

GRADUATE CATALOG

1970

1971



EASTERN
MICHIGAN
UNIVERSITY

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1970-1971

EASTERN MICHIGAN UNIVERSITY

Ypsilanti, Michigan 48197

Volume LXX, Number 3

September 1, 1970

DIRECTIONS FOR CORRESPONDENCE

Please address specific inquiries to the following offices:

Dean of Admissions and Financial Aids: Loans and grants-in-aid	212 Pierce Hall	487-3060
Dean of Records and Teacher Certification: Certification requirements and transcripts	5 Pierce Hall	487-4200
Dean of Summer and Evening Sessions: All information concerning the summer or evening sessions	227 Pierce Hall	487-3234
Receivables and Billing Office: University fees and financial aids	Briggs Hall	487-3335
Director of Registration: Registration of students for on-campus classes	Briggs Hall	487-2300
Director of Field Services: In-service and correspondence courses; speakers for special occasions; adult education; consultation services to schools	113 Sherzer	487-0407
Director of On-Campus Housing:	Basement-Dining Commons #1	487-1300
Coordinator of Off-Campus Housing: Student living accommodations	Basement-Dining Commons #1	487-1300
Director of Placement: Teaching vacancies; registration of applicants for teaching, business and industrial positions; opportunities for earning a portion of University expenses	420 W. Forest	487-0400
Foreign Student Adviser: Information and counseling for foreign students	103 Pierce Hall	487-3117

Statement of Mailing Privileges

Published four times a year by Eastern Michigan University and entered
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THE UNIVERSITY

Eastern Michigan University was founded by the State Legislature in 1849 to educate teachers for the public schools. Its major purpose was always broadly interpreted and gave special emphasis to instruction in the liberal arts, science and other areas vital to the background of well-qualified teachers.

The University's continuous emphasis of the liberal arts, social and natural sciences, business and applied science was formally recognized by legislative action in 1956 and again in 1959 when Eastern was designated to be a multi-purpose university. Accredited undergraduate and graduate degree programs are offered by the College of Arts and Sciences, the College of Business, the College of Education and by the Applied Science Departments.

LOCATION

Eastern Michigan University is located in Ypsilanti, a suburban community with a population of 50,000. Its location in the Detroit metropolitan area places it in one of the world's great industrial centers.

Detroit Metropolitan Airport is fifteen miles from campus. Major east-west and north-south expressways provide easy access to the University from any point within Michigan and the midwest.

Students wishing to extend their social, cultural and recreational experiences beyond the campus will find extensive opportunities for doing so in Detroit—a forty-five minute drive from campus. The resources of the University of Michigan are fifteen minutes away. Scenic lakes are within easy driving distance.

RESOURCES

Eastern Michigan University provides all of the resources of a rapidly growing, multi-purpose university. Faculty, staff, physical plant and related facilities are available to accommodate an enrollment of approximately 20,000 students. A highly professional faculty numbering almost 900 provide excellent classroom instruction. On-campus housing for almost 4,500 persons is provided in residence halls and in married student apartments.

The central campus of the University is located adjacent to the Huron River. The new west campus, a tract of 182 acres, provides new modern facilities for athletics and physical education, physical plant and other service functions and fine living accommodations for married students.

UNIVERSITY ADMINISTRATION

Board of Regents

	Term Expires
Virginia Allen	1970
Charles Anspach	1974
Veda Anderson	1974
Lawrence R. Husse	1972
Edward J. McCormick (chairman)	1970
Dr. Richard N. Robb	1976

Mildred Beatty Smith	1972
George E. Stripp	1976
Gary D. Hawks, Secretary	
Lewis E. Profit, Treasurer	

Executive Officers

Harold E. Sponberg	President
Bruce K. Nelson	Vice-President for Instruction
Lewis E. Profit	Vice-President for Business and Finance
Ralph F. Gilden	Acting Vice-President for Student Affairs

ACADEMIC ORGANIZATION

Bruce K. Nelson	Vice-President for Instruction
Ursula R. Christian	Assistant to the Vice-President
College of Arts and Sciences	Dean, Donald F. Drummond
Departments of: Art, Biology, Chemistry, Economics, English Language and Literature, Foreign Languages and Literature, Geography and Geology, History and Social Sciences, Mathematics, Music, Physics and Astronomy, Psychology, Sociology, Speech and Dramatic Arts	
College of Business	Dean, Earl A. Roth
Departments of: Accounting and Finance, Business Education, General Business, Management, Marketing, Bureau of Business Services and Research	
College of Education	Dean, Allen Myers
Departments of: Educational Leadership, Educational Psychology, Guidance and Counseling, Health, Physical Education and Recreation, Special Education and Occupational Therapy. Divisions of: Curriculum and Instruction, Educational Media, Social Foundations	
Applied Science Departments	Vice-President Bruce K. Nelson
Department of: Home Economics, Industrial Education, Military Science	
Graduate School	Dean, Omer E. Robbins, Jr.
	Acting Assistant Dean, Quirico S. Samonte
	Administrative Assistant, Neal F. Hoover
Records and Teacher Certification	Dean, Everett L. Marshall
International Studies	Dean, R. Stanley Gex
Summer and Evening Sessions	Dean, Julius M. Robinson
Academic Services	Dean, Valmore Goines
Divisions of: Academic Advising, Academic Budget Office, Division of Field Services, Information Systems and Registration, Instructional Research Office, Instructional Broadcasting Center, Instructional Computer Services, Minority Programs	
University Library	Director, Albert Marshall

DEPARTMENT HEADS

COLLEGE OF ARTS AND SCIENCES

Art	Kingsley M. Calkins
Biology	Richard A. Giles
Chemistry	Clark G. Spike
Economics	Young-iob Chung
English Language and Literature	Milton P. Foster
Foreign Languages and Literature	J. Henry Owens
Geography and Geology	Ross N. Pearson
History and Social Sciences	R. Neil McLarty
Mathematics	Robert S. Pate
Music	Howard R. Rarig
Physics and Astronomy	James M. Barnes
Psychology	Samuel Karson
Sociology	Edward Green
Speech and Dramatic Arts	John W. Sattler

COLLEGE OF BUSINESS

Accounting and Finance	Emerson Erb, Jr.
Business Education	Charles H. Duncan
General Business	W. Oscar Collins
Management	Claude I. Shell
Marketing	Robert J. Williams
Bureau of Business Services and Research	M. Godfrey Parsons

COLLEGE OF EDUCATION

Educational Leadership	George Brower
Educational Psychology	Wilbur A. Williams
Guidance and Counseling	John G. Pappas
Health, Physical Education and Recreation	Patric L. Cavanaugh
Special Education and Occupational Therapy	Frank Wawrzaszek
Divisions of:	
Curriculum and Instruction	
Educational Media	
Social Foundations	

APPLIED SCIENCE DEPARTMENTS

Home Economics	Anita L. Fielder
Industrial Education	Raymond A. LaBounty

ACCREDITATION

Eastern Michigan University is accredited by the North Central Association of Colleges and Secondary Schools, the National Council for Accreditation of Teacher Education, the American Chemical Society and the National Association of Schools of Music.

CIVIL RIGHTS POLICY

In 1966, the Board of Regents adopted the following policy: "Eastern Michigan University shall not discriminate against any person because of race, color, religion, creed, national origin or ancestry. Further, the University shall work for the elimination of improper discrimination in the areas listed above (1) in organizations recognized by the University, and (2) from non-University sources where students and employees of the University are involved."



GENERAL INFORMATION

UNIVERSITY HOUSING

The University owns and operates approximately 450 furnished apartments for married students. In addition, the University operates seventeen residence halls conveniently located on campus. Graduate students are eligible to live in any of these units when they are available.

Students living in residence halls are required to board there also. Room and board in the residence halls is approximately \$530.00 per semester. Apartment units rent for \$100 and \$115 per month for one bedroom apartments and \$120 and \$135 per month for two bedroom apartments. The University reserves the right to revise these rates when necessary. Applications and additional information may be obtained from the director of Housing, Housing Office, Eastern Michigan University.

The Housing Office also maintains listings of off-campus housing accommodations available in the Ypsilanti area. These listings include rooms, apartments, houses and "room-mates wanted," and are usually located near campus, but some good choices require transportation. Only those facilities available to students without regard for race, religion, creed, national origins or ancestry are posted.

A student expecting to live off-campus may obtain assistance by contacting the coordinator of Off-Campus Housing, Housing Office, Eastern Michigan University.

STUDENT EMPLOYMENT OPPORTUNITIES

Students interested in earning money with which to pay a portion of their expenses will be given advice and detailed information about on-campus employment opportunities upon application at the University Placement Center.

Ypsilanti, located thirty miles west of Detroit and seven miles southeast of Ann Arbor, is the center of an area which provides many and varied employment opportunities. Employment is generally available in business and industry and in governmental agencies in the area.

UNIVERSITY PLACEMENT CENTER

The University offers graduates and alumni aid in securing positions and in obtaining professional advancement through the services of the University Placement Center. The Placement Center seeks to serve both graduates and employers by identifying the person best qualified for each position, thus providing jobs that fit the qualifications of the individual graduate. The Placement Center serves as the channel through which much information about the performance of Eastern Michigan University graduates is brought back into the instructional program of the University. Cumulative records of professional experience and advanced graduate study are maintained for students who wish to file at the Placement Center.

VETERANS INFORMATION

Veterans eligible for educational benefits under the G.I. Bill should supply the Veterans Affairs Office at the University with their Certificate of Eligibility prior to the start of classes. For information regarding payment of tuition and other matters of interest to the veteran, please contact the Veterans Affairs Office, located in Welch Hall.

THE ACADEMIC YEAR

Eastern Michigan University operates on a semester plan. The fall and spring semesters are approximately fifteen weeks each. The summer semester provides concurrent six and eight week terms. Pre-summer and post-summer terms of two weeks each are provided for students wishing to accelerate the completion of degree requirements. Students are admitted to the Graduate School and may enroll in classes at the beginning of any semester or summer term.

The unit of work and of credit is the "semester hour." A semester hour is the credit granted in a course meeting one hour each week, or the equivalent, for fifteen or more weeks.

THE UNIVERSITY LIBRARY

Graduate education requires that students make extensive use of library facilities. Graduate education at Eastern Michigan University is served by a new, modern, air-conditioned library organized on a divisional basis, with open stacks. Collections and services are divided among the divisions of Education and Psychology, Science and Technology, Humanities and Social Sciences.

The total book collection numbers approximately 280,000 volumes. Special collections include a large Instructional Materials Center in conjunction with the Education and Psychology Division, a Map Library in the Science and Technology Division, the University Archives and a collection of United States Government Documents in the Social Sciences Division. Special facilities are available for the use of microfilm materials, study in small groups and typing of papers.

The Audio-Visual Center, a major department of the library, supplements books and journals with films, filmstrips, recordings and other materials.

INSTRUCTIONAL COMPUTER CENTER

The Instructional Computer Center, located in Room 117, Pray-Harrold Building, operates an IBM 1130, together with customary peripheral equipment. An IBM 360-40 is available on auxiliary stand-by basis for use on demand.

The services of the center are available to all faculty and graduate students. Students may develop proficiencies in computer programming by enrolling in courses in that area. Assistance is provided in programming special instructional and research projects upon request.

TUITION AND FEES

FINANCIAL OBLIGATIONS

Having fulfilled all other requirements, a student is eligible for registration or graduation only if he has met all of his financial obligations to the University. If a student has not met his financial obligations to the University at the time of graduation or at the close of any semester, his credits or other statements of record will be withheld and he will be ineligible for further registration at E.M.U. until all obligations have been satisfied.

LAST REGISTRATION DAY

The last official registration day each semester is defined as the last calendar day prior to the first day of classes.

REGISTRATION FEE

A registration fee of \$15.00 is charged to each student each semester. This fee is collected when the student pays his tuition and is non-refundable after the last official registration day each semester.

TUITION SCHEDULE – GRADUATE

All students holding a bachelor's degree will pay graduate tuition.

Michigan Resident

Credit Hours	Tuition	Registration Fee	Total
1	\$ 21.00	\$15.00	\$ 36.00
2	42.00	15.00	57.00
3	63.00	15.00	78.00
4	84.00	15.00	99.00
5	105.00	15.00	120.00
6	126.00	15.00	141.00
7	147.00	15.00	162.00
8	168.00	15.00	183.00
9	189.00	15.00	204.00
10	210.00	15.00	225.00
11	231.00	15.00	246.00
12	252.00	15.00	268.00

Non-Resident

Credit Hours	Tuition	Registration Fee	Total
1	\$ 52.50	\$15.00	\$ 67.50
2	105.00	15.00	120.00
3	167.50	15.00	172.50
4	210.00	15.00	225.00
5	262.50	15.00	277.50
6	315.00	15.00	330.00
7	367.50	15.00	382.50
8	420.00	15.00	435.00
9	472.50	15.00	487.50
10	525.00	15.00	540.00
11	577.50	15.00	592.50
12	630.00	15.00	645.00

For purposes of determining tuition assessments, both activity and academic hours are counted.

QUALIFICATIONS FOR MICHIGAN RESIDENCE

Residence in Michigan, for the purpose of registration in Eastern Michigan University, shall be determined according to this definition:

1. The residence of a student who is a minor follows that of his parents or legal guardians, except that a minor student who comes to the institution from another state or country cannot be registered as a resident of this state on the basis of having a resident of this state as a guardian except on permission of the board of the institution in each individual case.
2. A person who is at least 21 years of age at the time of registration in the institution and who has resided in this state six months next preceding the date of registration without being registered at a college or university during that period is deemed a resident of this state for the purpose of such registration.
3. A person who is at least 21 years of age and has manifested his intention in good faith to become a permanent resident of this state and not for the sole purpose of attending school and has resided in this state for at least six months may apply to the Treasurer of the Board of Regents for permission to register as a resident student, and the Treasurer, after a review of the individual case, may determine that the student qualifies as a resident.
4. The residence of a wife follows that of her husband, except that a woman student who is a resident under paragraphs 1 or 2 may continue to register as a resident of this state although subsequently marrying a nonresident student or other nonresident.
5. No person is deemed to have gained or lost a residence in this state while a student at any institution in this state, public or private, except by changes in status effected under paragraphs 1, 4 or 6.
6. A person in the service of the United States, and his wife or minor children, who have met the six-month residence requirement in paragraph 2, may register as residents of this state.
7. An alien lawfully admitted for permanent residence in the United States and who has obtained his permanent visa, and his wife or minor children, who have met the other requirements herein for residence, may register as residents of this state.
8. Full-time members of the "teaching staff," members of the teaching staff whose appointments require at least three contact hours of teaching each week in regularly assigned formal classes, research staff members with equivalent responsibilities, and dependents of the staff may register as residents of this state.

It shall be the duty of any student prior to registration, if there are any questions as to his right to be registered as a student with a status of Michigan residence, to raise such questions with the vice-president for business and finance.

SUMMER SESSION TUITION AND FEES

The Summer Session consists of one six- and eight-week session. In addition, several two- and three-week workshop sessions are conducted before and after the six- and eight-week session. The tuition schedule and registration fee are assessed to all courses offered during the six- and eight-week session. A workshop fee is assessed independently for the pre- and post-session workshop courses.

APPLIED MUSIC FEE

All students accepted for private music lessons will be assessed an applied music fee at the following rates:

Music Majors:	\$60.00 per semester for all instruction.
Other University Students:	\$60.00 per semester for one-hour lessons. \$30.00 per semester for half-hour lessons.
Students from public schools, the community and EMU staff and families:	\$90.00 per semester for one-hour lessons. \$45.00 per semester for half-hour lessons.

Lessons are arranged through the office of the Music Department to begin only after payment of the music fee and tuition.

The applied music fee is payable each semester to the Cashier's Office with the student's tuition. This fee is not refundable after the first lesson.

VEHICLE REGISTRATION AND FEE

All students, meeting the requirements of the law, and who live in University housing or are defined as commuting students, are eligible to maintain and operate a motor vehicle on campus. Motor vehicles are required to be operated within the provisions of the Traffic, Parking and Pedestrian Ordinance of the University.

Motor vehicles driven to or on the campus must be registered with the University, and the appropriate effective fee paid at the University Police Department during the first week of the semester.

Further details are printed in the Ordinance and in the Parking and Traffic Regulations brochure.

LATE REGISTRATION FEE

A late registration fee of \$5.00 is charged to those students who, for any cause, do not complete registration by the last official registration day of each semester. Checks returned by a bank constitute late registration and the late registration fee is charged.

PROGRAM ADJUSTMENT FEE

A fee of \$3.00 is charged for each student-initiated change to his registration after the last official registration day of each semester. Such changes consist of adding a course or changing sections.

FEES SUBJECT TO REVISION

All University fees and changes are subject to change by action of the Board of Regents.

PAYMENT OF TUITION

Tuition and other University fees are due and payable at the beginning of each semester. However, for those students who may prefer to make installment payments, the University provides for an optional installment payment plan during the fall and spring semesters.

The installment payment plan applies to tuition and room and board. It consists of a minimum initial payment of 40 percent of the room and board and tuition assessments for the semester, and one, two or three monthly installments at the option of the student, each consisting of a minimum of 20 percent of the assessments for the semester.

An installment payment service fee of \$3.00 is collected with each installment payment.

WITHDRAWAL FROM THE UNIVERSITY

Withdrawal Before Classes Begin. If a registered student finds it impossible to return to the University, he must sign a cancellation of registration form in the Graduate School Office *before the last official registration day*. This is necessary for cancellation of tuition assessment and for refunding tuition which has been paid. In an emergency, a letter to the Graduate School Office postmarked on or before the last official registration day will be acceptable.

Withdrawal After Classes Have Begun. If a graduate student finds it necessary to withdraw from the University after classes have begun, he must initiate the withdrawal in person or by letter through the Graduate School Office to be eligible for a tuition refund. The date the request is received by the Graduate School Office will be used in determining the amount of any refund.

TUITION REFUND SCHEDULE

Refunds are computed electronically and issued following the close of the program adjustment period each semester.

Refunds apply to tuition only, not to the registration fee. Exceptions to this policy are made for students called into military service for other than enlistment.

Fall and Spring Semesters

Withdrawal from the University:

1. Refund of 100% of the tuition paid will be made to those students who withdraw from the University on or before the last official registration day.
2. Refund of 60% of the tuition paid will be made to those students who withdraw from the University 21 calendar days or less after the last official registration day.

Decrease in Academic Load:

1. A refund of 100% of the difference in tuition paid will be made to those students who decrease their academic load before the last official registration day.
2. A refund of 60% of the difference in tuition paid will be made to those students who decrease their academic load 21 calendar days or less after the last official registration day.

Summer Six- and Eight-Week Sessions

Withdrawal from the University:

1. Refund of 100% of the tuition paid will be made to those students who withdraw from the University on or before the last official registration day.

2. A refund of 60% of the tuition paid will be made to those students who withdraw from the University seven calendar days or less after the last official registration day.

Decrease in Academic Load:

1. A refund of 100% of the difference in tuition paid will be made to those students who decrease their academic load before the last official registration day.
2. A refund of 60% of the difference in tuition paid will be made to those students who reduce their academic load seven calendar days or less after the last official registration day.

Two-Week and Three-Week Workshop Sessions

1. A refund of 100% of the tuition paid will be made to those students who withdraw prior to noon of the first day of the session.
2. No other refund will be granted.

APPLICATION FOR CANDIDACY TO A DEGREE

A student in a degree program who has completed twelve semester hours of graduate work, with at least six hours on the campus at Ypsilanti, has a cumulative grade point average of 5.0 (B) and who has met any special restrictions imposed at the time of admission, may apply for candidacy on forms available in the Graduate School Office.

All applications for Candidacy to A Degree must be recommended by the department and the college in which the student is pursuing graduate study. The Graduate Council officially approves or denies all applications for admission to candidacy. Applications for admission to candidacy for degree are approved when the student has met the above requirements and when he has demonstrated the competence to complete successfully more advanced graduate study. The completion of twelve graduate credits in a degree program does not guarantee admission to candidacy.

APPLICATION FOR GRADUATION

A candidate for graduation must complete an Application for Diploma in the Graduate School Office at the time of registration for the semester or session in which he plans to complete requirements for a degree. Failure to apply for graduation will result in a delay in receiving the degree.

Graduate students enrolled at another college or university for credit to be transferred to Eastern Michigan University and applied toward meeting degree requirements must submit an official transcript of such credit *not later than one month prior to the closing date of the semester in which the degree is to be awarded*. Grade reports and letters from instructors will not be accepted in lieu of official transcripts.

Applications for diplomas must be received in the Graduate School Office not later than:

February 1 – for June graduation
June 1 – for August and October graduation
October 1 – for January graduation.

THE GRADUATE SCHOOL

Omer E. Robbins, Jr.
Carol Everts

Dean
Secretary

Quirico S. Samonte
Nina Swikoski

Acting Assistant Dean
Secretary

Neal F. Hoover
Bette Frank

Administrative Assistant to the Dean
Secretary

Divisions:

Admissions and Programs
Records
Registration

Peggy Heaslip, Supervisor
Rosemary Hines, Supervisor
Sandra Schwartzenberger, Coordinator

HISTORY

Graduate education was inaugurated at Eastern Michigan University in 1938. Graduate programs were conducted in cooperation with the University of Michigan for nearly fifteen years. It was not until 1953 that the first Master of Arts degree was awarded by this University. The Master of Science degree was approved in 1959 and the Specialist in Arts and Specialist in Science degrees were authorized in 1964.

Eastern Michigan University continues to establish new graduate programs in specialized academic areas whenever a demonstrated need exists. Currently the Graduate School offers twenty-three programs leading to the Master of Arts Degree, ten programs leading to the Master of Science degree and two programs to master's degrees in specialized areas.

The University has been cognizant of its educational responsibilities beyond the master's degree. Specialist in Arts degrees have been approved in four specialized areas to provide advanced graduate study for persons seeking professional careers in educational institutions. Specialist in Science programs are currently being developed.

OBJECTIVES

The Graduate School has three major objectives:

- (1) to inspire all students to acquire knowledge, to seek truth and to apply their wisdom to the solution of human problems,
- (2) to develop within the student a fundamental understanding and mastery of his academic field and
- (3) to prepare students for successful professional careers in education, social and physical sciences, business, industry and government, and in the arts.

Faculties within all colleges and departments strive continuously to meet the educational needs of graduate students. Thirty-nine different educational programs have been authorized and accredited. Additional programs are in the developmental stages and some await formal approval.

Although formal graduate study programs have been established in each of the following academic areas, there is sufficient flexibility in each program to enhance the professional goal of each individual student. A system of professional academic advising is provided to assist the student in developing a program of study leading to an advanced degree.

ORGANIZATION

The Graduate School administers all graduate education at Eastern Michigan University. The dean serves as the chief executive officer, assisted by the assistant dean and aided by the administrative assistant to the dean. These administrators are charged with the responsibility for adherence to educational policies and standards and for the effective operation of the Graduate School.

The Graduate Council, with a membership of fifteen persons, includes faculty members from subject-matter areas in which graduate programs have been established and selected university administrators. The Council serves as a policy recommending body and engages in planning for the orderly development of graduate education.

GRADUATE COUNCIL

Omer E. Robbins, Jr., Ph.D., Chairman	Dean, Graduate School; Professor, Chemistry.
W. Oscar Collins, Ed.D.	Department Head, Professor, General Business.
Kenneth L. Grinstead, Ph.D.	Professor, Education.
Stuart Karabenick, Ph.D.	Assistant Professor, Psychology.
Martin Kornbluth, Ph.D.	Professor, English Language and Literature.
Raymond A. LaBounty, Ed.S.	Department Head, Professor, Industrial Education.
Everett L. Marshall, Ph.D.	Dean, Records and Teacher Certification; Professor, Education.
Thomas J. Murray, Ph.D.	Professor, Speech and Dramatic Arts.
Allen Myers, Ph.D.	Dean, College of Education; Professor, Special Education and Occupational Therapy.
Julius M. Robinson, Ed.D.	Dean, Summer and Evening Sessions; Professor, General Business.
John W. Sattler, Ph.D.	Department Head, Professor, Speech and Dramatic Arts.
Earl K. Studt, M.S.	Director, Field Services; Assistant Professor, Education.
Elizabeth Warren, Ph.D.	Professor, History and Social Sciences.
Wilbur A. Williams, Ph.D.	Department Head, Professor, Educational Psychology.
Masanobu Yamauchi, Ph.D.	Associate Professor, Chemistry.
Carol Everts	Secretary

GRADUATE DEGREE PROGRAMS

Programs leading to the Master of Arts Degree

- Art Education
- Geography
- Education
 - Elementary Education
 - Junior High School Education
 - Senior High School Education
- Reading
- Educational Administration
- Educational Psychology
- Guidance and Counseling
- Curriculum (Secondary)
- Community Education
- Special Education
- Fine Arts
- French
- History
- Home Economics
- Literature
- Mathematics
- Music
- Social Studies
- Sociology
- Spanish
- Speech and Dramatic Arts

Programs leading to the Master of Science Degree

- Biology
- Chemistry
- Chemistry Education
- General Science
- Geography
- Home Economics
- Industrial Education
- Physical Education
- Physics
- Psychology

Programs leading to a Masters Degree in a Specialized Field

- Business Administration
- Business Education

Programs leading to a Specialist of Arts

- Educational Administration
- Industrial Education
- Reading
- Special Education

GRADUATE SCHOOL CALENDAR

FALL SEMESTER 1970

Last day for filing application for admission	
for fall semester	August 14, 1970
Registration by mail	(consult class schedule for dates)
Last official registration day	September 14, 1970
Classes begin	September 14, 1970
Application for admission to candidacy	September 14, 1970
Last day for late registration and program adjustment	September 19, 1970
Last day for filing a diploma application	
for January graduation	October 1, 1970
Last day to drop a class without the approval of the dean of the Graduate School	October 23, 1970
Thanksgiving Recess	November 25, 26, 27, 28, 1970 (Wednesday - 12:00 noon)
Holiday vacation begins	December 19, 1970 (Saturday - 12:00 noon)
Classes resume	January 4, 1971
Final Examinations	January 15-21, 1971
Mid-year Commencement	January 17, 1971
First semester closes	January 21, 1971

SPRING SEMESTER 1971

Deadline for filing application for admission	
for spring semester	December 31, 1970
Registration by mail	(consult class schedule for dates)
Last official registration day	February 1, 1971
Classes begin	February 1, 1971
Application for admission to candidacy	February 1, 1971
Last day for late registration and program adjustment	(consult class schedule for dates)
Last day for filing a diploma application	
for June graduation	February 1, 1971
Last day to drop a class without the approval of the dean of the Graduate School	March 12, 1971
Spring vacation begins	April 9, 1971
Classes resume	April 19, 1971
Final Examinations	May 26-28, June 1-3, 1971
Memorial Day (no classes - all offices are closed)	May 31, 1971 (Monday)
Commencement	June 5, 1971

SUMMER SESSION 1971

Calendar in progress (consult class schedule for dates)

GRADUATE SCHOOL OFFICE

Location:	Rooms 116, 122 and 134 Pierce Hall
Office Hours:	8:00 A.M. - 5:00 P.M., Monday through Friday (September - June) <i>Closed 12:00 noon to 1:00 P.M. and on Saturday</i> 7:30 A.M. - 4:30 P.M., Monday through Friday (June - September) <i>Closed 12:00 noon to 1:00 P.M. and on Saturday</i>

GRADUATE SCHOOL POLICIES AND REGULATIONS

ADMISSION

Students seeking admission to the Graduate School should have a well-balanced general education upon which to construct a comprehensive and thorough understanding of a specialized field of knowledge. The applicant should possess an above average undergraduate academic record, should be highly motivated and should be committed to scholarly achievement.

Students entering Graduate School assume duties and responsibilities much different from those of undergraduate students. Each graduate student should contemplate the acceptance of the responsibility for learning and achievement through self motivation and independent study. Personal interests must extend beyond the limits of meeting minimum course requirements and the accumulation of semester hours and grades. A graduate student joins a community of scholars dedicated to the pursuit of truth and the extension of knowledge.

ADMISSION REQUIREMENTS

Admission to the Graduate School of Eastern Michigan University is open to anyone who (1) holds a bachelor's degree from an accredited college or university, (2) has a minimum undergraduate grade point average of 2.0 (C) or above, (3) indicates promise of success in graduate study, (4) meets the additional requirements established by departments offering graduate programs in specialized areas. Additional requirements often include: admission tests, valid teaching certificates, and/or personal interviews.

A student enrolling for graduate work for the first time at Eastern Michigan University must: (1) complete an application for admission form, (2) submit an official copy of transcripts of undergraduate and graduate credits earned at other institutions and (3) present official scores in any standardized test, if required in a degree program. This information must be submitted to the Graduate School Office *no later than thirty days prior to the first class of the semester or term in which enrollment is contemplated.*

ADMISSION OF FOREIGN STUDENTS

A limited number of foreign students are admitted to the Graduate School each year. Because of the varying nature of background study, foreign students should plan a minimum of two years additional study for a degree. All foreign students must

- (1) meet the minimum academic requirements for admission to the Graduate School,
- (2) submit evidence of proficiency in the English Language,
- (3) present a statement of financial responsibility,
- (4) provide two letters of recommendation from administrators or professors in the college or university from which the applicant holds a bachelor's degree.

The Graduate School requires that all foreign students applying for admission

take the Test of English as a Foreign Language (TOEFL). Further information may be obtained by writing to Test of English as a Foreign Language, Educational Testing Service, Princeton, New Jersey 08540. *The scores achieved on this examination must be submitted to the Graduate School Office before consideration can be given to the student's application.*

Foreign students already in the United States may demonstrate proficiency in the use of the English Language by submitting a certificate of proficiency awarded by the English Language Institute at the University of Michigan, Ann Arbor, Michigan.

GRADUATE RECORD EXAMINATION

Although not all departments and divisions within the University require applicants for admission to achieve a satisfactory score in the Graduate Record Examination, it is strongly recommended that all applicants submit a transcript of scores achieved in this test. This test does not replace other quantitative data submitted with the Application for Admission, but will provide an additional indication of the student's qualifications for graduate study.

ADMISSION TEST FOR GRADUATE STUDY IN BUSINESS

The College of Business requires that all applicants for admission to graduate programs complete the Admission Test for Graduate Study in Business. Applicants seeking admission to a master's degree program in that college should achieve a test score above the established median. The ATGSB scores are given important consideration when reaching a recommendation regarding the application for admission.

Applications for the Graduate Record Examination and the Admission Test for Graduate Study in Business should be sent to Educational Testing Service, 20 Nassau Street, Princeton, New Jersey 05840. Application materials are sometimes available at colleges and universities. Examinations are administered locally at centers throughout the world.

TYPES OF ADMISSION

Students who seek admission to the Graduate School at Eastern Michigan University may be recommended for one of the following types of admission, (1) Degree Program, (2) Non-degree Program and (3) Guest Admission.

Degree Admission: For an applicant who is interested in an advanced degree at Eastern Michigan University at the master's or specialist's degree level. Admission to a degree program is available to an applicant who meets (a) the minimum entrance requirements of the Graduate School, (b) any additional requirements of the program selected and (c) a recommendation of approval by the chairman or coordinator of advising in the area of specialization selected.

Non-Degree Admission: For an applicant who wishes to qualify for a Provisional or Permanent Teaching Certificate; for an applicant who does not seek or who does not qualify for Degree Admission but who wishes to take graduate courses for self-improvement; and for an undergraduate senior at Eastern Michigan University who wishes to elect courses numbered in the 500 series, excluding independent studies.

Applicants denied admission to a Degree Program in any department or division of the University *may not enroll in graduate level courses* in those departments or

divisions without written permission of the department head and/or the coordinator of advising within the department or division in which the course is offered.

Guest Admission: For a student currently enrolled at another college or university who wishes to earn credit at Eastern Michigan University at the master's or specialist's degree level to be transferred to another institution.

TRANSFER FROM NON-DEGREE TO DEGREE PROGRAM

Non-Degree students may apply for admission to a Degree Program after meeting all special entrance requirements of the academic area of specialization selected. Program Transfer Request forms are available in the Graduate School Office. Program Transfer Requests must be submitted to the Graduate School Office *one month* prior to the semester or term transfer is contemplated.

A request for admission to a Degree Program will be approved *only* upon written recommendation of the coordinator of advising in the area of specialization.

Credits earned under Non-Degree status do not apply automatically to the requirements of a Degree Program. Transfer of credits depends upon the requirements of the program, the recommendation of the adviser and the approval of the Graduate School Office. A student transferring from Non-Degree Admission must complete a minimum of ten semester hours after admission to a degree program.

CREDIT REQUIREMENTS

The minimum credit requirements for a master's degree is thirty (30) hours, and thirty-two (32) hours beyond the master's for a specialist's degree. This minimum is sufficient, however, only if the student's undergraduate record is satisfactory as to grade level achieved and exhibits competency in the broad subject area with which the graduate program is concerned.

TIME LIMITATION

All requirements for an advanced degree are expected to be completed within six calendar years from the time of first enrollment in the degree program. Graduate credit earned more than six (6) years prior to the date in which the degree is to be granted may not as a rule be applied to meeting graduation requirements. It is possible, however, that four (4) hours of out-of-date credits may be applied to a degree depending upon the requirements of the program, the recommendations of the adviser and the approval of the Graduate School Office.

TRANSFER OF CREDITS

Subject to the requirements of a degree program, the recommendation of the adviser and the approval of the Graduate School Office, it is possible to transfer six hours of graduate credits earned at other accredited institutions *at the time of admission* to a degree program. An additional six hours can be transferred from other institutions should a degree student enroll elsewhere *after admission* to a degree program. Grades of B-, C+ and C- are not accepted for transfer credit.

Undergraduate credit earned to satisfy the requirements for a provisional certificate cannot apply to a graduate degree.

Graduate credit earned for the provisional certificate cannot apply to the requirements of a permanent certificate.

Graduate credit earned for a provisional or permanent certificate can apply to a

graduate degree only if it meets the requirements of a degree program, the recommendation of the adviser and the approval of the Graduate School Office.

GENERAL PREREQUISITES FOR GRADUATE CREDIT IN FIELD OF SPECIALIZATION

Students wishing to enroll in a graduate major or area of concentration must possess an undergraduate major, or its equivalent, as a prerequisite. In some cases, related fields of concentration at the undergraduate level may be accepted upon the written recommendation of the coordinator of advising.

Deficiencies in undergraduate preparation must be removed by the completion of prescribed courses prior to enrollment in regular graduate courses. Credit earned in removing course deficiencies cannot be applied in meeting graduate degree requirements.

MAXIMUM STUDY LOAD

Full-time students may register for a maximum of twelve (12) semester hours during each regular semester. They may register for six and eight semester hours during the six-week and eight-week summer sessions.

Part-time students who are full-time employees regularly register for six (6) semester hours per semester. Special permission to register for more than six (6) semester hours may be requested if the student's cumulative grade point average is 6.5 or above. Such requests should be discussed with the coordinator of advising. The coordinator of advising will submit a written recommendation to the Dean's Office whenever appropriate. *Off-campus registration is governed by the same regulations that apply to enrollment on campus.*

ENROLLMENT IN GRADUATE COURSES BY SENIORS

A student of senior standing at Eastern Michigan University may register for graduate courses if recommended by the department head and approved by the dean of the Graduate School. Seniors applying for permission to enroll in graduate courses should have a cumulative grade point average of 2.50 or better in all course work completed at the University.

The enrollment in graduate courses should not extend beyond the duration of undergraduate study. Registration for a graduate course should not cause the total registration for the semester to exceed fifteen semester hours. The maximum number of units of graduate credit that may be earned during the senior year should not exceed a total of ten hours. Election of graduate courses is limited to courses in the 500 series, exclusive of independent studies. Seniors are not permitted to enroll in 600 series courses.

The granting of special permission for a senior to enroll in graduate courses does *not* imply admission to the Degree Program in the Graduate School. Seniors desiring to continue graduate study must apply for admission to the Graduate School after receiving their bachelor's degrees and must meet all requirements for admission.

GRADING SYSTEM

The grades used in the Graduate School of the University are listed below together with their grade point values.

Grade	Grade Points per semester hour
A+	9
A	8
A-	7
B+	6
B	5
B-	4
C+	3
C	2
C-	1
E	0
I	Unsatisfactory (denotes failure)
I	Incomplete
W	Withdrawal

USE OF "I," "X" and "W" GRADES

"I" – Incomplete: An "I" is awarded only when the student's work has been of acceptable quality, but the required amount has not been completed because of illness or other extenuating circumstances beyond the control of the student. It is never applied to poor work.

An "I" must be removed by completing the required work within four (4) weeks after the beginning of the next semester or session in which the student is enrolled in this University. Otherwise, the grade of "E" will be recorded. The time period for removal of an "I" may be extended upon written recommendation of the instructor of the course or the director of the Independent Study when extenuating circumstances beyond the control of the student exist.

The removal of an "I" grade must be completed within a one-year period from the date of initial enrollment in the course. All "I" grades not removed will be converted to "E" and the student's grade point average will be adjusted accordingly.

"X" – No Final Examination: An "X" is awarded only when the student has been unable to take an examination because of illness or other valid reasons during the examination period. In order to remove an "X," the student should follow the procedure outlined below:

- a. He shall report to the instructor or to the dean of the college in which the course is offered the reason for his inability to take the examination. If the reason is a valid one, the instructor shall assign the grade of "X," indicating no final examination, and will report it so on the student's grade card.
- b. If the student desires to remove the grade "X" acquired, he will apply in writing to the dean of the college offering the course, requesting a special examination and stating fully the reason why this request is necessary.
- c. If the request is approved by the dean, he will arrange with the instructor for a special examination to be given the student during the first month of the next semester that the student is enrolled in this University.
- d. If the grade of "X" is not removed in this manner, it will automatically become an "E," denoting failure, at the end of the fourth week of the next semester that the student is enrolled in the University.

- e. Any student who does not take the final examination and who does not proceed in the manner outlined above will be assigned the grade of "E," denoting failure. Emergency situations beyond the control of the student will be handled as circumstances require.

"W" – *Denotes Withdrawal*: The grade of "W" will be assigned only when an official withdrawal has been completed. If a student discontinues attending a class without officially withdrawing from the class, the grade of "E" will be assigned for the course.

WITHDRAWAL FROM ALL COURSE WORK

Students finding it necessary to withdraw from *all* course work in which enrolled during a semester or term must submit a notice of intent to withdraw from all classes and complete a withdrawal form in the Graduate School Office.

A student withdrawing from *all* classes during the regular academic semester must do so within 21 calendar days or less after the last official registration day to be eligible to receive a refund. Similar withdrawals during the summer session must be completed within seven calendar days or less. No grade will be entered on the student's permanent record. Consult the Tuition Refund Schedule for a schedule of partial remission of tuition and fees.

A student who withdraws after the expiration of the above designated periods will receive the grade recommended by the instructor. If extenuating circumstances exist causing the student to withdraw from *all* course work, these should be discussed with the coordinator of advising in the area of subject-matter specialization so that the information may be considered by the instructor when making the grade recommendation. Extenuating circumstances are interpreted as conditions beyond the control of the student which are supported by a written statement. These statements must be attached to the withdrawal form to be filed in the Graduate School Office.

Students who propose to withdraw permanently from graduate study at this University should submit this information in writing to the Dean of the Graduate School.

WITHDRAWAL FROM A CLASS

Students finding it necessary to adjust their work load during any semester or term for personal or academic reasons may do so by acquiring a Withdrawal from Class Form in the Graduate School Office. Students may withdraw from classes without permission during the first six (6) weeks of a regular semester. Withdrawal from classes may also be completed during the first three (3) weeks of a six-week Summer Session, or during the first four (4) weeks of an eight-week Summer Session.

Any student who contemplates withdrawal from a course should discuss the proposed action with his instructor and with the coordinator of advising. If extenuating circumstances exist; that is, conditions beyond the control of students, written evidence of this fact should be presented for discussion with the coordinator of advising. These statements are to be appended to the withdrawal form and subsequently filed in the Graduate School Office.

Students electing to withdraw from classes after the expiration of the above periods, should be willing to accept the grade submitted by the instructor. This grade will be recorded on the student's permanent record.

University policies governing the refund of tuition and fees presented in another section of this catalog will be observed.

GRADE POINT AVERAGE REQUIREMENTS FOR GRADUATION

No student will be recommended and approved for a master's or specialist's degree unless he has achieved a grade point average of 5.0 (B) or higher as required by his special program. A "B" grade point average must be acquired in (1) all graduate credit earned at Eastern Michigan University, (2) all courses included in the graduate study program and (3) all graduate credit included in the area of specialization.

Students who do not meet minimum graduation requirements may be permitted to enroll in additional courses in the area of specialization subject to policies governing academic probation and dismissal. Such additional credit earned may be included in computation of the grade point average upon the recommendation of the coordinator of advising in the program area. Additional work taken must be approved by the coordinator of advising prior to registration if credit is to be received.

ACADEMIC PROBATION AND DISMISSAL

A graduate student will be placed on academic probation when his cumulative grade point average at Eastern Michigan University is less than 5.00 (B average).

A graduate student placed on academic probation according to the provisions of the above who does not remove his probationary status at the end of his next two enrollment periods will be dismissed from the University.

A graduate student whose cumulative grade point deficiency at the end of any enrollment period is 15 points or more will be dismissed for academic reasons.

A student on academic probation, whose grades for the current enrollment period contains "I" and/or "X" grades, will be retained only at the discretion of the Graduate Council.

STUDENT ADVISING

In an effort to provide guidance for a student granted admission to a graduate degree program, a system of advising has been established. Upon notification of admission to a degree program by the Graduate School Office, the student is given the name, office address and telephone number of the designated adviser. The student advising program assists in the exploration of degree requirements, evaluation of applications for admission to a degree program, preparation of a plan of study, approval of program changes and the evaluation of the student's progress when applying for admission to candidacy for a degree and when applying for a diploma.

Each prospective degree student is therefore encouraged to make use of this service since a program of study is valid only (1) when properly authorized by a designated adviser and (2) conforms with the minimum requirements of a degree program and the Graduate School.

The following is a list of coordinator's of graduate advising for each of the degree programs offered by the University.

COORDINATORS OF GRADUATE ADVISING BY PROGRAM AREA

College of Arts and Sciences

Art	Professor Charles Fensch 106 Sill Hall, Tele. 487-3388
Biology	Dr. Bert Johnson 101 Sherzer, Tele. 487-0441
Chemistry	Dr. Bruce West 215 Strong, Tele. 487-0107
French	Dr. Eugene Gibson 220 Ford Hall, Tele. 487-4081
General Science	Dr. Charles Breedlove 316 Strong, Tele. 487-4144
Geography	Dr. Paul Buckholts 337 Strong, Tele. 487-0232
History	Dr. Roger King 701-M Pray-Harrold, Tele. 487-1018
Literature	Dr. George Perkins 612 Pray-Harrold, Tele. 487-1358
Mathematics	Dr. Robert Pate 601-T Pray Harrold, Tele. 487-1444
Music	Dr. Edith Borroff 219 Alexander, Tele. 487-3098
Physics	Dr. Walter Gessert 311 Strong, Tele. 487-4144
Psychology	Dr. Robert L. Anderson 970 Washtenaw, Tele. 487-1155
Sociology	Dr. Werner Einstadter 712-T Pray-Harrold, Tele. 487-4248
Spanish	Dr. Francisco Villegas 206 Ford Hall, Tele. 487-0178
Speech and Dramatic Arts	Dr. Thomas Murray 126 Quirk, Tele. 487-3131

College of Business

Business Administration	Dr. Robert Hislop 517 Pray-Harrold, Tele. 487-4444
Business Education	Dr. Charles H. Duncan 511 Pray-Harrold, Tele. 487-3410

College of Education

Educational Leadership	Mrs. Doris Kilanski 101-C Boone Hall, Tele. 487-0257
Educational Psychology	Dr. Israel Woronoff 225-D Boone Hall, Tele. 487-4342
Elementary Education, Jr. and Sr. High Education	Professor Robert Hoexter 325 Pierce Hall, Tele. 487-3260

Guidance and Counseling	Dr. Winton Kloosterman 13 Boone Hall, Tele. 487-3455
Physical Education	Dr. John E. Sheard 229 Warner Gym, Tele. 487-0091
Reading	Dr. Robert Krebs 328 Pierce Hall, Tele. 487-1160
Special Education	Mr. Joe Coyner 230 Rackham, Tele. 487-3302
Emotionally Disturbed	Dr. Joseph Motto 229 Rackham, Tele. 487-3302
Mentally Retarded	Dr. Henry Gottwald 226 Rackham, Tele. 487-4195
Occupational Therapy	Professor Frances Herrick 104 Rackham, Tele. 487-4094
Physically Handicapped	Dr. Robert Gutshall 233 Rackham, Tele. 487-0137
Speech Correction	Dr. Angelo Angelocci 119 Rackham, Tele. 487-4413

Applied Science Departments

Home Economics	Dr. Ruby Meis 104 Welch Hall, Tele. 487-2380
Industrial Education	Dr. H. James Rokusek 122 Sill Hall, Tele. 487-4331

WORKSHOPS, INSTITUTES AND TRAVEL COURSES

Workshops and institutes in special subject-matter areas are held both on-campus and at off-campus centers during the academic year and the summer session. Graduate students who have been admitted to the Graduate School are eligible to enroll in workshops and institutes offered for graduate credit. *Admission to the Graduate School must be completed prior to the beginning of the workshop or institute.*

Travel courses which provide graduate study opportunities in several foreign countries have been organized by some departments. Although these courses are of varying duration, most courses are scheduled from four to six weeks each. More complete information is available upon request.

