer	4(

Petitions of Exception	43
Philosophy	87-89
Physics	89-91
Placement Office	
Political Science	56, 91-92
Probation	45
Professional Preparation	
Psychological Services	
Psychology	56, 92-93
Publications, Student	5, 40
Readmission	43
Refunds	**************************************
Religious Groups	***************************************
Repeating Courses	44
Russian	57, 80-82
Scholarship Committee	
Science	58, 94
Scholarships	50-53
Sociology and Anthropology	57, 94-95
Spanish	57, 82-84
Sports	6, 40
Student Activities Council	
Student Employment	
Student Government	
Student Life	
Student Publications	
Student Residences	
Teacher Certification	
Teacher Education	28-30
Teaching, Majors and Minors, see Majors, Tea	ching, and
Minors Teaching	
Testing	33
Three-Semester Plan	4
Transfer Admissions	42
Tuition	47
Tuition, Out-of-State	48, 49
University Courses	
Veterans	
Western Institutions, Development of	
Withdrawal	
Yearbook	