INDEPENDENT STUDIES

Independent studies are for graduate students who have been admitted to a degree program. These studies permit students to exercise individual initiative and to demonstrate creativity in the enrichment of their study programs. Graduate students generally enroll in independent study courses in their major field of specialization after having completed a major portion of their graduate program. These independent study courses serve as capstone courses requiring the integration of specialized subject matter. A maximum of six (6) semester hours may be earned in independent studies.

Graduate students wishing to register for independent study courses must secure

special permission of approval to register from the department head in the area of specialization. Two typewritten copies, outlining the proposed study, which has been approved by the faculty director of the study, must be presented to the department head when making the request for special permission to register. The original copy of the proposed study outline will be forwarded to the Graduate School Office by the department head.

Because of the widely varying nature of Independent Studies, the graduate student should discuss with the department head and/or the study director the written style and format in which these studies must be presented. If a special style is not required by the adviser any standard thesis or dissertation manual may be followed.

Two bound copies of the independent study, the original copy and a carbon, xerox, or multilith copy, must be approved by the director of the study and/or the department head, who will submit them to the Graduate School Office. When the dean of the Graduate School approves the independent study, he will authorize the recording of the grade submitted by the instructor. When appropriate, the two copies of the independent study will be placed in the University Library.

AUDITING OF COURSES

Graduate students may audit graduate courses not included in their graduate program. Students wishing to audit a course must register for the course for "audit credit" after receiving the approval of the coordinator of advising. No student may receive "academic credit" for courses in which "audit credit" has been received.

REGISTRATION INFORMATION

Applicants who satisfy admission requirements will be issued a Permit to Register. No student will receive course credit or receive an official transcript for such credit who has not been officially admitted to the Graduate School.

Graduate students register in the Registration Office at times and in such manner as provided in the class schedule issued for each semester or session in which the student seeks to enroll.

Advisers' Signatures on the Enrollment Plan: Advisers' signatures are required for students majoring in business, educational administration, industrial education, mathematics and psychology. Other students enrolling in either business or industrial education courses also must obtain departmental advisers' signatures.

Any student on a Degree Program who does not obtain his adviser's signature assumes full responsibility for his registration. Courses that do not satisfy requirements on the student's program of study will not be applied toward the degree. Any course substitutions made on a Degree Program must be approved by the adviser. Written notification of course substitution must be placed on file in the Graduate School.

Late Registration: A late registration period is scheduled each semester to accommodate former Eastern Michigan University graduate students who find it impossible to register during the regular registration period. To be eligible for late registration, former graduate students must have been admitted to a degree program, must have an approved program of study on file in the Graduate School Office and must be a student in good academic standing.

New students are not admitted, neither are they eligible to register, during late registration periods.

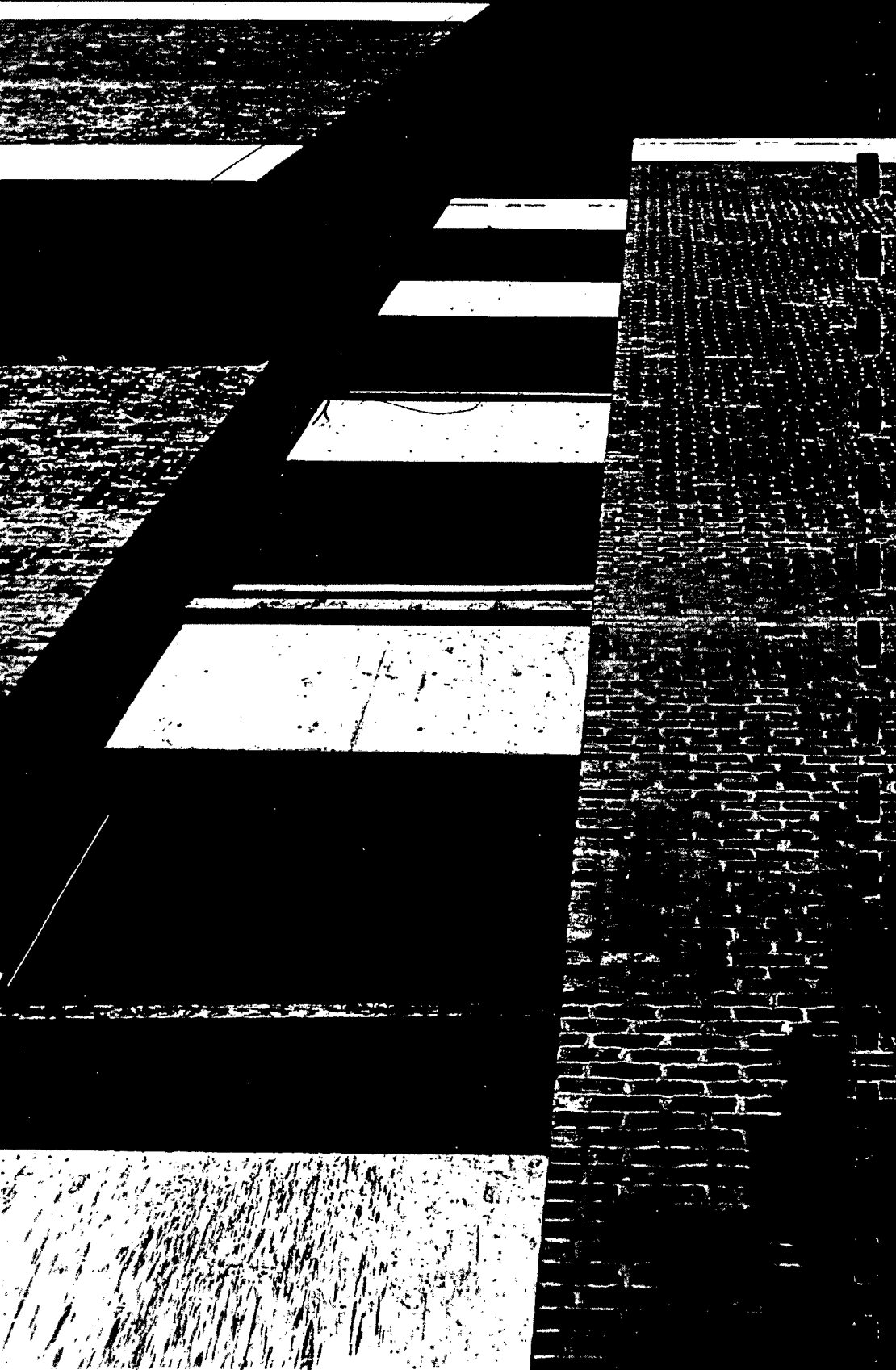
Former students wishing to register during late registration periods should

consult the Graduate School Calendar for exact dates. *Students may not register for classes after the close of the late registration period.* Information regarding late registration procedures may be obtained at the University Registration Office.

Registration for Off-Campus Classes: Students wishing to register for off-campus classes must have been admitted to the Graduate School. Applications for admission should be requested from the Graduate School Office.

Information about graduate classes offered at off-campus centers is available through the Division of Field Services, Room 113, Sherzer Hall (487-0407).





DEPARTMENTS
OF
INSTRUCTION



COLLEGE OF ARTS and SCIENCES

DEAN: Donald F. Drummond

DEPARTMENTS

Art
Biology
Chemistry
Economics
English Language and Literature
Foreign Languages and Literature
Geography and Geology
History and Social Sciences
Mathematics
Music
Physics and Astronomy
Sociology
Speech and Dramatic Arts

ART

The Art Department offers two programs leading to the degree of Master of Arts—Art Education and Fine Arts. Both programs are largely studio oriented and require a graduate drawing class. In each case, awarding of the degree is dependent on successful presentation of a final exhibition representing the candidate's major concentration.

Individual programs are prepared with an art adviser and committee review. Candidates should enter the program with a strong background in art at the undergraduate level.

Further information about these programs may be obtained from Professor Charles Fensch or from Professor Kingsley Calkins, head of the Art Department.

FA 500 Masterpieces of Art. Two sem hours (Formerly CU 543)

Historical art forms with readings, slides and discussion of historical works in the visual arts; a study by the block and gap method rather than a chronological survey. Design principles involved in the creation of the visual arts are applied both to famous works and the work of the student; laboratory experience in media for adults. *Not open to students who have a major in art.*

FA 501 Art Education Workshop. Two sem hours

Emphasis on composition: emotional, expressive, decorative, intellectual. Variety of media, color theory and color problems as they relate to art education in the elementary classroom.

FA 509 Design for Tapestry. Two sem hours

Weaving with adherence to the disciplines inherent in tapestry, giving emphasis to creativity and contemporary innovations.

Prereq: Design in materials or graduate standing.

FA 510 Ceramics. Two sem hours

Advanced studio course in ceramics.

FA 520 Drawing. Two sem hours

Advanced studio course in drawing.

FA 530 Art History. Two sem hours

Advanced course in art history.

FA 540 Jewelry. Two sem hours

Advanced studio course in jewelry.

FA 550 Graphics. Two sem hours

Advanced studio course in graphics.

FA 560 Watercolor. Two sem hours

Advanced studio course in watercolor.

FA 570 Sculpture. Two sem hours

Advanced studio course in sculpture.

FA 580 Oil Painting. Two sem hours

Advanced studio course in oil painting.

FA 608 Exhibition in Art Education. Two sem hours

For a major receiving a degree in art education the exhibition will include the works of the

student or may include examples of work done under the supervision of the art education degree candidate as evidence of master teaching ability. *To be elected in the last semester before receiving a master's degree.*

FA 610-617 Ceramics. Each two sem hours

Advanced studio courses in ceramics. Based on background and need of the student. *Open only to majors.*

FA 618 Exhibition in Ceramics. Two sem hours

For a candidate receiving a degree in fine arts, the exhibition will be composed of work done in the student's major area. *To be elected in the last semester before receiving a master's degree.*

FA 620-627 Drawing. Each two sem hours

Advanced studio courses in drawing. Based on background and need of the student. *Open only to majors.*

FA 628 Exhibition in Drawing. Two sem hours

For a candidate receiving a degree in fine arts, the exhibition will be composed of work done in the student's major area. *To be elected in the last semester before receiving the master's degree.*

FA 630-637 Art History. Each two sem hours

Advanced courses in art history. Based on background and need of the student. *Open only to majors.*

FA 640-647 Jewelry. Each two sem hours

Advanced studio courses in jewelry. Based on background and need of the student. *Open only to majors.*

FA 648 Exhibition in Jewelry. Two sem hours

For a candidate receiving a degree in fine arts, the exhibition will be composed of work done in the student's major area. *To be elected in the last semester before receiving the master's degree.*

FA 650-657 Graphics. Each two sem hours

Advanced studio courses in graphics. Based on background and need of the student. *Open only to majors.*

FA 658 Exhibition in Graphics. Two sem hours

For a candidate receiving a degree in fine arts, the exhibition will be composed of work done in the student's major area. *To be elected in the last semester before receiving the master's degree.*

FA 660-667 Watercolor. Each two sem hours

Advanced studio courses in watercolor. Based on background and need of the student. *Open only to majors.*

FA 668 Exhibition in Watercolor. Two sem hours

For a candidate receiving a degree in fine arts, the exhibition will be composed of work done in the student's major area. *To be elected in the last semester before receiving the master's degree.*

FA 670-677 Sculpture. Each two sem hours

Advanced studio courses in sculpture. Based on background and need of student. *Open only to majors.*

FA 678 Exhibition in Sculpture. Two sem hours

For a candidate receiving a degree in fine arts, the exhibition will be composed of work done in the student's major area. *To be elected in the last semester before receiving the master's degree.*

FA 680-687 Oil Painting. Each two sem hours

Advanced studio courses in oil painting. Based on background and need of the student. *Open only to majors.*

FA 688 Exhibition in Oil Painting. Two sem hours

For a candidate receiving a degree in fine arts, the exhibition will be composed of work done in the student's major area. *To be elected in the last semester before receiving the master's degree.*

BIOLOGY

PURPOSE OF THE PROGRAMS:

The programs leading to the degree of Master of Science in Biology provide both depth and breadth of preparation for professional work in the biological sciences. Individual programs are tailored to accommodate the candidate's aims and interests whether these be in teaching at the high school or college level, in continuing for the doctorate in some specialized field of biology, or in a non-teaching career in such areas as nature interpretation, aquatic biology or biological or paramedical technology.

APPLICATION PROCEDURE:

A letter should be directed to Dr. Bert M. Johnson, Graduate Program Coordinator, Department of Biology, Eastern Michigan University, Ypsilanti, Michigan 48197, requesting the Departmental Application Form G-BIO-166, information about programs and requirements for the degrees. A copy of the applicant's college transcript should be forwarded to the Graduate School.

DEGREES:

The Master of Science is the conventional degree for majors in the Department of Biology. The Master of Arts degree may be conferred upon student request and approval by the dean of the Graduate School.

ADMISSION REQUIREMENTS:

(1) bachelor's degree, (2) 20 semester hours in biology including 7 hours in botany and 7 hours in zoology, (3) one year of college chemistry, (4) one year of college physics, (5) an academic record of B (3.0) or better during the junior and senior years. The Graduate Record Examination is not required although it may be considered as one factor. Students deficient in one or more admission requirements may be granted provisional admission subject to removing deficiencies while beginning a graduate program. Hours earned in deficiency courses may not apply toward degree requirements.

GUIDANCE COMMITTEE:

The Guidance Committee for each student includes three faculty members of the Biology Department: a chairman, selected by the student, and two members, appointed by the Graduate Biology Program Coordinator. A temporary graduate adviser may be assigned to a graduate student until he has selected his chairman.

GRADUATE ASSISTANTSHIPS:

Available to graduate students in the Biology Department. Direct inquiries should be made to Dr. Richard A. Giles, head of the Biology Department, before February 1.

BIO 500 Survey of the Plant Kingdom. Two sem hours (Formerly BIO 542)

The major types of plants from algae to seed plants; emphasis on development of structure. *Not open to graduate majors in biology nor to students who have credit in 205 General Natural History or 221 General Botany.*

BIO 501 Survey of the Animal Kingdom. Two sem hours (Formerly BIO 543)

A survey of the major animal groups from protozoans to mammals. Structure and function; the bases for classification and the evolutionary relationships of the several groups. *Not open to graduate majors in biology nor to students who have credit in 205 General Natural History, 310 Natural History of Vertebrates, 421 Entomology or 425 Ornithology.*

BIO 502 Biology of Man. Two sem hours (Formerly BIO 521)

Man as a living organism in the world of living organisms, emphasizing his place among, and relationships with, the other organisms of the world; the morphological, physiological, taxonomic and ecological relationships of Man. Lectures and laboratory experience. *Not open to majors in biology.*

BIO 503 Plants and Nature. Two sem hours (Formerly BIO 517)

Plants in their natural environment; identification and classification of local flowering plants, use of hand-lens and plant manuals and methods of collection and preservation. Major plant groups and their climatic and geographic significance.

BIO 504 Field Zoology. Two sem hours (Formerly BIO 516)

Animals in their natural habitats; identification, behavior and environmental relations. Field study and observations in woods, fields, ponds and streams; collecting and displaying living and preserved material. *Not open to students with credit in 310 Natural History of Vertebrates, 421 Entomology or 425 Entomology, or 425 Ornithology.*

BIO 505 Science in the Elementary School. Two sem hours (Formerly BIO 580)

A survey of subject matter and grade placement utilizing current science texts and courses of study; reading in current literature; the construction and use of science materials; and supply and equipment needs for elementary science. *Should not be taken by students who have taken 402 Science in the Elementary Grades within the last five years.*

BIO 506 Methods in Teaching Biology. Two sem hours (Formerly BIO 581)

Salient techniques and methodology in presenting biological principles; text analysis, test construction, course content, planning and equipping a modern high school biology laboratory. *Not open to students who have credit in 403 Methods and Materials for Teaching Biology.*

BIO 507 Experimental Plant Physiology for Teachers. Two sem hours

Lecture and laboratory course concentrating on selected experimental physiological studies of seed plants. Offered during the summer session only.

Prereq: 15 hours in biology; not open to students who have had plant physiology.

BIO 510 Bacteriology Laboratory. Two sem hours

Techniques of isolating, cultivating and identifying bacteria. Includes experiments to demonstrate physiological and pathological properties of bacteria, and physical and chemical effects on growth and death of bacteria. *Not open to students who have credit in 210 Bacteriology Lab.*

Prereq: Must be accompanied or preceded by 514 Bacteriology or equivalent.

BIO 511 Physical Anthropology. Two sem hours (Formerly BIO 587)

The evolution of primates; current concepts of races; principles of archaeology; an appreciation of cultural differences. *Not open to students who have credit in 306 Physical Anthropology.*

BIO 512 Biogeography. Two sem hours

Descriptive and historical plant and animal distribution and the basic principles governing the natural distribution in both space and time.

Prereq: A course in college biology and a course in earth science, or consent of the department.

BIO 513 Principles of Heredity. Two sem hours (Formerly BIO 586)

The basic principles of heredity. *Not open to students who hold credit in 301 Genetics.*
Prereq: A recent course in introductory biology.

BIO 514 Bacteriology. Two sem hours

An introduction to the nature and biology of bacteria and other microbes (metabolism, genetics, growth and death), their ecological relationship in natural and controlled environments, and the interactions of pathogenic micro-organisms and their animal and plant hosts. *Not open to students who have credit in 211 Bacteriology.*
Prereq: 105 Biological Science, or equivalent; 119 Fundamentals of Chemistry desirable; and 510 Bacteriology Laboratory is optional.

BIO 515 Genetics Laboratory. Two sem hours

A laboratory course to accompany or follow BIO 513 Principles of Heredity. Work with organisms especially *Drosophila* and *Neurospora*; practice in gathering and analyzing data from living populations. Highly recommended for majors; others with interest in genetics should find it useful. *Not open to students with credit in 302 Genetics Lab.*
Prereq: BIO 513 Principles of Heredity, previously or concurrently.

BIO 516 Radiation Biology. Three sem hours

The molecular, cellular, organismal and supraorganismal effects of corpuscular and electromagnetic radiations; basic mechanisms of biological reactions to radiation, mutational effects of radiation, mammalian response to radiation, radiational studies with plants and radiation safety. *Not open to students who have credit in 480 Radiation Biology.*
Prereq: plant or animal physiology, one year physics, one year chemistry, genetics is desirable.

BIO 517 Radioisotopes in Biology. Three sem hours

Basic isotope technology and its application to plant and animal physiology; use in diagnosis and treatment of human diseases will also be discussed. *Not open to students who have credit in 481 Radioisotopes in Biology.*
Prereq: 516 Radiation Biology or equivalent.

BIO 518 History of Biology. Two sem hours

Development of major concepts in biology from the Greek natural philosophers to the present. *Not open to students who have credit in 485 History of Biology.*
Prereq: At least two courses in biology.

BIO 519 Organic Evolution. Two sem hours

Origin and evolution of life and the implication for biology and our current world view. *Not open to students with credit in 405 Organic Evolution.*
Prereq: 221 Botany, 222 Zoology and BIO 513 Principles of Heredity; 230 Historical Geology is desirable.

BIO 520 Problems in Functional Biology. Two sem hours (Formerly BIO 589)

The reduction of complex life functions to a few basic principles; development of an ability to approach physiological problems with confidence; laboratory demonstrations as an effective learning device.

BIO 521 Outdoor Science and Land Laboratories. Four sem hours

Using the outdoors effectively in instruction; recognition of instructional resources on school sites and other land laboratories. Basic ecological factors affecting associations of organisms; correlations between physical and social sciences. Field trips.

BIO 522 Limnology. Three sem hours

Physics, chemistry, geology and biology of inland waters; special emphasis upon streams. *Not open to students with credit in 410 Limnology.*
Prereq: 20 hours of biology and one year of chemistry; ecology and physics are recommended.

BIO 523 Limnological Methods. Two sem hours

Field and laboratory techniques in limnology. *Not open to students who have credit in 411 Limnological Methods.*

Prereq or Coreq: BIO 522 Limnology.

BIO 524 Ecology. Three sem hours

Interrelationships of plant and animal populations and their physical environment; biological principles in terrestrial adaptations. Individual student field problems will be required. *Not open to students who have credit in 420 Ecology.*

Prereq: 221 Botany, 222 Zoology and one taxonomic field course or permission of the department.

BIO 525 Conservation. Two sem hours**(Formerly BIO 584)**

A survey of the natural resources of Michigan; its land, water, minerals, forests, grasslands, wildlife and human powers. Some of the current problems in conservation peculiar to Michigan on the basis of its history, its present resource utilization and its future possibilities.

BIO 526 Serology. Two sem hours

The properties and behavior of antisera to foreign antigenic substances such as bacteria, viruses and toxins; the rationales and procedures of antigen-antibody reactions *in vitro*; and the mechanism of immunity to infectious diseases. Application of such reactions in identification and classification of microbes in clinical work and in biological research. Lecture, but provision of time should be made for laboratory experimental work.

Prereq: 211 Bacteriology, 451 Biochemistry desirable.

BIO 530 Economic Botany. Two sem hours**(Formerly BIO 540)**

The various ways in which plants and plant products are utilized in modern industry; plants as the source of technical raw materials; the dependence of man upon the plant kingdom. *Not open to students who have credit in 215 Economic Botany.*

BIO 531 Plant Anatomy. Three sem hours

Basic plant histology; recognition of primary and secondary tissues as variously combined in root stem, leaf and flower of a wide variety of representative seed plants. *Not open to students who have credit in 312 Plant Anatomy.*

Prereq: 221 General Botany.

BIO 532 Tropical Economic Botany. Two sem hours

The use of tropical plants and their products by man, including cultural and processing practices; daily lectures, discussions and field trips to forests, plantations, gardens and mills. *Not open to students who have credit in 415 Tropical Economic Botany.*

Prereq: One course in botany or its equivalent.

BIO 533 Morphology of Algae and Fungi. Four sem hours

Comparative morphology of the algae (freshwater and marine) and the fungi; the structure and life cycles of representative organisms; the relationship of morphology to reproduction, environmental adjustment, classification and evolution. *Not open to students who have credit in 430 Plant Morphology of Algae and Fungi.*

Prereq: 15 hours of biology including 221 General Botany.

BIO 534 Morphology of Mosses through the Vascular Plants. Four sem hours

Comparative morphology of the mosses, liverworts, ferns and other vascular plants; the structure and life cycles of representative forms; the relationship of morphology to reproduction, environmental adjustment, classification and evolution. *Not open to students who have credit in 431 Plant Morphology.*

Prereq: 15 hours of biology, including 221 General Botany, and 430 Plant Morphology of Algae and Fungi recommended but not essential.

BIO 540 Mineral Nutrition of Plants. Two sem hours

A lecture course dealing with mineral nutrition in plants.

Prereq: general botany and one year of chemistry.

BIO 541 Mineral Nutrition of Plants Laboratory. One sem hour

Experimental studies dealing with inorganic nutrients of plants.

Prereq or Coreq: BIO 540 Mineral Nutrition of Plants.

BIO 542 Plant Physiology. Three sem hours

Major plant functions; lectures, demonstrations, and experimentation in laboratory and greenhouse. *Not open to students who have credit in 310 Plant Physiology.*

Prereq: 221 General Botany; 219 Elementary Organic Chemistry or equivalent.

BIO 543 Plant Pathology. Two sem hours

Plant diseases caused by fungi, bacteria, viruses, insects, parasites and malnutrition; their control by chemical, physical, ecological, cultural and genetic measures. *Not open to students who have credit in 311 Plant Pathology.*

Prereq: plant physiology is desirable.

BIO 550 Taxonomy of Tracheophyta. Three sem hours

(Formerly BIO 546)

Theory and practice in identification and classification of vascular plants. *Not open to students with credit in systematic botany.*

Prereq: 221 General Botany.

BIO 552 Aquatic Tracheophyta. Three sem hours

Identification in the laboratory and field of herbaceous and shrubby vascular plants growing in aquatic habitats and in both vegetative and reproductive phases. *Not open to students who have credit in 450 Aquatic Tracheophyta.*

Prereq: 221 General Botany.

BIO 560 Economic Zoology. Two sem hours

(Formerly BIO 541)

The species, varieties and breeds of animals that are used as beasts of burden, supply food, clothing, sport and recreation, serve as pets or are injurious to man or to his domestic animals and crops.

Prereq: one course in college zoology.

BIO 564 Histology. Three sem hours

The structure and properties of vertebrate organs and their component tissues; techniques for their microscopic study. *Not open to students who have credit in 404 Histology.*

Prereq: 222 General Zoology.

BIO 565 Parasitology. Two sem hours

Animal and plant parasites which affect man and his environment; the zoological interrelationships. *Not open to students who have credit in 225 Parasitology.*

Prereq: 221 General Botany and 222 General Zoology.

BIO 566 Invertebrate Zoology. Four sem hours

Phylogenetic and anatomical study of representative types from each phylum of invertebrates; taxonomy, classical literature and current research. *Not open to students who have credit in 430 Invertebrate Zoology.*

Prereq: 222 General Zoology.

BIO 567 Vertebrate Physiology. Three sem hours

Physiological phenomena of the vertebrate body at the cellular and organ level. *Not open to students who have credit in 327 Vertebrate Physiology.*

Prereq: 222 General Zoology, 219 Elementary Organic Chemistry or equivalent; some physics is desirable.

BIO 570 Natural History of Invertebrates. Three sem hours

A field course in the recognition, collection, identification and preservation of common invertebrates of Michigan, exclusive of the insects; natural history, ecology and economic importance. *Not open to students who have credit in 300 Natural History of Invertebrates.*
Prereq: 222 General Zoology.

BIO 571 Natural History of Vertebrates. Three sem hours

Vertebrates, their adaptations and natural history; the taxonomic classification, identification and distribution of local and other forms. Field work, sometimes under adverse weather conditions and at night; accurate observation and permanent recording of original data on local species. *Not open to students who have credit in 310 Natural History of Vertebrates.*
Prereq: 222 General Zoology.

BIO 572 Ichthyology. Three sem hours

Classification of the fresh water fish of the Great Lakes region and a general survey of the fishes of the world; the natural history, anatomy, ecology and conservation of fishes. Lectures, laboratory studies, field trips and demonstrations.
Prereq: 222 General Zoology or equivalent.

BIO 573 Animal Embryology. Three sem hours

Reproduction and development of animals with laboratory studies of the frog, chick, pig and other forms. *Not open to students who have credit in 323 Animal Embryology.*
Prereq: 222 General Zoology.

BIO 574 Comparative Morphology and Evolution of Chordates. Four sem hours

The comparative anatomy of the vertebrate organ systems; the evolutionary development of the groups. Detailed dissection in the laboratory of the shark and cat. *Not open to students who have credit in 324 Comparative Anatomy of Vertebrates.*
Prereq: 222 General Zoology.

BIO 575 Ornithology. Three sem hours

Bird biology for the secondary teacher and for students with an advanced interest in biology; field identification and census methods of spring and summer bird populations, behavior and ecology. A survey in the laboratory of major North American bird families. A student field project is required. *Not open to students who have credit in 425 Ornithology.*
Prereq: 222 General Zoology or consent of the department.

BIO 580 Advanced Field Ornithology. Two sem hours (Formerly BIO 680)

Field study and identification of fall migratory birds and the fall migration as biological phenomenon.
Prereq: 425 Ornithology, 210 Birds or approval of department.

BIO 581 Tropical Ornithology. Two sem hours

A field course covering activity of native Jamaican birds and wintering North American birds, and the relationships between the two groups.
Prereq: One course in ornithology or experience in field identification of birds, and consent of department.

BIO 582 Aquatic Entomology. Three sem hours

Aquatic insect families and some common genera; ecology, including adaptations to the aquatic environment, life histories and taxonomy. A collection of the common insect families of this area is required.
Prereq: 421 Entomology.

BIO 583 Field Parasitology. Three sem hours

The helminth, protozoan and arthropod parasites of animals, both vertebrate and invertebrate; collection, preparation and identification of parasites of local animals. A collection and a project is required.
Prereq: 222 Zoology; 225 Parasitology; 430 Invertebrate Zoology or 300 Natural History of Invertebrates; and 310 Natural History of Vertebrates or 324 Comparative Anatomy.

BIO 584 Protozoology. Three sem hours

Survey of the protozoa, both free living and parasitic; their life cycles, morphology and ecology. Techniques of collecting, culturing and preserving protozoans and their identification. *Not open to students with credit in 480 Protozoology.*

Prereq: 222 General Zoology.

BIO 585 Entomology. Three sem hours

A survey of the world of insects, their structure, function, behavior and ecology; identification and classification of local insects. A field project is required. *Not open to students who have credit in 421 Entomology.*

Prereq: 222 General Zoology or consent of department.

BIO 595 Workshops in Selected Areas.

BIO 596 Seminar in Biology. One sem hour

Presentation of special reports and group discussions on selected topics.

Prereq: 20 hours of credit in biology, including botany and zoology.

BIO 596 Seminar in Limnology. One sem hour

Current problems and topics in limnology.

Prereq: Approval of department.

BIO 597, 598, 599 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

BIO 610 Cytogenetics. Four sem hours

(Formerly BIO 683)

The structure and behavior of cells with emphasis on their nuclear components. Implications for genetics and evolution; some opportunity in the laboratory for individual investigation and for demonstration of techniques in cytological study.

Prereq: 15 hours of biology, including at least one course in genetics.

BIO 620 Virology. Two sem hours

(Formerly BIO 544)

The biological, physical and chemical nature and pathological activities of virions as found in bacteria, insects, plants and animals. Laboratory methods for propagation of virion and identification; selective inhibition of viral reproduction by chemicals *in vitro*; and, immunity to viral diseases.

Prereq: 15 hours of credit in biology, including bacteriology and biochemistry.

BIO 621 Electron Microscopy Laboratory. Two sem hours

A specialized course in techniques of electron microscopy including preparation of various tissues, use of electron microscope and its application to the study of biological problems. Darkroom technique is also covered.

Prereq: 16 hours of biology, including general cytology, or consent of the department.

BIO 628 Tropical Ecology. Two sem hours

Important biotic communities of the tropics. Investigation in both marine and terrestrial environments; lectures, laboratory and field work. *Not open to students who have credit in 428 Tropical Ecology.*

Prereq: botany, zoology, some concept of ecological principles and some familiarity with use of taxonomic keys.

BIO 640 Plant Cell Physiology. Two sem hours

(Formerly BIO 681)

Selected topics on recent advances in molecular botany.

Prereq: 221 General Botany, laboratory physiology (plant or animal) and organic chemistry.

BIO 650 Phycology. Two sem hours

(Formerly BIO 672)

Structure, function, distribution and classification of the major groups of algae. Special

attention to forms which may be found locally; opportunities for field collections, culturing algae.

Prereq: 15 hours of credit in biology including general botany and plant anatomy, or approval of the department.

BIO 651 Plant Taxonomy. Two sem hours (Formerly BIO 684)

Modern techniques and systems of classification of the higher plants. The student will apply one or more of the techniques in a field problem.

Prereq: one course in plant classification.

BIO 660 Experimental Animal Embryology. Two sem hours

Demonstration and laboratory experiences utilizing the experimental method. An individual research project is a major part of the course.

Prereq: 323 Embryology or equivalent.

BIO 670 Animal Behavior. Two sem hours (Formerly BIO 545)

The behavior of both vertebrates and invertebrates; instinct, learning, sociality, communication and breeding behavior, with emphasis on the ontogenetic and adaptive significance of behavior patterns.

Prereq: two courses in zoology.

BIO 671 Comparative Physiology. Four sem hours (Formerly BIO 569)

A study of systems used to maintain endogenous homeostasis in a phylogenic series of animals.

Prereq: organic chemistry, animal physiology.

BIO 672 Endocrinology. Four sem hours (Formerly BIO 685)

A biological and non-clinical survey of the invertebrate and vertebrate endocrine systems; the histology and function of each of the major endocrine organs, their specific hormones and integrative mechanisms.

Prereq: organic chemistry and animal physiology.

BIO 673 Animal Cell Physiology. Two sem hours

A lecture course on animal cell physiology. A study of the physiochemical relationships which are responsible for the properties of cell irritability, conductivity, contractility, metabolism, respiration, excretion, growth and reproduction. Lab course is available but not required.

Prereq: 222 General Zoology, laboratory physiology (plant or animal) and organic chemistry. Biochemistry, elementary physics desirable.

BIO 674 Animal Cell Physiology Laboratory. Two sem hours

A lab course on animal cell physiology. Laboratory study of the physiochemical relationships which are responsible for the properties of cell irritability, conductivity, contractility, metabolism, respiration, excretion, growth and reproduction.

Prereq: 673 Animal Cell Physiology pre- or corequisite.

BIO 695 Workshop in Advanced Biology. Two sem hours

BIO 696 Seminar in Biology; Laboratory Instruction. One sem hour

Analysis and discussion of the special problems of laboratory instruction in biology in college.

Prereq: Appointment to a graduate assistantship.

BIO 697, 698, 699 Thesis Problem. One, two and three sem hours

(Formerly 676, 677, 678, 679, 686, 687, 688, 689)

CHEMISTRY

The Chemistry Department offers programs leading to a Master of Science in Chemistry Education degree and a Master of Science in Chemistry degree. Graduate courses and research opportunities are provided in a wide area of chemistry.

MASTER OF SCIENCE IN CHEMISTRY EDUCATION

Objectives: To provide individually prepared programs of advanced study for teachers in secondary schools and community colleges and for students seeking entry into specialist degree programs in teaching.

Admission Requirements: Application for admission to this program will be considered from all applicants who have an undergraduate degree with a major or a minor in chemistry. Undergraduate courses must include quantitative analysis, one year of organic chemistry, one year of physics and mathematics equivalent to one year of analytical geometry and calculus. Deficiencies in preparation may be made up without credit while in the program.

Degree Requirement: Successful completion of a minimum of thirty semester hours of graduate credit, distributed as follows:

1. Enroll in Chm 432, 461-2-3, 481, 503, 570 and 596 or demonstrate satisfactory knowledge of the topics normally covered in them.
2. A minimum of twenty hours of graduate credit in chemistry.
3. Graduate and undergraduate credit hours in chemistry must total at least forty-six.
4. Six hours in approved courses selected from outside the Chemistry Department.

Certification for teaching may be achieved by satisfying the additional requirements listed in the undergraduate catalog.

MASTER OF SCIENCE IN CHEMISTRY

Objectives: To provide individually prepared programs of advanced professional training for industrial chemists and to prepare students to enter a doctoral degree program.

Admission Requirements: Application for admission to this program will be considered from all applicants who have an undergraduate degree with a major in chemistry. Deficiencies in preparation may be made up without credit while in the program. Entering students will be required to take placement examinations in analytical, biological, inorganic, organic and physical chemistry.

Degree Requirement:

1. Satisfactory completion of a minimum of thirty semester hours of graduate credit, distributed as follows:
 - a. at least twelve credit hours or demonstrated proficiency in four of these five areas—analytical, biological, inorganic, organic and physical chemistry.
 - b. six to ten hours of research culminating in a written thesis or six hours of a suitable independent study project.
 - c. two credit hours in seminar.
 - d. electives chosen from advanced courses in chemistry.
 - e. six hours in approved courses selected from outside the Chemistry Department.
2. Demonstrated competence in a suitable foreign language, preferably German.
3. Satisfactory performance on a comprehensive examination.

GRADUATE ASSISTANTSHIPS

Graduate assistantships for the academic year are available with stipends ranging from \$2500 to \$3000 depending upon experience. Completed application forms for the positions should be sent to the graduate adviser by March 15 for the fall term and by November 15 for the spring term.

For further information regarding these programs and admission procedures, contact graduate adviser in chemistry.

CHM 503 New Approaches to Teaching Chemistry. Two sem hours

Laboratory procedures of the *Chem Study Program*. Pre-lab discussions and lectures.

Prereq: Three courses in chemistry.

CHM 520 Introductory Chemistry. Two sem hours

The relationship of chemistry to the earth sciences, physical sciences and biological sciences; terms and definitions common to the several fields. The periodic table, modern theories of atomic structure and chemical processes and reactions in relation to physical surrounding and to life processes. *For non-major only.*

CHM 530 X-Ray Crystallography. Three sem hours

Crystal symmetry including crystal classes, point groups and space groups. The origin and production of X-rays, the design of X-ray equipment and the diffraction of X-rays by crystals. The theory of single crystal and powder X-ray methods; the role of modern automated diffractometers and electronic computers in the solution of crystal structures; laboratory experience in the Weissenberg single crystal technique and the powder method.

Prereq: Physical chemistry or approval by the department.

CHM 532 Structural Inorganic Chemistry. Three sem hours

Physical and chemical methods for determining structures of inorganic substances and the relationship between structure and descriptive chemistry.

Prereq: One year of physical chemistry and one course in advanced inorganic chemistry.

CHM 551 Biochemistry. Three sem hours

A lecture course dealing with the chemical properties of biologically important compounds and the pathways and energy relationships of metabolism.

Prereq: Organic chemistry.

Coreq: CHM 552 Biochemistry Laboratory.

CHM 552 Biochemistry Laboratory. Two sem hours

A laboratory course dealing with isolation and analysis of biologically significant compounds. One hour of lecture per week provides background in the laboratory techniques of biochemistry.

Prereq: Organic chemistry laboratory. Quantitative analysis is strongly recommended.

Coreq: CHM 551 Biochemistry.

CHM 553 Enzymology. Two sem hours

(Formerly CHM 551)

A lecture course covering the nomenclature, kinetics, mechanism and isolation of enzymes.

Prereq: CHM 551 Biochemistry and CHM 552 Biochemistry Laboratory.

CHM 555 Biopolymers. Two sem hours

A lecture course concerned with the chemistry and function of proteins, nucleic acids and polysaccharides.

Prereq: 351 Introductory Biochemistry or 451 Biochemistry.

CHM 561 Advanced Physical Chemistry. Three sem hours

A survey course at an advanced level; quantum mechanics, molecular spectroscopy, statistical mechanics and kinetics.

Prereq: One year of physical chemistry, at least two years of analytical geometry-calculus and one year of college physics.

CHM 570 Modern Topics in Organic Chemistry. Four sem hours

Modern chemical principles, update information for students lacking recent instruction in chemistry.

CHM 571 Advanced Organic Chemistry. Three sem hours

A lecture course providing intensive coverage of stereochemistry and reaction mechanisms.

Prereq: One year of organic chemistry.

CHM 572 Stereochemistry of Organic Compounds. Two sem hours

Study of the fundamentals of stereochemistry, including such topics as structure and symmetry, stereoisomerism, classification and separation of stereoisomers and stereospecific and stereoselective reactions.

Prereq: 372 Organic Chemistry.

CHM 575 High Polymer Chemistry. Three sem hours

Macromolecules and the reactions that produce synthetic plastics, elastomers, resins and fibers; physical methods of evaluation and characterization of polymers and the relation of polymer structure to physical properties.

Prereq: 372 Organic Chemistry, 373 Organic Chemistry Laboratory, 461 Physical Chemistry or consent of the department.

CHM 576 High Polymer Chemistry Laboratory. Two sem hours

Experimental methods for preparing, evaluating, characterizing and analyzing polymers. Preparatory methods include step-growth and chain-growth polymerization via several mechanisms. Methods for evaluation, characterization and analysis include: osmometry, viscosimetry, D.T.A.-T.G.A., fractionation and degradation.

Prereq or coreq: CHM 575 High Polymer Chemistry or permission of the department.

CHM 581 Analytical Chemistry. Three sem hours

The fundamental principles of quantitative analysis.

Prereq: Instrumental analysis and one year of physical chemistry.

CHM 594, 595 Special Topics in Chemistry. Two sem hours

An in-depth study of a specialized area of chemistry.

Prereq: Graduate standing or permission of the department.

CHM 596 Seminar in Chemistry. One sem hour

Discussions of specific topics in chemistry by graduate students, staff and visiting scientists. Attendance at all sessions is expected. Two enrollments are required for all Master of Science in Chemistry candidates. Each student makes one presentation per enrollment. One of these must be based upon a research or an independent study project.

Prereq: Graduate standing or permission of the department.

CHM 597, 598, 599 Research in Chemistry. One, two and three sem hours

The student performs original research under direction. Thesis is submitted.

Other Courses for Credit:

374 Organic Chemistry Laboratory.*

432 Advanced Inorganic Chemistry.

461, 462, 463 Physical Chemistry.*

472 Qualitative Organic Chemistry.

481 Instrumental Analysis.

490 Literature of Chemistry.

491 History of Chemistry.*

496, 497 Special Topics in Chemistry.

*No credit given toward the M.S. in Chemistry degree.

ECONOMICS

The graduate program for Economics will become formulized later in the school year. Students should contact Dr. Young-lob Chung, head, Department of Economics, for further information.

ECO 501 Economic Analysis and Policy I. Two sem hours

A basic course in economic analysis and policy.

Prereq: Not open to students having 220 and 221 Elements of Economics or equivalent.

ECO 502 Economic Analysis and Policy II. Two sem hours

Continuation of a basic course in economic analysis and policy.

Prereq: Not open to students having 220 and 221 Elements of Economics or equivalent.

ECO 504 Development of Economic Analysis. Two sem hours

Theories and policies of internal change and evolution in economic science.

Prereq: One course in economics or permission of department.

ECO 528 Economics of State and Local Finance. Two sem hours

Economic analysis of expenditures, revenues and debt management of state and local governments.

Prereq: Six hours of economics.

ECO 530 Economics: Principles and Public Issues. Two sem hours

The basic analytic tools of economic theory and their use in considering policy for current major problems. *Not open to students who hold credit in economics.*

ECO 532 Collective Bargaining. Two sem hours

Labor and management relations considered from the point of view of the two parties and the public welfare; labor contracts. Traditional and current areas of dispute and methods of settlement.

ECO 533 White Collar and Public Employee Unionism. Two sem hours

An analysis of the special characteristics of labor organizations and collective bargaining patterns in public employment and in selected white collar occupations of the private sector of the economy.

Prereq: One course in economics or permission of department.

ECO 535 Regional and Urban Economics. Two sem hours

Examination of problems of economic adjustment and development by regions, including inner-city and metropolitan areas; economic concepts and methods related to regional income and product accounting; economic base studies; input-output analysis; determinants of industrial location; transportation development pertaining to living patterns and other economic activities.

Prereq: 220 and 221 Elements of Economics, or equivalent or permission of department.

ECO 541 Microeconomic Analysis. Two sem hours

Economic analysis of the behavior of individuals and firms; price determination in competitive and monopolistic markets; general static equilibrium and the allocation of resources.

Prereq: 431 Intermediate Economic Analysis or permission of the department.

ECO 542 Macroeconomic Analysis. Two sem hours

National income accounting as a framework for economic analysis; determinants of consumption, investments and government expenditures; models of underemployment and inflation.

Prereq: 430 Aggregate Economic Analysis or permission of the department.

ECO 574 Economic Development of the Far East. Two sem hours

An analysis of economic development in the Far East, including a comprehensive survey of the development policies and economic structures of individual countries.

Prereq: Six hours in economics.

ECO 575 Economic Development Planning. Two sem hours

Analysis of the theory of economic development planning and its application in developed and underdeveloped countries. Major development planning models are discussed.

Prereq: Six hours in economics.

ECO 577 Industrial Organization. Two sem hours

The enterprise sector of a capitalist economy; incidence of competition and monopolistic tendencies in various industries and markets, market structure, conduct and performance, mergers and concentration and public policies.

Prereq: One course in economics or permission of the department.

ECO 578 Government and Business. Two sem hours

The political and economic functions of government; business corporations and financial mergers; direct control of business control versus government ownership of utilities; governmental controls of agriculture and natural resources; the responsibility of government in maintaining employment.

Prereq: One course in economics and one course in political science.

ECO 579 Economic Growth and Development. Two sem hours

Conditions, causes and consequences of growth and development; instruments of expansion and control and important theories and models of growth. Economic growth in both the United States and underdeveloped countries.

ECO 595 Workshop in Economics. Two sem hours

Selected principles of economics presented by visiting consultants. Class discussion on phases of contemporary economics.

ECO 696 Seminar in Economic Development. Two sem hours

Research on theoretical and empirical problems of economic growth; economic development policies and the role of capital formation in economic growth; specific developmental problems of underdeveloped areas.

Prereq: ECO 579 Economic Growth and Development or permission of the department.

ENGLISH LANGUAGE and LITERATURE

The Department of English Language and Literature offers courses leading to the degree of Master of Arts in Literature, as well as some general courses that serve other purposes and do not count toward the degree. A substantial number of those who have attained our M.A. (Lit.) are now teaching English in junior colleges and community colleges—some in universities. Opportunities of this kind are increasing.

General requirements for the M.A.: In addition to the general Graduate School requirements set forth in the early pages of this catalog, the Department of English requires (A) for admission to the program, at least 15 semester hours of undergraduate literature in English, (B) for admission to candidacy for the degree, at least 12 semester hours of graduate literature in English with grades averaging B or better, (C) for the degree, a minimum of 30 semester hours of graduate work (usually 12 hours in an English major, 6 hours in an English minor, six hours of electives in English and six hours of collateral study) with grades averaging B or

better, (D) a total of literary studies, graduate and undergraduate combined, of at least 48 semester hours. A master's thesis is not required. Reading knowledge of foreign languages is not at present required but is highly desirable, especially for students who think of working eventually toward a Ph.D. degree.

Major and minor requirements for the M.A.: ordinarily a candidate for the M.A. will complete a major of 12 hours in a field chosen from those listed under Groups I, II and III, a minor of six hours in a field chosen from a second group and electives of six hours chosen from fields of the third group.

Group I

MEDIEVAL AND RENAISSANCE

17th and 18th CENTURIES

Group II

19th AND 20th CENTURIES

AMERICAN LITERATURE

Group III

PROSE FICTION (A student presenting Prose Fiction as a major is advised to include a course in literary criticism and must include one course each in 18th, 19th and 20th century British prose fiction and one in American prose fiction among his total undergraduate and graduate credits.)

POETRY (A student presenting Poetry as a major is advised to include a course in literary criticism and must include one course each in Chaucer, Shakespeare and Milton among his total undergraduate and graduate courses.)

It should be noted that the same course may not be presented for credit toward both the major and minor. The major and minor program is designed to provide some depth in particular areas, but in considering his entire training in literature (both undergraduate and graduate) the student should aim for breadth as well. It is especially advised that the minor be chosen in an area where he would otherwise be weak.

Graduate assistantships and teaching fellowships are available in the department each year. Interested students should consult with the director of Graduate Studies.

The director of Graduate Studies is Professor George Perkins. Members of the departmental Graduate Committee are Professors Alice Bensen, Ernest Gohn, Eugene Haun and Paul McGlynn. All are available during regular office hours for information or counseling.

I. General Courses

LIT 500-503 are courses not open to undergraduate students and, effective June 15, 1965, and thereafter, not credited toward an M.A. in Literature. Such courses are offered for the benefit of graduate students specializing in departments other than English who wish to take collateral or cognate work in the Department of English. Such students, however, are not restricted to these courses, they may take any graduate courses in English for which they have the prerequisites.

LIT 500 Masterpieces of Literature. Two sem hours

(Formerly CU 532)

A study of various literary forms—drama, poems and prose works—to provide greater understanding of the significance of literature to the individual and to society. Chosen for their excellence in themselves and for their relevance to contemporary life are works of such authors as Homer, Sophocles, Shakespeare, Wordsworth and Ibsen.

LIT 502 Modern Problems as Portrayed in Modern Literature. Two sem hours

(Formerly CU 563)

The portrayal in modern literature of such problems as the relation between the individual and the state, the family, and the crowd; the relation between Western and other civilizations. The effect of the industrial system and the search for values. Writers whose works might provide material include Huxley, Mann, Shaw, Forster, Joyce, Lawrence, Wells, Faulkner, Eliot, Auden, Miller and Dos Passos.

LIT 503 Biography as Literature. Two sem hours

(Formerly CU 574)

The documentary biography, the portrait biography and the narrative-pictorial biography; biography as fact, as psychological interpretation and as art.

LIT 508 Teaching of Children's Literature. Two sem hours

(Formerly LE 534)

An appreciation of the several types of books available for children with suggested uses which might be made in the elementary schools. *Not open to students who have credit in 207 Children's Literature. Offered for teachers in the elementary schools; not counted toward the M.A. in literature.*

II. Courses for M.A. in Literature

A. AMERICAN LITERATURE

LIT 510 Problem of Evil in American Literature. Three sem hours

(Formerly CU 562)

Analysis of selected essays, poems, short stories and novels in which three great American writers, Emerson, Hawthorne and Melville, have delineated and speculated upon the nature, loci, causes and effects of evil in the cosmos, in society and in the individual soul.

Prereq: 15 hours of credit in literature.

LIT 520 Dickinson, Robinson, Frost. Three sem hours

(Formerly CU 568)

The lyric and narrative poetry of three New England poets: explication of poems, biography and the poets' reflection of their times.

Prereq: 15 hours of credit in literature.

LIT 521 Whitman and Contrasting American Poets. Three sem hours

(Formerly CU 571)

Form and content in Whitman's poetry as related to the literary, social and political backgrounds of his time. Comparisons with the theory and practice of Bryant, Poe, Whittier and Longfellow.

Prereq: 15 hours of credit in literature.

LIT 523 Realism and Naturalism in the American Novel. Two sem hours

Realism and naturalism as theory and as practice in the late 19th and early 20th centuries, with emphasis on Howells, Twain, James, Crane, Norris and Dreiser.

Prereq: 15 hours of credit in literature.

LIT 525 Henry James. Three sem hours

Major novels, shorter fiction and literary criticism of Henry James.

Prereq: 15 hours of credit in literature.

B. BRITISH LITERATURE BEFORE THE ELIZABETHAN PERIOD

LIT 530 Studies in Chaucer. Three sem hours

(Formerly CU 575)

Intensive reading of Chaucer's major works and supplementary reading in Chaucerean criticism.

Prereq: 15 hours of credit in literature.

C. BRITISH LITERATURE OF THE SIXTEENTH CENTURY

LIT 540 Elizabethan Drama. Three sem hours

(Formerly CU 567)

The plays of Marlowe, Jonson and Webster, considered primarily for their intrinsic literary and

dramatic merit and secondarily for the light they throw on Shakespeare's milieu. A greater understanding of the term "Elizabethan Drama."

Prereq: 15 hours of credit in literature.

LIT 541 Studies in Shakespeare. Three sem hours (Formerly CU 564)

Studies in the historical, biographical, textual and critical scholarship relevant to two or three of Shakespeare's plays. Investigations, reports, papers.

Prereq: 15 hours of credit in literature, including one course in Shakespeare.

LIT 542 Elyot, Sidney, Spenser. Three sem hours (Formerly CU 566)

To examine in depth the artistic aims, techniques and achievements of three Sixteenth Century British authors, including their relation to Renaissance Christian Humanism.

Prereq: 15 hours of credit in literature.

D. BRITISH LITERATURE OF THE SEVENTEENTH CENTURY

LIT 550 Donne, Browne and Others. Three sem hours (Formerly CU 565)

The principal works of two or three English authors from the period 1600-1660, e.g., John Donne and Sir Thomas Browne.

Prereq: 15 hours of credit in literature.

LIT 551 Studies in Milton. Three sem hours (Formerly CU 570)

The complete poetry and selected prose of John Milton, with some attention to his intellectual milieu.

Prereq: 15 hours of credit in literature.

E. BRITISH LITERATURE OF THE NEO-CLASSICAL PERIOD

LIT 560 Dryden, Pope. Three sem hours

A study of the major works of Dryden and Pope, with an introduction to the most important criticism of their writings.

Prereq: 15 hours of credit in literature.

LIT 562 Boswell and Johnson. Three sem hours

Major writings with attention to the men and times.

Prereq: 15 hours of credit in literature.

LIT 563 Studies in Eighteenth-Century Comic and Satiric Fiction. Three sem hours

Major comic or satiric authors of the 18th century and the literary, historical and critical problems arising from their work. On a cyclical basis, the authors studied will include Swift, Fielding, Sterne and Smollet, and some of their imitators and minor successors; the Fielding-Richardson interreaction.

Prereq: 15 hours of credit in literature.

LIT 564 Studies in Eighteenth-Century Sentimental and Gothic Fiction.

Three sem hours

Major sentimental or Gothic authors of the 18th century and the literary, historical and critical problems arising from their work. On a cyclical basis, the authors studied will include Defoe, Richardson, MacKenzie, Goldsmith, Godwin, Walpole, Radcliffe and Lewis.

Prereq: 15 hours of credit in literature.

F. BRITISH LITERATURE OF THE NINETEENTH CENTURY

LIT 570 Wordsworth. Three sem hours (Formerly CU 572)

An intensive study of the poetry and critical essays of Wordsworth.

Prereq: 15 hours of credit in literature.

LIT 571 Byron, Keats. Three sem hours (Formerly CU 573)

An intensive study of the poetry of Byron and Keats.

Prereq: 15 hours of credit in literature.

LIT 573 Tennyson and Browning. Three sem hours

Reading and analysis of major works by Tennyson and Browning, with peripheral study of their social and literary background.

Prereq: 15 hours of credit in literature.

LIT 575 Carlyle, Arnold. Three sem hours

(Formerly CU 577)

A close examination of selected works, accompanied by rapid reading of other works and of biographies, correspondence and other background materials that will aid students in placing these two major writers in their time, and in discovering their relevance to our time.

Prereq: 15 hours of credit in literature.

G. BRITISH AND AMERICAN LITERATURE OF THE TWENTIETH CENTURY

LIT 580 The Making of the Modern Mind. Three sem hours

(Formerly CU 561)

The emergence of the moral, social, political and religious dilemmas that confront thinking men and women of the twentieth century, studied chiefly through works of British and American literature.

Prereq: 15 hours of credit in literature.

LIT 581 Eliot, Jeffers, Auden. Three sem hours

Intensive study of the work of three major contemporary poets.

Prereq: 15 hours of credit in literature.

H. MISCELLANEOUS

LIT 597, 598, 599 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member. *Not to be elected until a student has been accepted as a candidate for the master's degree in literature.*

LIT 609 Literary Criticism. Three sem hours

(Formerly CU 666)

A study of various approaches to literary criticism with application to specific works.

Prereq: 15 hours of credit in literature.

LIT 696 Seminars in Selected Topics. Three sem hours

Topics and instructors announced from time to time.

Prereq: 15 hours of credit in literature. Further prerequisites may be required for some topics.

III. Languages, Linguistics and Composition

The University does not offer a master's degree in language, linguistics or composition. All candidates for the M.A. in literature must, however, present one course in the history of the English language, either undergraduate or graduate. See description of ENG 509 The Development of Modern English below; other courses in this group are not counted toward the M.A. in literature.

ENG 501 Basic Studies for Teachers of Language Arts. Three sem hours

(Formerly CU 533)

Seeks to increase the student's understanding of the nature and function of language to the end that he may deal more effectively with the communication problems of his pupils. *No special knowledge of grammar is assumed.*

ENG 502 Linguistics Theory. Three sem hours

Contemporary theoretical developments in linguistics for prospective teachers of grammar in college, high school and elementary school.

ENG 509 The Development of Modern English. Three sem hours (Formerly CU 553)

The history of the English language. The scientific principles involved in linguistic evolution; the grammatical structure, the sources of the English vocabulary, the political, social and cultural influences which have affected the language. *This course is required of all candidates for the M.A. in literature who have not acquired undergraduate credit in the history of the English language. Not open to students who have credit in 221 History of the English Language.*

IV. Other Courses for Credit Toward M.A. in Literature

The following courses for advanced undergraduates are also available to graduate students for either two or three semester hours credit each depending upon the circumstances of the student's registration; on this matter the student should, before completing his registration, have a clear understanding with both the dean of the Graduate School and the chairman of the Committee on Graduate Studies in the Department of English. For descriptions of these courses, see the Undergraduate Catalog. Ordinarily a maximum of three undergraduate courses may be approved for graduate credit.

305 Shakespearean Comedy.

314 Old English.

315 Age of Chaucer.

316 English Literature 1500-1600.

317 English Literature 1600-1660.

318 English Literature 1660-1744.

319 English Literature 1744-1798.

327 Milton.

330 The Eighteenth Century Novel.

331 The Nineteenth Century Novel.

332 The Twentieth Century American Novel.

333 The Twentieth Century British and European Novel.

340 English Drama 1558-1642.

341 English Drama 1660-1779.

401 Modern American and British Poetry.

403 Modern Drama.

404 English Literature 1798-1832.

405 Victorian Poetry.

407 Victorian Prose.

409 American Literature to 1865.

410 American Literature since 1865.

420 Old English Poetry.

430 History of Literary Criticism.

434 English Literature in Transition, 1880-1914.

FOREIGN LANGUAGES and LITERATURE

The department of Foreign Languages and Literature offers programs of study in French and in Spanish leading to the Masters of Arts degree.

For admission to one of the programs a student shall present an undergraduate major in French or Spanish, equivalent to the requirements for such a major at Eastern Michigan University. Students with less undergraduate preparation may be admitted to the program only by special approval of the departmental graduate committee, which shall establish compensatory requirements. Individual programs will be prepared in consultation with the advisers: Eugene M. Gibson, French; Francisco Villegas, Spanish.

The program may include a maximum of six hours of study in related areas, to be determined in advance by the departmental adviser and the student. A graduate student may elect upper-division courses numbered in the 400's for graduate credit with the advice and consent of his departmental adviser. No student will be recommended for the degree, despite an unusual undergraduate preparation, unless he has completed at EMU a minimum of 12 hours in literature courses and eight hours in language courses.

For admission to candidacy for the degree, a student shall demonstrate to a departmental committee his proficiency in written or oral French or Spanish, and present 12 semester hours of graduate work in that language with grades of at least B. A research paper shall be completed and approved by the departmental committee before the student is recommended for the degree. A comprehensive oral or written examination will be required at least one month before the degree is granted.

FLA 511 Methods of Teaching Modern Language. Two sem hours

History, theory, and techniques of modern language teaching. Not counted in Group I for degree, nor toward a major or minor in any modern language.

FLA 512 Methods of Teaching Modern Languages in the Elementary Grades.

Two sem hours

Techniques and materials of teaching French and Spanish in elementary grades. Not counted in Group I for degree, nor toward a major in any modern language.

I. French

FRN 516, 517 Reading French for Graduate Students. Two sem hours

Structure, basic vocabulary, and common idioms of French for reading proficiency. Open to beginning students. Enrollment in *both parts* is required.

FRN 519 French Diction. Two sem hours

Study of physiology of the fundamental vowel and consonant sounds in French. Drill on rhythm and intonation. Practice and recording in the laboratory.

FRN 520 French Grammar and Syntax. Two sem hours

An advanced course in grammar and syntax. Intended to give a solid basis for oral and written expression and for the teaching of French.

Prereq: 443 French Syntax or equivalent.

FRN 521 Advanced Conversation in French. Two sem hours

Acquisition of an active vocabulary for daily life and greater oral facility. The student will work in the laboratory listening to and making his own recordings. This course may be repeated for supplementary credit.

Prereq: 444 Advanced French Conversation or equivalent.

FRN 522 Stylistics. Two sem hours

Translation of selected passages into French; some free composition in French.

Prereq: 443 French Syntax or its equivalent.

FRN 524 Modern French Novel. Two sem hours

Contemporary prose fiction from Gide to Michel Butor. Works of Malraux, Camus, Sartre and others will be studied and discussed.

FRN 525 Modern French Theatre. Two sem hours

A study of the recent French theatre since the end of the first World War and continuing up to the present.

FRN 563, 564 Sixteenth Century French Literature. Two sem hours

Literature of the sixteenth century in France, from Grands Rhetoriciens and Rabelais, to the Edict of Nantes.

Prereq: Two courses in French literature, beyond survey.

FRN 585, 586 Old French. Two sem hours

Development of Old French from its Latin roots with major emphasis upon the morphological changes. Readings in the literature of the Old and Middle French periods from the earliest documents to the time of Villon.

Prereq: 481 History of the French Language or its equivalent and two courses in literature beyond 341, 342 Survey of French Literature.

II. Other Courses for Credit Toward M.A. in French

The following courses for advanced undergraduates are also available to graduate students, for either 2 or 3 hours credit depending upon the circumstances of the student's registration. He will be expected to do somewhat more work than is done by the undergraduates. This aspect of the course work should be clearly settled by the chairman of the French Graduate Program, the instructor in the course and the student. The descriptions of the courses are given in the Undergraduate Catalog.

431 Molière.

432 Corneille and Racine.

441, 442 Nineteenth Century French Novel.

443 French Syntax.

444 Advanced French Conversation.

447, 448 Nineteenth Century French Theatre.

461, 462 Modern French Poetry.

471, 472 Eighteenth Century French Literature.

481 History of the French Language.

491, 492 Seventeenth Century French Literature.

III. SPANISH

SPN 520 Spanish Grammar and Syntax. Two sem hours

The morphological and syntactical structure of Spanish.

Prereq: 443 Advanced Spanish Composition or equivalent.

SPN 521 Graduate Spanish Conversation. Two sem hours

A continuation of advanced conversation with emphasis on matters of diction and style. This course may be repeated for supplementary credit.

Prereq: 444 Advanced Spanish Conversation or equivalent.

SPN 522 Stylistics. Two sem hours

The manner in which literary Spanish makes use of the means of expression available in the language.

Prereq: 443 Advanced Spanish Composition.

SPN 524 The Spanish Language in the New World. Two sem hours

Acquainting the students with the Spanish language as it is used in several language areas of the American continent.

Prereq: 481 History of the Spanish Language, SPN 520 Spanish Grammar.

SPN 585, 586 Old Spanish. Two sem hours

Development of Old Spanish from its Latin roots, with major emphasis on changes. Readings in medieval literature from the Poema del Cid to the end of the 15th Century.

Prereq: 481 History of the Spanish Language or equivalent and two courses in Spanish literature beyond 341, 342 Survey of Spanish Literature.

IV. Other Courses for Credit Toward M.A. in Spanish

The following courses for advanced undergraduates are also available to graduate students, for either two or three hours credit depending upon the circumstances of the student's registration. He will be expected to do somewhat more work than is done by the undergraduates. This aspect of the course work should be clearly settled by the chairman of the Spanish Graduate Program, the instructor in the course and the student. The descriptions of the courses are given in the Undergraduate Catalog.

431, 432 Survey of Spanish-American Literature.

443 Advanced Spanish Composition.

444 Advanced Spanish Conversation.

445 Spanish-American Novel.

446 Spanish-American Theatre.

447 Modern Novel.

448 Modern Drama.

451, 452 Readings in Spanish.

453 Drama of the Golden Age.

454 Modernism in Spanish America.

455 The Generation of 1898.

463 Don Quijote.

481 History of the Spanish Language.

GEOGRAPHY and GEOLOGY

There is an acute shortage of professional geographers today. Persons with a master's degree in geography have many opportunities for teaching careers in junior colleges as well as in secondary and elementary schools. Geographers are in great demand for positions with government agencies from local to federal levels: working in urban and regional planning, analysis of foreign areas, resource management, agricultural surveys, transportation, cartography, climatology, military geography and general economic geography. Many opportunities in private industry also exist for geographically trained persons who can do research in marketing and industrial location.

Programs of study leading to a master's degree in geography are developed on an individual basis. They are designed to prepare each student for professional work in the field and at the same time permit some opportunity for specialization. In general, programs are designed to either prepare students who wish to work towards a doctoral degree in geography, as a terminal degree for those who wish a career in professional geography, excluding teaching, or as a terminal degree for those who intend to teach at the elementary, secondary and junior college level and desire to increase their proficiency in the field of geography.

Normally, a minimum of thirty semester hours, including the thesis, will be required for a master's degree. In addition, graduate students who have not successfully completed courses in economic geography and cartography or map interpretation must elect these courses for undergraduate credit early in their graduate program. Twenty-four hours must be taken for graduate credit in geography; the remaining hours will be taken in a cognate field, or fields. A maximum of three undergraduate courses may be approved for graduate credit.

All graduate students are required to write a thesis as part of the master's program. The subject of the thesis is determined by the student and his advisers in order to provide an opportunity for the student to work in his special field of interest.

Students desiring more information concerning the master's program in geography should contact Dr. Paul Buckholts, departmental graduate adviser.

GEO 507 Resources and Nations. Two sem hours

Patterns of distribution, production, consumption and adequacy of physical and cultural resources; different management characteristics and roles which resources play in the development of nations. *Not open to students who have more than eight hours of credit in geography.*

GEO 508 Earth Science I. Two sem hours

Rocks and minerals and their significance in the development of landforms. *Not open to students who hold credit in 108 Earth Science.*

GEO 509 Earth Science II. Two sem hours

Weather and climate and related phenomena such as natural vegetation and soils. *Not open to students who hold credit in 108 Earth Science.*

GEO 522 Processes of Landform Development. Two sem hours

Interrelation of climate, soil formation, landform development and vegetation; glaciation, streams, wind and shoreline environments in Michigan. Classroom, laboratory and field trips.

GEO 528 Biogeography. Two sem hours

Descriptive and historical plant and animal distribution and the basic principles governing the natural distribution in both space and time.

GEO 529 Common Rocks and Minerals. Two sem hours

Materials and processes in the formation and distribution of important minerals and rocks. *Not open to students who have credit in 229 Rocks of Michigan.*

GEO 530 Principles of Earth History. Two sem hours

Relationship of geologic processes to the rock record of earth, its relationship to the solar system, time, earth change and the succession of life. *Not open to students who have credit in 230 Historical Geography.*

GEO 535 The Geography of Energy. Two sem hours

The problems of production, transportation, distribution and consumption of electricity. Energy sources: coal, petroleum products, natural gas, water power and nuclear fission.

Prereq: 339 Economic Geography or approval by the department.

GEO 541 South American Lands. Two sem hours

A regional geography study of the countries and colonies on the South American continent; resources, people and national cultures.

Prereq: 15 hours of credit in geography and approval by the department.

GEO 542 Middle America and the Caribbean World. Two sem hours

A regional study of Mexico, Central America and islands of the Caribbean Sea. Conditions leading to the present political upheavals in the area and an effort made to chart future trends.

Prereq: 15 hours of credit in geography, including one course in urban geography, or approval by the department.

GEO 544 Problems in Urban Geography. Two sem hours

Selected geographic problems: urban sprawl, deterioration of the urban environment, changing urban functions and others. Acquisition of analytical techniques and geographical insights.

Prereq: 15 hours of credit in geography, including one course in urban geography, or approval by the department.

GEO 545 Problems in Political Geography. Two sem hours

Individual and group research in the geopolitical relationships among sovereign states, alliances and coalitions.

Prereq: 15 hours of credit in geography, including 432 Political Geography, or approval by the department.

GEO 552 Social Studies of Michigan. Two sem hours

The geographic, economic, political and sociological backgrounds of important historical events in Michigan. The Indians, French and British in Michigan; the territorial period; early statehood; the rise of mining, lumbering, manufacturing and commercial agriculture; the utilization of natural resources for recreation. *Prereq: One geography course and one American history course.*

GEO 553 Geography of the Great Lakes. Two sem hours

A geographic and economic survey of water and land uses, primarily within the area of the Great Lakes drainage basin; the role of the St. Lawrence Seaway. Documents and statistical source material to acquire knowledge about a vital and dynamic area.

Prereq: A course in economic geography, the geography of Anglo-America or approval by the department.

GEO 555 Geography of Australia. Two sem hours

A regional study of the physical and economic geography of Australia and New Zealand including the physical setting, distribution of people and economic development.

Prereq: One course in geography.

GEO 556 Problems in the Geography of Western Europe. Two sem hours

Selected problems in the cultural and economic geography of Western Europe.

Prereq: 15 hours of credit in geography including one course in the geography of Europe or approval by the department.

GEO 557 Field and Project Geography. Six sem hours

Use of field instruments and methodologies in physical, agricultural, urban, industrial and settlement geography. *Not open to students who hold credit in 403 Field and Project Geography.*

Prereq: Graduate majors in geography or approval by the department.

GEO 558 Geography of the Moslem World. Two sem hours

A regional study of the areas of Africa and Asia practicing the religion of Islam. An assessment of the resource bases, current issues and possible future trends in those countries which have grown in importance since 1940. *Not open to students who hold credit in an equivalent course.*

Prereq: One course in geography.

GEO 559 Problems in Soviet Geography. Two sem hours

Individual and group research in selected problems in the geography of the Soviet Union.

Prereq: 15 hours of credit in geography, including a course in Soviet geography, or approval by the department.

GEO 561 Physical Landscapes. Two sem hours

An understanding of selected landscapes; the agents and processes at work in the formation of surface features such as: weathering, wind, ice, water, waves, vulcanism and diastrophism.

Prereq: One course in physical geography, geology or approval by the department.

GEO 562 Weather. Two sem hours

Aimed at understanding the atmospheric processes which generate all weather; applies observations of weather elements to analysis of weather phenomena; concludes with experimental forecasting. One hour lecture and two hours laboratory per week. *Not open to students holding credit in 223 Weather and Climate.*

GEO 563 Climate. Two sem hours

Regional climates are assessed in terms of characteristic types and frequencies of weather, with emphasis on geographic and atmospheric causes of differences and variations. Data in a number of statistical and graphical forms are interpreted in evaluating and classifying climates. One hour lecture and two hours laboratory per week.

Prereq: 223 Weather and Climate or GEO 562 Weather.

GEO 568 Geography Field Trips. Variable Credit

Representative geographic regions in the area visited; significant geographic and geologic characteristics of each region. Students will have an opportunity to visit typical mining, forestry, agricultural, industrial and cultural enterprises of the regions. A written report is required.

GEO 569 The American Midwest. Two sem hours

A regional treatment. The natural setting, the distribution of the people, the important occupations and the present and future problems in each of the several regions.

Prereq: 15 hours of credit in geography, including a course in geography of Anglo-America, or approval by the department.

GEO 571 Teaching of Social Studies. Two sem hours

Subjects included: selecting and securing, organizing, presenting and evaluating materials.

GEO 574 Problems of Sub-Saharan Africa. Two sem hours

Individual research in selected problems in the geography of Sub-Saharan Africa.

Prereq: 15 hours of credit in geography, including a course in the Geography of Africa, or approval by the department.

GEO 585 City and Regional Planning. Two sem hours

Philosophy, history, legal aspects and techniques of the planning process. Case studies in the United States and Europe illustrating the impact of planning on man's economic, social and political activities.

Prereq: 10 hours of credit in geography or approval by the department.

GEO 596 Seminar in Geography. Two sem hours

The problems involved in modern geography and analysis of subfields.

Prereq: Geography majors.

GEO 597, 598, 599 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

Prereq: Approval by the department.

GEO 649 Problems in Economic Geography. Two sem hours

Research problems and techniques dealing with the production, distribution and consumption aspects of economic geography.

Prereq: 15 hours of credit in geography, including a course in economic geography, and approval by the department.

GEO 655 Field Studies in Michigan. Two sem hours

The geographic and geologic environment: on-campus sessions and field trips include both subject matter and methodological concern. Write department for information on content. Offered as a two-week workshop in the summer session.

GEO 660 Area Analysis. Two sem hours

Advanced geography field research. A philosophy of field geography; selected problems concerned with industry, recreation, agriculture and commerce.

Prereq: 15 hours of credit in geography, including 303 Field Geography, 403 Field and Project Geography or GEO 557 Field and Project Geography or approval by the department.

GEO 663 Analytical Climatology. Two sem hours

An advanced course in climatology which treats in detail the causes and effects of climates in specific areas of the world. Analysis of various climatic classification systems, regional climatology and applied climatology are stressed.

Prereq: 223 Weather and Climate or GEO 562 Weather and GEO 563 Climate.

GEO 670 History of Geographic Thought. Two sem hours

The main themes of geographic thought from ancient times to the present day; the evolution of ideas fundamental to modern American geography.

Prereq: Approval by the department.

GEO 696 Seminar in Methods and Research. Two sem hours

Basic research techniques applicable to geography. Location and identification of source materials, statement and analysis of problems, and preparation and presentation of results of research.

Prereq: Approval by the department.

GEO 697, 698, 699 Thesis. One, two and three sem hours

An intensive study of a problem of group direction or problems under the direction of a University faculty member.

Prereq: Approval by the department.

HISTORY and SOCIAL SCIENCES

For admission to a Master of Arts in history the student shall present a minimum of 15 hours in history. Normally the graduate major shall include 20 hours in history and 6 hours in a cognate field. Forty-four hours in history are required including credit earned for the bachelor's degree. The minimum total of graduate hours for a degree is 30. The student who gains admission to the program with fewer than 20 undergraduate hours in history will need more than 30 hours of graduate credit for a degree.

Distribution requirements,
undergraduate and graduate combined:

1. United States history 8 hours
 2. Modern European history 8 hours
 3. Ancient history 2 or 3 hours
 4. Medieval history 2 or 3 hours
 5. Non-Western history 5 hours
- or
- Latin America and Canada 5 hours

Additional required graduate
courses:

1. Historical Method 2 hours
2. Historiography 2 hours
3. Seminar 3 hours
(A substantial research
paper shall be an essential
part of the seminar)

An oral examination is required of all students admitted to the Graduate School after September 1, 1966, who apply for candidacy for the Master of Art's degree in history. The examination is scheduled soon after the student has completed 12 hours of graduate study. He selects three examination fields in consultation with the graduate adviser. The examination committee will consist of three historians; each a specialist in one of the selected fields.

Graduate students in history should arrange an early conference with the departmental graduate adviser and have all course elections approved by him.

For admission to a Master of Arts in social studies, the student shall present a bachelor's degree from an accredited institution, a grade point average of 3.0 either in all his undergraduate work in the social studies or in his prospective social studies area of concentration, and not less than 30 semester hours of undergraduate credit in social studies. Candidates for the degree must also possess a teacher's certificate for the elementary or secondary level. Students who do not meet these qualifications will make up the deficiency.

For completion of the master's degree in social studies, the applicant must present a total of not less than 30 semester hours of graduate credit distributed as follows:

1. Twelve semester hours in one social studies area of concentration (economics, history, political science, sociology and such geography courses as are classed as social sciences).
2. Twelve semester hours to be selected from at least two of the social studies areas other than his area of concentration.
3. Six elective semester hours of graduate work. The elective hours may be social studies or any other graduate courses offered by the University.
4. All course elections must be approved by the departmental graduate adviser. The departmental graduate adviser is Dr. H. R. King, 701-M Pray Harrold Building.

I. History

A. COURSES FOR THE M.A. IN HISTORY

HIS 503 Colonial American History. Two sem hours

Colonial American political, economic and social institutions; current scholarship and interpretation.

Prereq: 223 American History to 1865 and permission of the department.

HIS 507 History of Religions I: Judaism and Islam. Two sem hours

Major themes and movements in the development of two great Semitic religions, with reference to an understanding of the present scene.

Prereq: 201 The Comparative Study of Religion or permission of the department.

HIS 508 History of Religions II: Christianity. Two sem hours

Formative influences in the development of Latin, Byzantine and Reformation Christendom, with special concern for their influences in current events.

Prereq: 201 The Comparative Study of Religion or permission of the department.

HIS 509 History of Religions III: Hinduism and Buddhism. Two sem hours

The development of Hinduism and Buddhism with emphasis on the influences they exercise in Asia in the twentieth century.

Prereq: 201 The Comparative Study of Religion or permission of the department.

HIS 511 Ancient History I. Two sem hours

Greek City-State Civilization; the political economic, social, cultural and religious life of the Greeks in the period between the Persian Wars and the successors of Alexander the Great (479-323 B.C.) with special attention to fifth-century Athens, the legacy of Greece to the modern world.

HIS 512 Ancient History II. Two sem hours

Roman Imperial Civilization; the political, economic, social, cultural and religious life of the Romans from the accession of Augustus to the death of Constantine (31 B.C.-337 A.D.)

HIS 514 The Reformation Era. Two sem hours

Causes of the Reformation; Europe on the eve of the Reformation; the Reformation in Germany; spread of Protestantism; spread of Calvinism; the Catholic Reformation; religious conflicts and consequences; secularization of European States and the legacy of the Reformation.

HIS 515 Medieval History I. Three sem hours

The intellectual and institutional history of the Middle Ages; the philosophy of the Middle Ages; the Carolingian Renaissance, the Ottonian Renaissance and the Twelfth Century Renaissance, the history of education from Antiquity through the Middle Ages; and the rise of the universities.

HIS 516 Medieval History II. Three sem hours

The intellectual and institutional history of the High and Late Middle Ages; education, philosophy and medieval institutions in a growing secular society.

HIS 517 Historical Background of Modern Britain. Two sem hours

The history of Great Britain from 1815 to the present with primary emphasis on institutional development. Political, economic, social and imperial problems will be examined, and Great Britain's role in today's world will be assessed.

HIS 518 Studies in Recent German History. Two sem hours

World War I, the Weimar Republic, the rise of National Socialism and the National Socialist state, World War II and contemporary Germany.

Prereq: 338 German History since 1815 or permission of the department.

HIS 519 Modern France. Two sem hours

Developments in the French nation from the Revolution of 1789 to the present.

HIS 527 Religion and Public School Education. Two sem hours

Problems relating to religion in public school education; the general problem is well stated by F. Ernest Johnson as follows: "How can public education, in accord with its function of putting each generation in possession of its full cultural heritage, do justice to the religious phase of that heritage without doing violence to religious liberty as constitutionally safeguarded in the First Amendment to the American Constitution and in similar provisions in the constitutions of the several states?"

HIS 531 Studies in Negro History. Three sem hours

The major developments in the history of Negro Americans from 1619 to the present.

Prereq: Six hours of U.S. History.

HIS 533 Studies in Michigan History. Two sem hours

Intensive study of differing periods and topics in Michigan history.

Prereq: 313 Michigan History, 414 Michigan in the Twentieth Century or permission of the department.

HIS 535 Culture of Western Europe I. Two sem hours

Historical and cultural development in the 17th and 18th centuries; formation of the modern state system, the Age of Enlightenment and the Era of Revolution.

HIS 536 Culture of Western Europe II. Two sem hours

Historical and cultural development in the 19th and 20th centuries; the impact of the Industrial and Scientific Revolutions; the life and thought of the people.

HIS 541 The United States, 1825-1860: Ferment and Reform. Two sem hours

Reform movements of the period; the labor movement, education, immigration, the Negro and the democratization of politics.

Prereq: Three courses in American history.

HIS 543 Nationalism and Modernization in the Middle East and North Africa.

Three sem hours

The development of nationalism and modernization in the Middle East and North Africa from World War I to the present; political and social changes occurring in this developing area.

Prereq: 441 Middle Eastern History, 1798 to Present, 442 North Africa, 1798 to Present or permission of the department.

HIS 548 History Travel-Study Tours. Six sem hours

Representative areas with significant historical background.

HIS 550 Twentieth Century Russia. Two sem hours

Political, economic and diplomatic developments in the history of Russia from the Revolution of 1905 to the death of Stalin.

HIS 554 Studies in Modern India. Two sem hours

The development of India from mid-19th century to the post-independence period; major problems confronting contemporary India.

Prereq: 375 Modern India or permission of the department.

HIS 557 Intellectual History of the Far East. Two sem hours

Major texts of Chinese classical thought; dominant trends in the later development of Chinese and Japanese ideas. The enduring influence of Confucianism.

Prereq: One course in Far Eastern history or permission of the department.

HIS 558 Diplomatic History of the Far East. Two sem hours

The international relations of China, Japan and Korea with each other and with the Western powers from the beginning of the nineteenth century to the present; stresses arising from East Asia's enforced entry into the modern state system.

Prereq: One course in Far Eastern history or permission of the department.

HIS 560 Federalist-Jeffersonian America. Two sem hours

The period 1789-1815 and the foundations of the American Republic. Ideology; political, constitutional and economic issues; problems arising from territorial and commercial growth.

Prereq: Three courses in American history including 223 American History to 1865 or its equivalent.

HIS 561 Studies in Latin American History I. Two sem hours

Selected political, economic, social and intellectual aspects of Spanish American and Portuguese American history from the period of discovery to the independence era.

Prereq: One course in Latin American History or permission of the department.

HIS 562 Studies in Latin American History II. Two sem hours

Selected political, economic, social and intellectual aspects of the history of Spanish and Portuguese America during the National Period, from independence to the present.

Prereq: One course in Latin American history or permission of the department.

HIS 565 Problems and Trends in Recent American History. Two sem hours

Significant aspects of selected minority, industrial, agrarian and governmental problems.

HIS 566 Contemporary World Problems. Two sem hours

The global problems of colonialism, the exchange of raw and processed materials and their relation to foreign policy, the implications of the present conflict between communism and democracy and the possibility for present and future peaceful coexistence.

HIS 567 American Democratic Thought. Two sem hours

An intellectual history, tracing the sources, mutations and evolution of democratic concepts in the United States.

HIS 568 The New Deal. Two sem hours

Political, social and economic problems of the 1930's and early 1940's; attempted solutions and their ramifications.

Prereq: Three courses in American History, including 224 American History, 1865 to Present, or its equivalent.

HIS 572 Nationalism. Two sem hours

Several definitions of nationalism; the rise of nations and nationalities in the several historical periods. The increasing functions of the state.

HIS 573 America in the Atlantic Community. Two sem hours

America and Europe since 1492. The impact America has made upon Europe and Europe upon America; the development of social, cultural and intellectual cross-Atlantic currents.

HIS 582 Studies in the Constitutional History of the United States. Three sem hours

Major problems and events in American constitutional history from 1607 to the present.

Prereq: 411 American Constitutional History to 1865, 412 American Constitutional History, 1865 to Present, Political Science 312 American Constitutional Law I or 313 American Constitutional Law II.

HIS 583 Studies in the Civil War and Reconstruction. Two sem hours

Major problems of interpretation in the period from 1850 to 1877.

Prereq: Two courses in American History.

HIS 584 The United States: 1877-1917. Two sem hours

The history of the United States for the four decades preceding 1917.

HIS 585 Emergence of Canada. Two sem hours

The Canadian people and their culture; the government (English-Canadian relationship), the resources, the development of industry, United States-Canadian relations and the emergence of Canada as a contemporary world power.

HIS 586 United States in World Politics. Two sem hours

American foreign policy in the twentieth century; the nation's transition to great-power status and its adjustment to the demands of that role.

HIS 596 Seminar in Current Affairs. Two sem hours

The problems involved in the teaching of current affairs and exploration of the most effective techniques and materials available in this field.

HIS 597, 598, 599 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

HIS 687 Historical Method. Two sem hours

The relationship of history to the humanities and social sciences; the use of the library, standard bibliographical aids and collected source materials. The skills and experience necessary to evaluate historical writing critically and to conduct historical research in a mature and professional manner.

Prereq: 15 hours of graduate credit in history.

HIS 688 Historiography. Two sem hours

A critical study of the writings, philosophy and influence of major historians.

Prereq: 15 hours of graduate credit in history.

HIS 696 Seminar in History. Three sem hours

Research in problems of significance in history; areas of concentration will vary. The preparation of a paper demonstrating the ability of the student to apply the canons of historical scholarship will constitute a substantial part of the course.

Prereq: 15 hours of graduate credit in history plus HIS 687 Historical Method.

HIS 697, 698, 699 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

B. OTHER COURSES FOR CREDIT TOWARD THE M.A. IN HISTORY

The following courses for advanced undergraduates are also available to graduate students. The student, before completing his registration, should have a clear understanding with both the dean of the Graduate School and the graduate adviser in the Department of History concerning the number of semester hours credit each course will carry. For descriptions of these courses see the Undergraduate Catalog.

Ancient and Medieval History.

323 *Greek History.*

324 *Roman History.*

327 *The Early and High Middle Ages.*

328 *The Late Middle Ages.*

430 *History of the Byzantine Empire, 324-1453.*

European History.

307 *British Empire.*

311 *England to 1689.*

312 *England 1689 to Present.*

333 *Europe since 1919.*

337 *German History to 1815.*

338 *German History since 1815.*

343 *Russia to 1855.*

344 *Russia since 1855.*

435 *Italy since 1815.*

440 *French Revolution and Napoleon, 1774-1815.*

471 *Social and Intellectual History of Nineteenth Century Europe.*

American History.

313 *Michigan History.*

361 *Foreign Relations of the United States.*

363 *History of the West.*

365 *The Old South.*

368 *Social and Intellectual History of the United States to the Civil War.*

369 *Social and Intellectual History of the United States since the Civil War.*

402 *The American Revolution.*

451 *Background of Current Latin-American Problems.*

380 *The American Colonies to 1763.*

383 *The Age of Jackson.*

385 *Civil War and Reconstruction.*

402 *The American Revolution.*

414 *Michigan in the Twentieth Century.*

Non-Western History.

371 *The Far East to 1800.*

372 *The Far East since 1800.*

375 *Modern India.*

II. Philosophy

PHI 528 Foundations of Western Thought. Two sem hours

Writings of some of the most influential philosophers, e.g., Plato, Aristotle, Descartes, Berkeley, Hume and Kant. *For graduate students with no previous work in philosophy.*

PHI 529 Studies in the Philosophy of Art. Two sem hours

An application of contemporary analytical methods to problems in the philosophy of art. The reading matter consists of leading journal articles published during the twentieth century.

Prereq: 210 *Aesthetics* or permission of the department.

PHI 530 Plato. Two sem hours

Major and minor Platonic dialogues and some of the epistles.

Prereq: One course in philosophy.

PHI 531 British Empiricism. Two sem hours

Scientific thinking, theory of knowledge, social contract theory, nature of religious belief and problems of causality and scientific induction. The works of Bacon, Hobbes, Locke, Berkeley, Hume and Russell.

Prereq: One course in philosophy.

PHI 542 Philosophy of Mind. Two sem hours

Questions about the mind as a whole and about particular features of the mind like choice, intention, emotion, feeling, sensation and the unconscious.

Prereq: One course in philosophy.

PHI 543 Aristotle. Two sem hours

The main works of Aristotle either in part or completely. The student will concentrate on one aspect of Aristotle and write a paper on it.

Prereq: One course in philosophy.

III. Political Science**PLS 505 Problems in Public Administration. Two sem hours**

Selected problems in public administration on the local, state and federal levels; inter-governmental administrative relationships.

PLS 506 American Parties and Politics. Two sem hours

An exploration of the devices, dilemmas and delights of party politics as played in the United States. *Not open to students who hold credit for 358 Political Parties and Pressure Groups.*

PLS 540 Public Opinion. Two sem hours

The role of public opinion in a democracy. Opinion methodology; the techniques of measuring public opinion.

PLS 541 Studies in Latin America. Three sem hours

Comparative government of Latin America; political development theories applied to a Latin American context.

Prereq: 367 Contemporary Political Systems of Latin America or permission of the department.

PLS 543 Political Behavior. Two sem hours

Empirical and theoretical knowledge concerning certain aspects of the actions and interactions of men in the political process; political participation, political affiliations and party identification, political leadership, political communication, political institutions and voting behavior.

Prereq: One course in political science.

PLS 545 International Relations. Two sem hours

Relations between nations; factors affecting behavior in the state system and possibilities of developing a viable international system.

Prereq: 112 American Government or 202 State and Local Government.

PLS 546 Studies in International Law. Two sem hours

Selected problems in International Law: the Law of the United Nations; world law; the law of war and peace; the International Court of Justice; national concepts of International Law.

Prereq: 341 International Law or permission of the department.

PLS 549 Comparative Administrative Systems. Two sem hours

Processes of administrative adaptation to development goals in newly independent non-Western countries; current approaches and theories of administrative modernization and development in the light of Western and non-Western experiences.

Prereq: 211 Comparative Government or permission of the department.

PLS 580 American Governmental Executives-National. Two sem hours

The American Presidency; creation of the office; its historical evolution; its national and world significance; problems related to the powers, responsibilities and limits of the office; election to the office; succession to the office.

PLS 581 Contemporary Problems in American Government. Two sem hours

Executive-legislative relationships; judicial review; the making of foreign policy; national defense; public welfare; the electoral process and the role of the citizen in American government.

PLS 587 State and Local Government. Two sem hours

Forms and functions of state and local government. *Not open to students who hold credit in 202 State and Local Government.*

PLS 588 Problems in Representative Government. Two sem hours

The right to vote; apportionment of legislative bodies; operation of the electoral college; accurate administration of elections; informing the electorate; securing the public interest.

PLS 596 Seminar in Current Affairs. Two sem hours

The problems involved in the teaching of current affairs and exploration of the most effective techniques and materials available in the field.

MATHEMATICS

The Department of Mathematics offers a program which leads to the degree of Master of Arts.

The Graduate Advisory Committee of the department (henceforth referred to as the Graduate Committee) will recommend admission to the program, assign each student to an adviser and prepare "tailor-made" programs and file them in the Graduate Office. After the student completes 12 hours of credit, the Committee will recommend admission to candidacy to the dean of the Graduate School.

I. Requirements for admission to the program:

- A. admission to the Graduate School
- B. a strong undergraduate major in mathematics comparable to that offered at Eastern Michigan University; students without such a major may be admitted to the program after meeting requirements specified by the Graduate Committee
- C. acceptance by the Graduate Committee after individual consultation with member(s) of the Committee.

II. Degree requirements

- A. The Graduate Committee, after consultations with the student, will recommend that a minimum of 30 semester hours credit beyond the bachelor's degree be divided in one of the following two ways:
 1. a. at least 24 semester hours in mathematics, including at least one course each in algebra, analysis and geometry
 - b. six semester hours in cognate courses outside the Mathematics Department
 2. a. a minimum of 20 semester hours of credit in mathematics, including analysis, algebra, geometry and probability or statistics
 - b. four semester hours in methods or history of mathematics and methods
 - c. six semester hours in courses outside the Mathematics Department

- B. approval by the Graduate Committee of each semester's courses
- C. final recommendation for the degree by the Graduate Committee

For further details, contact Dr. Robert S. Pate, head of the Mathematics Department.

The following courses may be elected for graduate credit and course descriptions may be found in the undergraduate catalog: 400, 402, 403, 411, 414, 416, 418, 420, 421, 423, 425, 426, 436, 437, 440, 441, 445, 446, 470, 471, 491, 492.

The Specialist's Degree

The Specialist's Degree in Mathematics has great flexibility and prepares persons for positions in business, industry, education and government. The final approval of this degree is now pending.

Admission to the program ordinarily requires the student to have 44-48 semester hours of mathematics and/or mathematics education. Ten of these hours must be at the graduate level. Formal admission by the Graduate Committee of the Department of Mathematics is required.

Admission to candidacy requires 12 hours of work beyond a master's degree with a grade-point average of 5.0 and approval of certain committees and offices.

Thirty-two semester hours of approved graduate credit beyond a master's degree is required together with an examination, all within a period of six years. Sixteen to twenty hours of the work must be in mathematics, including MTH 515 or MTH 528; MTH 526; MTH 626; MTH 511 or MTH 518; or equivalents.

Students preparing for secondary school teaching or supervision take four hours of methods courses not included in the master's degree. Others complete MTH 681, unless exempted. All students take MTH 698 and one or both MTH 697 and MTH 699. Six or eight hours of cognate work are elected with the approval of the student's adviser. Students preparing for secondary school work include MTH 536, MTH 542, MTH 561 and MTH 574.

Students preparing either for graduate work beyond the Specialist's Degree or college teaching complete both MTH 515 and MTH 528 or one from MTH 519, MTH 610 and MTH 614. Also, they complete MTH 527, MTH 627, MTH 511 and MTH 518.

MTH 500 Modern Mathematics Content, K-6. Two sem hours

The modern mathematics required for teaching this subject in the elementary grades, K-6: set theory, logic, numeration systems, the real number system and geometry. *Not open to students who have credit in MTH 501 New Topics in Modern Mathematics, K-8.*

MTH 501 New Topics in Modern Mathematics, K-8. Two sem hours

New topics new in modern mathematics programs; the materials of various study groups; practical problems in teaching mathematics in grades K-8. *Not open to students who have credit in MTH 500 Modern Mathematics Content, K-6 or MTH 512 Linear Algebra II.*

Prereq: Teaching experience, 381 The Teaching of Mathematics, K-6 or 464 Improving Arithmetic Instruction in the Elementary School

MTH 503 Arithmetic Methods. Two sem hours

Current problems in teaching arithmetic. Evaluating pupil achievement; new topics.

Prereq: Teaching experience, 381 The Teaching of Mathematics, K-6 or 464 Improving Arithmetic Instruction in the Elementary School.

MTH 506 Introduction to Mathematical Logic. Two sem hours

Propositional and first order predicate calculi and rules of deduction; application in mathematical systems and proofs.

Prereq: A minor in mathematics.

MTH 508 Foundations of Mathematics. Two sem hours

An introduction to axiomatic method, axiomatic set theory, transfinite arithmetic, logical paradoxes; their influence on modern conceptions of mathematics.

Prereq: A minor in mathematics.

MTH 511 Linear Algebra I. Two sem hours

(Formerly MTH 517)

Vector spaces, dimension, linear transformations, matrices and determinants with application to linear equations. Equivalence of matrices and an introduction to similarity theory.

Prereq: A minor in mathematics.

MTH 512 Linear Algebra II. Two sem hours

The theory of finitely generated modules over a ring of polynomials, as applied to similarity theory; canonical forms for similarity. Scalar products, the dual space, Sylvester's Theorem and the Spectral Theorem.

Prereq: MTH 511 Linear Algebra I (formerly MTH 517).

MTH 515 Elements of Set Theory. Two sem hours

Sets and subsets, set operations, sets of numbers, relations, cardinal numbers, ordinal numbers, ordered sets and other topics.

Prereq: A minor in mathematics.

MTH 516 The Theory of Integers. Two sem hours

Elementary properties, divisibility, congruences, powers and other topics.

Prereq: An undergraduate major in mathematics.

MTH 518 Group Theory I. Two sem hours

Definitions and examples, modules, commutative groups, homomorphisms, quotient groups, permutations, groups with operators and dimension.

Prereq: 15 hours of undergraduate credit in mathematics and permission of the department.

MTH 519 Group Theory II. Two sem hours

Homomorphy and groups with operators, construction of composite groups, Sylow p-groups and p-groups, transfers into subgroups and other topics.

Prereq: MTH 518 Group Theory I.

MTH 520 The Real Number System. Two sem hours

A development of the real number system and a study of its properties.

Prereq: A minor in mathematics.

MTH 522 Fourier Analysis. Two sem hours

An introduction to Fourier series and their application to the solution of boundary value problems in the partial differential equations of physics and engineering.

Prereq: 320 Differential Equations I, 420 Advanced Calculus I or equivalents.

MTH 526 Real Analysis I. Two sem hours

Sets, compact, perfect and connected sets, metric spaces, convergence of sequences and series, continuous and differentiable functions (including functions of bounded variation).

Prereq: 420 Advanced Calculus I or permission of the department.

MTH 527 Real Analysis II. Two sem hours

Riemann-Stieltjes integral, uniform convergence, Stone-Weirstrass theorem, power series, exponential logarithmic and trigonometric functions, Fourier series.

Prereq: MTH 526 Real Analysis I.

MTH 528 Introduction to Topology I. Two sem hours

(Formerly MTH 544)

Elements of general topology, including countability, metric spaces, topological spaces, continuity, separation axioms and compactness.

Prereq: MTH 420 Advanced Calculus I or permission of the department.

MTH 529 Introduction to Topology II. Two sem hours

Connectedness, local connectedness, product and quotient spaces, metrizable, completeness, generalized convergence and homotopy.

Prereq: MTH 528 Introduction to Topology I.

**MTH 531 Modern Mathematics Content, Junior High School. Two sem hours
(Formerly MTH 514 or SC 526)**

The modern mathematics required for teaching this subject in the junior high school: algebra, geometry, axiomatic systems, number theory, measurement, proof, probability and statistics, relations and functions and their graphs.

Prereq: Teaching experience in junior high school mathematics or 15 hours of undergraduate credit in mathematics.

MTH 536 Introduction to Digital Computers and FORTRAN. Two sem hours

A first course in computer programming designed for graduate students. The course concentrates on development of algorithmic problem solution and their descriptions via flow charts and the FORTRAN IV language. The students will obtain experience using a digital computer by running several programs. *Not open to students who have credit in 236 Introduction to Computer Programming, 237 Introduction to Computer Programming and Numeric Methods or 337 Computer Programming Languages.*

Prereq: College algebra and permission of the department.

MTH 537 Introduction to Numerical Analysis. Two sem hours

Review of current computer language in use on campus, errors, evaluation of functions, root determination, numeric integration, interpolation, solution of ordinary differential equations and simultaneous linear equations. *Not open to students who have credit in 436 Numerical Analysis Mathematics.*

Prereq: A course in computer programming, 121 Analytic Geometry and Calculus II.

MTH 542 Non-Euclidean Geometry. Two sem hours

Foundations of geometry and historical development. A study of hyperbolic and elliptic plane geometries. These compared with parabolic plane geometry.

Prereq: A minor in mathematics.

MTH 543 Analytic Projective Geometry. Two sem hours

Projective geometry as defined on a vector co-ordinate space. The corresponding vector algebra is studied and then adapted to the affine plane and two of its subplanes: Euclidean and Space-Time.

Prereq: An undergraduate major in mathematics.

MTH 546 Graph Theory. Two sem hours

A study of undirected and directed graphs and their structural properties including connectivity and traversability. Associated matrices, groups and relations and applications to networks.

Prereq: A minor in mathematics.

MTH 547 Geometry for High School Teachers. Two sem hours

Fundamental concepts of Euclidean and non-Euclidean geometrics, including topology. developed from a postulational point of view.

Prereq: A minor in mathematics.

MTH 548 Introduction to Differential Geometry. Two sem hours

Fundamental concepts of the theory of curves and surfaces in three-dimensional space. Applications.

Prereq: An undergraduate major in mathematics.

MTH 550 Number Theory II. Two sem hours

Basic principles and ideas of algebraic number theory: Divisibility, Algebraic Number Fields, Ideals, Arithmetic in Algebraic Number Fields, Fundamental Theorem of Algebraic Number Theory and its consequences.

Prereq: 414 Theory of Numbers or MTH 516 The Theory of Integers.

MTH 561 Modern Mathematics Content, Senior High School. Two sem hours

The modern mathematics required for teaching this subject in the senior high school: number theory, nature of proof, mathematical systems such as groups, integral domains, rings and fields, concept of isomorphism and elementary matrix theory.

Prereq: A minor in mathematics.

MTH 574 Probability. Two sem hours

Probability, expectation, variance, co-variance, distribution functions, sampling theory and other topics. *Not open to students who have credit in 470 Introduction to Mathematical Statistics I.*

Prereq: 15 hours of undergraduate credit in mathematics.

MTH 575 Statistical Problems. Two sem hours

Probability densities, mathematical expectation, multivariate distribution theory, sampling distributions, point and interval estimations, test of hypotheses, an introduction to the analysis of variance and statistical decision problems. *Not open to students who have credit in 471 Mathematical Statistics II.*

Prereq: MTH 574 Probability or 470 Introduction to Mathematical Statistics I.

MTH 576 Selected Topics in Probability and Statistics. Two sem hours

Analysis of variance and regression, Bayesian Statistics, multivariate analysis, games and decisions, non-parametric methods, sequential analysis.

Prereq: 470 Introduction to Mathematical Statistics I and 471 Mathematical Statistics II, or MTH 574 Probability and MTH 575 Statistical Problems.

MTH 577 Selected Topics in Probability and Statistics II. Two sem hours

This course will cover the following topics: design of experiments, statistical methods in operations research, stochastic processes and selected applications.

Prereq: 471 Mathematical Statistics II or MTH 575 Statistical Problems.

MTH 581 Modern Mathematics Methods, K-6. Two sem hours

Effective techniques in presenting materials, planning class activities and creating good learning situations; current problems in a modern mathematics curriculum for grades K-6.

Prereq: MTH 500 Modern Mathematics Content, K-6 or permission of the department.

MTH 583 Modern Mathematics Methods, Junior High School. Two sem hours

Effective techniques in presenting materials, planning class activities and creating good learning situations; current problems in a modern mathematics curriculum for junior high school.

Prereq: MTH 531 Modern Mathematics Content, Junior High School or permission of the department.

MTH 585 Modern Mathematics Methods, Senior High School. Two sem hours

For students lacking an undergraduate high school methods course in mathematics. *Not open to students who have credit in 306 Teaching of High School Mathematics.*

Prereq: A minor in mathematics.

MTH 586 Teaching of Modern High School Mathematics. Two sem hours

Current problems in a modern high school mathematics curriculum; recommended courses at the senior level. Content and methods; high school reform movements.

Prereq: A major in mathematics including 306 Teaching of High School Mathematics or MTH 585 Teaching of Modern High School Mathematics.

MTH 587 Enriching Instruction in Mathematics, Senior High School. Two sem hours

New teaching aids and supplementary reading materials; subject matter usually not developed in standard texts (e.g. linear programming, principles of computers and advanced geometric constructions). Topics for accelerated high school classes.

Prereq: 306 *Teaching of High School Mathematics*, MTH 585 *Modern Mathematics Methods, Senior High School* or MTH 586 *Teaching of Modern High School Mathematics* and MTH 561 *Modern Mathematics Content, Senior High School*.

MTH 591 Special Topics in Mathematics. Two sem hours (Formerly MTH 581)

- A graduate level course in a specific area of mathematics, to be determined by the field of specialization of the instructor and the interest of the students.

Prereq: *Permission of the department.*

MTH 610 Rings and Ideals I. Two sem hours

Polynomial rings, ideals and homomorphisms, imbedding theorems, prime ideals, the radical, minimal and maximal prime ideals belonging to an ideal.

Prereq: *Any course in abstract algebra.*

MTH 611 Rings and Ideals II. Two sem hours

Direct and subdirect sums, Boolean rings, rings of matrices and additional theory of ideals in commutative rings.

Prereq: *MTH 610 Rings and Ideals I.*

MTH 614 First Course in Field Theory. Two sem hours

Finite fields and finite projective geometries. Prime fields and their extensions, splitting fields, separability, irreducibility, Galois theory and the fundamental theorem of algebra.

Prereq: *MTH 518 Group Theory, MTH 610 Rings and Ideals I or equivalents.*

MTH 626 Complex Analysis I. Two sem hours

Stereographic projection and the Riemann sphere, mappings, Bolzano-Weierstrass theorem, power series and their properties, analytic functions and conformal mapping and rational functions; exponential, trigonometric, hyperbolic, logarithmic and inverse functions; paths, regions, continua and the definite integral.

Prereq: *MTH 526 Real Analysis I or 420 Advanced Calculus I and MTH 528 Introduction to Topology I.*

MTH 627 Complex Analysis II. Two sem hours

Cauchy's integral theorem and formula, uniform convergence, Taylor's series and related topics, analytic continuation, Liouville's and Casorati-Weierstrass factor theorem, meromorphic functions, Riemann surfaces and multiple-valued functions.

Prereq: *MTH 626 Complex Analysis I.*

MTH 681 The Teaching of Junior College Mathematics. Two sem hours

Current problems in a junior college mathematics program. The role of algebra and trigonometry, elementary functions, analytic geometry, the calculus and linear algebra; content and techniques of instruction. CUPM recommendations for a college program.

Prereq: *Permission of the department.*

MTH 697, 698, 699 Independent Studies. One, two, and three sem hours

A report on an approved subject in the field of mathematics, the history of mathematics or the teaching of mathematics, under the guidance of Mathematics Department staff.

Prereq: *Completion of 10 hours of graduate credit in mathematics and permission of the department.*

MUSIC

The Department of Music offers the Master of Arts degree with programs of study in conducting, music education, music literature, music theory-composition or performance. All are accredited by the National Association of Schools of Music.

A minimum of 30 hours of credit is required for the degree; 20-22 hours are earned in the Music Department, six-eight in other departments, and two in a master's degree recital, thesis or composition, depending upon the major field of study.

A major field is elected by each student after having successfully completed six hours in the Music Department, and by applying for acceptance in the area of his choice. Admission to a major field comprises formal acceptance for work toward a degree in the Music Department.

Graduate programs in music are devoted to expanding musicianship and to making available the most recent developments in the materials and techniques of music teaching at all levels.

The Music Department is currently increasing its interactions with Michigan schools and is developing new programs for the master's and specialist's degrees in music. Eastern Michigan University was a primary member of the Institute for Music in Contemporary Education under the Ford Foundation—MENC sponsored Contemporary Music Project.

For further information, apply to the director of graduate studies in music.

Admission to a program leading to the degree Master of Arts in Music requires a prior instrumental or vocal audition, placement tests and a piano proficiency examination. All new students should write the director of music admissions and scholarships well in advance of their intended registration date, to arrange these auditions and examinations.

Auditions and examinations will be held in the year 1970-71 on the following days:

Fall Semester

December 3, 1970

January 9, 1971

Summer

June 26, 1971

Spring Semester

March 17, 1971

April 15, 1971

May 22, 1971

All students accepted for private music lessons will be assessed an applied music fee at the following rates:

Music Majors:	\$60.00 per semester for all instruction.
Other University Students:	\$60.00 per semester for one-hour lessons.
	\$30.00 per semester for half-hour lessons.

I. General Courses

NOTE: All music literature and history courses except MUS 541 The Band and Its Literature, MUS 542 The Organ and Its Literature and MUS 544 Solo Song Literature are open to general University students. All 500-level courses are open to qualified seniors.

MUS 501 Masterpieces of Music. Two sem hours

Promotes interest, enjoyment and understanding of some of the important works of great composers; importance of music as a factor in human experience and as a mode of thought. *Not open to students who have a major or minor in music.*

II. Courses for M.A. in Music

A. BASIC COURSE

MUS 510 Introduction to Graduate Studies. Two sem hours

Available source materials for graduate research; research, documentation, evaluation and scholarly presentation, organizing and assembling a bibliography.

B. COMPOSITION AND THEORY

MUS 511 Survey of Harmonic Techniques. Two sem hours

Compositional and harmonic techniques and practices of major composers of the eighteenth, nineteenth and twentieth centuries.

Prereq: 202 Music Theory-Literature IV or equivalent.

MUS 513 Form and Analysis. Two sem hours

Structural principles and techniques through analysis of representative works of eighteenth, nineteenth and twentieth centuries.

Prereq: 202 Music Theory-Literature IV or equivalent.

MUS 514 Sixteenth Century Counterpoint. Two sem hours

Polyphonic techniques and forms based upon stylistic principles of the sixteenth century.

Prereq: 202 Music Theory-Literature IV or equivalent.

MUS 517 Music Composition I. Two sem hours

The creative process in music through analysis of traditional and new music; original composition in small forms illustrating various techniques and media.

Prereq: Permission of the department (may be repeated for credit).

MUS 518 Music Composition II. Two sem hours

Original composition based upon techniques of the twentieth century; composition of works of moderate length.

Prereq: MUS 517 Music Composition I or equivalent.

MUS 519 Music Composition III. Two sem hours

Original composition in larger forms with the intent of performance.

Prereq: MUS 517 Music Composition I and MUS 518 Music Composition II or equivalent.

C. LITERATURE AND HISTORY

MUS 504 America's Music. Two sem hours

The diversified styles of music made and continuously used by the people of the United States in terms of our historical cultural traditions.

MUS 531 Renaissance Music. Two sem hours

Selected works representing the forms, styles and idioms of the fifteenth and sixteenth centuries. *Open to majors and non-majors.*

MUS 532 Baroque Music. Two sem hours

Selected works representing some of the styles and idioms of the seventeenth century; works of the early and mid-eighteenth century (Bach, Handel) in the restricted viewpoint of their relationship to the preceding century. *Open to majors and non-majors.*

MUS 533 Music in the Classic Era. Two sem hours

The development of musical style and form in the classic era, principally in the works of Haydn, Mozart and Beethoven. *Open to majors and non-majors.*

MUS 534 Music in the Romantic Era. Two sem hours

The development of musical style and form in the romantic era. Intensive study of selected compositions. *Open to majors and non-majors.*

MUS 535 Music of the Twentieth Century. Two sem hours

Study of major works, composers and aesthetic systems of twentieth-century music. Selected works to be announced each time the course is offered. *Open to majors and non-majors.*

MUS 536 World Music I. Three sem hours

The study of music literature from a variety of times and cultures. Discussion of experimentation and improvisation characteristic of soloists and small groups in the history of world music. To include solo song, chamber music, madrigal, piano, lute, sitar (and other non-Western music). *Open to majors and non-majors.*

MUS 537 World Music II. Three sem hours

A continuation of the study of music from a variety of times and cultures with emphasis on large groups. To include instrumental ensembles, orchestra, band, choir, composite groups, theatrical and festival music. Discussion of the culmination of style characteristic of large groups in the history of world music. *Open to majors and non-majors.*

MUS 538 The New Music. Two sem hours

Examination of the new music; its sound sources, structures, notation, performance and perception. Listening, study, discussion and performance, covering vocal, instrumental and electronic techniques. *Open to majors and non-majors.*

MUS 540 The Symphony. Two sem hours

The symphony as an art form; a musical and historical survey of the influences, trends and styles found in examples from its inception to the present. *Open to majors and non-majors.*

MUS 541 The Band and Its Literature. Two sem hours

The history and development of the band and its music.

MUS 542 The Organ and Its Literature. Two sem hours

Organ music from its beginning to the present; types of instruments representing regional and epochal schools as they influence the structure of music and its interpretation.

Prereq: Keyboard proficiency, or previous organ performance or permission of the department.

MUS 543 The Piano and Its Literature. Two sem hours

Music for the piano from the Baroque to the present. *Open to majors and non-majors.*

MUS 544 Solo Song Literature. Two sem hours

The art song literature from the American, English, French, German and Italian repertoire, with an introduction to the literature of the arias from operas and oratorios.

Prereq: Demonstrable singing knowledge of one of the foreign languages.

MUS 545 The Opera. Two sem hours

Opera from its inception to the present day as music and theatre. *Open to majors and non-majors.*

MUS 596 Seminar: History of Jazz. Two sem hours

The origins of jazz; its roots in Afro-American culture; its development in the United States; the significance of the Negro's contribution to this unique American musical expression; the history of recorded jazz; a discussion of the major personalities and the importance of jazz in American composition. *Open to majors and non-majors.*

D. MUSIC EDUCATION

MUS 551 The General Music Class. Two sem hours

The place of music in the education of adolescents, involving methods and materials for the general music classes.

MUS 556 Development of a String Program in the Public Schools. Two sem hours

Problems related to building a public school string program; including techniques and materials. *Prereq: Permission of the department.*

MUS 558 Supervision and Administration of School Music Education Programs.

Three sem hours

Trends and practices in the teaching of vocal and instrumental music at the elementary and secondary school levels.

MUS 559 Piano Pedagogy. Two sem hours

Individual instruction; teaching problems and procedures for developing techniques; teaching materials at various levels of advancement.

MUS 652 Advanced Techniques and Materials for Vocal Music in the Elementary Schools.

Two sem hours

New materials and advanced teaching techniques in the elementary vocal music area.

MUS 653 Advanced Techniques and Materials for Developing the Secondary School Vocal Program. Two sem hours

Modern theory, techniques and materials for choral directors, vocal specialists and school music administrators; specialized instruction in their respective areas of concentration.

MUS 654 Advanced Techniques and Materials for Developing the Secondary School Band Program. Two sem hours

Current trends in techniques and materials for the high school band.

MUS 655 Advanced Techniques and Materials for Orchestras in the Secondary Schools.

Two sem hours

Selected problems and their solution pertaining to the improvement of the musical performance of the school orchestra. Major emphasis is placed on the string section and its problems.

E. PERFORMANCE

MUS 546 Collegium Musicum. One sem hour

Various ensembles of soloists-instrumental, vocal and mixed. Opportunity to perform old and new music infrequently heard. *Open to all interested students by permission of the department.*

MUS 547 Collegium Musicum. Two sem hours

Various ensembles of soloists-instrumental, vocal and mixed. Opportunity to perform old and new music infrequently heard. Credit beyond one semester hour is earned through individual projects and research. *Open to all interested students by permission of the department.*

MUS 548 Collegium Musicum. Three sem hours

Various ensembles of soloists-instrumental, vocal and mixed. Opportunity to perform old and new music infrequently heard. Credit beyond one semester hour is earned through individual projects and research. *Open to all interested students by permission of the department.*

MUS 549 Collegium Musicum. Four sem hours

Various ensembles of soloists-instrumental, vocal and mixed. Opportunity to perform old and new music infrequently heard. Credit beyond one semester hour is earned through individual projects and research. *Open to all interested students by permission of the department.*

MUS 571, 572, 573, 574, 575, 576 Applied Music (Secondary Instrument or Voice).

One sem hour each

MUS 577 Advanced Instrumental Conducting. Two sem hours

Interpretative factors and more subtle baton techniques; greater understanding of style and form through analysis of representative scores.

MUS 578 Advanced Choral Conducting. Two sem hours

Choral conducting techniques, styles and materials, organization, balance of choral groups, score reading, control of voices for blending flexibility, vocal poise and musical discipline for both church and school singing groups.

Prereq: 326 Conducting.

MUS 581, 582 583, 584, 585, 586 Applied Music (Principal Instrument or Voice).

Two sem hours each

Prereq: Audition.

MUS 595 University Summer Choir. One sem hour

Open to all students of the University by permission of the department.

MUS 596 Chamber Music: Performance Seminar. Two sem hours

Study and performance of contemporary and traditional literature for chamber music ensembles. *Open to advanced undergraduate and graduate students.*

Prereq: Permission of the department. (May be repeated for credit.)

MUS 681, 682, 683, 684, 685, 686 Performance. Two sem hours each

Open only to students concentrating in applied music, with a graduate recital required in partial fulfillment of the Master of Arts in Music degree.

Prereq: Audition.

MUS 689 Graduate Recital. Two sem hours

Required in partial fulfillment of the Master of Arts degree of those students concentrating in applied music.

F. MISCELLANEOUS

MUS 595 Choral Arts Workshop. Two sem hours

Choral workshop.

MUS 595 Band Workshop for Music Teachers. Two sem hours

MUS 595 Choir Workshop for Music Teachers. Two sem hours

MUS 595 Orchestra Workshop for Music Teachers. Two sem hours

MUS 597, 598, 599 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

MUS 697, 698, 699 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

PHYSICS and ASTRONOMY

The Department of Physics and Astronomy supervises four programs leading to the degree of Master of Science.

1. Physics (a program for the student who expects to continue towards a more advanced degree, who plans a professional career in physics or who plans to teach in a two-year college). Graduation requirements include an undergraduate and graduate combined total of 50 approved semester hours in physics and 22 approved semester hours in mathematics, as well as a research problem culminating in a written thesis. Additional requirements and information may be obtained from Dr. Walter Gessert, Graduate Adviser, Physics and Astronomy Department.

2. Physics Education (a program for the secondary school physics teacher). Graduation requirements include an undergraduate and graduate combined total of 44 approved semester hours work in physics and astronomy and 16 approved semester hours of mathematics, as well as an essay in physics, physics history or the teaching of physics. Additional requirements and information may be obtained from Dr. Walter Gessert, Graduate Adviser, Physics and Astronomy Department.

3. Physical Science (a program for teachers of physics, chemistry or physical science in small high schools). Graduation requirements include an undergraduate and graduate combined total of 60 semester hours of approved work in chemistry, physics and mathematics (including one year of calculus). Additional requirements and information may be obtained from Dr. Charles Breedlove, General Science Adviser, Physics and Astronomy Department.

4. General Science (a comprehensive program for the junior high or middle school science teacher). Graduation requirements include an undergraduate and graduate total of 70 approved semester hours work in biology, chemistry, earth science and physics. Additional requirements and information can be obtained from Dr. Charles Breedlove, General Science Adviser, Department of Physics and Astronomy.

PHY 503 Astronomy I. Two sem hours

(Formerly SC 583)

A non-mathematical descriptive course in astronomy to acquaint the teacher with the general field of astronomy. Many of the topics considered can be used in the elementary classroom. A study of the sun and its family of planets as well as the stars and nebulae in the universe beyond the solar system. Naked-eye observations of the constellations and telescopic observations of the moon, planets, double stars and clusters. *Not open to students who have credit in 303 Introduction to Astronomy.*

PHY 504 Astronomy II. Two sem hours

(Formerly SC 590)

A non-mathematical descriptive course in astronomy to increase the teacher's acquaintance with the general field of astronomy and the work of the astronomer. Many of the topics covered can be used in the elementary and junior high school classroom. The stellar system; a review of the solar system and the motions of the earth. Naked eye and telescopic observations constitute the laboratory phase of the course.

Prereq: PHY 503 Astronomy I or 303 Introduction to Astronomy or equivalent.

PHY 511 Mechanics for Teachers. Two sem hours

A study of kinematics, dynamics, gravitation and energy designed particularly for teachers of general science who have little previous experience with physics.

PHY 512 Heat and Light for Teachers. Two sem hours

A phenomenological study of heat, elementary kinetic theory, geometrical and physical optics. *Prereq or corequisite: PHY 511 Mechanics for Teachers or equivalent.*

PHY 513 Electricity for Teachers. Two sem hours

A study of electrostatics, magnetism and electronics.

Prereq: PHY 511 Mechanics for Teachers or equivalent.

PHY 520 Teaching of Physical Science. Two sem hours (Formerly SC 582)

Scientific attitudes for use with elementary pupils; the scientific method; a selected group of physical principles; simple experiments which may be used in the elementary school.

PHY 521 Physical Science for Secondary Teachers. Two sem hours

Simply constructed or easily available materials will be used to stress laboratory centered instruction in physical science at the secondary level. Topics will include properties and structure of matter, force and motion, heat, electricity, optics, conservation laws and radioactivity.

Prereq: One college course in physical science or physics.

PHY 524 Introductory Physical Science I. Two sem hours

A laboratory course; introductory materials for teachers of physical science in secondary schools. Experiments and demonstrations by class participants.

Prereq: Three laboratory courses in science or science teaching experience.

PHY 527 Introduction to the Use of Radioisotopes. Two sem hours

Properties, measurement, safe handling and dosage of radioisotopes.

Prereq: 221 Mechanics, Sound and Heat and 222 Electricity and Light or the equivalent. Not open to students who have credit in 471 Nuclear Physics.

PHY 550 New Approaches to Teaching Physics I. Two sem hours

Designed to increase the subject matter competency of those teaching or preparing to teach high school physics. Content, organization, problems and philosophy of the latest high school physics text materials.

Prereq: One year of college physics and one course in calculus.

PHY 551 New Approaches to Teaching Physics II. Two sem hours

Designed to increase the subject matter competency of those teaching or preparing to teach high school physics. The content, organization, problems and philosophy of the latest high school physics text materials.

Prereq: PHY 550 New Approaches to Teaching Physics I.

PHY 552 Supervision of the Science Program. Two sem hours

Problems in organizing, staffing and curriculum planning for the K-12 science program.

Prereq: Graduate standing.

PHY 553 Recent Science Curricular Developments. Two sem hours

Problems in development and implementation of materials, methods and content of recent curricular efforts.

Prereq: Science teaching experience and graduate standing.

PHY 580 Atomic and Nuclear Physics I. Two sem hours

Electron physics, radiation, atomic structure, x-rays, the quantum properties of waves and particles, relativity, the Bohr atom and atomic spectra, wave mechanics and the Schroedinger equation.

Prereq: One year of college physics.

PHY 581 Atomic and Nuclear Physics II. Two sem hours

Nuclear structure, radioactive decay, detection and measurement of nuclear radiation, fission, fusion, cosmic rays, production of radioisotopes in neutron howitzer.

Prereq: One year of college physics.

PHY 597, 598, 599 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

Prereq: Prior approval of the physics graduate adviser.

PHY 630 Classical Physics (Theoretical Physics I). Three sem hours
(Formerly 630 Continuum Theory of Matter)

An overall view of the theoretical structure and the experimental foundations of physics. The methods of vector calculus and related mathematics concepts are applied to mechanics, vibrations and fluid systems. Recommended for physics teaching majors.

Prereq: 430 Intermediate Mechanics I or equivalent.

PHY 631 Advanced Mechanics. Three sem hours

Provides the background required for graduate courses in electromagnetic theory and quantum mechanics, shows the power and beauty of classical physics. Topics covered include: Lagrangian formalism, Hamiltonian formalism, small vibrations, rigid bodies, canonical formalism, Hamilton-Jacobi theory, perturbation theory, continuous media.

Prereq: 431 Intermediate Mechanics II or permission of the department.

PHY 650 Electromagnetic Theory. Three sem hours

Provides the student with a foundation in the classical theory of the Maxwell field equations and indicates the many current applications. Typical topics covered are: Maxwell's equation, conservation laws, plane waves, wave guides, resonant cavities, dipole radiation, diffraction, radiation by moving charges, Bremsstrahlung, Cerenkov radiation, multipole fields, plasma electrodynamics.

Prereq: 450 Electricity and Magnetism or permission of the department.

PHY 660 Modern Physics (Theoretical Physics II). Three sem hours
(Formerly 660 Theory of Fields: Molecular Theory of Matter)

A continuation of 630 Theoretical Physics I. Topics include electromagnetic theory, relativity and quantum concepts. This course is particularly recommended for physics teaching majors.

Prereq: PHY 630 Classical Physics.

PHY 675 Relativity and Quantum Theory (Theoretical Physics III). Two sem hours

The principle of invariance and absolute velocity; implications of relativity theory; the quantum theory; wave-particle duality; the Schroedinger equation; uncertainty principle; philosophical implications.

Prereq: Mathematics 221 Analytic Geometry and Calculus IV, 430 Intermediate Mechanics I and 470 Atomic Physics. 431 Intermediate Mechanics II and 460 Heat and Thermodynamics are recommended but not required.

PHY 676 Quantum Mechanics. Four sem hours

The Schroedinger equation and its applications in three dimensions, angular momentum, electron spin, Heisenberg's matrix mechanics, Dirac notation, perturbation theories, variational methods, scattering theory.

Prereq: 475 Introduction to Quantum Mechanics.

PHY 692 Research Techniques. Two sem hours (Formerly PHY 694)

Under direction the student will study and report on a subject in physics, physics history or the teaching of physics. Laboratory research, library research or both.

Prereq: Admission to candidacy for an M.S. in physics education.

PHY 697, 698, 699 Research in Physics. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

Prereq: Undergraduate major or equivalent and permission of the department.

I. OTHER COURSES FOR CREDIT TOWARD M.S. IN PHYSICS OR PHYSICS EDUCATION

The following courses for advanced undergraduates are also available to graduate students for credit depending on the background, needs, and curriculum of the student; on this matter the student should, before completing his registration, have a clear understanding with both the dean of the Graduate School and the chairman of the Committee on Graduate Studies in the Department of Physics and Astronomy. For descriptions of these courses, see the Undergraduate Catalog.

- 430 Intermediate Mechanics I.
- 431 Intermediate Mechanics II.
- 436 Vibration and Sound.
- 440 Optics.
- 441 Modern Optics.
- 450 Electricity and Magnetism.
- 452 Electrical Measurements.
- 454 Vacuum Tubes and Their Applications.
- 455 Semiconductor Electronics.
- 456 Electronics for Science Students.
- 460 Heat and Thermodynamics.
- 462 Kinetic Theory and Statistical Mechanics.
- 471 Nuclear Physics.
- 475 Introduction to Quantum Mechanics.
- 476 Solid State Physics.
- 481 Mathematical Physics.

PSYCHOLOGY

The graduate program was initiated in 1964. The Master of Science degree is awarded in general psychology with training emphasis on theory, research methodology and problem-solving approaches. Application for admission to the graduate program in psychology must include the results of the Graduate Record Examination scores on verbal, quantitative and psychology in addition to the application materials required by the Graduate School. Students may be accepted into the program with regular status or interim status. Students are reevaluated when advancement to candidacy is required.

In order to meet the requirements for the Master of Science degree, a student must earn a total of 44 undergraduate and graduate credits in psychology which includes a minimum of 24 graduate credits with at least a B average. Twelve to fourteen of these hours are required courses which include: PSY 513 Advanced Psychological Statistics, PSY 514 Correlational Analysis or PSY 515 Analysis of Variance, PSY 510 and PSY 511 Basic Concepts of Psychology, 453 History and Systems of Psychology, PSY 516 Research Design, PSY 699 Thesis. Six hours are required in a cognate area. The remaining hours are selected by the student and his psychology adviser. All graduate students in psychology are required to have their programs approved by the graduate adviser prior to registration each semester. Requirements also include passing a comprehensive examination as well as completion of an approved master's thesis.

Students interested in the psychology graduate program should address inquiries to the Chairman, Psychology Department Committee on Graduate Studies.

PSY 501 Advanced General Psychology. Two sem hours

Readings and lectures on the major findings and development in the areas of scientific method, sensation and perception, learning and motivation, emotion, developmental, personality, psycho-pathology and social psychology. *Not open to psychology majors.*

Prereq: Graduate standing.

PSY 510 Fundamentals of Psychology. Two sem hours

Advanced readings and lectures on the major findings and recent research developments in the areas of scientific method, sensation and perception, learning and motivation and emotion.

Prereq: Major or minor.

PSY 511 Basic Concepts of Psychology. Two sem hours

Advanced reading and lectures on the major findings and recent research developments on the areas of developmental, personality, psychopathology and social psychology.

Prereq: Major or minor.

PSY 512 Statistics in Psychology. Two sem hours

The tools of descriptive statistics applied to psychological and educational research.

Prereq: One course in psychology.

PSY 513 Advanced Psychology Statistics. Two sem hours

Characteristics of families of distribution, inference of population parameters from sample statistics, hypothesis testing by parametric and nonparametric techniques, relationships of statistical methods to underlying mathematical models.

Prereq: 205 Quantitative Methods in Psychology.

PSY 514 Correlational Analysis. Two sem hours

Simple correlation and regression; special correlational techniques, including multiple correlation and factor analysis.

Prereq: 205 Quantitative Methods in Psychology or equivalent.

PSY 515 Analysis of Variance. Two sem hours

Analysis of variance techniques as related to psychological research.

Prereq: 205 Quantitative Methods in Psychology.

PSY 516 Research Design. Two sem hours

Research methods and analysis of data.

Prereq: Experimental psychology and PSY 512 Statistics in Psychology or equivalent.

PSY 519 Instrumentation for Behavioral Research. Two sem hours

Design, construction, maintenance and evaluation of apparatus for behavioral research.

Prereq: Mathematics 104 High Algebra I or equivalent.

PSY 522 Human Learning. Two sem hours

Conditioning and learning in the acquisition and modification of individual responses; theories and principles having application to personality theory, psychotherapy and education.

Prereq: One course in psychology.

PSY 524 Advanced Motivation and Emotion. Two sem hours

A review of major findings, theories and recent research developments in the areas of motivation and emotion.

Prereq: 20 hours of credit in psychology, including 301 Introductory Experimental Psychology.

PSY 526 Cognitive Processes. Two sem hours

A review of theoretical and empirical developments in the areas of thinking, problem solving, concept formation, creativity and decision making.

Prereq: 20 hours of credit in psychology, including 301 Introductory Experimental Psychology.

PSY 528 Advanced Sensation and Perception. Two sem hours

A review of research and theory dealing with sensory experience and perception.

Prereq: 20 hours of credit in psychology, including 301 Introductory Experimental Psychology.

PSY 532 Development Psychology. Two sem hours

Biological, intellectual, social and emotional changes through the life span. Major concepts and problems related to developmental stages of life.

Prereq: 20 hours of credit in psychology, including 321 Child Psychology or 322 Psychology of Adolescence.

PSY 534 Psychology of Adolescence. Two sem hours (Formerly SC 501)

Physical, intellectual, emotional and social development from puberty to adulthood with emphasis on the significance for teachers and others interested in youth.

Prereq: One course in psychology.

PSY 540 Psychology of Adjustment. Two sem hours (Formerly SC 502)

Issues, concepts, principles and theories in human adjustment.

Prereq: One course in psychology; open to majors and minors with permission of adviser.

PSY 543 Abnormal Psychology. Two sem hours (Formerly SC 560)

Behavior pathologies of children and adults, including symptom origins and methods of treatment. *Not open to students who hold credit in 360 Abnormal Psychology.*

Prereq: One course in psychology; open to majors and minors with permission of the adviser.

PSY 545 Clinical Psychology I. Two sem hours

The responsibilities and tasks of the clinical psychologist; common diagnostic tools; the clinician's role in differential diagnosis; review of major treatment approaches used by clinicians.

Prereq: PSY 512 Statistics in Psychology and PSY 543 Abnormal Psychology.

PSY 550 Dynamics of Human Behavior. Two sem hours (Formerly SC 565)

The determinants of behavior and personality with emphasis on the physiological, psychological and cultural bases.

Prereq: One course in psychology; open to majors and minors with permission of the adviser.

PSY 552 Theories of Personality. Two sem hours

Major theories of personality including Freud, Jung, Adler, Rank, Sullivan, Kelly, Holistic and learning theorists.

Prereq: One course in psychology.

PSY 553 Existential Psychology. Two sem hours

Origins, growth, major contributors and foci of concern of the existential movement(s) in psychology and psychotherapy.

Prereq: Two courses in psychology. PSY 552 Theories of Personality is recommended.

PSY 554 Theory of Psychological Testing. Two sem hours

Assumptions, rationale and statistical foundations of psychological tests used in differential diagnosis.

Prereq: 10 hours in psychology, including statistics.

PSY 555 Individual Testing I. Two sem hours

Training and supervised experience in the administration and interpretation of the WISC and WAIS Tests.

Prereq: PSY 545 Clinical Psychology I and 554 Theory of Psychological Testing.

PSY 556 Individual Testing II. Two sem hours

Training and supervised experience in Binet and special diagnostic tests.

Prereq: PSY 555 Individual Testing I.

PSY 580 Psychology of Individual Differences. Two sem hours (Formerly SC 575)

The objective and quantitative investigation of human variability in behavior phenomena and the factors influencing these differences.

Prereq: One course in psychology; open to majors and minors with permission of the adviser.

PSY 591, 592, 593 Individual Reading. One, two and three sem hours

Supervised reading of psychological literature to provide in depth understanding of a selected psychological problem.

Prereq: One course orienting student to the problem area and permission of the instructor.

PSY 595 Workshop in the Scientific Approach to Problem Solving. Two sem hours (Formerly SC 595)

The scientific approach to the solving of problems; the application of psychological principles.

Prereq: One course in psychology.

PSY 597, 598, 599 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

PSY 601 Personality Evaluation I. Four sem hours

An introduction to individual clinical tests and projective methods in the study of personality diagnosis. Includes learning to administer, score and interpret the MMPI, 16 PF, Bender-Gestalt, Draw-A-Person and Rorschach. Entails a knowledge of the clinical assessment research literature covering the reliability and validity of each testing method.

Prereq: PSY 555 Individual Testing I and permission of the instructor.

PSY 602 Personality Evaluation II. Four sem hours

This course emphasizes the integration and synthesis of a battery of clinical psychological tests as exemplified in writing a psychological report. Supervised practice is given in test administration, scoring and interpretation of test protocols administered to psychiatric patients and emotionally disturbed children.

Prereq: PSY 601 Personality Evaluation I.

PSY 697, 698, 699 Thesis Problem. One, two and three sem hours

Completion of research problem, writing thesis and defense of thesis.

Prereq: Permission of graduate adviser.

SOCIOLOGY

Program Purpose

The program in sociology leading to the degree of Master of Arts provides the basic professional preparation for advanced graduate training beyond the master's level, for teaching positions at the secondary and college levels and for positions in social agencies in Michigan and other states.

Admission Requirements

1. admission to the Graduate School of the University
2. an undergraduate major or minor in sociology with courses in statistics, methodology and theory is desirable
3. removal of deficiencies in preparation in key areas of sociology
4. scores on the Graduate Record Examination if required
5. recommendation of the Graduate Committee in Sociology

Admission to Candidacy for a Degree

With the completion of 12 hours of graduate credit including at least nine in

sociology, the department will transmit a recommendation to the dean of the Graduate School.

Course Requirements

- | | |
|--|-----------------|
| 1. SOC 530 Advanced Social Statistics. | 3 sem hr |
| SOC 535 Advanced Methods in Sociological Research. | 3 sem hr |
| SOC 540 Advanced Sociological Theory. | <u>3 sem hr</u> |
| | 9 sem hr |
| 2. Additional graduate sociology electives as approved by graduate adviser in the Sociology Department | 9 sem hr |
| 3. Independent study or thesis credit—at least two (2) hours of which must be a SOC 596 seminar | 6 sem hr |
| 4. Cognate courses in other fields, as approved by graduate adviser in the Sociology Department | <u>6 sem hr</u> |
| | 30 sem hrs* |

***NOTE:** Courses required to make up deficiencies in sociology or extra hours required by the Graduate School will be arranged with the graduate adviser in the Sociology Department and will be above and beyond (and sometimes prior to) these 30 hours of requirements.

All graduate students in sociology are required to have their program approved by the graduate adviser in the Sociology Department prior to registration each semester.

Thesis Requirement

Each student is required to write a thesis as part of the Master of Arts program in sociology (six hours of the graduate program are set aside for thesis preparation). The subject of the thesis is determined by the student and his advisers in light of the special interests of the student. The completed thesis must be approved by the department.

Financial Aid

A number of graduate assistantships, loans and grants are available.

Information

Any queries about the Master of Arts program in sociology should be addressed to the graduate adviser in the Department of Sociology.

SOC 500 Man in Society. Two sem hours (Formerly SOC 520)

Basic concepts, theory and analysis of social structures, social process and social disorganization. Not open to students who have credit in sociology.

SOC 502 Racial and Cultural Minorities. Two sem hours (Formerly SOC 576)

Racial and cultural minorities in the modern world with particular references to the Negro and to European and Oriental immigrants in the United States; racial myths, doctrines and movements; conflict and accommodation of majority and minority peoples; proposed solutions of ethnic problems. *Not open to students with credit for 214 Racial and Cultural Minorities.*

*Prereq: 105 Introductory Sociology.**

**Prerequisites may not be taken concurrently with courses for which they are required.*

SOC 503 The Family. Two sem hours (Formerly SOC 524)

Study of the family as a basic social institution. Examination of various types of family systems throughout the world, with special emphasis on the American family. *Not open to students with credit in 450 The Family.*

*Prereq: 105 Introductory Sociology or 235 Cultural Anthropology.**

SOC 504 Population. Two sem hours (Formerly SOC 557)

Population size and composition and their dynamics as basic social science data. Vital phenomena and migration. The relationship between human numbers and resources and its politico-economic implications. Population theories and policies of population control. *Not open to students with credit in 334 Population.*

*Prereq: 105 Introductory Sociology.**

SOC 505 Cultural Anthropology. Two sem hours (Formerly SOC 560)

Technology, social structure, political institutions, warfare, kinship and the family, religion and magic, art, recreation and education in the cultures of non-literate peoples. Cultural dynamics; applied anthropology. *Not open to students with credit in 235 Cultural Anthropology.*

SOC 506 Criminology. Two sem hours (Formerly SOC 526)

An examination of the types of crime and theories of criminal causation and prevention. Attention is given to functioning of police and court systems and to problems of penology, including parole. *Not open to students with credit for 206 Criminology.*

Prereq: 105 Introductory Sociology.

SOC 508 Social Psychology. Two sem hours (Formerly SOC 525)

An introductory study of the order and regularity underlying processes of human interaction; motives and attitudes, social norms and roles, the socialization process, personality and group membership. The effect of group membership upon individual behavior. *Not open to students with credit in 308 Social Psychology.*

Prereq: 105 Introductory Sociology and 101 or 102 General Psychology.

SOC 509 Culture and Personality. Two sem hours (Formerly SOC 589)

An analysis of the manner in which group and cultural factors influence the growth and change of personality. Some attention is given to the impact of personality types on group life. *Not open to students with credit in 309 Culture and Personality.*

Prereq: 105 Introductory Sociology and 101 or 102 General Psychology.

SOC 510 Theories of Criminal Behavior. Three sem hours (Formerly SOC 587)

Consideration of major theories of criminal and delinquent causation. Emphasis on sociological factors in criminal acts and the dynamics of criminal and delinquent behavior.

Prereq: At least two courses in sociology, including 206 Criminology or SOC 506 (526) Criminology.

SOC 511 Concepts of Correction. Three sem hours (Formerly SOC 588)

Contemporary correction at policies and programs in the U.S. Efficacy of law enforcement; police, courts, prisons and probation in the control of crime. Punishment, rehabilitative techniques and crime prevention.

Prereq: At least two courses in sociology, including 206 Criminology or SOC 506 (526) Criminology.

SOC 513 Social Deviance. Three sem hours

The development of deviant self conceptions; social psychological processes of group alienation and individual estrangement. Deviant behavior patterns and the development of deviant careers; theories of deviance.

Prereq: At least two courses in sociology, including 308 Social Psychology or SOC 508 (525) Social Psychology.

SOC 530 Advanced Social Statistics. Three sem hours (Formerly SOC 450)

This course will focus considerable attention on nonparametric statistics but will also examine the problem of controlling for variables in a statistical sense. Certain of the classical techniques of multivariate analysis will be included.

Prereq: 250 Elementary Social Statistics.

SOC 535 Advanced Methods in Sociological Research. Three sem hours (Formerly SOC 575)

Relationship of theory and research is stressed. Consideration of the research process as a decision-making situation both on the general level of research design and the specific level of special techniques. The process and logic of data analysis.

Prereq: 403 Modern Sociological Theory and 404 Methods in Sociological Research.

SOC 536 Qualitative Analysis. Three sem hours

An examination of the methods and techniques of qualitative analysis in sociology. Research will be conducted by class members and reviewed in seminar presentations.

Prereq: 403 Modern Sociological Theory and 404 Methods in Sociological Research.

SOC 540 Advanced Sociological Theory. Three sem hours

An analysis of contemporary theoretical schools of thought in sociology.

Prereq: 403 Modern Sociological Theory and 404 Methods in Sociological Research.

SOC 541 Theory Construction and Verification. Three sem hours

Analysis of contemporary strategies in theory, construction and verification. Problems of validity and reliability will be emphasized. *Open to non-sociology majors with permission of the instructor.*

Prereq: 403 Modern Sociological Theory and 404 Methods in Sociological Research.

SOC 545 Advanced Social Psychology. Three sem hours

This course is an in depth study of interpersonal behavior and group processes with special emphasis on the effects of group membership on individual behavior. Topics studied may include attitudes, interpersonal influence and attraction and leadership.

Prereq: 308 Social Psychology or SOC 508 Social Psychology, 250 Elementary Social Statistics and 404 Methods in Sociological Research.

SOC 551 Research in Family Interaction. Three sem hours

Review of research on family interaction, with particular emphasis on experimental observational studies. Power structure role differentiation, communication patterns and coalition formation.

Prereq: One of the following: 308 or SOC 508 Social Psychology, 450 Advanced Social Statistics or SOC 503 The Family or 402 Group Dynamics.

SOC 555 Contemporary Community Structure. Three sem hours

Theoretical perspectives in the analysis of urban communities including urban change; the development of stratification patterns and power structures and the role of various urban institutions.

Prereq: Nine hours of sociology.

SOC 556 Human Ecology and Community Development. Three sem hours

An analysis of the forms and development of the urban community; spatial and temporal patterns, organization of urban functions, rural-urban relationships and the current metropolitan trend in the U.S.

Prereq: Nine hours of sociology.

SOC 594 Supervised Field Experience. Two sem hours

Supervised internship in a community agency such as a correctional institution, human relations committee, city planning agency or in a project for the rehabilitation of persons in culturally or economically deprived segments of the community. Students are ordinarily placed for two consecutive semesters. The student is expected to derive a master's thesis from this experience.

Prereq: Permission of the graduate adviser in sociology.

SOC 595 Workshop in Crime and the Community. Two sem hours (Summer only)
(Formerly 586)

A brief, intensive exploration of specific aspects of crime and its relationship to social organization. *Not open to students with credit in 206 Criminology or SOC 506 (526) Criminology.*

Prereq: 105 Introductory Sociology.

SOC 596 Seminar in Research and Theory of Intergroup Relations. Two sem hours

An examination of empirical and theoretical issues and problems in cultural assimilation, conflict and ethnic stratification. The student will research selected topics and design empirical research proposals in his area of specific interest.

Prereq: 214 or SOC 502 (576) Racial and Cultural Minorities, SOC 535 (575) Advanced Methods in Sociological Research and permission of the graduate adviser in sociology.

SOC 596 Seminar in Problems of Criminology. Two sem hours

Guided individual and group study of contemporary theoretical issues in the field of criminology.

Prereq: Nine hours of graduate sociology and permission of the graduate adviser in sociology.

SOC 596 Seminar in Sociological Theory. Two sem hours

An intensive analysis of a selected theoretical school of thought, theoretical problem or theorist in sociology.

Prereq: SOC 540 Advanced Sociological Theory and permission of the graduate adviser in sociology.

SOC 596 Seminar in Social Psychology. Two sem hours

Advanced course in social psychology dealing primarily with new directions and controversies in the field. (The seminar will vary from semester to semester according to the interests of the students and instructor).

Prereq: SOC 545 Advanced Social Psychology or permission of the instructor.

SOC 596 Seminar in Personality and Culture. Two sem hours

An intensive study of theory and research concerning the relationship between personality patterns and socio-cultural variables; a research proposal will be prepared by each member.

Prereq: 309 or SOC 509 (589) Culture and Personality, SOC 535 (575) Advanced Methods in Sociological Research and permission of the graduate adviser in sociology.

SOC 596 Seminar in the Family. Two sem hours

Examination of theory, methodology and substantive findings in the study of the family as a basic social institution. Preparation and presentation of papers.

Prereq: 15 hours of sociology, including 450 Advanced Social Statistics or SOC 503 The Family, SOC 551 Research in Family Interaction or permission of the instructor.

SOC 596 Seminar in Community Behavior and Social Change. Two sem hours

The sociological examination of community power structures; voluntary social action groups and institutional practices; their implications for producing and reducing change.

Prereq: 15 hours of sociology, including either 306 The Urban Community, SOC 555 Contemporary Community Structure or SOC 556 Human Ecology and Community Development and permission of the graduate adviser in sociology.

SOC 596 Seminar in Ecological Theory and Methods. Two sem hours

Analysis of the theoretical implications of ecological theory for the study of functional and spatial relationships of social organizations. Emphasis on the methods of ecological research and the development of particular research problems.

Prereq: 15 hours of sociology, including either 306 The Urban Community, SOC 555 Contemporary Community Structure or SOC 556 Human Ecology and Community Development and permission of the graduate adviser in sociology.

SOC 596 Seminar in Selected Population Problems. Two sem hours

Particular problems in the techniques of demographic analysis. Population theory or population control will be studied.

Prereq: 240 Elementary Social Statistics and 15 hours of sociology, including 334 or SOC 504 Population and permission of the graduate adviser in sociology.

SOC 597, 598, 599 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a member of the Sociology faculty.

Prereq: Permission of the graduate adviser in sociology.

SPEECH and DRAMATIC ARTS

The Department of Speech and Dramatic Arts provides the following program of graduate study leading to the Master of Arts in Speech and Dramatic Arts.

I. Objective:

- A. to provide advanced preparation for the teaching of speech and dramatic arts
- B. to provide preparation for the further pursuit of advanced graduate study in speech and dramatic arts

II. Requirements for Admission:

- A. undergraduate major or minor in speech and dramatic arts
- B. regular admission to the Graduate School as described in the Graduate School Catalog
- C. acceptance by the Graduate Committee of the Department of Speech and Dramatic Arts

III. Course of Study:

- A. the completion of a minimum of at least 30 semester hours credit beyond the bachelor's degree
- B. course work to include training in research approaches and resources in speech and dramatic arts, an extra-departmental cognate and a choice of emphasis in either public address or in dramatic arts

IV. Terminal Requirements:

- A. either the successful completion of a terminal qualifying examination covering:
 - 1. public address or dramatic arts
 - 2. a selected cognate
- B. or the submission and defense of a written thesis

For further information about the graduate program in speech and dramatic arts contact Dr. John W. Sattler, head of the Department of Speech and Dramatic Arts.

I. General Courses

General courses in speech and dramatic arts are courses which, in addition to being offered for credit toward an M.A. in Speech and Dramatic Arts, are offered for the benefit of graduate students specializing in departments other than speech and dramatic arts who wish to take collateral or cognate work in the Department of Speech and Dramatic Arts. Such students, however, are not restricted to these courses; they may take any other graduate courses in speech and dramatic arts for which they have prerequisites.

SPH 501 Creative Drama. Two sem hours (Formerly DRA 501)
The theory and techniques of informal drama, improvisation and dramatic play.

SPH 502 Drama for Children. Two sem hours (Formerly DRA 502)
Theory and techniques of directing plays with and for children.

SPH 503 Play Production—Junior-Senior High School. Two sem hours (Formerly DRA 503)
Principles and techniques of play production with emphasis on problems encountered in secondary schools. Dramatic structure, play selection, directing, scene design and construction, stage lighting, make-up, costuming, properties and business management; improvement of effectiveness in both curricular and extracurricular theatre.

SPH 509 Communications for Leaders. Two sem hours (Formerly DRA 590)
Principles and techniques in effective communication; the use of communication skills in interviews, discussions, staff meetings, abstracting printed materials, bulletins, written and spoken reports.

SPH 536 Broadcast Management. Three sem hours (Formerly 327)
An analysis of station management in the areas of advertising, programming, promotion and publicity, applied research and labor relations.

SPH 537 Mass Communications. Two sem hours (Formerly SPH 522)
A study of the sociological and psychological aspects of the mass media. Special emphasis will be placed on the process and effects of mass communication with detailed study of radio and television.

SPH 538 Television Techniques for Classroom Teachers I. Two sem hours (Formerly SPH 523)
Skills and techniques needed by classroom teachers for the effective presentation of educational materials through the medium of television. Theory and practice.

SPH 548 Television Techniques for Classroom Teachers II. Two sem hours (Formerly SPH 526)
A continuation and intensification of the theoretical and practical experience in instructional television provided in SPH 538 Television Techniques for Classroom Teachers I. Laboratory hours to be arranged.

SPH 551 Theatre Planning. Two sem hours (Formerly DRA 551)
A study of the steps and considerations appropriate to the design of theatre structures with emphasis on institutional and community playhouses.
Prereq: Nine hours credit in dramatic arts or permission of the department.

SPH 582 Modern Rhetorical Theory. Two sem hours
A study of rhetorical theory developed since 1915.
Prereq: Graduate standing.

SPH 589 Discussion and Conference. Two sem hours
The principles and practice of discussion in problem solving and learning groups: conference, committee, panel, symposium and forum.

SPH 595 Workshop in Broadcasting and Film. Two sem hours
Practical experience in radio, television and film. Available to teachers and high school students interested in broadcasting.

SPH 596 Seminar in Directing Speech Activities. Two sem hours
The philosophy, organization and administration of forensic programs for those who direct or plan to direct extracurricular speech activities.

II. Specialization Courses

Specialization courses in speech and dramatic arts are courses specifically designed for students wishing credit toward the M.A. in Speech and Dramatic Arts. Such courses are open to other students, however, who have the necessary prerequisites.

SPH 552 Theatre Management. Two sem hours (Formerly DRA 552)

The materials and procedures of theatrical business management including scheduling, budgeting, accounting, ticket sales, house management, program editing and public relations.

Prereq: Nine hours of credit in dramatic arts or permission of the department.

SPH 556 Advanced Directing Lab. One sem hour (Formerly DRA 556)

Intensive scene study of selected dramatic styles and theatrical variants.

Prereq or coreq: SPH 558 Advanced Directing.

SPH 557 Advanced Acting Lab. One sem hour (Formerly DRA 557)

Intensive scene study of selected dramatic styles and theatrical variants.

Prereq or coreq: SPH 559 Advanced Acting.

SPH 558 Advanced Directing. Two sem hours (Formerly DRA 558)

Theoretical and practical considerations involved in the direction of selected nonrealistic styles of drama.

Prereq: 335 Play Direction or permission of the department.

SPH 559 Advanced Acting. Two sem hours (Formerly DRA 559)

Theoretical and practical considerations involved in the acting of selected nonrealistic styles of drama.

Prereq: 242 Fundamentals of Acting, 335 Play Direction, SPH 558 Advanced Directing or permission of the department.

SPH 560 Ancient Dramatic Theory. Three sem hours (Formerly DRA 560)

Study of the main theories regarding the nature and purpose of drama from ancient Greece to the end of the 17th century.

Prereq: 406 History of the Theatre or permission of the department.

SPH 561 Modern Dramatic Theory. Three sem hours (Formerly SPH 596)

The main theories regarding the nature and purpose of drama from the beginning of the 18th century to the present.

Prereq: SPH 560 Ancient Dramatic Theory or permission of the department.

SPH 562 American Theatre History. Two sem hours (Formerly DRA 562)

A tracing of the main currents in the history of the American theatre from its beginnings in the late 1700's to the present day.

Prereq: 406 History of the Theatre or permission of the department.

SPH 570 College Teaching of Speech. One sem hour

Theory and practice of teaching speech at the college level.

Prereq: Permission of the department.

SPH 576 Public Address. Three sem hours (Formerly SPH 596)

Critical study of the significant speeches of leading speakers with reference to their dominant issues and their influence on social and political life.

Prereq: 15 hours of credit in speech.

SPH 581 Rhetorical Theory. Three sem hours (Formerly SPH 596)

Study of the principles of rhetorical criticism.

Prereq: 15 hours of credit in speech.

SPH 584 Studies in Group Discussion, Argumentation and Persuasion.**Three sem hours (Formerly SPH 596)**

A review of contemporary research and theory in decision-making, communications and group processes with evaluation of the relation of such research and theory to current problems and practices in group discussion, argumentation and persuasion.

Prereq: 15 hours of credit in speech.

SPH 592 Research Techniques in Speech and Dramatic Arts. Two sem hours

An introduction to the nature and value of research; the research problem; basic research tools; philosophical foundations of historical, descriptive and experimental research; professional writing.

Prereq: 15 hours of credit in speech and major/graduate.

SPH 596 Seminar in Dramatic Arts for Children. Two sem hours (Formerly SPH 565)

Advanced study of the history, theory and techniques of dramatic arts for children.

Prereq: 222 Dramatic Arts for Children, 323 Creative Drama or SPH 501 Creative Drama plus 322 Theatre for Children or SPH 502 Drama for Children.

SPH 596 Seminar in Theatre History. Two sem hours (Formerly SPH 566)

This course will be concerned with a penetrating study of the theatrical activity and technology prevalent during two or more periods in world history.

SPH 596 Seminar in Design and Technical Theatre. Two sem hours (Formerly SPH 567)

An intensive study of the organic theory of theatre production with emphasis on the contributions of Craig, Appia, Bakst, Reinhardt, Jones, Simonson and BelGeddes.

Prereq: 370 Scene Design, 376 Stage Lighting, 406 History of the Theatre or permission of the department.

SPH 596 Seminar in Acting. Two sem hours (Formerly SPH 568)

Discussion in depth of outstanding representatives from the literature of the field of acting.

Prereq: Nine hours of credit in dramatic arts or permission of the department.

SPH 596 Seminar in Directing. Two sem hours (Formerly SPH 569)

Discussion in depth of outstanding representatives from the literature of the field of directing.

Prereq: Nine hours of credit in dramatic arts or permission of the department.

SPH 597, 598, 599 Independent Studies. One, two and three sem hours**(Formerly DRA 597, 598, 599)**

An intensive study of one or more problems in group direction under the direction of a University faculty member.

SPH 651 Design I. Two sem hours (Formerly DRA 651)

Intermediate consideration of the theoretical and mechanical factors governing the design of scenery for the stage.

Prereq: Six hours of credit in dramatic arts.

SPH 652 Lighting. Two sem hours (Formerly DRA 652)

A continuation of 376 Stage Lighting.

Prereq: Graduate standing.

SPH 653 Costume I. Two sem hours (Formerly DRA 653)

Intermediate study of the approaches to and the historical sources for stage costuming.

Prereq: Six hours of credit in dramatic arts.

SPH 654 Costume II. Two sem hours (Formerly DRA 654)

Problems of construction and design of period costumes for the stage with emphasis on practical application culminating in a final design and construction project.

Prereq: 377 Stage Costume: History and Theory, SPH 653 Costume I or permission of the department.

SPH 655 Playwriting I. Two sem hours (Formerly DRA 655)
Intermediate study of the approaches to and the structural composition of dramatic writing.
Prereq: Six hours of credit in dramatic arts.

SPH 656 Playwriting II. Two sem hours (Formerly DRA 656)
A continuation of 386 Dramatic Writing.
Prereq: Graduate standing.

SPH 657 Advanced Creative Drama. Two sem hours (Formerly DRA 657)
A continuation of 323 Creative Drama.
Prereq: Graduate standing.

SPH 658 Theatre for Children. Two sem hours (Formerly DRA 658)
Intermediate consideration of the theoretical and practical factors involved in play production for child audiences.
Prereq: Six hours of credit in dramatic arts.

SPH 697, 698, 699 Independent Studies. (Thesis) One, two and three sem hours
(Formerly DRA 697, 98, 699)

An intensive study of one or more problems in group direction under the direction of a University faculty member.

III. Other Courses for Credit toward Master of Arts in Speech and Dramatic Arts

The following courses for advanced undergraduates are also available to graduate students for two or three semester hours of credit each, depending upon the circumstances of the student's registration; on this matter the student should, before completing his registration, have a clear understanding with both the dean of the Graduate School and the chairman of the Committee on Graduate Studies in the Department of Speech and Dramatic Arts. For descriptions of these courses, see the Undergraduate Catalog.

Communication and Public Address

- 350 *Persuasive Speaking.*
- 356 *Argumentation and Debate.*
- 359 *Discussion and Conference.*
- 440 *Survey of Public Address.*
- 460 *Theory of Speech Criticism.*
- 485 *Theories of Speech Communication Behavior.*

Broadcasting

- 340 *Broadcasting and Film Performance Techniques II.*
- 331 *Fundamentals of Radio Production and Direction.*
- 332 *Fundamentals of Television Production and Direction.*
- 431 *Advanced Radio Production and Direction.*
- 432 *Advanced Television Production and Direction.*
- 344 *Broadcast Continuity Writing.*
- 446 *Broadcasting in Society.*

Interpretation

- 314 *Interpretation of Drama.*
- 411 *Advanced Problems in Interpretation.*

Speech Science and Pedagogy

300 *Phonetics.*

307 *The Teaching of Speech.*

Dramatic Arts

322 *Theatre for Children.*

323 *Creative Dramatics.*

335 *Play Direction.*

370 *Scene Design.*

375 *Stage Costuming and Make-up.*

376 *Stage Lighting.*

385 *Dramatic Writing.*

386 *Dramatic Writing.*

406 *History of the Theatre.*

422 *Independent Study in Dramatic Arts for Children.*

423 *Independent Study in Dramatic Arts for Children.*

424 *Independent Study in Dramatic Arts for Children.*

425 *Honors Course in Theatre.*

426 *Honors Course in Theatre.*

427 *Honors Course in Theatre.*

428 *Honors Course in Theatre.*

499 *Seminar in Theatre.*





COLLEGE OF BUSINESS

DEAN: Earl A. Roth

DEPARTMENTS

Accounting and Finance
Business Education
General Business
Management
Marketing

Two graduate programs are offered, one leading to the Master of Business Administration (MBA) degree, and the other to the Master of Business Education (MBE) degree. The former provides professional preparation for business; the latter for teaching of business subjects at secondary and community college levels.

Admission to Graduate Programs

1. A baccalaureate degree from an accredited institution.
2. An undergraduate record of above average quality.
3. Scores on Admission Test for Graduate Study in Business.
4. Six semester hours of undergraduate study each in accounting, economics, management, marketing and three semester hours each in computer science, finance and statistics. (Graduate students in business education may secure approval to substitute business writing and/or business law.)

Applicants with non-business degrees are required to remove these deficiencies by completing a maximum of 19 semester hours of graduate study in foundation courses.

5. Foreign students must provide scores on the Test of English as a Foreign Language, or equivalent.

Master of Business Administration

Program Objectives

The program is designed primarily to prepare students for careers of administrative responsibility. As such, its objective is to broaden the participant's knowledge and understanding of administration, to improve his capacity for effective decision making in business, and to facilitate his professional development.

Program Requirements (Minimum)

Basic Disciplines	12 sem hrs
Operational Areas: (Accounting, Finance, Management, Marketing)	9-12
Business Electives	3
Cognate Courses	<u>6</u>
	30 sem hrs (min)

Master of Business Education

Program Objectives

This graduate program recognizes the need for broadly educated business teachers. It is planned to qualify students for careers in the field of business education in secondary schools and in community colleges. Special opportunity is provided for students wishing to complete academic study required for vocational certification in distributive and office occupations.

Program Requirements (Minimum)

Cultural Background: (Science, Humanities, Social Sciences, Music, Art)	6 sem hrs
Business Administration, Mathematics, Economics	5-9
Business and Professional Education	<u>15-19</u>
	30 sem hrs (min)

Additional information regarding graduate study in the College of Business may be obtained from special advisers:

MBA Degree Program: Academic Advising and Counseling Center

517 Pray-Harrold
Building

MBE Degree Program: Department of Business Education

511 Pray-Harrold
Building

ACCOUNTING and FINANCE

ACC 501 Accounting Principles. Three sem hours

For students whose undergraduate major was not in business. The development of accounting principles and techniques for use as a tool in making financial decisions; an analytical rather than a procedural approach. The completion of a self-instruction, programmed text on the basic accounting process is required.

ACC 502 Financial Principles. Three sem hours

For students whose undergraduate major was not in business. Key financial problems in business management; an understanding to work effectively with financial specialists in overlapping problem areas; develops a strong base for those students who expect to return to the subject of finance and to build further competence in this area. Treatment of a limited number of key financial concepts.

Prereq: ACC 501 Accounting Principles or equivalent.

ACC 515 Accounting for School Administrators. Two sem hours

Principles, theory and procedures of public school fund accounting; accounting principles as applied to various kinds of public school funds, financial statements and reports, internal accounting control, payroll accounting, business papers and procedures. *Not open to business administration majors.*

ACC 544 Tax Accounting for International Business. Three sem hours

International accounting problems; the interaction of tax laws of the United States and of selected foreign countries.

Prereq: 344 Tax Accounting or equivalent.

ACC 573 Securities Analysis. Two sem hours

Procedures and methods of security analysis including valuation, timing, and psychological factors which influence the individual security, the industry and the securities market. Designed for individual investors and for future securities analysts and managers.

Prereq: 250 Principles of Finance and 241 Principles of Accounting or equivalent.

ACC 583 Financial Administration Policies. Two sem hours

The internal policies and problems of financial management encountered by businesses. Developing administrative insight in funds administration planning, capital structure planning, security distribution arrangements and timing, expansion financing and solvency maintenance.

Prereq: 241 Principles of Accounting and 250 Principles of Finance or equivalent.

ACC 584 Administrative Controls. Two sem hours

An interdisciplinary approach to decision making requiring accounting data; the effectiveness of accounting information. Representative problem areas include: profit planning, cash flow, make or buy, capital investment and product pricing.

Prereq: 12 hours of credit in accounting or permission of the department.

ACC 610 Accounting System Design and Installation. Three sem hours

Provides the fundamentals of developing and analyzing accounting systems to produce efficient recording optimum data processing procedures and appropriate analysis and interpretation for management, treated in the context of data processing methods. Case studies are used.

Prereq: 15 hours of credit in accounting.

ACC 664 Theory of Accounting. Two sem hours

The historical evolution of accounting and the contributions made by accounting theorists, accounting societies and governmental agencies. The evaluation and application of theories to select accounting problems.

Prereq: Undergraduate major in accounting or permission of the department.

ACC 696 Seminar in Accounting Theory and Practice. Two sem hours

An intensive study of selected problems in accounting.

Prereq: ACC 664 Theory of Accounting and MKT 592 Business Research.

ACC 697, 698, 699 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

Prereq: MKT 592 Business Research and permission of the department.

BUSINESS EDUCATION

BED 555 Teaching Data Processing. Three sem hours

Basic information in the area of storage and retrieval systems and the methodology for presenting such information.

Prereq: Permission of the department.

BED 562 Cooperative Programs in Business Education. Three sem hours (Formerly 462)

Purpose and philosophy of vocational education in the fields of distributive and office occupations. Focus on organization and administration of vocational business education under federal, state and local regulations. *Open to graduate students and seniors in business education.*

BED 568 Coordination of Cooperative Programs in Business Education. Three sem hours

To acquaint the student with the function and scope of the teacher-coordinator's duties and responsibilities. Required of all potential coordinators. Recommended for school administrators. *Open to qualified seniors in business education.*

BED 569 Foundations of Business Education. Two sem hours

Principles and developments in business education for school administrators and business teachers. The objectives and curricular patterns in business for different types of educational institutions; professional leadership and current research in the field. *Open only to graduate students.*

BED 571 Current Problems in Business Education. Two sem hours

Current problems confronting business teachers in the secondary schools. Organization and administration of business education programs; physical facilities, equipment and instructional materials; student personnel relationships. school-business relationships; evaluation of business education programs. *Open to business education majors only.*

BED 572 Administration of Business Education. Two sem hours

Analyzes administrative and supervisory duties and responsibilities. Local, state and federal programs, finance and budgeting, physical facilities, selection and placement of teaching staff, public relations and publicity, equipment selection and maintenance.

BED 595 Workshop in Business Education. Two sem hours

Modern methods, procedures and materials for improving the effectiveness of the classroom teacher in the areas of shorthand, typewriting, bookkeeping and basic business.

BED 596 Seminar in Business Education. Two sem hours

Concepts and problems of business education in secondary schools and community colleges; current literature and research supplemented by individual research in selected areas.

BED 597, 598, 599 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

BED 611 Curriculum Models in Business Education. Three sem hours

Objectives, levels and patterns of business education programs will be studied and comparisons made with recent research.

Prereq: Business education major or permission of the department head.

BED 630 Psychological Development of Office Skills. Three sem hours

Psychological techniques and procedures for developing both basic and higher levels of facility in typewriting and shorthand courses.

Prereq: Business education majors only.

GENERAL BUSINESS

GBS 501 Introductory Probability and Statistics for Business. Three sem hours

Fundamental concepts of quantitative analysis for business and economics. Emphasis on probability as a basis for statistics, probability distribution, sampling distributions, regression, correlation and time series.

Prereq: Business major.

GBS 530 Public Law of Business. Three sem hours

Examination of case law and statutory law which sets the limits on the manager's discretion in formulating and implementing policies. Major topics: Administration and the law; Unfair Trade Practices Law; Anti-trust Law; Labor Law; Securities Law.

Prereq: 303 Business Law and business major.

GBS 567 Risk and Risk Management. Three sem hours

Study of the nature of risk and the principles and methods used in risk management. Emphasis on use of insurance in handling business risks.

Prereq: Business major.

GBS 568 Administrative Communications. Two sem hours

Seminar in administrative communications covering theory, principles and practices. Applications to business research, case analyses and report writing to help student become aware of management's problems and use of communications in managing a business.

Prereq: Business major.

GBS 570 Problems in Contemporary Economics. Two sem hours

Basic business and economic problems in a free enterprise system; current economic problems. *Not open to students who have credit in economics.*

GBS 586 Quantitative Analysis for Business. Three sem hours

Business decision making; complex problems of the modern business enterprise. Quantification and measurement, statistical decision making, linear programming, game theory, inventory control, replacement decisions and various techniques of statistical optimization.

Prereq: 365 Introduction to Business Statistics and business major.

GBS 588 Managerial Economics. Three sem hours (Formerly MKT 588)

Application of analytical methods in internal and external business management problems. Methods and techniques that facilitate decision making and forward planning under conditions of uncertainty. Management, uncertainty, prediction, measurement. Selected decision making problems. Management and technique of problem analysis and evaluation.

Prereq: Business major, GBS 501 Introductory Probability and Statistics for Business or equivalent.

GBS 589 Business Conditions: Analysis and Forecasting. Three sem hours (Formerly GBS 592)

Underlying forces in the aggregative level of business activity and their implications for business policies; types of fluctuations in business activity and their relationship to business management. Methods of short term forecasting and projecting of trends.

GBS 597, 598, 599 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the directions of a University faculty member.

MANAGEMENT

MGT 501 Management of Human Resources. Three sem hours

For graduate students whose undergraduate major was not in business. An understanding of management concepts in organizational theory, human relations and administrative control.

Prereq: Open only to graduate students.

MGT 576 Business in Society. Three sem hours (Formerly GBS 576)

Intellectual and cultural foundations of business. The ideas and concepts upon which our society is based; the relationship of these concepts to the meaning of today's business.

Prereq: Business major.

MGT 585 Organization Theory and Systems. Three sem hours

The man-machine system of business enterprise; system concepts, feasibility studies, designing, planning, authorizing, installing, operating and modifying. Management decision-making concerning organizational concepts and staffing.

Prereq: Six hours of credit in management.

MGT 687 Seminar in Personnel Administration. Three sem hours

Problems actually faced by executives, line and staff, in all levels of an organization in carrying out their responsibility for personnel administration.

Prereq: Graduate standing and six hours of credit in management.

MGT 689 Problems in International Management. Three sem hours

Problems of international business involving management in foreign countries.

Prereq: MGT 585 Organization Theory and Systems.

MGT 696 Seminar in Administrative Policy. Three sem hours (Formerly MGT 596)

Policy making and administration from the viewpoint of the executive; an appreciation of the nature and origin of policies, leadership and authority. Environment influence and experience in decision making.

Prereq: 12 hours of credit in business administration.

MGT 697, 698, 699 Independent Studies. One, two and three sem hours (Formerly MGT 597,598,599)

An intensive study of a problem or group of problems under the directions of a University faculty member.

Prereq: MGT 696 Seminar in Administrative Policy and MKT 592 Business Research.

MARKETING

MKT 501 Marketing. Three sem hours

The development of skills in the analysis and resolution of management problems related to the marketing process; economic, psychological and sociological characteristics of demand for various products and markets; channels of distribution; advertising; personal selling; pricing policies; and regulation of marketing. *Open only to graduate students.*

MKT 518 Marketing Policies and Problems. Three sem hours

Analysis of current marketing problems and their implications relative to the firm's marketing mix and external economic, social, cultural, legal, and political environments.

Prereq: MKT 501 Marketing or equivalent.

MKT 592 Business Research. Three sem hours

(Formerly GBS 592)

Scientific research; basic considerations in research methodology; economic analyses. Oral and written reports.

MKT 660 International Marketing. Three sem hours

Investigation of international marketing and its role in the multinational corporation. Subjects included are appraising international market opportunities, international product, promotion, price and distribution policies and international marketing environments.

Prereq: MKT 501 Marketing or equivalent.

MKT 680 Application of Quantitative Techniques to the Marketing Process.

Three sem hours

The development of student skills in quantitative data and marketing decision-making process. Forecasting models, inventory models, transportation models, models of customer behavior and advertising models. Attention is given to problem definition, gathering data, methods of analysis and decision theory.

Prereq: MKT 501 Marketing or equivalent.

MKT 696 Seminar in Advanced Marketing Theory and Practice. Three sem hours

Selected topics of importance in marketing theory and practice. Contributions of economics, behavioral science and mathematics to the marketing process.

Prereq: MKT 501 Marketing or equivalent.

MKT 697, 698, 699 Independent Studies. One, two and three sem hours

(Formerly MKT 597, 598, 599)

An intensive study of a problem under the direction of faculty members of professional rank.

Prereq: Six hours of graduate credit in marketing.



COLLEGE OF EDUCATION

DEAN: Allen Myers

DEPARTMENTS

Educational Leadership
Educational Psychology
Guidance and Counseling
Health, Physical Education and Recreation
Special Education and Occupational Therapy

DIVISIONS

Curriculum and Instruction
Educational Media
Social Foundations

EDUCATIONAL LEADERSHIP

The program includes pre-service and in-service preparation programs in public school, community school and community college administration. Degrees currently offered include:

- Master's - Educational Administration
- Master's - Community School Administration
- Specialist's - Educational Administration

The master's degree program includes:

Administration courses	14 hours
Education courses	10 hours
Courses outside the College of Education	6 hours
Total	30 hours

All courses must be approved by an adviser assigned by the Department of Education Leadership if the student wants them to count on his program.

The specialist's degree program includes:

Administration Courses	32 hours
Applied Research and Internship	6 hours
Education courses	10 hours
Courses outside College of Education	14 hours
Total	62 hours

All courses must be approved by an adviser assigned by the Department of Educational Leadership if the student wants them to count on his program.

Admission requirements for a master's degree:

1. Admission to the Graduate School.
2. A valid undergraduate degree from an accredited four year institution of higher education.
3. A 2.5 undergraduate grade point average
or
a 2.75 undergraduate grade point average for the last 60 hours
or
a favorable test score.
4. A valid teaching certificate (for elementary and secondary school administration).

Admission requirements for the specialist program include:

1. Admission to the Graduate School.
2. A valid teaching certificate (for elementary and secondary school administration).
3. A year or more of successful educational experience.
4. Three favorable recommendations from supervisors in educational experience.
5. A 2.5 undergraduate grade point average:
or
a 2.75 (last 60 hours)
or
a favorable test score.

Course Substitutions

Must be approved by the adviser upon recommendation of the instructor primarily responsible for teaching the course.

Area of Concentration

With the approval of the student's adviser, one course may be substituted from another area if the course is administrative in nature. Such a course cannot carry more than three hours of credit.

Courses Outside the College of Education

A suggested list of courses has been prepared by the department of the University. Other courses not including methods courses may be used in this area if they are approved by the student's adviser.

Internships

Information on internships is available in the office of the Director of Internship Programs—E. Duvall

Coordinator of Advising - D. Kilanski

Advisers - M. A. in Educational Administration

G. Brower, D. Fox, C. LeTarte, J. Minzey

Advisers - M.A. in Community School Administration

C. LeTarte, J. Minzey

Advisers - Specialist in Arts in Educational Administration

E. Duvall, K. Grinstead, A. Salatino

ADM 502 Educational Organization. Two sem hours

Organization of American public schools; authority, functions and relationships of federal, state and local governments to education. Methods of organization within school districts; nongraded organizational patterns.

ADM 515 Accounting for School Business Administrators. Two sem hours

Principles, theory and procedures of public school fund accounting; accounting principles as applied to various kinds of public school funds, financial statements and reports, internal accounting control, payroll accounting, business papers and procedures. *Not open to business administration majors.* Offered cooperatively with the College of Business.

ADM 540 Community Organization. Two sem hours

An understanding of the community as a social group. Emphasis on community analysis, leadership, criteria of a good community, community change and action and community problems. *Open to teachers and community members.*

ADM 550 Adult Education. Two sem hours

(Formerly ADM 594)

Organization and administration of adult education programs for communities. *Open to nonmajors.*

ADM 553 Economics of Public Education. Two sem hours

Economic assumptions and theories of support for education; the effectiveness with which school funds are spent.

Prereq: Six hours of credit in administration.

ADM 556 The Community School. Two sem hours

The basic principles in the organization and administration of community school activities. Observations of community schools and their varied programs together with textual and research materials. The Flint Community Schools will receive particular attention. *Open to nonmajors.*

ADM 557 Community School Administration. Two sem hours

Selected problems in community school administration for students who are directors or instructors in a community school.

Prereq: ADM 556 The Community School.

ADM 562 Educational Leadership. Two sem hours

The process and function of various school leadership positions are explored including current practices, theories, and concepts of educational administration. A general course describing the role of principal, superintendent, board of education and other administrative positions in the public schools.

ADM 563 Philosophy and Purposes of the Community College. Two sem hours

An overview of the development of the two year college, its origins, major characteristics and prospects with special emphasis to philosophy and purposes. Fundamental issues identified and conflicting positions investigated. *Open to non-majors.*

ADM 566 Supervision of Instruction. Two sem hours (Formerly ADM 595)

Identification, validation and use of criteria for appraising and improving teaching and learning, with focus on the classroom; principles underlying techniques of improving instruction. *Open to nonmajors.*

ADM 583 Organization and Administration of the Community College. Two sem hours

An understanding of the two year college; its legal bases, external and internal constraints, functional patterns, administrative staff roles and responsibilities, faculty organization and authority, student participation in organizational structure. *Open to non-majors.*

ADM 587 Evaluating Educational Services. Two sem hours

Principles and procedures involved in the evaluation of: administrative and supervisory functions, the planning and management of school business affairs, the special services programs, the curriculum and auxiliary services. Public opinion and criticism, follow-up studies, standardized tests, and studies of educational change in behavior and attitudes.

ADM 596 Seminar in Administration and Supervision. Two sem hours.

A consideration of special fields and special problems in Educational Administration.

Prereq: Six hours of credit in Administration.

ADM 605 Leadership Research and Theory. Two sem hours (Formerly ADM 505)

Theories and models of administration and leadership; general theories of leader behavior. A philosophy of social change and an understanding of social action.

ADM 650 School Law for Teachers. Two sem hours

Legal principles underlying the day-to-day teaching activities; how laws operate and legal principles develop. *Open to nonmajors.*

ADM 651 Collective Negotiations in Education. Two sem hours (Formerly ADM 595)

An analysis of negotiations; issues which may be encountered by school administrators and teachers in collective negotiations in education. *Open to nonmajors.*

ADM 655 Problems in School Building Planning. Two sem hours (Formerly ADM 555)

Functional layouts and locations of school buildings in the light of recent trends toward involvement of staff and community.

Prereq: Six hours in administration.

ADM 658 School Personnel Administration. Two sem hours (Formerly ADM 558)

The basic principles of staff relationships and policies necessary for effective service and high-level morale.

Prereq: Six hours in administration.

ADM 660 School and Community Understanding. Two sem hours (Formerly ADM 593)
Interpreting the school to the community; some basic understandings in the use of the community as a laboratory to enrich the education of the child and to serve the needs of the community. *Open to nonmajors.*

ADM 671 Elementary School Principalship. Two sem hours
Educational leadership in the elementary school and school-community relations; curriculum, instruction, special services, buildings and equipment, pupil relations and personnel relations.
Prereq: Six hours in administration.

ADM 672 Junior High School Principalship. Two sem hours
Educational leadership in the junior high school and school-community relations; curriculum, instruction, special services, buildings and equipment, pupil relations and personnel relations.

ADM 673 Senior High School Principalship. Two sem hours
Educational leadership in the senior high school and school-community relations; curriculum, instruction, special services, buildings and equipment, pupil relations and personnel relations.

ADM 677 School Business Management. Two sem hours
School business procedures; budgeting, construction, purchasing, salary schedules, school indebtedness and insurance problems.
Prereq: ADM 553 Economics of Public Education.

ADM 680 Legal Aspects of Administration. Two sem hours
Operation of laws; development of legal principles; federal and state relationships to education; authority and liability of school boards, administrators and teachers; negligence, discipline and control.
Prereq: Six hours of credit in administration.

ADM 682, 683 Behavioral Science in Administration and Supervision I and II. Two sem hours
Emphasizes contributions of research in the behavioral sciences. Explores studies of psychologists, sociologists, political scientists and others that have special value in understanding such concepts as leadership, organization, power, authority, communication, innovation and decision making.

ADM 693 Practicum in Field Research. Two sem hours
Orientation to research and proposal development, development of research instruments and procedures to be used in independent study and review of the literature for the proposed research area. *Must be taken prior to Independent Studies.*
Prereq: ADM 683 Behavioral Science in Administration and permission of the department.

ADM 694 Internship in Educational Administration. Two sem hours
On-the-job training experience in an administrative job. Is completed in schools which have contracted with the University to conduct this program. Arrangements made with instructor prior to registration.
Prereq: Prior approval of the department.

ADM 696 Advanced Seminar in Administration and Supervision. Two sem hours
An intensive study of selected problems in administration and supervision.
Prereq: Eight hours in concentration area toward Specialist in Arts.

ADM 696 Advanced Seminar: School Finance. Two sem hours
Designed to acquaint students with specific areas of school finance. Probable areas for study are: (1) the capital outlay program, (2) the school bond market, (3) the bond prospectus, (4) model state foundation programs, (5) the development of sound debt management policies.
Prereq: ADM 553 Economics in Public Education.

ADM 696 Interuniversity Seminar. Two sem hours

Students from various Michigan universities will meet at Flint for eight sessions on the first Friday of the month, beginning in October. Speakers of national significance will discuss topics from fields outside of, but pertaining to vital issues in, education. *Students must apply to instructors for admission to the course prior to July 1. May be used by administration majors for cognate credit.*

ADM 697, 698, 699 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

Prereq: ADM 683 Behavioral Science in Administration and Supervision II, ADM 693 Practicum in Field Research, EDP 592 Research Techniques and permission of the department.

EDUCATIONAL PSYCHOLOGY

The purposes of the Master's degree program in Educational Psychology are (1) to provide the professional classroom teacher with a broad foundation in the areas of human growth and development, learning and educational psychology, measurement and evaluation of learning and personality dynamics, (2) to improve the teacher's competencies and skills in the understanding and the utilization of psychological theories, principles and tools and (3) to provide a foundation for the pursuit of more advanced degrees in Educational Psychology or in an allied field.

ADVISING AND SELECTION

The Graduate Committee in Educational Psychology is responsible for selection and advisement of graduate students for the programs. The evaluation and modification of the program is also the responsibility of this committee.

Following admission to the Graduate School, each applicant interested in a degree in educational psychology will be screened by the Graduate Committee. Millers Analogies test scores are required. If accepted into the program, each applicant will be assigned to a member of the committee who will serve as his adviser.

COURSE REQUIREMENTS

Foundation courses are designed to broaden and strengthen the student's understanding of the basic areas of education. Courses in the area of concentration will provide specialized competencies. Cognate courses allow each student to strengthen his background in areas of human behavior and related fields, so that he will have a sound basis on which to develop his professional skills.

In planning his program the student and his adviser will take into account the student's vocational goal, and his educational and work experience. The selection of appropriate courses and cognate fields is of utmost importance, if the student is to be maximally ready to assume professional responsibility in this field.

Foundations

8 hours

Basic Concepts in Educational Psychology
Introduction to Research
Curriculum Foundations
Social Foundations
Alternates approved by the Graduate Committee

Areas of Concentration	8 hours
Development	
Learning and Educational Technology	
Personality	
Measurement and Research	
Courses in One of the Areas of Concentration or an Approved Research Project	6 hours
Cognates (outside of the Department of Education)	6 hours
Seminar in Educational Psychology	2 hours
	<hr/>
	minimum 30 hours
Graduate Committee: Mary F. Gates, Eugene Haddan, Kishor Wahi, Wilbur A. Williams, and Israel Woronoff (Chairman).	

A. Survey

EDP 502 Basic Concepts. Two sem hours

The major areas in educational psychology; recent developments in human development, measurement and research, learning and technology and personality.

EDP 596 Seminar in Educational Psychology. Two sem hours

An overview and integration of the major concepts and theories in measurement, human development, learning and educational technology and personality. Analysis of the student's experiences in the graduate program in education psychology as it relates to his professional goals.

B. Development

EDP 500 Human Development. Two sem hours

Heredity, physiological changes and physical growth of the child. Learning differences, mental abilities and intelligence testing. The gifted and mentally limited.

EDP 501 Psychology of Adolescence. Two sem hours

Physical, intellectual, emotional and social development from puberty to adulthood with emphasis on the significance for teachers and others interested in youth.

EDP 509 Problems in Child Psychology. Two sem hours

Ways in which children may be helped to accept greater responsibility; possible approaches for reducing tensions and increasing motivation of pupils. Course content will be determined by the needs of the students and the availability of community resources.

C. Learning and Educational Technology

EDP 503 Principles of Classroom Learning. Two sem hours

Major principles of learning are examined for their applications in a classroom setting. Recent contributions are studied, and the value of learning theories for the teacher is discussed.

EDP 504 Essentials of Programmed Instruction. Two sem hours

Principles of programmed instruction are discussed, and students examine published programs and evaluate them. Students construct short programs in their areas of interest and revise and evaluate them.

Prereq: One course in educational psychology.

EDP 506 Technology of Instruction. Two sem hours

Classroom management of learning and instruction; the tools of instruction. Educational technology is more than the study of machines used in education.

Prereq: EDP 502 Basic Concepts.

EDP 508 Computer Applications in Education. Two sem hours

Computer applications in education for school administrators, teachers and others; the computer (hardware), the basic concepts of computer languages (software) and language skills to communicate with "experts." Scheduling, test scoring, record keeping, unique uses of computers for administrators, teachers and counselors.

D. Personality

EDP 505 Mental Hygiene. Two sem hours

The role and responsibility of the teacher in promoting good mental health. Factors and conditions contributing to maladjustment; the nature of mental disorders and diseases; school and agency services in their prevention and treatment. *Not open to students who have credit in 206 Mental Hygiene.*

EDP 584 Psychoanalytic Theory and Education. Two sem hours

The applicability of psychoanalytic theories and concepts to problems of education.

Prereq: EDP 500 Human Development.

E. Measurement and Research

EDP 521 Educational Statistics. Two sem hours (Formerly R&S 521)

Comprehension and understanding of statistical procedures. Areas covered include: distribution, measures of central tendency, measures of dispersion and correlation.

EDP 531 Measurement and Evaluation. Two sem hours

An analysis of educational achievement and individual prognosis. Includes a study of the construction and use of standardized and teacher-made educational tests, rating scales, questionnaires and similar devices.

EDP 551 Intermediate Statistics. Two sem hours (Formerly R&S 551)

Inferential statistics, both parametric and nonparametric; theory of hypothesis testing.

Prereq: EDP 521 Educational Statistics.

EDP 592 Research Techniques. Two sem hours (Formerly R&S 592)

Kinds of research in a variety of settings; reviewing reports of research; developing an interest in research activities. Students will present a plan for a research problem.

EDP 598 Special Project. Two sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

EDP 599, 699 Master's Project. Three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

EDP 631 Advanced Statistics: Analysis of Variance. Two sem hours (Formerly R&S 631)

Involves statistical principles in experimental design through the study of single and multifactor analyses of variance.

Prereq: EDP 521 Educational Statistics and EDP 551 Intermediate Statistics.

GUIDANCE, COUNSELING and PERSONNEL WORK

The master's program consists of three major segments: (1) foundation courses, eight hours, (2) a major sequence in guidance and counseling, 16-18 hours and (3) cognate courses, six-eight hours to be selected from the behavioral sciences with approval of an adviser. The major sequence includes the following: G&C 500 or G&C 501, G&C 510, G&C 520, G&C 540, G&C 680, and G&C 696. Additional courses from G&C offerings to complete 16-18 hours are selected with the approval of an adviser.

Students planning to enter counseling in a public school must present a valid teaching certificate or plan to earn one before completing the degree. Students who plan to counsel in other than public schools will make appropriate adjustments in their programs, with the approval of an adviser.

For information, students should contact Dr. Winton Kloosterman, chairman of graduate advising, or Dr. John G. Pappas, chairman of the Department of Guidance and Counseling. The faculty offices are located in Boone Hall, Room 113.

G&C 500 Introduction to Guidance and Counseling. Two sem hours (Formerly G&C 544)

A general course designed to present the philosophy, practice and principles underlying counseling and guidance services in schools and other agencies. It is intended to provide an overview of the counseling and guidance field as well as an introduction to the professional program for the counselor. *Not open to students who have credit in G&C 501 Guidance in the Elementary School.*

G&C 501 Guidance in the Elementary School. Two sem hours (Formerly G&C 549)

The unique contributions of guidance to the work of the classroom teacher and other staff in the elementary school are surveyed. Relationships between guidance, instruction and administration in the elementary school are explored. *Not open to students who have credit in G&C 500 Introduction to Guidance and Counseling.*

G&C 510 Counseling Principles and Practices. Two sem hours (Formerly G&C 545)

An introduction to the theory and practice of counseling. In addition to an acquaintance with various approaches to the counseling process students begin counseling contacts in a setting providing supervised and self-evaluation.

Prereq: G&C 500 Introduction to Guidance or G&C 501 Guidance in the Elementary School.

G&C 520 Standardized Group Testing. Two sem hours (Formerly G&C 547)

An introduction to the principles of psychological measurement and their application to counseling, guidance and personnel work.

Prereq: G&C 500 Introduction to Guidance and Counseling or G&C 501 Guidance in the Elementary School and EDP 521 Educational Statistics.

G&C 540 Group Guidance. Two sem hours (Formerly G&C 548)

This course affords the student an opportunity for experience in a small group. Included in the content will be the skills, techniques and materials for group methods in guidance and personnel programs.

Prereq: G&C 500 Introduction to Guidance and Counseling or G&C 501 Guidance in the Elementary School.

G&C 601 Student Personnel Services in Higher Education. Two sem hours

Overview of student personnel services in higher education; their evolution and growth; educational significance; administrative aspects; and survey of the various student services. Major emphasis will be given to role of personnel work in the educative process of students in colleges and universities, including junior and community colleges.

Prereq: G&C 500 Introduction to Guidance and Counseling and G&C 510 Counseling Principles and Practices.

G&C 610 Theories of Counseling. Two sem hours

(Formerly G&C 647)

The rationale, historical development and research underlying selected theories of counseling, with emphasis on the implications of each theory for practice. Each student is encouraged to develop a theoretical basis for his own counseling practice.

Prereq: 10 semester hours in G&C courses.

G&C 611 The Elementary School Counselor. Two sem hours

The function of the elementary school counselor, his evolving role and relationships to students, teachers, parents and special service personnel. Emphasis will be placed on techniques for the early identification of pupil's intellectual, emotional, social and physical characteristics; development of his abilities and talents; diagnosis of his learning difficulties; and early use of available resources to meet his needs.

Prereq: G&C 501 Guidance in the Elementary School and G&C 510 Counseling Principles and Practices.

G&C 612 Case Studies in Counseling. Two sem hours

An opportunity for advanced students to make an intensive study of selected counseling cases. Purpose of this study will be to acquaint students with critical areas in the counseling process and to develop professional skills which will assist in working through these areas.

Prereq: 10 Semester hours in G&C courses.

G&C 620 Individual Appraisal in Guidance and Counseling. Two sem hours

(Formerly G&C 640)

Testing and nontesting procedures, techniques and the processes of psychoeducational appraisal and their application to counseling, guidance and personnel work. Major emphasis is placed on the relevance of individual assessment to an increase in self-understanding.

Prereq: G&C 510 Guidance in the Elementary School and G&C 520 Standardized Group Testing.

G&C 621 Individual Mental Testing for Counselors. Two sem hours

(Formerly G&C 642)

An introduction to the administration, scoring and interpretation of Wechsler psychological scales. Special emphasis is placed on the use of these test results by the school counselor in elementary or secondary schools.

Prereq: G&C 520 Standardized Group Testing and G&C 620 Individual Appraisal in Guidance and Counseling.

G&C 630 Educational and Occupational Information. Two sem hours

(Formerly G&C 646)

Supplying educational-vocational information as a major guidance service; sources, organization and dissemination of such information to students.

Prereq: Six semester hours in G&C courses.

G&C 631 Dynamics of Vocational Development. Two sem hours

An in-depth study will be made of the process of vocational development in educational and other settings as it relates to general human development and the economics and sociology of work. Theoretical constructs and significant research findings will be examined. Implications will be drawn for professional workers in guidance and counseling and related to the manpower resources, locally and in the community at large.

Prereq: G&C 630 Educational and Occupational Information.

G&C 632 Vocational Rehabilitation Counseling. Two sem hours

Division of Vocational Rehabilitation: history, organization, legislation, role of the vocational rehabilitation counselor; principles and practices of vocational rehabilitation counseling; interviewing, referrals, establishing eligibility, determining vocational objectives, case reporting, adjustment counseling, selective placement and follow-up; counseling needs of physically and mentally handicapped clients; case studies and visits to rehabilitation agencies.

Prereq: G&C 630 Educational and Occupational Information.

G&C 650 Organization and Administration of Guidance Services. Two sem hours

(Formerly G&C 645)

The philosophy and principles of guidance as implemented in practice; the administration of the various special guidance services. Guidance functions of various school staff members will be considered.

Prereq: 10 semester hours in G&C courses.

G&C 651 Professional Problems of Counselors. Two sem hours

(Formerly G&C 649)

Selected problems typical to the professional activities of the school counselor are evaluated. The current and future involvement of the counselor in the total school setting is studied in depth.

Prereq: 10 semester hours in G&C courses.

G&C 680 Counseling Practicum I. Two sem hours

(Formerly G&C 643)

An introduction to supervised counseling experiences. A variety of counseling cases, criticism by other members of the class and the instructor, together with self-evaluation combine to produce greater skill and understanding of the counseling relationship.

Prereq: Permission of the Graduate Committee in Guidance and Counseling.

G&C 681 Field Work in Guidance, Counseling and Personnel Work. Two sem hours

On-the-job experiences under professional supervision that afford the student practical experience in counseling and guidance. Settings for the field work may include elementary and secondary schools, junior and senior colleges and universities, or other approved agencies.

Prereq: Permission of the Graduate Committee on Guidance and Counseling.

G&C 685 Counseling Practicum II. Two sem hours

(Formerly G&C 644)

An advanced course in supervised counseling experience.

Prereq: Permission of the Graduate Committee in Guidance and Counseling.

G&C 686 Supervision of Counseling Practicum. Two sem hours

Provides enrollees with the opportunity to supervise students in a counseling practicum experience. Includes the critiquing of tapes, leading group discussions and evaluating the growth of beginning counselors.

Prereq: Permission of the Graduate Committee in Guidance and Counseling.

G&C 694 Internship in Guidance, Counseling and Personnel Work. Eight sem hours

A supervised work experience in an approved program of counseling, guidance, pupil personnel work, student personnel services or other setting appropriate to the interest and background of the enrollee. The intern will be required to spend at least 500 clock hours on the job to satisfy the course requirement.

Prereq: Permission of the adviser.

G&C 696 Seminar in Guidance, Counseling and Personnel Work I. Two sem hours

An integrating experience for the M.A. program. Includes organization and administration of services, and other selected topics for intensive study.

Prereq: 10 semester hours in G&C courses.

G&C 697, 698 Independent Studies. One, and two sem hours

An opportunity to explore topics of interest to the student in an intensive and independent manner. Topics must be selected and an independent study pursued with the consent and supervision of a member of the faculty in guidance and counseling.

Prereq: Permission of the adviser.

G&C 699 Specialist in Arts Report. Three sem hours

A formal research paper required of each candidate for the specialist's degree in guidance and counseling. Each candidate's study will be supervised and approved by a committee consisting of the adviser and one additional member of the Graduate Committee in Guidance and Counseling.

Prereq: Permission of the adviser.

CURRICULUM AND INSTRUCTION

Graduate programs in elementary education at Eastern Michigan University are intended for professional educators seeking careers in early childhood education, elementary education and supervision.

The master's degree program in early childhood education is designed to further the student's knowledge of the preschool, nursery, kindergarten and primary years. Courses, seminars, workshops and field experiences focus on critical examination of the basic concepts of growth, development and behavior and of the multidimensional aspects of the teacher's role with children, parents, professional colleagues and community. Current practices will be evaluated in the light of theoretical foundations and relevant research findings.

The master's degree in elementary education is designed along the same basic lines. Its purpose is to provide the practicing classroom teacher with increased depth in the foundation areas as well as greater breadth in the field of elementary education.

Faculty members who may be contacted regarding these programs are: B. Borusch and R. Hoexter.

Graduate programs in secondary education at Eastern Michigan University are intended for professional educators seeking teaching and/or supervisory careers in secondary school curriculum and secondary and junior high school teaching.

The master's degree programs in secondary education provide an opportunity for emphasis on behavioral science foundations, curriculum development and instructional improvement.

The master's degree in secondary school curriculum is designed primarily for the student who wishes to attain a broader and more comprehensive understanding of the American secondary school.

The master's degree in education for secondary school teachers is designed for the graduate student who wishes to take his master's in the field of education and who also wishes to improve his teaching effectiveness in the academic areas.

The master's degree in education for junior high school teachers is designed for teachers, department heads, supervisors and principals who have a particular interest in the development and understanding of competencies for work in the junior high school and the middle school.

Faculty members who may be contacted regarding these programs are: Wm. Goldsmith, W. Russell, N. S. Morre and R. Hoexter.

CUR 504 Creative Activities in Early Elementary Education. Two sem hours

Relationship of creative activities to the development of fully functioning, integrated individuals in kindergarten and primary grades. Planning for and implementing creative activities in play, dramatization, music and art.

CUR 523 The Junior High School Curriculum. Two sem hours

(Formerly CO 561 The Junior High School)

History and philosophy of the junior high school; curriculum, provision for individual differences, modern classroom procedures, use of materials and aids of instruction, the activity program and guidance.

CUR 530 Education of the Black Man in Contemporary America. Two sem hours

This course focuses on the current problems, attitudes and opinions of black Americans and their relation to education. It is designed to help those planning teaching careers to better understand the black man in America.

CUR 532 Elementary School Children and Social Studies. Two sem hours

Current issues and controversies in the teaching of social studies in the elementary school.

CUR 540 Curriculum Foundations. Two sem hours

Curriculum content and patterns of schools in the United States. Historical and theoretical authority for the curriculum; criteria for the choice of content.

CUR 541 Curriculum—Elementary School. Two sem hours

Fundamentals of curriculum development; selected types, several basic determinants, some approaches to organization and the concept of change. In curriculum building, emphasis is placed on the role of the teacher and on the problem-census approach to defining problems.

CUR 542 Curriculum—Secondary School. Two sem hours

The development and present status of the secondary curriculum; principles of curriculum revision and some factors involved in curriculum changes. Students are encouraged to concentrate on curriculum problems present in their school system.

CUR 543 Core Curriculum. Two sem hours

An insight into the nature and techniques of core teaching.

CUR 546 The Dropout Problem. Two sem hours

An intensive review of this national problem; practical procedures based upon school and community resources for improving holding power.

CUR 553 Survey of Recent Science Curricular Developments. Two sem hours

Problems in development and implementation of materials, methods and content of recent curricular efforts.

Prereq: Undergraduate major in science and teaching experience.

CUR 566 Improving Instruction. Two sem hours

Identification, validation and use of criteria for appraising and improving teaching and learning, with focus on the classroom; principles underlying techniques of improving instruction.

CUR 567 Enriching the Early Elementary Classroom Program. Two sem hours

Types of organization of elementary classroom activities and programs in relation to behavioral goals. Uses of direct and vicarious experiences, materials and instructional techniques to develop and extend vocabulary, language, experience backgrounds, self-concepts and social learnings. Particularly beneficial for teachers working with educationally disadvantaged.

CUR 571 Teaching of Social Studies. Two sem hours

Subjects included in social studies, problems related to the presentation of materials, planning of units and types of class activities. *Not open to students who have credit in 481 and 348 Teaching Social Studies.*

CUR 584 Planning the Pre-School Environment. Two sem hours

Requirements and recommendations for personnel, physical facilities, materials and equipment to serve children in day care, nursery, pre-school and kindergarten programs. Planning for child development centers in schools and communities.

CUR 585 Kindergarten Education. Two sem hours

Basic principles and philosophy of kindergarten education; curriculum planning and curriculum materials for kindergarten children.

CUR 586 Trends and Issues in Kindergarten Education. Two sem hours

Important trends and issues affecting the education of kindergarten children.

CUR 587 Early Childhood Education. Two sem hours

Educational implications of historical, developmental and curricular research; continuity in program development; foundations and techniques for establishing cooperative home-community-school relationships for the improvement of the education of young children.

CUR 591 Supervision of Student Teachers. Two sem hours

Preparing the public school teacher to work with student teachers.

CUR 595 Teaching the Disadvantaged. Two sem hours

The problems of teaching disadvantaged children and youth in inner-city, suburban and rural schools.

CUR 595 Early American Life—Colonial Williamsburg. Two sem hours

CUR 595 Workshop in East African Studies. Two sem hours

This workshop is designed to study the culture, geography and economy as they affect education in Ethiopia, Kenya, Somalia, Tanzania, Uganda and Zambia. These countries are forming an expanded East African Economic Community.

CUR 596 Seminar in Secondary Curriculum. Two sem hours

Problems and concerns in curriculum making in junior and senior high schools; content is determined by students' interests and concerns.

Prereq: CUR 540 Curriculum Foundations, CUR 542 Curriculum—Secondary Systems and 20 hours of graduate credit.

CUR 597, 598, 599 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

CUR 696 Seminar in Elementary School Curriculum. Two sem hours

An intensive study of curriculum materials and problems in elementary schools.

Prereq: CUR 541 Curriculum—Elementary School and 20 semester hours of graduate credit.

CUR 696 Seminar: Early Childhood Education. Two sem hours

Systematic analysis of critical issues and research areas in early childhood education. Presentation of individual reports to seminar group for discussion and criticism.

CUR 696 Seminar: Reassessing Human Potential. Two sem hours

New theories regarding human potential as they influence current curriculum concepts and practices.

Prereq: CUR 540 Curriculum Foundations.

CUR 696 Seminar: Changing Process of Elementary Education. Two sem hours

Childhood education in its cultural setting; a reappraisal of objectives in an educational future which is changing rapidly.

Prereq: CUR 540 Curriculum Foundations.

READING

(Part of Curriculum and Instruction)

The graduate programs in reading are primarily designed for the preparation of specialized personnel in this field; special teachers of reading at both the elementary and the secondary levels; supervisory reading specialists, such as consultants, coordinators and supervisors; specialists for reading clinic positions, such as clinic directors and reading counselors.

Courses are also designed to aid administrators, supervisors, directors and persons in guidance and related work whose main responsibilities in schools are general in nature.

The programs at Eastern Michigan University are consistent with the "Minimum Standards for Professional Training of Reading Specialists" as defined by the International Reading Association. A student can plan a program with his adviser that will enable him to meet the State of Michigan requirements for a reading specialist.

Programs are planned within the established framework of the master's degree program in education. Adaptations are made for individual interests and needs.

The specialist's program is planned for professional personnel who have completed a master's degree program in reading identical with or equivalent to the master's program outlined by Eastern Michigan University. The program is specifically designed for personnel who wish to serve as reading consultants, reading supervisors or reading coordinators.

Persons who wish to have further information regarding these programs may contact Dr. Irene Allen, Dr. Robert Krebs, Dr. Muriel Langman or Dr. Ingrid Ylisto.

RDG 500 Foundations of Reading Development. Four sem hours (Formerly RDG 572)

History of trends in reading instruction in America; factors influencing achievement in reading; goals, critique of current methods, reading skills functional in the content areas and organization, location and evaluation skills. *This is the first course in the concentration area.*

RDG 501 Developmental Reading—Elementary. Two sem hours (Formerly RDG 591)

Objectives, approaches, materials, and techniques for reading in the elementary school classroom. Factors influencing development; fundamental skills, assessing and providing for individual strengths and needs.

Prereq: Nonmajor.

RDG 502 Developmental Reading—Secondary. Two sem hours (Formerly RDG 592)

Curricular objectives and their implementation through recommended activities, methods and materials; functional programs for disabled readers.

Prereq: Nonmajor.

RDG 560 Reading Problems of the Disadvantaged. Two sem hours

Methods, techniques and materials found effective in teaching reading to the disadvantaged; proper placement of developmental tasks; promising practices in large city school systems; compensatory education as it affects reading.

RDG 573 Programs in Language Arts. Two sem hours

Curricular objectives and their implementation through listening, speaking, handwriting, spelling and creative, narrative and expository writing; evaluative procedures and some consideration of corrective techniques.

RDG 582 The Nature of Common Reading Problems. Two sem hours

Problems of underachievement; weaknesses and deficiencies in attitudes, comprehension, word recognition and facility and flexibility in silent and oral reading; physical, psychological, environmental and educational factors.

Prereq: RDG 500 Foundations in Reading Development.

RDG 589 Developing School-Wide Reading Programs. Two sem hours

Organization of school-wide reading programs; determinants of variability; effective interrelationships and communication; roles of special reading teachers and consultants.

Prereq: Eight hours of credit in reading.

RDG 594 Internship in Reading. Six sem hours

Supervised experiences in selected school systems; major functions and problems of reading consultants and/or co-ordinators.

RDG 595 Workshops in Selected Areas. Two sem hours

RDG 595 Workshop in Providing for Individual Differences in Reading. Two sem hours

RDG 596 Seminar: The Teaching of Reading. Two sem hours

Sources, research studies and a critical examination of selected studies and investigations; evaluation of student's background in reading.

Prereq: 10 hours of credit in reading.

RDG 597, 598, 599 Independent Studies. One, two, and three sem hours

An intensive study of a problem or group of problems in the field of reading or language arts. The completed study must give evidence of the student's ability to select a problem, set it up and pursue it to satisfactory completion. *Must be done with recommendation and/or approval of a full-time member of the reading staff.*

RDG 601 Programs in Language Arts: Secondary School. Two sem hours

Curricular objectives and their implementation through listening, speaking, spelling and creative, narrative and expository writing; evaluative procedures and some consideration of corrective techniques.

RDG 660 Survey of Resources and Materials in the Language Arts. Two sem hours

Publications useful in teaching, listening, speaking, reading and writing; special-purpose reading materials such as high-interest, low-vocabulary materials, materials for the gifted, materials for bibliotherapy. Determinants of readability.

Prereq: Eight hours of credit in reading.

RDG 661 Analysis and Treatment of Common Reading Problems. Two sem hours

(Formerly RDG 661 & 662)

Survey of diagnostic procedures, formal and informal; organization and interpretation of case history and test data; determinants of prognosis, preparation of recommendations; designing individualized programs.

RDG 663 Evaluation of Reading Growth and Development. Two sem hours

Standardized and informal tests; selection, administration and interpretation, techniques for appraising achievement in listening, speaking, reading and writing. Kindergarten through 12th grade.

RDG 693 Reading Practicum I. Two sem hours

Supervised and directed experiences in teaching reading appropriate to the student's needs. The practicum student will have a group experience, developmental or remedial. The student will diagnose the strengths and weaknesses of the subjects and design treatment to develop specific skills and abilities. Approved and supervised by the reading staff professor.

RDG 693 Reading Practicum II. Two sem hours

Supervised and directed experience in teaching reading appropriate to the student's needs. The practicum student will work with an individual remedial case. The detailed case-study approach will emphasize specialized planning based upon a thorough diagnosis. Approved and supervised by the reading staff professor.

RDG 696 Seminar: The Reading Process. Two sem hours

For the research in the behavioral and medical sciences; linguistic studies; critical examination of selected studies, investigations and reports.

Prereq: 20 hours of credit in reading.

RDG 697, 698, 699 Independent Studies. One, two, and three sem hours

An intensive study of a problem or group of problems in the field of reading or language arts. The completed study must give evidence of the student's ability to select a problem, set it up and pursue it to satisfactory completion. *Must be done with recommendation and/or approval of a full-time member of the reading staff.*

EDUCATIONAL MEDIA

At the present time there are no graduate programs in either audio-visual or library science. However, a master's degree in educational media may be developed by 1972. The present offerings in educational media provide some course work leading to permanent certification and for electives in most every master's degree program in education. The course work needed for school library certification in Michigan can be obtained through a sequence of undergraduate courses only.

Courses in educational media are designed to aid administrators, supervisors, directors, technicians and teachers in all aspects of media and educational technology. There are specific courses in television, motion picture projections, production of materials and resource material classification and utilization. For those interested in courses in education media, please check with your adviser. Persons who wish further information regarding these classes may contact A. Carpenter, R. Peterson and Mrs. F. Cook.

AUDIO-VISUAL (Former Prefixes CUR)**EDM 512 Audio-Visual Instruction. Two sem hours**

A survey course for teachers and administrators in which the nature and effective use of teaching materials are considered and fully demonstrated. Provision is made for actual use of materials and equipment. *Not open to students who have credit in 344 Audio-Visual Methods in Teaching.*

EDM 522 Administration of Audio-Visual Services. Two sem hours

An analysis of the function of an audio-visual teaching materials program; the qualifications and duties of staff, the selection and evaluation of materials and equipment, unit costs, school plant requirements; the problems of developing a program and the measures for appraising its adequacy and effectiveness.

Prereq: 344 Audio-Visual Methods in Teaching or EDM 512 Audio-Visual Instruction.

EDM 524 T. V. in Education. Two sem hours

Extent and nature of experimentation in instruction by radio and television; current philosophy and attitudes toward teaching by radio and television.

EDM 526 Radio and TV in the Classroom. Two sem hours

Study and practice in the utilization and evaluation of instructional, educational and enrichment radio and television programs. Familiarization with broadcast methods and facilities. Includes utilization guidebooks and sources of materials.

EDM 595 Production of Instructional Materials—Workshop I. Two sem hours

Basic techniques in the production of a variety of teaching materials; lettering, mounting, and color application to flat pictures and graphics; projected materials of various sizes; overhead projectuals; display boards of all types.

Prereq: 344 Audio-Visual Methods in Teaching or EDM 512 Audio-Visual Instruction.

EDM 595 Workshop in Television Utilization. Two sem hours

For teachers; advanced problems in the use of television in the classroom.

Prereq: One course in television.

EDM 596 Seminar in Instructional Materials. Two sem hours

A course designed to assist the individual student in detailed study of specific problems or topics in utilization, production, selection, or administration of Instructional Materials. Visits to actual service centers, use of resource persons, etc., will be employed. A sharing of solutions and problems will be used in a seminar setting during the course.

Prereq: 344 Audio-Visual Methods in Teaching, EDM 512 Audio-Visual Instruction or permission of the department.

EDM 596 History and Appreciation of Motion Pictures and Photography. Two sem hours

A course designed to give the history of the photographic medium with the emphasis on important films and photographs and the people who created them.

Prereq: 344 Audio-Visual Methods in Teaching, EDM 512 Audio-Visual Instruction or permission of the department.

LIBRARY SCIENCE (Former Prefixes LIB)

EDM 525 Resource Materials for the Elementary School. Two sem hours

Criteria and sources for selection and purchase of books, pamphlets, periodicals and free materials for nursery school through the sixth grade. *Teachers only.*

EDM 595 Workshop in Reading Guidance for Children. Two sem hours

Reading guidance for teachers and librarians learning to meet the special needs of the individual child. Pre-school children to adolescents.

EDM 596 Seminar: The Administrator and the School Library. Two sem hours

For administrators, supervisors, beginning audiospecialists and beginning librarians; services, activities, materials and standards of a materials center in a school library.

SOCIAL FOUNDATIONS

SFD 509 International Agencies in Education. Two sem hours

The objectives, methods and materials for teaching international understanding, UNESCO, AID and other agencies involved in international education; the development of educational systems in underdeveloped nations and the relationship of education to such forces as nationalism and colonialism.

SFD 520 Education in Europe and U.S.S.R. Two sem hours (Formerly SFD 521)

A comparative analysis of selected educational systems in Europe including the U.S.S.R. Patterns, trends and problems of various phases of education such as foundation, administration, organization and curriculum are examined.

SFD 523 Education in New Nations. Two sem hours (Formerly SFD 522)

A comparative analysis of the educational systems of emerging societies. The role of education in emerging societies as well as the influence of Western educational thought and practices in non-Western societies.

SFD 524 The Development of European Education. Two sem hours

Consideration of ancient traditions as the Graeco-Roman and Hebraic-Christian and such modern forces as nationalism, democracy, science and industrialization in terms of their impact on educational development in selected European countries. Focus is upon organization, philosophy, curriculum, methods of instruction and evaluation.

SFD 525 Philosophy of Education. Two sem hours

Through a study of the development of educational thought, the student is enabled to find his way through the maze of conflicting current opinions. The course should help him to find a tenable and satisfying philosophy to guide his own educational thinking.

SFD 526 History of American Education. Two sem hours

A sound historical foundation upon which to base judgments about our present educational practice in the United States.

SFD 527 Juvenile Delinquency. Two sem hours

Nature, meaning, basic causal factors and conditions of delinquency in home, school and community; problems in personality and behavior; the juvenile court; delinquency prevention and control programs. Opportunity to study problems of particular individual interest. *Not open to students who have credit in 354 Juvenile Delinquency.*

SFD 528 Progressivism in American Education. Two sem hours

The genesis and development of pragmatism; the special contributions of Pierce, James, Mead, and Dewey; the educational theories and practices of the Progressivists Bode, Kilpatrick, Counts; present thought and new influences.

SFD 529 Sociology of Education. Two sem hours

Selected points of view and empirical studies on social organization, social change, policymaking, power and authority structures, social class system and social movements in relation to the school as an institution.

SFD 548 Workshop in British Education. Four or six sem hours

British education in its social and cultural setting. Taught at Reading, England, in cooperation with Reading University.

SFD 548 Education in Scandinavia. Four sem hours

Deals with education and the political, social and cultural systems which influence Scandinavia. Includes lectures and discussion about the types and levels of education, curriculum, administration, teaching methods. A summer program conducted annually at the University of Copenhagen in cooperation with Denmark's International Student Committee.

SFD 548 Workshop in Education in India and the Philippines. Four sem hours

An eight week program conducted in India and the Philippines in cooperation with Punjab University in India and the Philippine Women's University. Selected aspects of the education and society of the areas are examined and periods of residence are spent in India and the Philippines. The course will include lectures as well as visits to primary and secondary schools and colleges of education. Brief visits in Honolulu, Hong Kong and Bangkok are included.

SFD 562 Cultural Determinants of Learning. Two sem hours

The educational theories and practices in literate and preliterate societies as illustrative of various theories of cultural dynamics and change which relate to citizens who will be living in the twenty-first century; the relationship between culturally held values and the learning process.

SFD 593 International Understanding. Two sem hours

Available local and national resources for promoting international understanding in the classroom; selected issues in international understanding and selected school projects and programs. Resource persons will be invited to participate.

SFD 595 Workshop on India: Its Culture and Education. Two sem hours

The critical issues affecting education in selected areas of the Indian subcontinent; a sociological, political, historical and economic perspective focused on the allocation of educational resources, the reconciliation of tradition and technical education, social change and the balance between nationalism and internationalism.

SFD 595 Workshop in Group Leadership. Two sem hours

An experiential workshop in group process; analysis of group processes, functions of leadership, interpersonal relations and personal styles as influences on group development.

SFD 596 Seminar in Social Foundations II. Two sem hours

An intensive study of problems in social foundations.

SFD 612 The Logic of Teaching. Two sem hours

Philosophical analysis of concepts central to the processes of education; learning by doing, teaching as telling and the curriculum as content, knowing "that" and knowing "how."

SFD 620 Anthropology of Education. Two sem hours

An overview of the learning process in human societies, addressing universal problems of motivation, selectivity, thinking-remembering-forgetting, language and thought, value orientation and cultural sets.

SFD 621 Existentialism and Education. Two sem hours

An historical and comparative analysis of the relationship of pragmatism to existentialism; factors which affect theories and practices of American education.

SFD 622 Pragmatism and Education. Two sem hours

(Formerly SFD 622 Development of American Pragmatism)

Consideration of pragmatists' psychology, sociology, ethics, social philosophy and their influence upon educational philosophy and practices.

SFD 625 History of Educational Thought. Two sem hours

A study of the history of educational thought as a means of understanding the evolutionary process by which modern concepts of education developed.

Prereq: SFD 525 Philosophy of Education.

SFD 648 Workshop in East African Education. Four sem hours

A study of education in its social and cultural setting. Taught at Nairobi, Kenya, in cooperation with University College Nairobi and at Mogadiscio, Republic of Somalia, in cooperation with the National Teacher Education Center. *Summers only.*

HEALTH, PHYSICAL EDUCATION and RECREATION

Degree

Master of Science in Physical Education

Admission

1. bachelor's degree from an accredited institution with a major-minor in health, physical education, recreation and athletics
2. minimum of eight semester hours in the basic sciences

Requirements for the Degree

1. fulfillment of the Graduate School requirements
2. successful completion of a minimum of 30 semester hours with 20-24 hours in H.P.E.R.
3. recommendation of the departmental graduate adviser

Curriculum Requirements

Candidates will have the responsibility of scheduling conferences with their graduate H.P.E.R. adviser to complete the following:

1. CORE CLASSES 10 hours
 - a. PED 585 Physical Education in Elementary Schools
or
PED 586 Physical Education in Secondary Schools
 - b. PED 587 Philosophy of Physical Education
 - c. PED 588 Administrative Problems in Physical Education
 - d. PED 589 Advanced Physical Testing
 - e. PED 592 Research Techniques
2. PROFESSIONAL CLASSES (electives in H.P.E.R.) 10-14 hours
3. COGNATE CLASSES (electives outside H.P.E.R.) 6-10 hours

Specialist's Degree

An advanced terminal degree of 32 additional hours beyond the master's in an individual's selected area of concentration is under consideration.

Graduate Adviser in H.P.E.R.

For further information concerning graduate work in H.P.E.R. contact:
Dr. John E. Sheard
Department of H.P.E.R.

I. General Courses

PED 500-504 are designed for nonmajors and should enhance the knowledge of students from other departments.

PED 501 Problems in Community Health. Two sem hours (Formerly PED 590)
Community health problems and the forces operative in their solution; the role of the educator dealing with the health problems of his environment.

PED 502 Elementary School Health. Two sem hours (Formerly PED 557)
Elementary school personnel and the total school health program.

II. Tool Courses

PED 505 Basic Statistics. Two sem hours (Formerly PED 521)
Statistical procedures; distribution, measures of central tendency, measures of dispersion, and correlation.

PED 506 Test Construction. Two sem hours (Formerly PED 531)
Types of written tests and examinations; construction, selection and interpretation of results.

III. Athletic Courses

PED 510 Administration of Athletics. Two sem hours
Problems related to interscholastic and intercollegiate athletic programs; for administrators, supervisors, coaches and others having a part in the control of athletics.

PED 619 Problems in Training for Athletics. Two sem hours (Formerly PED 689)

Problems in the physical preparation of athletes for competition; treatment and rehabilitation following injuries.

PED 696 Seminar in Athletics I. Two sem hours

A lecture-demonstration course in the problems and techniques of advanced coaching theories; emphasis on football and track.

PED 696 Seminar in Athletics II. Two sem hours

A lecture-demonstration course in the problems and techniques of advanced coaching theories; emphasis on basketball and baseball.

IV Recreation Courses

PED 520 Trends in Community Recreation. Two sem hours (Formerly PED 510)

Recreation and the cultural aspects of communities.

PED 522 Social Recreation. Two sem hours (Formerly PED 684)

Planning and directing activities for family groups, church groups, senior citizens and school and community functions.

V. Health Courses

PED 540 School Health Trends. Two sem hours (Formerly PED 530)

Review of recent literature and research in the areas of health service and health instruction; national trends in school health.

PED 595 Health Education Workshop. Two sem hours (Formerly PED 593)

Developing concepts of health education and total health programs.

PED 595 Workshop in Sex Education. Two sem hours

Designed to provide a period of concentrated study and discussion about sex education for teachers, nurses, school administrators, clergy and interested representatives of community agencies.

PED 645 Problems in Sex Education. Two sem hours

A course designed to help school personnel improve and implement comprehensive sex education programs in the schools, K-12. The focus is on improvement of skills and techniques in teaching and program development.

PED 650 Administration of the School Health Program. Two sem hours

For principals, supervisors, coordinators, athletic directors and other personnel involved with the administration and leadership in school health programs. Current administrative theory in the implementation and improvement of school programs.

VI. Physical Education Courses

PED 548 Physical Education Travel Study Tour. Four-six sem hours

A tour of several foreign countries to study curriculums, methods of teaching, training techniques facilities and points of cultural interest related to health, physical education, recreation and athletics.

PED 561 Supervision in Physical Education. Two sem hours

Problems, relationships and procedures in the supervision of physical education programs.

PED 562 Facility Planning and Development. Two sem hours

Terminology, standards for planning, construction, use and maintenance of facilities in health, physical education, recreation and athletics.

PED 565 Problems in Intramural and Extramural Sports. Two sem hours

(Formerly PED 685)

Organization and administration of intramural and extramural sports in junior and senior high schools; practical aspects of programming for groups and individuals.

PED 570 Critical Analysis of Physical Education. Two sem hours

(Formerly PED 589)

The expanding of physical education and the physical educator; an analysis of research in the foundation sciences and in philosophy.

PED 585 Physical Education in Elementary Schools. Two sem hours

(Formerly PED 555)

Curriculum development, teaching methods, program planning and evaluation for the physical educator and the elementary school teacher; purposes and principles of organization and development of a physical education program for elementary schools.

Ped 586 Physical Education in Secondary Schools. Two sem hours

(Formerly PED 556)

Developing a physical education curriculum for secondary schools; problems involved in supervision.

PED 587 Philosophy of Physical Education. Two sem hours

(Formerly PED 687)

The development of concepts of physical education and their impact on the society in which we live.

Prereq: Major/minor.

PED 588 Administrative Problems in Physical Education. Two sem hours

The case study approach to the understanding of problems in physical education and athletics; planning, organizing, developing, staffing, coordinating, and budgeting programs.

Prereq: Major/minor.

PED 589 Advanced Physical Testing. Two sem hours

(Formerly PED 686)

The application and interpretation of advanced physical tests in the areas of health, physical education, recreation and athletics.

Prereq: Major/minor.

PED 660 Motor Learning and Development. Two sem hours

A study of the development of motor skills in children as related to their age and growth patterns with an investigation of major theories and research in learning as applied to motor skills.

PED 670 Current Problems in Physical Education. Two sem hours

Identification, discussion and analysis of current problems and issues which confront the physical educator.

Ped 678 Comparative Physical Education. Two sem hours

(Formerly PED 688)

The historical heritage of physical education from early Greek civilization to the present. Comparative studies of aims, objectives and programs of ancient and modern cultures.

VII. Research Courses

PED 592 Research Techniques. Two sem hours

(Formerly PED 594)

Research in a variety of settings; reviewing published research, participating in research, presenting a plan for a research problem.

PED 595 Workshop in Total Activity. Two sem hours

Physiological aspects of man related to his involvement in everyday activities in the modern accelerated pace of life.

PED 595 Workshop in Movement Education. Two sem hours

A period of concentrated study, observation and actual participation in methods and content areas in movement education for both elementary and secondary schools; of value to all elementary and secondary generalists or specialists interested in motor development.

PED 595 Workshop in Gymnastics. Two sem hours

The development and improvement of gymnastics as a major area of physical education in the schools; the continuity and progression of gymnastic skills from grades one through twelve and current trends in theory and practice. Lectures, demonstrations and discussions.

PED 596 Seminar in Current Literature Analysis. Two sem hours

A critical analysis of recent literature and research in physical education and athletics. Emphasis is placed on the interpretation of practical data which are likely to have the greatest influence on programs, procedures and practices.

PED 596 Seminar in International Physical Education. Two sem hours

A continuation of PED 678, studying additional selected countries. A comparative analysis of physical education, recreation and sports of each country in depth, using the seminar approach.

Prereq: PED 678 Comparative Physical Education.

PED 596 Seminar in Modern Dance. Two sem hours

A concentrated study of the teaching of modern dance in the secondary school, including technique and composition.

PED 597, 598, 599 Independent Studies. One, two, and three sem hours

An intensive study of a problem under the direction of a University faculty member.

Prereq: PED 592 Research Techniques or equivalent.

PED 695 Workshop: Trends in Physical Education. Two sem hours

Basic issues and current trends in physical education and its related areas; local and national programs.

Prereq: Graduate major.

PED 695 Workshop in Physical Fitness. Two sem hours

Current theories and practices in the development of physical fitness in our society; evaluation of school programs.

Prereq: Graduate major.

PED 696 Seminar in Physical Fitness. Two sem hours

A study of the literature and materials pertinent to the teaching of fitness. Particular attention is given to the implementation of programs of fitness within the school and community.

PED 696 Seminar in Motor Skills. Two sem hours

An investigation of factors having a significant effect upon the acquisition of motor skills. Attention is directed in turn to the learner, the educational setting and the teacher.

PED 697, 698, 699 Independent Study. One, two, and three sem hours

A research study organized and developed by the specialist's degree candidate under the supervision of an approved faculty member. The research project may continue for a second semester with the end product a single treatise.

Prereq: Permission of graduate adviser.

SPECIAL EDUCATION and OCCUPATIONAL THERAPY

The Graduate School at Eastern Michigan University offers a program in special education leading to a master's degree and a specialist's degree. The degree program is pursued through a number of avenues in addition to regular course work. There are opportunities for field studies, workshops, independent studies, internships and research projects.

The primary emphasis of the master's degree program is in developing proficiency in classroom teaching and a better understanding of the individualized programs necessary for successful educational experiences for the exceptional child.

Master's degree students wishing to qualify for teaching in an area of special education (i.e. mentally retarded, orthopedically handicapped, deaf and hard of hearing, emotionally disturbed, visually handicapped, occupational therapy or speech correction) may pursue a certification program on the graduate level. Those who have obtained certification on the undergraduate level are encouraged to further their understanding of a particular field of specialization or to obtain additional knowledge in one or more areas of exceptionality.

The minimum degree requirement does not guarantee certification, and the meeting of certification standards is not to be construed as the completion of the University special education equivalents. Graduate programs are planned on an individual basis, and students should seek the advice of department counselors when necessary.

The specialist's program is open to qualified students who have met certification standards, have teaching experience, and possess a master's degree. Three general areas are emphasized at this level of study: administration, supervision and curriculum development and classroom teaching. Curricular requirements include a general core of theoretical and specialized courses, seminars, independent studies and an internship in the field of interest and specialty.

In addition to the more specific courses that are offered for special education majors, the graduate program offers a number of general courses that are open to regular classroom teachers and other nonmajors. These courses are designed to provide a student with better understanding of the child with problems who might be found in any classroom.

For further information, contact the graduate adviser, Department of Special Education, 487-3300.

A. General Courses

SGN 506 Education of Exceptional Children. Two sem hours

Problems and methods involved in the adjustment and training of exceptional children in the school, e.g., the mentally retarded, the gifted, the deaf, the blind, the emotionally unstable and the delinquent. *Not open to students who have credit in 251 Education of Exceptional Children.*

SGN 513 The Slow-Learner in the Classroom. Two sem hours

Adjusting the curriculum for slow-learning children; problems of identification, methods and materials, curriculum modifications and remedial techniques. *Not an equivalent of or a substitute for SMH 558 Education of the Mentally Handicapped I and SMH 559 Education of the Mentally Handicapped II.*

SGN 514 Measurement and Diagnosis in Special Education. Two sem hours

Psychological evaluation and assessment; the role of tests in the assessment of intellectual capacity, educability, emotional adjustment and visual and auditory limitations.
Prereq: SGN 506 Education of Exceptional Children.

SGN 515 Social Psychology of the Handicapped. Two sem hours

Principles of social psychology which influence handicapped individuals and their environment; society as it affects handicapped individuals; and individuals as they affect society.
Prereq: SGN 506 Education of Exceptional Children.

SGN 519 Administration and Supervision of Special Education. Two sem hours

Organizing or improving a program for exceptional children; philosophical, legal and practical aspects.

Prereq: SGN 506 Education of Exceptional Children and six hours of credit in special education.

SGN 520 Family-School Relationships in Special Education. Two sem hours

Discovering and analyzing the home problems which have educational implications for the child.

SGN 561 Education of Gifted Children. Two sem hours

The identification of gifted students; the use of test results, psychological services and cumulative records. Curricula stressing enrichment and acceleration and the use of community resources. Of special value to classroom teachers.

SGN 569 Occupational Information in Special Education. Two sem hours

Experiences in securing information of cultural, social, educational and occupational opportunities in the community for exceptional children. Visits to industry, community, service agencies and educational institutions.

Prereq: SGN 506 Education of Exceptional Children.

SGN 595 Education of the Disadvantaged Child. Two sem hours

Problems and techniques related to the education of disadvantaged children. An overview of the sociological, medical and psychological problems as they relate to the deprived child in both metropolitan and rural areas.

SGN 597, 598, 599 Independent Studies. One, two, and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

SGN 605 Rehabilitation Counseling in Special Education. Two sem hours

Designed to integrate the theories and practices of social psychology, physical reconstruction, special education and vocational guidance as they relate to life planning for the physically handicapped.

Prereq: Major/minor.

SGN 694 Internships.

SGN 696 Interdisciplinary Seminar in Special Education. Two sem hours

An intensive study of selected problems in special education. *Open only to majors in special education.*

SGN 697, 698, 699 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

B. MENTALLY HANDICAPPED

SMH 507 Contemporary Problems in Mental Retardation. Two sem hours

Contemporary issues and problems relating to the mentally retarded; institutionalization, sterilization, euthanasia, the parent movement, federal legislation, demonstration project and current research.

SMH 555 Physical Education and Recreation for the Mentally Handicapped. Two sem hours

Physical education programming and curriculum for the retarded. Physical training and its relation to learning.

Prereq: SGN 506 Education of Exceptional Children.

SMH 557 Mental Deficiency. Two sem hours

The nature and causes of mental deficiency; characteristics and social control of mental defectives. Opportunities are provided for observation and clinical studies. *Not open to students who have credit in 350 Mental Deficiency.*

SMH 558 Education of the Mentally Handicapped I. Two sem hours

Selection and preparation of curriculum materials for mentally handicapped children; the methods and devices used in presenting this material. Opportunities provided for functional experiences.

Prereq: SGN 506 Education of Exceptional Children. Not open to students who have credit in 357 Education of the Mentally Handicapped I.

SMH 559 Education of the Mentally Handicapped II. Two sem hours

Educating the mentally handicapped in the intermediate program, and the techniques and methods in preparing and utilizing a curriculum adapted to the child's needs and abilities.

Prereq: SMH 558 Education of the Mentally Handicapped or taken concurrently. Not open to students who have credit in 358 Education of the Mentally Handicapped.

SMH 565 Habilitation of the Trainable Mentally Retarded Child. Two sem hours

Habilitation and education of the trainable retarded child; philosophy and objectives, classroom management and procedures, program coordination and evaluation, parent counseling, professional personnel, legislation, housing, transportation, sheltered workshop and other ancillary services.

SMH 568 Secondary Education of the Mentally Handicapped. Two sem hours

A program of functional education for mentally handicapped children in the junior-senior high school age group; vocational, occupational and terminal education.

Prereq: SGN 506 Education of Exceptional Children.

SMH 596 Seminar in Mental Retardation. Two sem hours

Focuses on the various problems related to mental retardation and the sociological and psychological theory as applied to the field. Students are expected to propose, analyze and conduct research from reviews of the literature and applied field study problems.

C. LEARNING DISABILITIES

SLD 567 Education of Children With Learning Disabilities. Two sem hours

(Formerly LE 567 Education of the Brain-Injured Child)

Planning and effecting educational programs for brain-injured children who have disturbances in perception, thinking and emotional behavior. Pathology of the central nervous system; teaching techniques, classroom management, case studies, research and teacher-child and parent relationships.

Prereq: SGN 506 Education of Exceptional Children. Not open to students who have credit in 468 Education of the Brain Injured Child.

D. EMOTIONALLY DISTURBED

SED 511 Methods and Curriculum for Emotionally Disturbed. Two sem hours

Curriculum materials, methods, and techniques for educating the emotionally disturbed child.

Prereq: SED 519 Emotionally Disturbed Children.

SED 512 Organization of Programs for the Emotionally Disturbed. Two sem hours

Program variations and their adaptations for the education of emotionally disturbed children; the theoretical and philosophical foundations of programs; behavior management techniques, teacher role, and professional relationships.

Prereq: SED 519 Emotionally Disturbed Children.

SED 519 Emotionally Disturbed Children. Four sem hours

Dynamics of individual behavior; theories of emotional behavior in children illustrated by case materials and excerpts from psychotherapy.

Prereq: 360 Abnormal Psychology.

SED 563 The Emotionally Disturbed Child in the Regular Classroom. Two sem hours

For regular classroom teachers who do not have training in dealing with the emotionally handicapped child. The behavior of disturbed children, techniques for dealing effectively with symptomatic behavior; a case study analysis of children being taught by individuals electing the course. This course does not apply toward certification to teach emotionally handicapped children in special educational programs.

Prereq: Regular classroom teacher. Others with permission of the instructor.

SED 583 Preclinical Experiences.

Provides 120 clock hours of contact with emotionally disturbed, but those who have worked with disturbed children may have this requirement waived by presenting a statement from a supervisor. Arrangements for this requirement are made through Prof. Caputo's office.

SED 596 Seminar in the Emotionally Disturbed Child. Two sem hours

All recipients of fellowships, as well as other graduate majors in the program for teachers of the emotionally disturbed, are now required to elect this seminar during their graduate work. Course consists of a review and discussion of some contemporary issues in the education of the disturbed, following which students elect areas for more intensive exploration through library study or actual data gathering. Students present their results and conclusions to the group in a discussion setting.

SED 603 Therapeutic Management of Emotionally Disturbed Children. Two sem hours

Techniques in dealing with emotionally disturbed children; surface manipulation of behavior and life space interview.

Prereq: SED 519 Emotionally Disturbed Children and presently working with children.

SED 696 Psychological and Educational Techniques for Emotionally Disturbed.

Two sem hours

Advanced course for graduate students in the area of emotionally disturbed. Variations in educational programming for the disturbed and socially maladjusted are discussed. Each student is required to work individually with a disturbed or maladjusted child to make an analytical, educational evaluation of the child's learning needs and to implement this analysis in a tutorial relationship with the child.

Prereq: SED 511 Methods and Curriculum for Emotionally Disturbed and SED 512 Organization of Programs for the Emotionally Disturbed.

E. PHYSICALLY HANDICAPPED

SPH 510 Education and Treatment of Cerebral Palsied Children. Two sem hours

An interpretation of the cerebral palsied child; types of cerebral palsy. The problems of education and treatment; opportunity is provided to observe children in the classroom and treatment room.

Prereq: SGN 506 Education of Exceptional Children.

SPH 536 Methods of Teaching Physically Handicapped Children. Two sem hours

Educational and psychological needs of crippled children; teaching techniques to meet these needs, and problems that arise in group adjustment. Observation and laboratory are required.

SPH 537 Pathology of the Physically Handicapped. Two sem hours

Orthopedic disabilities, cardiac and other handicapping conditions of children; structure and function of the human body as it relates to these disabilities. Laboratory period and case studies are required.

Prereq: SGN 506 Education of Exceptional Children.

SPH 538 Therapeutic Care of the Physically Handicapped Child. Two sem hours

Medical and surgical aspects of the orthopedic and other handicapped conditions of children; therapies and services used in their rehabilitation. Opportunity for observation of children is available.

Prereq: SGN 506 Education of Exceptional Children.

F. SPEECH CORRECTION

SPA 500 Introduction to Speech Correction. Two sem hours

The more important problems of speech, their causes and the remedial procedures which the classroom teacher may employ. Disorders of articulation. *Not open to students who have credit in 241 Introduction to Speech Correction.*

SPA 502 Introduction to Audiology. Two sem hours

Structure and functions of the auditory mechanisms. Included is a study of sound as the auditory stimulus; anatomy and physiology of the hearing mechanisms; diseases of the ear and treatment; pure tone audiometry.

SPA 504 Anatomy of the Speech and Hearing Mechanisms. Two sem hours

The anatomy and physiology of normal speech production and auditory reception; the physical processes of speaking and listening as dynamic, interdependent processes.

SPA 506 Applied Phonetics. Two sem hours

The International Phonetic Alphabet; physiology of sound production, ear training and broad transcription of normal and deviant speech.

SPA 515 Speech Pathology. Two sem hours

Etiology, diagnosis and treatment of functional and organic speech disorders. Defects of loudness, pitch and quality.

Prereq: SPA 500 Introduction to Speech Correction, SPA 504 Anatomy of the Speech and Hearing Mechanisms and SPA 506 Applied Phonetics.

SPA 516 Speech Pathology Lab. Two sem hours

Supervised clinical experience in diagnosing speech problems. Directed observation and practice in obtaining a case history; testing articulation; diagnosing retarded speech, stuttering and voice; testing for cleft palate, cerebral palsy and aphasia.

Prereq: Concurrent enrollment in SPA 515 Speech Pathology.

SPA 518 Directed Observation. One sem hour

Observation and evaluation of the methods and materials used in treating speech and hearing disorders. Opportunity for supervised clinical practice.

Prereq: SPA 515 Speech Pathology and concurrent enrollment in SPA 520 Speech Correction Clinical Methods I.

SPA 520 Speech Correction Clinical Methods I. Two sem hours

Diagnosis and treatment of functional articulatory problems, stuttering, language impairment and functional voice disorders.

Prereq: SPA 515 Speech Pathology.

SPA 521 Speech Correction Clinical Methods II. Two sem hours

Treatment of speech disorders associated with cerebral palsy, cleft palate, hearing losses and mental handicaps.

Prereq: SPA 520 Speech Correction Clinical Methods I.

SPA 522 Speech Correction Clinical Practice I. Two sem hours

Supervised clinical experience with children and adults in an individual and group setting. Functional articulation and voice disorders and rhythm problems.

Prereq: Concurrent enrollment in SPA 521 Speech Correction Clinical Methods II.

SPA 523 Speech Correction Clinical Practice II. Two sem hours

Clinical experience with speech disorders associated with organic impairment; problems of children with cerebral palsy, cleft palate, hearing losses and mental handicaps.

Prereq: SPA 522 Speech Correction Clinical Practice I.

SPA 524 Speech Correction Clinical Practice III. Two sem hours

A minimum of 30 clock hours of supervised clinical experience with a variety of speech and hearing disorders.

Prereq: 343 and 344 Clinical Practice in Speech Correction I and II.

SPA 532 Psychology of Speech and Hearing. Two sem hours

Speech, language and hearing as a part of child development; social and emotional implications of communication disorders.

SPA 536 Audiometric Testing. Two sem hours

Advanced techniques of testing the auditory function. Consideration is given to interpretation of audiograms, hearing aid evaluations and use of differential hearing assessment techniques for children and adults with hearing disorders.

Prereq: SPA 502 Introduction to Audiology.

SPA 537 Clinical Practice in Hearing Testing. Two sem hours

Supervised practice in hearing testing, including aid and bone conduction, special procedures and speech audiometry.

Prereq: SPA 536 Audiometric Testing.

SPA 538 Clinical Practice in Hearing Therapy. Two sem hours

Supervised practice in auditory training and lip-reading with children and adults.

Prereq: SDH 554 Auditory Training and Speech Reading for the Deaf and Hard of Hearing.

SPA 550 Articulation. Two sem hours

A critical examination of the assumptions underlying the etiological, symptomatological and therapeutic rationales currently used in articulation therapy and research.

Prereq: Undergraduate major in speech correction.

SPA 552 Voice. Two sem hours

A study of the etiology, diagnosis and treatment of functional and organic voice disorders. Defects of loudness, pitch and quality will be considered.

Prereq: Undergraduate major in speech correction.

SPA 554 Stuttering. Two sem hours

Causation, symptomatology and remedial procedures of stuttering; specific therapy procedures in the clinic, the school and the home.

Prereq: Undergraduate major in speech correction.

SPA 556 Anatomy of the Head, Neck and Trunk. Two sem hours

Detailed study of the skeletal, neurological, physiological and muscular system of the head, neck and trunk with special emphasis on the speech mechanism. Laboratory dissection will be a part of the course.

Prereq: SPA 504 Anatomy of the Speech and Hearing Mechanisms or equivalent. Undergraduate major in speech correction.

SPA 558 Language Therapy. Two sem hours

Incorporating newly acquired or recently modified speech patterns into communicative behavior. Patterns and codes of language; the development of therapeutic activities for individuals with speech, hearing or language impairments.

Prereq: Undergraduate major in speech correction.

SPA 562 Selection and Fitting of Hearing Aids. Two sem hours

Interpretation of audiograms and the selection, fitting and care of hearing aids.

Prereq: SPA 536 Audiometric Testing.

SPA 594 Public School Internship in Speech Correction. Four sem hours

Supervised clinical practice with speech handicapped persons. The first internship is completed in a public school setting.

Prereq: Undergraduate major in speech correction and concurrent enrollment in SPA 596 Seminar in Public School Speech Correction.

SPA 596 Seminar in Public School Speech Correction. Two sem hours

Emphasizes professional ethics, organization and administration of speech correction programs in all settings. Includes state laws governing special education, professional growth and development and employment practices and procedures.

Prereq: Concurrent enrollment in SPA 594 Public School Internship in Speech Correction.

SPA 610 Cleft Palate. Two sem hours

Nature and etiology of palatal and facial deformities; surgical procedures and related therapy. Observation of dental, medical and social service agencies.

Prereq: Undergraduate major in speech correction.

SPA 612 Cerebral Palsy. Two sem hours

Examines the nature, etiology and treatment of speech disorders resulting from cerebral palsy. Related intellectual, perceptual, social and emotional problems will be considered as well as the neuromuscular symptoms. Current speech therapy approaches will be emphasized within a total therapeutic program.

Prereq: Undergraduate major in speech correction.

SPA 614 Aphasia. Two sem hours

Designed to provide a theoretical framework for understanding the symbolic language problems of aphasia as well as current therapeutic approaches to the problem. Discussion is concerned primarily with aphasia resulting from cerebral insult after language has been established. Consideration is given to related physical and behavioral disturbances.

Prereq: Undergraduate major in speech correction.

SPA 616 Experimental Phonetics. Three sem hours

Theoretical consideration of speech as motor behavior and as an acoustical phenomenon. Physiological and acoustical investigations of speech and voice. Principles and methods of measuring speech action and acoustical phenomena.

SPA 618 Language and Learning Theories. Two sem hours

An examination of the nature and function of language and communication via linguistics, semantics and phonetics, with special emphasis placed on learning theories and their relationship to language, speech and communication behavior.

Prereq: Undergraduate major in speech correction.

SPA 620 Diagnostic Methods in Speech Pathology. Two sem hours

The course will cover the diagnostic procedures and routines used in evaluation and diagnosis of speech and language disorders. Emphasis will be placed on the clinical approach to diagnosis as opposed to the public school approach. Consideration will be given to case interview, parental counseling, report writing and case referral.

Prereq: Undergraduate major in speech correction.

SPA 622 Diagnostic Methods in Hearing. Two sem hours

Evaluation of auditory dysfunctions with special emphasis on the multiple-handicapped child. Demonstrations and case studies will be an integral part of the course.

Prereq: Undergraduate major in speech correction.

SPA 694 Clinical Internship in Speech Correction. Two sem hours

Opportunity for experience to practice speech correction in a clinical setting. Experience with children and adults with multiple handicaps will be provided, as well as an opportunity to work as a part of a professional team in rehabilitation procedures.

Prereq: Undergraduate major in speech correction.

SPA 696 Seminar in Speech Pathology. Two sem hours

An examination of current research dealing with theoretical and therapeutic implications in the various pathologies of speech. Opportunity for individual investigation and study provided.

Prereq: Undergraduate major in speech correction.

SPA 697, 698, 699 Independent Studies. One, two, and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.

G. DEAF AND HARD OF HEARING

SDH 510 Survey of Education and Guidance for the Deaf. Two sem hours

A survey course covering the history of the education of the deaf; current educational programming; counseling, guidance and vocational habilitation.

SDH 514 Speech for the Deaf I. Two sem hours

Analysis of the particular problems of speech for the deaf; methods of analyzing and transcribing speech; techniques for the development of speech for the young deaf child.

SDH 518 Speech for the Deaf II. Two sem hours

Speech development and improvement for the older deaf child. Includes supervised speech tutoring.

Prereq: SDH 514 Speech for the Deaf I.

SDH 522 Language for the Deaf. Four sem hours

The effects of hearing loss on language development; the structure of the English language and principles of grammar; a survey of the varying language methods with emphasis on Fitzgerald Straight Language System. Activities include field trips, preparation of lesson plans and teaching materials.

Prereq: SDH 510 Survey of Education and Guidance for the Deaf.

SDH 530 School Subjects for the Deaf. Two sem hours

Principles and methods of teaching reading and school subjects to the deaf and the adaptation of regular curriculums and materials to meet the needs of the deaf.

SDH 554 Auditory Training and Speech Reading for the Deaf and Hard of Hearing.

Two sem hours

(1) Study of the avenues of receptive communication available to the acoustically handicapped; (2) methods of developing speech reading skills; (3) methods of training children with residual hearing; (4) the care and use of group and individual amplification equipment.

SDH 593 Pre-Practicum with the Deaf. Two sem hours

Sixty clock hours of directed observation and practical work in the classroom with deaf children.

SDH 596 Deaf Education Seminar. Two sem hours

A comparative study of the varying curriculums of deaf education programs in Michigan. Includes educational programming, school organization, use of community resources and parent counseling.

Prereq: Concurrent enrollment in student teaching.

SDH 596 Advanced Seminar in Education of Child with Impaired Hearing. Two sem hours

For teachers of deaf or hard of hearing, speech correctionists, counselors and teachers; an

auditory approach to diagnosis, therapy and educational management of the child with impaired hearing from infancy through high school. Effects of hearing impairments and rehabilitation procedures for speech reading, language and speech. Practicum with children of different ages. *Summer session only.*

Prereq: Undergraduate major in deaf and heard of hearing.

SDH 626 Visual Communication for the Deaf. Two sem hours

A study of the rationale for manual communication systems with the deaf involving the combined use of manual alphabet and language of signs. Developing fluency in manual communication skills will be a part of the course.

Prereq: Three years of teaching the deaf or permission of the instructor.

SDH 682 Evaluation and Training of Deaf Infants. Two sem hours

Management of deaf infants, with emphasis on early language development, parent counseling, observation of deaf infants and practice.

Prereq: Undergraduate major in deaf education or permission of the instructor.

SDH 686 Secondary School Subjects for the Deaf. Four sem hours

Principles and methods of teaching secondary school subjects to the deaf; the improvement of reading skills and written composition, techniques of correcting language errors and adapting the regular school curriculum to meet the demands of the deaf.

Prereq: Undergraduate major in deaf and hard of hearing.

SDH 688 Advanced Speech for the Deaf and Hard of Hearing. Two sem hours

Review of classical approaches, a study of recent research and practical application of findings to the development and improvement of speech for the deaf and hard of hearing. Includes supervised diagnostic and therapeutic practicum.

Prereq: Undergraduate major in deaf and hard of hearing or speech correction.

H. OCCUPATIONAL THERAPY

SOT 528 Adaptive Equipment and Appliances. Two sem hours

Techniques of creating braces and splints for the upper extremities through the use of such materials as aluminum, royalite, plastic, celastic, plaster of paris, wood and leather. The neuromuscular theory of hand splinting with emphasis on necessary precautions. How to make, repair, fit and purchase adaptive equipment and appliances.

WORKSHOPS

SGN 595 Sensory Training for Perceptually Handicapped Children. Two sem hours

SGN 595 Rehabilitation in Special Education. Two sem hours

SGN 595 Gessell Testing. Two sem hours

SGN 595 Parent-Child Counseling in Special Education. Two sem hours

SGN 595 Unit Teaching for Exceptional Child. Two sem hours

SGN 595 Supervising Teaching in Special Education. Two sem hours

SGN 595 The Application of New Materials in Teaching Special Education. Two sem hours

SGN 595 Workshop for Training of Supervising Teachers: Special Education. Two sem hours

SGN 595 Workshop on the Gifted. Two sem hours

SLD 595 Language Problems of Neurologically Impaired Child. Two sem hours

SLD 595 Sensory Training for Perceptually Handicapped Children. Two sem hours

SLD 595 Workshop in Diagnostic Procedures in Learning Disabilities. Two sem hours

SMH 595 Pre-School Culturally Deprived Mentally Handicapped Child. Two sem hours

SMH 595 Physical Education and Recreation for the Mentally Handicapped. Two sem hours

SVH 595 Workshop in Mathematics for the Visually Handicapped. Two sem hours

SPA 595 Workshop in Stuttering. Two sem hours

SPA 595 Workshop in Language Development. Two sem hours







APPLIED SCIENCE DEPARTMENTS

DEPARTMENTS

Home Economics
Industrial Education

HOME ECONOMICS

The graduate program in home economics has been developed to fulfill a variety of needs for home economists in Michigan and surrounding states. Some participants enroll primarily to earn required certification credits, but the majority complete the degree.

The specific needs which are identified as basic to advanced study are:

- (a) a general strengthening of all areas of home economics for secondary teachers who plan to continue their work in homemaking instruction
- (b) an opportunity to select one or more areas for specialization in order that the student may prepare herself for teaching at the college and university level
- (c) a concentrated study in one or more areas of specialization in preparation for certain types of work in business, research, mass communications or extension services
- (d) continued study and experiences for the purposes of training specialists in teacher education in home economics.

A master's degree may be earned either in general home economics or in one of the following areas of specialization:

- (a) clothing, textiles and related arts
- (b) family life and child development
- (c) foods and nutrition
- (d) consumer management, equipment and housing
- (e) home economics education

Since area of specialization requirements vary, the candidate has the option of selecting a graduate program leading to the degree of Master of Arts or Master of Science in Home Economics. All degree programs require a minimum of 30 hours. Of these, at least 24 semester hours are in the field of home economics (of which a minimum of 16 hours may be in a chosen area with the opportunity to select at least eight semester hours in other areas of home economics) with at least six semester hours selected from related courses outside the Department of Home Economics.

All programs of study include a two-hour course in research methods (HEC 592). Students have the option of a two- or four-hour independent study or of courses selected from their major emphasis.

For further information about the program contact Dr. Ruby L. Meis, graduate adviser of the Department of Home Economics, 104C Welch Hall.

HEC 500 The Disadvantaged Family. Two sem hours

Problems facing individuals in families that are socially, culturally and economically disadvantaged. Resources for effective local and federal programs of assistance in social service, education and legislation; resource speakers and field trips.

HED 501 Women in the Modern World. Two sem hours

The dynamics of the past half century with implications for the American woman. Opportunities and conflicts represented by the emerging multiple roles for women; opportunities through counseling, continuing education and mass media.

HEC 502 Family in Crisis. Two sem hours

Social and psychological aspects of crisis situations in the family; educational preparation to face difficult situations in constructive ways. School, community and legal assistance available for families in trouble.

HEC 503 Problems in Family Finance. Two sem hours

Principles of basic family financial planning, its relationship to economic conditions, social trends and the family life cycle. Special concern given to procedures in periods of financial emergency. Planning for security and protection against critical family distress.

HEC 504 Parent Education. Two sem hours

Discovering and analyzing situations and influences in the home which have educational implications for the child; methods and techniques for providing parent education.

HEC 505 Social and Economic Problems in Housing. Two sem hours

Personal and public concerns for adequate family housing with an evaluation on economics, art and social aspects. Local, state and federal legislation on housing and trends in social action.

HEC 506 Foods in the Cultures of the World. Two sem hours

An interdisciplinary approach to cultures of the world; special social and ethnic groups in America and their food habits, agriculture and climate, religion and economics.

HEC 507 Leisure and the Family. Two sem hours

Impact of various aspects of modern life on availability and perception of leisure time; survey of variations in family time and resources for creative use of leisure time activities which are appropriate at various stages of the family life cycle. Materials related to leisure time uses, sources of vacation information, consideration of the family with special needs. Cooperative programs by departments of sociology, arts and crafts, recreation, music and others. Consultants from each special field.

HEC 508 Food and Nutrition Problems of the Low-Income Family. Two sem hours

Social and economic factors relative to the dietary patterns of the underprivileged family and its members; dietary conditions and supplementary community food programs.

HEC 509 Family Clothing Management. Two sem hours

Clothing and textile problems for each individual in the family; the relationship of garment design, garment construction, fiber content, fabric construction and finish to the acceptability of the garment.

HEC 511 Curriculum Development in Homemaking Education. Two sem hours

Contributions of home economics at elementary and secondary levels; techniques employed in curriculum planning and reconstruction.

HEC 512 Methods and Materials in Family Life Education. Two sem hours

Philosophy and objectives in family life education; teaching-learning procedures. Sources for teaching materials, professional consultations, resource persons in family life education and evaluation of sample materials.

Prereq: 208 Aesthetics of the Home and Family or equivalent; 269 Housing the Family.

HEC 514 Home and Family Life Education in the Junior High School. Two sem hours

Developmental needs of preadolescents; changes in family and society as a basis for developing junior high school programs in homemaking and family life education. Survey of methods and materials unique for effective personal and family-centered teaching at this level.

Prereq: 371 Methods and Materials in Homemaking Education or equivalent.

HEC 515 Space, Equipment and Furnishings for Homemaking Departments. Two sem hours

Problems in remodeling old and planning new departments, equipping and furnishing them. Trends in space use in departments with correlated application of experiences in classroom.

Prereq: 269 Housing the Family, 371 Methods and Materials in Homemaking Education or the equivalent.

HEC 516 Federal Legislation for Wage Earner Programs in Home Economics. Two sem hours

Current legislation providing vocational training home economics, related positions for youth and adults. Processes of area studies, implementing programs and roles of personnel involved.

Prereq: Consent of the department head.

HEC 518 Special Problems in Homemaking Education. Two sem hours

Course developed to assist the in-service teacher with specific problems in homemaking programs. Major concerns are the slow learner, the returning school dropout, the disabled or homebound child. Assistance and resources available for teachers who face such difficulties in their teaching responsibilities.

Prereq: 371 Methods and Materials in Homemaking Education or the equivalent.

HEC 530 Family Economics and Home Management. Two sem hours

Management problems and consumer needs of American families: analysis of consumer aids and buying-selling practices.

Prereq: 204 Home Management and Family Economics.

HEC 531 Recent Developments in Home Equipment. Two sem hours

Current models of household appliances; mechanical principles involved in construction, use and methods of testing. Cost-quality factors and consumer information.

Prereq: 269 Housing the Family or the equivalent.

HEC 540 Family Development. Two sem hours

Family growth patterns through predictable stages of development; processes of interaction and cooperation.

Prereq: HEC 104 Family Living, 206 Contemporary Family Relations or the equivalent.

HEC 541 Child Guidance in the Family. Two sem hours

Family relationships with responsibilities to children at various developmental stages. Analysis, evaluation, practical application of various philosophies of child development and child rearing as they relate to family living.

Prereq: HEC 206 Contemporary Family Relations.

HEC 544 Preparation for the Later Years. Two sem hours

Individual, family and community planning for the years ahead; developing potentialities; maintaining health, providing reasonable security; building interpersonal relationships. Lectures, field trips and demonstrations.

HEC 545 Laws Affecting the Family. Two sem hours

Laws related to the family; their historical development and application to various stages of the family life cycle. Family law from the viewpoints of family members and professional persons who work with families; legal assistance available to families.

HEC 560 Tailoring. Two sem hours

Fundamental construction processes and special techniques applied to the construction of tailored garments; alterations and adaptations.

Prereq: Six hours of credit in clothing and/or textiles.

HEC 561 Consumer Problems in Clothing and Textiles. Two sem hours

Investigation of the sociological, psychological, legal and technical facts involved in the selection and use of textiles and clothing.

Prereq: 302 Experimental Clothing; 235 Textiles for Consumers or the equivalent.

HEC 562 History of Costume. Two sem hours

The costume (through ages) from ancient times to present day; major characteristics; social, economic and aesthetic influences; recurring styles; influence on present fashion.

Prereq: History 101 or 102 History of Civilization or equivalent and 208 Aesthetics of the Home and Family or equivalent.

HEC 563 History of Furnishings and Decorations. Two sem hours

Interior decoration through past centuries; furniture, decorative objects and fabrics representative of various periods of history in relation to original and present use. Authenticity, quality and appropriate adaptations.

Prereq: HEC 309 Home Decoration.

HEC 564 Fashion Design. Two sem hours

Structural designs, techniques and presentation; designing and illustrating present-day apparel.

Prereq: One course in costume.

HEC 565 Clothing Design and Construction. Two sem hours

Principles of pattern design, with application to a variety of styles and fabrics. Special problems in fitting, adaptations of design and processes of construction.

Prereq: Six hours of credit in clothing/textiles.

HEC 566 Consumer Problems in Home Furnishings. Two sem hours

Characteristics, cost, construction and range in quality of furniture, china, silver, glassware, wall coverings, rugs and carpets, flooring, woods and fabrics. Field trips. Purchasing problems are analyzed.

Prereq: 204 Home Management and Family Economics; 309 Home Decoration or the equivalent.

HEC 568 The Fashion Field. Two sem hours

The nature of the fashion cycle, the psychology of fashion, general definitions and background, fashion movements, the relation of art to fashion, the fashion world, the fashion centers, fashion trends and the major fashion designers.

HEC 569 Problems in Interior Decoration. Two sem hours

Practical experience in the integration of a complete decorative plan with regard to social and economic considerations, family living patterns, style and choice, client-decorator relationships and consultative practices. Field trips.

Prereq: 269 Housing the Family; 309 Home Decoration or consent of the department head.

HEC 570 Methods and Materials in Teaching Clothing and Textiles. Two sem hours

For the specialist in teaching clothing and textiles at secondary and advanced levels. Classroom procedures, organization of resources and methods of evaluation.

Prereq: 302 Experimental Clothing.

HEC 580 Recent Developments in Foods. Two sem hours

The latest findings in research and technology in foods production, processing and distribution. Lectures, field trips and demonstrations.

Prereq: 211 Advanced Foods or the equivalent.

HEC 581 Special Problems in Meal Management. Two sem hours

Management problems dealing with cost in time, money and energy for family meals; special occasions, simple catering and special marketing problems.

Prereq: HEC 211 Advanced Foods; 204 Home Management and Family Economics or the equivalent.

HEC 582 Experimental Foods. Two sem hours

Experimental methods and scientific approaches to food problems. Laboratory and lecture.

Prereq: Six hours of credit in foods; inorganic and organic chemistry.

HEC 584 Advanced Nutrition. Two sem hours

The latest research in nutrition and emphasis on it as a world-wide problem. Problems related to nutritional deficiencies and special diet needs.

Prereq: 201 Nutrition of the Family or the equivalent.

HEC 592 Research Methods for Home Economics. Two sem hours

Basic course for students planning to elect an independent study. Types of research and techniques for interpretation.

To precede HEC 597, 598, 599 Independent Studies in Home Economics.

HEC 597, 598, 599 Independent Studies in Home Economics. One, two and three sem hours

An intensive study of a selected professional problem under the direction of a staff adviser.

HEC 611 Evaluation in Homemaking Education. Two sem hours

Experience in measuring progress toward important goals in homemaking education; critical consideration of available tests and evaluation materials. Evaluation instruments and statistical techniques.

Prereq: 371 Methods and Materials in Homemaking Education.

HEC 613 Supervision in Homemaking Education. Two sem hours

Responsibilities, services and professional techniques for supervisors of homemaking teachers at local, state and national levels; in-service and preservice programs.

Prereq: A provisional certificate in vocational homemaking education.

HEC 633 Management of Homes for Physically Handicapped. Two sem hours

The principles of home management for the disabled homemaker or for the homemaker who has the care of a handicapped person in the home. For home economists who deal in adult education, social service, equipment and mass media.

Prereq: 204 Home Management and Family Economics or the equivalent.

HEC 660 Recent Developments in Textiles. Two sem hours

The nature of textile fibers; economic, chemical and physical problems related to their manufacture and use; technological advances to overcome these problems.

Prereq: 235 Textiles for Consumers or equivalent and organic chemistry.

HEC 661 Textile Analysis. Two sem hours

The chemical and physical analysis of fibers, yarns, fabrics and finishes; equipment and techniques used; interpretation of data; presentation of findings to the consumer; textile standards; current textile literature.

Prereq: HEC 660 Textile Analysis.

INDUSTRIAL EDUCATION

Objectives of a Program Leading to a Master's Degree

A program in industrial education is designed to:

1. provide advanced preparation in professional, technical and cognate areas
2. increase the competency of a teacher, supervisor or administrator of industrial education in the foundation areas of industry and technology, history and philosophy, curriculum and instruction, research and psychology
3. provide some measure of flexibility in the selection of courses to meet the needs of each student
4. enable a student to acquire a broad knowledge of the literature in industrial education
5. provide a strong foundation for professional advancement and further graduate study.

Requirements for Admission to a Program Leading to a Master's Degree

An applicant for admission must:

1. be admitted to the Graduate School of the University
2. have completed a minimum of 20 hours in industrial education
3. maintain a 5.0 (B) average for the first six hours of graduate study in industrial education courses at Eastern Michigan University
4. receive the recommendation of the Graduate Committee in the Department of Industrial Education.

Objectives of a Program Leading to a Specialist's Degree

A program in industrial education is designed to:

1. provide a high degree of individualization enabling a student to select courses consistent with his career objectives
2. permit optimum flexibility in selecting related courses in cognate areas outside the departments of industrial education and education
3. enable a student to acquire an intensive knowledge of the literature of his chosen field of study
4. enable a student to demonstrate his abilities in problem solving by formulating and completing an independent research study consistent with his area of concentration
5. provide the stimulation and encouragement to lead a qualified student toward a doctoral degree.

Requirements for Admission to a Program Leading to a Specialist's Degree

An applicant for admission must:

1. be admitted to the Graduate School of the University
2. hold baccalaureate and master's degrees from accredited institutions
3. have, normally, a minimum of two years of successful teaching in the general field of industrial education
4. have a concentration in the field of industrial education which will warrant advanced work—ordinarily 45 semester hours with at least 10 at the graduate level
5. have a 6.0 (B+) average in graduate courses in industrial education
6. complete a personal data form (601 IE)
7. develop a tentative plan of work in cooperation with a department adviser

I. Courses for Nonmajors**IED 500 Crafts I. Two sem hours**

The selection and use of industrial materials, devices and machines in the home, the school and in business and industry. Opportunities are provided for laboratory experience. *Not open to majors in industrial education.*

IED 501 Crafts II. Two sem hours

The selection and use of industrial materials, devices and machines in the home, the school and in business and industry. Opportunities are provided for laboratory experience. *Not open to majors in industrial education.*

IED 502 Industrial Arts in Elementary Education. Two sem hours

The theory and implementation of industrial arts content and method in the integration of elementary school subjects. *Open to majors in industrial education with permission of the department.*

IED 503 Teaching Aids in Secondary School Studies. Two sem hours

Selection, design and construction of three-dimensional teaching aids. Materials and procedures for making models, mock-ups, educational displays, dioramas and specialized learning equipment for social studies, science, mathematics, language arts and other subject areas. Principles and use of educational exhibits in junior and senior high school.

IED 504 Graphic Representation. Two sem hours

Illustrations of ideas, plans and proposals presented graphically. Production of examples of graphs, charts and similar representations used by teachers and administrators. *Not open to majors in industrial education.*

IED 505 Graphic Arts. Two sem hours

General graphic arts including: letterpress, planographic, gravure and silk-screen printing; linoleum-block and carving and rubber-stamp making. *Not open to students who have credit in 104 or 205 Graphic Arts or equivalent.*

II. Communication

IED 510 Electricity-Electronics. Two sem hours

An investigation of direct and alternating current theories combined with laboratory experiences and practical applications of test equipment.
Prereq: Algebra or trigonometry.

IED 513 Drafting Technology. Two sem hours

Drafting methods and materials; theory and application of pictorial and orthographic projection, primary and secondary auxiliary views, perspective shades and shadows and topographical drawing.

IED 515 Product Design. Two sem hours

Elements and principles of product design; theory and application of design principles in planning and processing industrial products.

IED 516 Architectural Drafting and Design. Two sem hours

Contemporary architectural drafting and design; methods of presentation, site planning, perspective, rendering and recent developments in drafting media.
Prereq: Four hours in drawing.

IED 517 Visual Communication. Two sem hours

Theory and application of design, composition, photomechanics, image transfer and finishing operations.

IED 610 Electronics Circuitry. Two sem hours

Electronic theories related to vacuum tube principles, basic circuits and the application of solid state equipment.
Prereq: 200 Electricity and Electronics I, 214 Electricity and Electronics II or IED 510 Electricity-Electronics.

III. Transportation

IED 520 Power Systems. Two sem hours

The technology involved in harnessing and controlling power, including its sources, generation, transmission and utilization; the machines and devices used to convert power in industrial applications.

IV. Materials Processing

IED 530 Forest Products Industry. Two sem hours

Processes and procedures involved in the derivation of chemical and physical products of the tree; materials and production of the primary and secondary woods industries, wood structure and analysis.

IED 533 Plastics Technology. Two sem hours

Sources and properties of plastics materials; testing, chemical production, molding and forming processes, the fabricating and finishing industry.

IED 536 Metals Technology. Two sem hours

A study of the metals industry; sources, characteristics and refining of metals, testing procedures, machining and processing applications, production methods.

V. Industry and Technology

IED 540 Contemporary American Industry. Two sem hours

The structure of the industrial institution in American society: formal organization, production, financial structure, research and development, union organization, legal structure, industrial relations and informal relations in industry.

IED 541 Materials of Industry. Two sem hours

Selected industrial materials; sources, properties, characteristics, analysis and testing. Implications for designing learning experiences in industrial education.

IED 640 Recent Technological Developments. Two sem hours

Innovations in materials and processes and their implications for programs of industrial education; industrial visitation.



VI. History and Philosophy

IED 550 Development of Industrial Education. Two sem hours

Contributing factors in the historical development of industrial education programs; the influence of industry, institutions, movements and leaders in the field.

IED 551 Philosophy of Industrial Education. Two sem hours

Philosophical viewpoints concerning industrial arts, vocational and technical education; historical development and philosophical justification of modern programs.

IED 552 Principles of Vocational and Technical Education. Two sem hours

Vocational and technical education as a phase of the program of education in the United States; philosophy, principles, practices and current trends in a modern program of vocational and technical education.

IED 650 Industrial Education in Colleges and Universities. Two sem hours

The philosophy, history and development of programs for teachers of industrial education; current trends in selected institutions.

IED 652 Technical Programs in Community Colleges. Two sem hours

Nature, scope and functions of vocational and technical programs in community colleges; recent developments.

VII. Curriculum and Instruction

IED 560 Content and Method of Industrial Education. Two sem hours

Methods of teaching, the identification of student and teacher behavior, principles of learning and teaching, analysis of the strategy or tactics for methods, developing criteria for making value judgments regarding methods of teaching in industrial education.

IED 660 Curriculum Planning in Industrial Education. Two sem hours

Development and current status of curriculum in industrial education; principles of curriculum development, criteria for content selection, contemporary curriculum patterns, factors involved in curriculum change.

IED 661 Evaluation in Industrial Education. Two sem hours

Principles and methods of evaluation in industrial education; experience in development and construction of effective devices for evaluation.

IED 662 Cooperative Programs in Industrial Education. Two sem hours

Cooperative vocational programs in the secondary school; organization and procedures for apprenticeship training, trades and industries, distributive education and diversified occupations.

IED 663 Instructional Media in Industrial Education. Two sem hours

Recent developments in instructional media and technology; the relationship of media to the psychology of learning. Implications for programs of industrial education.

VIII. Organization and Management

IED 670 Laboratory Planning. Two sem hours

Space and equipment in school laboratories, drawing rooms and related facilities for industrial education; safety, efficiency, design, location, selection, installation, care, standards, specifications.

IX. Administration and Supervision

IED 680 Supervision of Industrial Education. Two sem hours

Principles and problems involved in the methods of improving instruction in industrial education. *Open to majors in industrial education and to majors in administration.*

X. Research

IED 592 Research in Industrial Education. Two sem hours

Basic research types, methods and procedures, extent and sources of studies, the development of investigations, consumption of reported studies and the role played in the improvement of industrial education programs.

IED 595 Workshops in Selected Areas. Two sem hours

IED 597, 598, 599 Independent Studies. One, two and three sem hours

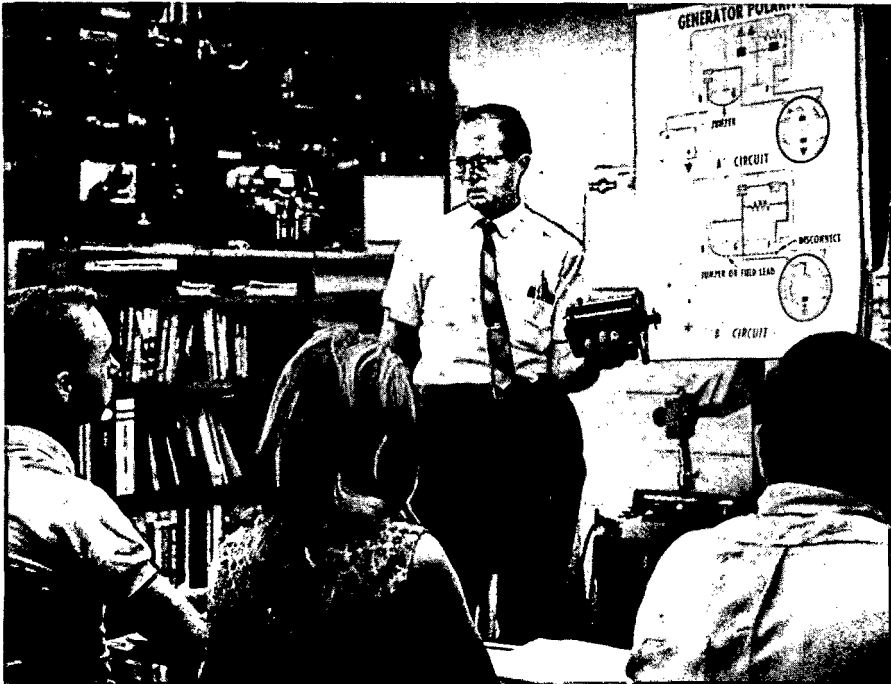
An intensive study of a problem or group of problems under the direction of a University faculty member.

IED 696 Seminar in Industrial Education. Two sem hours

An intensive study of selected problems in industrial education. *Open only to majors in industrial education.*

IED 697, 698, 699 Independent Studies. One, two and three sem hours

An intensive study of a problem or group of problems under the direction of a University faculty member.



GRADUATE FACULTY

ART

- Avedon, Barry (1966) Assistant Professor, Art
B.F.A. Rochester Institute of Technology; M.F.A. Rochester Institute of
Technology
- Beginin, Igor (1968) Assistant Professor, Art
B.A., M.A., Wayne State University
- Blaine, William (1969) Lecturer, Art
B.F.A. Atlanta School of Art; M.F.A. Syracuse University
- Calkins, Kingsley M. (1950) Professor, Art
Department Head, Art
B.S., Eastern Michigan University; M.A., University of Michigan
- Fairfield, Richard T. (1963) Associate Professor, Art
B.F.A., Bradley University; M.F.A., University of Illinois
- Fensch, Charles (1966) Assistant Professor, Art
B.A., Kent State University; M.A., Wayne State University
- Field, Jan M. (1965) Assistant Professor, Art
B.F.A., M.F.A., School of the Art Institute of Chicago
- Godfrey, Elaine C. (1962) Associate Professor, Art
B.S., Central Michigan University; M.A., University of Michigan
- Hunter, Fredrick (1967) Instructor, Art
B.S., Wisconsin State University; M.F.A., University of Wisconsin
- Lamming, Dorothy (1947) Professor, Art
B.A., North Dakota State Teachers College; M.F.A., University of Washington
- Loree, John (1962) Professor, Art
B.S., Fordham University; M.F.A., Alfred University
- Mayer, Roger (1967) Instructor, Art
B.F.S., Rhode Island School of Design; M.F.A., Syracuse University
- Pappas, John N. (1962) Associate Professor, Art
B.F.A., M.A., Wayne State University
- Sharp, David W. (1962) Associate Professor, Art
B.A., Arizona State University; M.F.A., State University of Iowa
- Smith, Doris A. (1958) Associate Professor, Art
B.D., M.S. and D., University of Michigan
- Tammany, David D. (1966) Assistant Professor, Art
B.F.A., University of Wichita; M.F.A., Tulane University
- VanHaren, John E. (1960) Professor, Art
B.S., M.A., University of Wisconsin
- Yager, Jay (1968) Assistant Professor, Art
B.S. S.U.N.Y. College of Ed., Buffalo, New York; M.F.A., M.S., University of
Wisconsin

BIOLOGY

- Bates, John (1966) Assistant Professor, Biology
B.S., Hillsdale College; M.A., University of Michigan
- Belcher, Robert O. (1946) Professor, Biology
B.A., Berea College; M.S., Ph.D., University of Michigan
- Booth, Howard D. (1967) Assistant Professor, Biology
B.S., M.S., Eastern Michigan University

- Brown, Donald F. M. (1956) Professor, Biology
B.A., M.S., Ph.D., University of Michigan
- Cali, C. Theresa (1965) Associate Professor, Biology
B.A., M.S., Fordham University; Ph.D., Cornell University
- Caswell, Herbert H., Jr. (1955) Professor, Biology
B.S., Harvard University; M.A., University of California at Los Angeles; Ph.D., Cornell University
- DiMattia, Pearl E. (1965) Assistant Professor, Biology
B.A., M.S., University of Michigan
- Fennel, William E. (1970) Professor, Biology
B.A., University of Missouri, M.A., University of Missouri, Ph.D., University of Michigan
- FitzPatrick, Lawrence M. (1965) Instructor, Biology
B.S., M.S., Eastern Michigan University
- Ghosheh, Najati S. (1965) Associate Professor, Biology
B.S., M.S., Kansas State University; Ph.D., University of Illinois
- Giles, Richard A. (1947) Professor, Biology
Department Head, Biology
B.S., Massachusetts State College; M.S., Ph.D., Michigan State University
- Jackson, Dennis C. (1967) Assistant Professor, Biology
B.S., Arizona State University; M.S., Michigan State University
- Johnson, Bert M. (1951) Professor, Biology
B.S., M.A., Ph.D., University of Michigan
- Liu, Stephen C. (1965) Associate Professor, Biology
B.S., M.S., National Taiwan University; Ph.D., University of Minnesota
- Milske, Paul W. (1967) Assistant Professor, Biology
B.S., College of St. Thomas; M.A., University of Michigan
- Minick, Merlyn (1966) Assistant Professor, Biology
B.S., Eastern Michigan University; M.S., University of Michigan
- Richards, Lawrence P. (1965) Associate Professor, Biology
B.A., University of California at Berkeley; Ph.D., University of Illinois
- Sinclair, Frank L. (1955) Assistant Professor, Biology
B.S., Eastern Michigan University; M.S., Michigan State University
- Sperling, William D. (1960) Assistant Professor, Biology
B.A., Eastern Michigan University; M.A., University of Michigan
- Volz, Paul A. (1969) Assistant Professor, Biology
B.A., Heidelberg College; M.S., Michigan State University; Ph.D., Michigan State University
- Waffle, Elizabeth L. (1968) Assistant Professor, Biology
B.A., Cornell College; M.S., State University of Iowa; Ph.D., Iowa State University
- Wallace, Dale C. (1969) Assistant Professor, Biology
B.A., Western Washington College of Education; M.A., Colorado College; Ph.D., Cornell University
- Yu, Shih-An (1967) Associate Professor, Biology
B.A., National Taiwan University; M.A., Ph.D., University of New Hampshire

CHEMISTRY

- Collins, Ronald W. (1965) Associate Professor, Chemistry
B.S., University of Dayton; Ph.D., Indiana University
- Compere, Edward L. Jr., (1964) Professor, Chemistry
B.S., Beloit College; M.S., University of Chicago; Ph.D., University of Maryland
- Ferrier, Linda (1969) Lecturer, Chemistry
B.S., Ball State University; M.S., Wayne State University
- Giles, Elizabeth V. (1965) Assistant Professor, Chemistry
B.S., Central State University; M.S., Michigan State University
- Graves, Bruce B. (1968) Associate Professor, Chemistry
B.A., Swarthmore College; M.S., Ph.D., University of Louisville
- Powell, Ralph R. (1966) Assistant Professor, Chemistry
B.S., Marian College; Ph.D., Purdue University
- Ramsay, O. Bertrand (1965) Associate Professor, Chemistry
B.S., Washington and Lee University; Ph.D., University of Pennsylvania
- Rengan, Krishnaswamy (1970) Assistant Professor, Chemistry
B.S., University College Triumdrum; Ph.D., University of Michigan
- Robbins, Omer, Jr. (1961) Professor, Chemistry
B.S., M.S., Ph.D., University of Michigan
- Schullery, Stephen E. (1970) Assistant Professor, Chemistry
B.A., Eastern Michigan University; Ph.D., Cornell University
- Scott, Ronald M. (1959) Professor, Chemistry
B.S., Wayne State University; Ph.D., University of Illinois
- Spike, Clark G. (1958) Professor, Chemistry
Department Head, Chemistry
B.S., Eastern Michigan University; M.S., Ph.D., University of Michigan
- Sullivan, John M. (1958) Professor, Chemistry
B.A., Dartmouth College; M.S., Ph.D., University of Michigan
- West, Bruce D. (1969) Associate Professor, Chemistry
B.S., M.S., Ph.D., University of Wisconsin
- Williamson, Jerry R. (1967) Associate Professor, Chemistry
B.A., University of Illinois; M.S., Ph.D., University of Iowa
- Work, Stewart D. (1964) Associate Professor, Chemistry
B.A., Oberlin College; Ph.D., Duke University
- Yamauchi, Masanobu (1965) Associate Professor, Chemistry
B.A., University of Hawaii; M.S., Ph.D., University of Michigan

ENGLISH LANGUAGE AND LITERATURE

- Bensen, Alice R. (1947) Professor, English Language and Literature
B.A., M.A., Washington University; Ph.D., University of Chicago
- Brylowski, Walter M. (1955) Professor, English Language and Literature
B.A., Kalamazoo College; M.A., University of Connecticut; Ph.D., Michigan State University
- Dume, Thomas L. (1957) Professor, English Language and Literature
B.A., University of Michigan; M.A., Columbia University; Ph.D., Temple University
- Evenhuis, Francis D. (1969) Professor, English Language and Literature
B.A., Western Michigan University; M.A., Ph.D., University of Iowa

- Foster, Milton P. (1947) Professor, English Language and Literature
Department Head, English Language and Literature
B.A., Waynesburg College; M.A., University of Pittsburgh; Ph.D., University of Michigan
- Gohn, Ernest S. (1958) Professor, English Language and Literature
B.A., Ph.D., Johns Hopkins University
- Haun, Frederick E. (1966) Professor, English Language and Literature
B.A., Hendrix College; M.A., Vanderbilt University; Ph.D., University of Pennsylvania
- Hebert, Catherine A. (1947) Professor, English Language and Literature
B.A., Eastern Michigan University; M.A., Ph.D., University of Michigan
- Jernigan, E. Jay (1965) Associate Professor, English Language and Literature
B.S., B.A., Kansas State Teacher's College; M.S., Ph.D., Kansas State University
- Jordan, Hoover H. (1939) Professor, English Language and Literature
B.A., Yale University; M.A., Ph.D., Cornell University
- Kornbluth, Martin (1966) Professor, English Language and Literature
B.A., M.A., University of Missouri; Ph.D., Pennsylvania State University
- Lawniczak, Donald A. (1967) Assistant Professor, English Language and Literature
B.A., M.A., Toledo University; Ph.D., Kent State University
- McGlynn, Paul D. (1964) Assistant Professor, English Language and Literature
Ph.B., M.A., University of Detroit; Ph.D., Rice University
- Miller, Majorie M. (1946) Professor, English Language and Literature
B.A., Nebraska State Teachers College; M.A., University of Michigan
- Perkins, George B. (1967) Professor, English Language and Literature
B.A., Tufts College; M.A., Duke University; Ph.D., Cornell University
- Pillsbury, Paul W. (1960) Professor, English Language and Literature
B.A., Dartmouth College; M.A., Ph.D., University of Michigan
- Potter, Edward E. (1950) Professor, English Language and Literature
B.A., St. Ambrose College; M.A., University of Notre Dame; Ph.D., University of Michigan
- Schreiber, O. Ivan (1950) Associate Professor, English Language and Literature
B.A., Wittenberg College; M.A., Ohio State University
- Trowbridge, Ronald L. (1965) Assistant Professor, English Language and Literature
B.A., M.A., Ph.D., University of Michigan
- Virtue, John B. (1946) Professor, English Language and Literature
B.A., M.A., University of Nebraska; Ph.D., Yale University

FOREIGN LANGUAGES AND LITERATURE

- Anderson, Robert F. (1969) Associate Professor, Foreign Languages and Literature
B.A., Western Reserve; M.A., University of Michigan; Ph.D., Case-Western Reserve

- Bidwell, Jean S. (1964) Assistant Professor, Foreign Languages and Literature
B.A., Pembroke College, Brown University; M.A., University of Michigan
- Gibson, Eugene M. (1956) Professor, Foreign Languages and Literature
B.A., M.A., University of Oklahoma; Ph.D., University of California
- Gorin, Carol A. (1968) Assistant Professor, Foreign Languages and Literature
B.A., Brandeis University; M.A., University of Rochester; Ph.D., University of North Carolina
- Judd, Wendell Thomas (1968) Instructor, Foreign Languages and Literature
B.A., University of Michigan; M.A., University of Michigan
- Muller, Brigitte D. (1967) Assistant Professor, Foreign Languages and Literature
B.A., Eastern Michigan University; M.A., University of Michigan; Doctorate, University of Aix-Marseille
- Owens, J. Henry (1940) Professor, Foreign Languages and Literature
Department Head, Foreign Languages and Literature
B.A., Franklin College; M.A., Ph.D., University of Minnesota
- Villegas, Francisco (1950) Professor, Foreign Languages and Literature
B.A., University of Costa Rica; M.A., Ph.D., University of Michigan

GEOGRAPHY AND GEOLOGY

- Buckholts, Paul O. (1961) Professor, Geography and Geology
B.A., M.A., Oklahoma University; Ph.D., Harvard University
- Cichanski, Allen (1965) Assistant Professor, Geography and Geology
B.S., M.S., Ohio State University
- Hall, E. Lorene (1960) Assistant Professor, Geography and Geology
B.S., M.A., Eastern Michigan University
- Howe, George M. (1969) Professor, Geography and Geology
B.S., California Institute of Technology; M.A., Oberlin College; Ph.D., Clark University
- Kureth, Elwood J.C. (1968) Assistant Professor, Geography and Geology
B.A., Eastern Michigan University; M.A., University of Michigan
- MacMahan, Horace A., Jr. (1969) Associate Professor, Geography and Geology
B.A., University of Maine; M.S., University of Utah; Ed.D., University of Colorado
- Mancell, Robert B. (1969) Assistant Professor, Geography and Geology
B.A., M.A., University of Michigan
- McDonald, James R. (1965) Professor, Geography and Geology
B.A., Antioch College; M.A., Ph.D., University of Illinois
- McLennan, Marshall S. (1970) Assistant Professor, Geography and Geology
B.A., University of California at Los Angeles; M.A., San Francisco State University
- Mills, Madolia E. (1968) Instructor, Geography and Geology
B.A., M.A., Wayne State University
- Nazzaro, Andrew A. (1969) Assistant Professor, Geography and Geology
B.A., Jacksonville University; M.S., Florida State University
- Ogden, Lawrence (1963) Professor, Geography and Geology
B.S.Ed., Northwest Missouri State College; B.Geol., University of Tulsa; M.S., University of Wisconsin; D.Sc., Colorado School of Mines

- Ojala, Carl F. (1970) Assistant Professor, Geography and Geology
B.A., Kent State University; M.A., University of Georgia
- Pearson, Ross N. (1969) Professor, Geography and Geology
Department Head, Geography and Geology
B.Ed., Illinois State Normal University; M.S., University of Wisconsin; Ph.D.,
University of Michigan
- Raphael, C. Nicholas (1967) Assistant Professor, Geography and Geology
B.A., Wayne State University; M.A., Eastern Michigan University; Ph.D.,
Louisiana State University
- Tirtha, Ranjit (1970) Associate Professor, Geography and Geology
B.A., M.A., Punjab University; Ph.D., University of North Carolina
- Turner, Daniel S. (1965) Professor, Geography and Geology
Ph.B., Ph.M., Ph.D., University of Wisconsin
- Wallace, Sue (1966) Assistant Professor, Geography and Geology
B.S., M.A., Indiana University
- Ward, Robert M. (1969) Assistant Professor, Geography and Geology
B.A., Earlham College; M.A., Indiana University

HISTORY AND SOCIAL SCIENCES

- Abbott, Richard H. (1966) Associate Professor, History and Social
Sciences
B.A., Grinnell College; M.A., University of Missouri; Ph.D., University of
Wisconsin
- Anderson, Frederick M. (1969) Professor, History and Social Sciences
B.A., Wesleyan College; M.A., Cornell University; Ph.D., Harvard University
- Bilsky, Manuel (1960) Professor, History and Social Sciences
B.A., M.A., Wayne State University; M.A., Ph.D., University of Michigan
- Brewer, Thomas L. (1969) Assistant Professor, History and Social Sciences
B.A., Wabash College; M.A., Yale University
- Briggs, William D. (1965) Assistant Professor, History and Social Sciences
B.A., University of California; M.A., Sacramento State College
- Bufford, Samuel L. (1968) Assistant Professor, History and Social
Sciences
B.A., Wheaton College; Ph.D., University of Texas
- Cassar, George H. (1968) Assistant Professor, History and Social
Sciences
B.A., M.A., University of New Brunswick; Ph.D., McGill University
- Creighton, David L. (1968) Assistant Professor, History and Social
Sciences
B.A., Union College
- Disbrow, Donald W. (1956) Professor, History and Social Sciences
B.A., Haverford College; Ph.D., University of Rochester
- Drummond, Donald F. (1958) Professor, History and Social Sciences
Dean, College of Arts and Sciences
B.A., Western Michigan University; M.A., Ph.D., University of Michigan
- Earl, David M. (1965) Professor, History and Social Sciences
B.A., Oberlin College; M.A., Wayne State University; Ph.D., Columbia
University

- Fenz, Emanuel G. (1969) Assistant Professor, History and Social Sciences
B.A., Walla Walla College; M.A., Andrews University; Ph.D., University of Colorado
- Flusche, Della M. (1968) Assistant Professor, History and Social Sciences
B.A., North Texas State University; M.A., Marquette University; Ph.D., Loyola University
- Franks, Thomas H. (1967) Assistant Professor, History and Social Sciences
B.A., Franklin and Marshall College; M.A., University of Michigan
- Gimelli, Louis B. (1966) Associate Professor, History and Social Sciences
B.A., State University of New York; M.A., Ph.D., New York University
- Goff, Richard D. (1964) Associate Professor, History and Social Sciences
B.A., Ph.D., Duke University; M.A., Cornell University
- Green, James E. (1947) Associate Professor, History and Social Sciences
B.A., M.A.L.S., M.A., University of Michigan
- Hafter, Daryl M. (1969) Assistant Professor, History and Social Sciences
B.A., Smith College; M.A., Ph.D., Yale University
- Hourani, Benjamin T. (1968) Associate Professor, History and Social Sciences
B.A., M.A., American University, Beirut; Ph.D., Michigan State University
- King, H. Roger (1967) Associate Professor, History and Social Sciences
B.A., Bates College; M.A., University of Connecticut; Ph.D., Vanderbilt University
- Lindenberg, Karen E. (1968) Assistant Professor, History and Social Sciences
B.S., Ph.D., University of Oregon
- May, George S. (1965) Associate Professor, History and Social Sciences
B.A., M.A., Ph.D., University of Michigan
- McLarty, R. Neil (1958) Professor, History and Social Sciences
Department Head, History and Social Sciences
B.A., Eastern Michigan University; M.A., Ph.D., University of Michigan
- Racz, Barnabas A. (1968) Associate Professor, History and Social Sciences
J.D., University of Budapest; M.A., Ph.D., University of Michigan
- Sabki, Hisham M. (1969) Assistant Professor, History and Social Sciences
B.S., M.A., Ph.D., Indiana University
- Scherer, Lester B. (1969) Assistant Professor, History and Social Sciences
B.A., Harvard University; B.D., Garrett Theological Seminary; Ph.D., Northwestern University
- Solomon, Samuel R. (1960) Professor, History and Social Sciences
B.A., M.A., Ph.D., Syracuse University
- Terry, Janice J. (1968) Assistant Professor, History and Social Sciences
B.A., College of Wooster; M.A., American University, Beirut; Ph.D., University of London

- Waltz, James C. (1968) Associate Professor, History and Social Sciences
B.A., M.A., Ph.D., Michigan State University; B.D., Evangelical Theological
Seminary
- Wheatley, Ira M. (1969) Associate Professor, History and Social Sciences
B.A., University of the Pacific; B.D., Drew Theological Seminary; Ph.D.,
University of Iowa
- Wittke, Reinhard (1956) Professor, History and Social Sciences
B.A., M.A., Ph.D., University of Michigan
- Yoo, Jong Hae (1969) Assistant Professor, History and Social Sciences
L.L.B., M.P.A., Seoul National University; M.P.A., Ph.D., University of
Michigan
- Zickgraf, P. Louis (1948) Professor, History and Social Sciences
B.A., M.A., Indiana University; Ph.D., University of Illinois

MATHEMATICS

- Badii, Larry L. (1965) Associate Professor, Mathematics
B.S., Tehran University; B.A., M.A., San Jose State College; Ph.D., Oregon
State University
- Barbee, W. Louise (1965) Assistant Professor, Mathematics
B.A., Eastern Michigan University; M.A., Ph.D., University of Michigan
- Buckeye, Donald A. (1968) Associate Professor, Mathematics
B.S.Ed., Ashland College; M.A.T., Ed.D., Indiana University
- Demptster, Andrew C. (1966) Assistant Professor, Mathematics
B.S., M.S., Ph.D., University of Michigan
- Early, Madeline L. (1956) Professor, Mathematics
B.A., Hunter College; M.A., Ph.D., Byrn Mawr College
- Ginther, John L. (1965) Professor, Mathematics
B.Ed., University of Toledo; Ed.M., Ph.D., University of Illinois
- Goosey, Bob L. (1959) Assistant Professor, Mathematics
B.S., Montana State University; M.A., Pennsylvania State University; Ph.D.,
University of Michigan
- Gotts, M. Margaret (1938) Assistant Professor, Mathematics
B.A., Eastern Michigan University; M.A., University of Michigan
- Hee, Christopher E. (1969) Lecturer, Mathematics
B.Ch.E., University of Detroit
- Heezen, Alan (1967) Assistant Professor, Mathematics
B.A., Notre Dame; M.A., Ph.D., University of Michigan
- Koo, Delia Z. F. (1965) Associate Professor, Mathematics
B.A., St. John's University, China; M.A., Michigan State University; M.A.,
Ph.D., Radcliffe College
- Lauckner, Kurt F. (1965) Assistant Professor, Mathematics
B.S.E., M.S., Ph.D., University of Michigan
- Marshall, Richard W. (1968) Assistant Professor, Mathematics
B.S., University of Pittsburgh; M.A., Ph.D., University of Michigan
- Northey, James H. (1957) Professor, Mathematics
B.S., Northern Michigan University; M.S., Ph.D., University of Michigan

- Pate, Robert S. (1946) Professor, Mathematics
 Department Head, Mathematics
 B.A., Peru State College; M.A., University of Nebraska; Ph.D., University of Illinois
- Rankin, Joanne S. (1963) Assistant Professor, Mathematics
 B.A., M.A., Eastern Michigan University
- Rebane, Toomas (1969) Assistant Professor, Mathematics
 B.S., M.S., Ph.D., University of Michigan
- Remmers, John H. (1968) Lecturer, Mathematics
 B.A., Harvard University; M.A., University of Michigan
- Suryanarayana, Manda B. (1969) Assistant Professor, Mathematics
 B.S., P.R. Government College, India; M.S., University of Poona, India; M.S., Ph.D., University of Michigan
- Tse, Enoch C.W. (1967) Assistant Professor, Mathematics
 B.S., Hong Kong Baptist College; M.A., Wayne State University; Ph.D., University of Michigan
- Vamanamurthy, Mavina K. (1969) Assistant Professor, Mathematics
 B.S., M.S., Bangalore, India; M.S., Ph.D., University of Michigan
- Ullman, Nelly S. (1963) Assistant Professor, Mathematics
 B.A., Hunter College; M.A., Columbia University; Ph.D., University of Michigan
- Walter, James R. (1964) Assistant Professor, Mathematics
 B.A., B.S., Otterbein College; M.A., University of Michigan

MUSIC

- Abramson, Armand (1967) Associate Professor, Music
 B. Mus., University of Louisville; M. Mus., Eastman School of Music
- Ballard, Blaine (1960) Associate Professor, Music
 B.S., M.Ed., State Teachers College, Mansfield, Pa.; M. Mus., Indiana University
- Borroff, Edith (1966) Professor, Music
 B.M., M.M., American Conservatory of Music; Ph.D., University of Michigan
- Dittemore, Edgar (1968) Assistant Professor, Music
 B.Mus.Ed., B.M., M.Mus.Ed., University of Kansas; Ph.D., University of Iowa
- Eggers, Carter (1967) Assistant Professor, Music
 B.A., State University of South Dakota; M.Mus., Ithaca College
- Eller, Daniel (1966) Associate Professor, Music
 B.Mus., M.Mus., University of Illinois
- Elwell, John (1948) Associate Professor, Music
 B.S., Eastern Michigan University; M.Mus., University of Michigan
- Fenwick, Ruth (1952) Associate Professor, Music
 B.Sch.Mus., Bluffton College; M.A., Ohio State University
- Fitch, William D. (1944) Professor, Music
 B.S., Kansas State College; M.M., Ph.D., University of Michigan
- Goldschmidt, Erich (1955) Associate Professor, Music
 Swiss Musicpaedagogical Society, Zurich, Basel Conservatory, Schola Cantorum Basiliensis, Basel
- Gurt, Joseph (1967) Associate Professor, Music
 B.S., M.S., Juilliard School of Music

- Henry, Oscar M. (1968) Professor, Music
B.A., Fisk University; M.A., Harvard University; Ph.D. Ohio State University
- Hill, Rodney (1969) Instructor, Music
B.M., University of Kentucky; M.M., University of Cincinnati
- Howe, Marvin (1966) Associate Professor, Music
B.Mus., Oberlin College; M.S., Ithaca College; M.F.A., Ph.D., University of Iowa
- Laney, Maurice (1968) Professor, Music
B.A., Albion College; M.Mus., Eastman School of Music; Ph.D., Indiana University
- Lowe, Emily (1961) Assistant Professor, Music
B.A., Duke University
- Mason, Thom D. (1968) Assistant Professor, Music
B.S., Mus.Ed., University of Wisconsin; M.Mus., DePaul University; Ph.D., Northwestern University
- Mehta, Dady (1969) Assistant Professor, Music
Ecole Normale de Musique, Paris; State Academy of Music, Vienna
- Parris, Arthur (1970) Professor, Music
B.S., Juilliard School of Music; M.A., Ph.D., Bryn Mawr College
- Phipps, Mary (1969) Assistant Professor, Music
B.S., Northwestern; M.Mus., Oakland University
- Pignotti, Alfio (1969) Associate Professor, Music
B.Mus., Eastman School of Music; M.Mus., Manhattan School of Music
- Plank, Max (1969) Instructor, Music
B.Mus.Ed., M.Mus., Kansas State Teacher's College
- Pyle, Hershal (1945) Associate Professor, Music
B.Mus., Saint Louis Institute of Music; M.Mus., M.A., University of Michigan
- Quayle, Robert (1969) Assistant Professor, Music
B.Mus., M.Mus., University of Michigan
- Rarig, Howard R. (1965) Professor, Music
Department Head, Music
B.Mus., M.Mus., Ithaca College; Ph.D., University of Michigan
- Riley, Maurice W. (1947) Professor, Music
B.A., M.A., Colorado State College; M.Mus., Ph.D., University of Michigan
- Roe, Charles (1968) Assistant Professor, Music
B.Mus., Baldwin-Wallace College; M.Mus., University of Illinois
- Smith, John Robert (1969) Instructor, Music
B.Mus., Louisiana State University
- Stewart, David (1969) Instructor, Music
B.Mus., Oberlin College; M.A., Smith College
- Sundquist, Jean (1958) Associate Professor, Music
B.S., Northern Michigan University; M.Mus., University of Michigan
- Szabo, Edward J. (1968) Associate Professor, Music
B.M., Cincinnati Conservatory of Music; B.S., M.S., Juilliard School of Music; M.A., Ed.D., Columbia University
- Teal, Mary (1969) Associate Professor, Music
B.S., Northwestern State College; M.Mus., Ph.D., University of Michigan

Tyra, Thomas (1964) Associate Professor, Music
B.Mus.Ed., M.Mus., Northwestern University

PHYSICS AND ASTRONOMY

Barnes, James M. (1955) Professor, Physics and Astronomy
Department Head, Physics and Astronomy
B.S., Eastern Michigan University; M.S., Ph.D., Michigan State University

Breedlove, Charles B. (1964) Professor, Physics and Astronomy
Coordinator, Science Education
B.S., McMurray College; M.S., Southern Methodist University; Ed.D., Wayne State University

Gessert, Walter L. (1961) Professor, Physics and Astronomy
B.S., Eastern Michigan University; M.S., Wayne State University; Ph.D., Michigan State University

Hochman, Lawrence D. (1966) Associate Professor, Physics and Astronomy
B.S., M.A., Wayne State University; Ph.D., Adelphi University

Loeber, Adolph P. (1964) Associate Professor, Physics and Astronomy
B.S., M.A., Wayne State University; Ph.D., Michigan State University

Moore, Jean R. (1968) Assistant Professor, Physics and Astronomy
B.S., M.S., Indiana University; M.A., Ph.D., University of Michigan

Parsons, Karl (1950) Associate Professor, Physics and Astronomy
B.A., Indiana Central College; M.S., State University of Iowa

Porter, James C. (1967) Associate Professor, Physics and Astronomy
B.S., Ph.D., Purdue University

Silver, Robert (1966) Associate Professor, Physics and Astronomy
B.S., Wayne State University; Ph.D., University of California

Thomas, Clinton E. (1959) Associate Professor, Physics and Astronomy
(On leave, Somalia Project)
B.S., M.S., M.S., University of Michigan

Wooley, Jon K. (1967) Assistant Professor, Physics and Astronomy
B.S., M.S., University of Michigan; M.A., Swarthmore College

PSYCHOLOGY

Anderson, Robert L. (1957) Professor, Psychology
B.A., Northern Michigan University; M.A., Columbia University; Ph.D., New York University

Canter, Francis M. (1967) Professor, Psychology
B.A., Ph.D., Washington University

Delprato, Dennis J. (1969) Assistant Professor, Psychology
B.A., Washington and Jefferson College; M.S., Ohio University; Ph.D., Michigan State University

Friedman, Monroe P. (1964) Professor, Psychology
B.S., Brooklyn College; Ph.D., University of Tennessee

Gallatin, Judith E. (1968) Assistant Professor, Psychology
B.A., M.A., Ph.D., University of Michigan

Holmes, Peter A. (1968) Assistant Professor, Psychology
B.A., Franklin and Marshall College; M.A., Bryn Mawr College; Ph.D., University of Delaware

- Jackson, Donald E. (1967) Associate Professor, Psychology
B.A., M.A., Ph.D., University of Alabama
- Karabenick, Stuart A. (1966) Associate Professor, Psychology
B.A., Ph.D., University of Michigan
- Karson, Samuel (1966) Professor, Psychology
Department Head, Psychology
B.S., Long Island University; Ph.D., Washington University (St. Louis)
- Marshall, Joan (1964) Assistant Professor, Psychology
B.A., M.A., University of Toronto; Ph.D., Western Reserve University
- Meisels, Murray (1965) Associate Professor, Psychology
B.A., Brooklyn University; Ph.D., State University of New York at Buffalo
- O'Dell, Jerry W. (1966) Associate Professor, Psychology
B.A., University of Cincinnati; Ph.D., University of Michigan
- Pool, Kenneth B. (1969) Associate Professor, Psychology
A.A., Ventura Junior College; B.A., University of California at Santa Barbara;
Ph.D., University of California at Berkeley
- Sroges, Richard W. (1965) Associate Professor, Psychology
B.S., M.A., Roosevelt University; Ph.D., Northwestern University
- Stern, Ferdinand (1968) Associate Professor, Psychology
L.L.D., University of Vienna, Law School; Ph.D., University of Washington
- Weinstock, Anne C. (1969) Assistant Professor, Psychology
B.A., Carleton College; M.A., State University of Iowa; Ph.D., Wayne State
University
- Youssef, Zakhour I. (1965) Associate Professor, Psychology
B.A., M.A., Ph.D., Wayne State University

SOCIOLOGY

- Ehrlich, Allen S. (1968) Assistant Professor, Sociology
B.A., University of Cincinnati; M.A., University of Minnesota; Ph.D., University of Michigan
- Einstadter, Werner J. (1967) Associate Professor, Sociology
B.A., M.A., D. Crim., University of California (Berkeley)
- Fauman, S. Joseph (1958) Professor, Sociology
B.A., M.A., Ph.D., University of Michigan
- Ferman, Patricia R. (1966) Assistant Professor, Sociology
B.A., Wayne State University; M.A., Ph.D., University of Michigan
- Green, Edward (1963) Professor, Sociology
Department Head, Sociology
B.A., M.A., Ph.D., University of Pennsylvania
- Guptill, Carleton S. (1967) Associate Professor, Sociology
B.A., M.A., Emory University; Ph.D., Duke University
- Hutchinson, J. Glenn (1964) Assistant Professor, Sociology
B.A., Emory University; M.A., University of North Carolina; Ph.D., University of Chicago
- Kersten, Lawrence K. (1968) Assistant Professor, Sociology
B.Arch., M.C.P., University of Michigan; Ph.D., Wayne State University
- Segal, Mady W. (1969) Assistant Professor, Sociology
B.A., Queens College; M.A., Ph.D., University of Chicago

- Stupple, David W. (1969) Assistant Professor, Sociology
B.A., Lake Forest College; M.A., Ph.D., University of Missouri
- Thalhofer, Nancy N. (1969) Assistant Professor, Sociology
B.A., Lawrence College; M.A., Ph.D., University of Michigan
- Townsend, Patricia K. (1969) Assistant Professor, Sociology
B.A., M.A., Ph.D., University of Michigan
- Wasserman, Ira M. (1969) Assistant Professor, Sociology
B.S., Penn State University; M.S., University of Minnesota; M.A., New School
of New York; Ph.D., University of Michigan
- Watts, Leroy R. (1969) Associate Professor, Sociology
B.A., University of Dubuque; M.A.S.W., State University of Iowa

SPEECH AND DRAMATIC ARTS

- Bird, P. George (1955) Associate Professor, Speech and Dramatic Arts
Technical Director, Quirk Theatre
B.S., M.S., University of Wisconsin
- Bowen, Harry W. (1967) Associate Professor, Speech and Dramatic Arts
B.A., Westminster College; M.A., Ohio State University; Ph.D., University of
Pittsburgh
- Compton, Gail (1969) Associate Professor, Speech and Dramatic Arts
B.S., University of Evansville; M.S., Ph.D., University of Wisconsin
- Gousseff, James W. (1963) Professor, Speech and Dramatic Arts
Director, University Theatre
B.S., Iowa State College of Agriculture and Mechanic Arts; M.A., Cornell
University; M.F.A., Yale University; Ph.D., Northwestern University
- Kaufman, Alvin S. (1968) Associate Professor, Speech and Dramatic Arts
B.A., Ohio Wesleyan; M.A., University of Washington; Ph.D., Stanford
University
- Kelly, Joseph P. (1940) Professor, Speech and Dramatic Arts
B.A., Grinnell College; M.A., Ph.D., State University of Iowa
- Koste, Virginia G. (1962) Associate Professor, Speech and Dramatic Arts
B.A., Vassar College; M.A., Wayne State University
- McCracken, Sally R. (1968) Assistant Professor, Speech and Dramatic Arts
B.A., Muskingum College; M.A., Bowling Green State University; Ph.D., Wayne
State University
- McDaniel, Thelma (1961) Assistant Professor, Speech and Dramatic Arts
B.F.A., State University of Iowa; M.A., Eastern Michigan University
- McElya, Mitchell R. (1967) Assistant Professor, Speech and Dramatic Arts
B.S., M.F.A., University of Wisconsin
- Murray, Thomas J. (1963) Professor, Speech and Dramatic Arts
B.A., M.A., Ph.D., University of Michigan
- Paulin, Kenneth (1970) Assistant Professor, Speech and Dramatic Arts
B.A., Western Michigan University; M.A., Ph.D., Purdue University
- Sattler, John W. (1947) Professor, Speech and Dramatic Arts
Department Head, Speech and Dramatic Arts
B.A., Yankton College; M.A., University of Michigan; Ph.D., Northwestern
University
- Swisher, William V. (1965) Assistant Professor, Speech and Dramatic Arts
B.A., M.A., University of Michigan

- Yahrmatter, Arthur J. (1968) Assistant Professor, Speech and Dramatic Arts
B.S., M.A., Wayne State University; Ph.D., Southern Illinois University
- Zellers, Parker R. (1964) Professor, Speech and Dramatic Arts
B.A., Emerson College; M.A., Indiana University; Ph.D., State University of Iowa

ACCOUNTING AND FINANCE

- Bryan, William C. (1960) Associate Professor, Accounting and Finance
B.S., Oklahoma State University; M.B.A., University of Michigan; C.F.A.
- Carroll, Charles (1969) Associate Professor, Accounting and Finance
B.B.A., M.B.A., Western Reserve University; C.P.A., State of Ohio
- Erb, Emerson C., Jr. (1967) Professor, Accounting and Finance
Department Head, Accounting and Finance
B.S., M.B.A., D.B.A., Indiana University; C.P.A., State of Indiana
- Gilson, Fred T. (1964) Assistant Professor, Accounting and Finance
B.S., University of Illinois; M.B.A., University of Michigan
- Kennedy, Herbert M. (1967) Assistant Professor, Accounting and Finance
B.S., Principia College; M.B.A., University of Michigan
- Keros, John W. (1965) Associate Professor, Accounting and Finance
B.B.A., M.B.A., University of Michigan; C.P.A., State of Indiana
- Lafferty, John (1969) Assistant Professor, Accounting and Finance
B.A., Providence College; M.B.A., Dartmouth College
- Nourallah, Faye S. (1968) Associate Professor, Accounting and Finance
B. Commerce, Cairo University; M.S., Ph.D., University of Illinois
- Trussell, Larry R. (1968) Assistant Professor, Accounting and Finance
B.A., Fort Hays Kansas State College; M.S., University of Arkansas
- Underwood, William (1963) Professor, Accounting and Finance
B.A., Eastern Michigan University; M.A., Wayne State University; C.P.A., State of Michigan

BUSINESS EDUCATION

- DeLoach, Rosemary (1967) Associate Professor, Business Education
B.A., Northern Michigan University; M.A., Ph.D., University of Michigan
- Duncan, Charles H. (1965) Professor, Business Education
Department Head, Business Education
B.S., Indiana State College; M.Ed., Ed.D., University of Pittsburgh
- Graziano, Louis R. (1966) Assistant Professor, Business Education
B.A., Fairmont State College; M.Ed., Wayne State University
- Ogden, Russell L. (1956) Professor, Business Education
B.S., Eastern Illinois University; M.A., Ed.D., Colorado State College
- Robek, Mary F. (1958) Professor, Business Education
B.Ed., Wisconsin State College, Whitewater; M.A., Northwestern University;
M.B.A., Ph.D., University of Michigan
- Wingo, Rosetta C. (1968) Assistant Professor, Business Education
B.S., Morgan State College; M.A., New York University; Ph.D., Michigan State University

GENERAL BUSINESS

- Brown, Leland (1964) Professor, General Business
B.A., M.A., Indiana State University

- Cameron, George D., III (1963) Professor, General Business
B.A., M.A., Kent State University; J.D., University of Michigan
- Collins, W. Oscar (1957) Professor, General Business
Department Head, General Business
B.S., Southwest Missouri State College; M.Ed., University of Missouri; Ed.D.,
Indiana University
- Conley, James H. (1969) Associate Professor, General Business
B.A., Otterbein College; B.D., United Theological Seminary; Ph.D., Michigan
State University
- Robinson, Julius M. (1947) Professor, General Business
Dean, Summer and Evening Sessions
B.S., Southwest Missouri State College; M.A., Northwestern University; Ed.D.,
New York University

MANAGEMENT

- Beltsos, Nicholas J. (1962) Assistant Professor, Management
B.S., Marquette University; M.A., Michigan State University
- Deihl, Lincoln W. (1967) Professor, Management
B.S., Bowling Green State University; M.S., Indiana University; Ph.D., Ohio
State University
- Klatt, Lawrence A. (1969) Associate Professor, Management
B.S., M.B.A., University of Detroit; Ph.D., University of Missouri
- Patrick, Floyd A. (1970) Professor, Management
B.S., University of Wisconsin; M.A., Ph.D., University of Iowa
- Shell, Calude I., Jr. (1967) Professor, Management
Department Head, Management
B.A., Maryville College; M.S., University of Tennessee; Ph.D., Southern Illinois
University

MARKETING

- Braden, Joseph H. (1970) Assistant Professor, Marketing
B.S., Purdue University; M.B.A., D.B.A., Indiana University
- Hansz, James E. (1966) Assistant Professor, Marketing
B.A., Albion College; M.B.A., Michigan State University
- Kurtz, David L. (1967) Association Professor, Marketing
B.A., Davis and Elkins College; M.B.A., Ph.D., University of Arkansas
- Neuhaus, Colin F. (1969) Assistant Professor, Marketing
B.A., Gettsburg College; M.B.A., University of Michigan
- Parsons, M. Godfrey (1967) Associate Professor, Marketing
B.S., M.S., University of Missouri
- Roth, Earl A. (1954) Professor, Marketing
Dean, College of Business
B.S., M.A., Ohio State University; Ed.D., Indiana University
- Williams, Robert J. (1966) Professor, Marketing
Department Head, Marketing
B.S., M.S., Ph.D., Cornell University

EDUCATIONAL LEADERSHIP

- Brower, George (1954) Professor, Education
Head, Department of Educational Leadership
B.S., Western Michigan University; M.A., University of Michigan; Ph.D., Cornell
University
- Daly, Francis M., Jr. (1964) Professor, Education
Assistant Dean, College of Education
B.S., M.A., Ed.D., Wayne State University
- Duvall, Elven E. (1968) Professor, Education
B.A., Eastern Michigan University; M.A., University of Michigan; Ed.D.,
Columbia University
- Fox, Donald R. (1966) Associate Professor, Education
B.S., M.A., Central Michigan University; Ph.D., University of Michigan
- Grinstead, Kenneth L. (1964) Professor, Education
B.A., Iowa Wesleyan College; M.A., Ph.D., University of Iowa
- Kilanski, Doris M. (1970) Instructor, Education
B.A., Mount Mary College; M.A., Ed.S., Eastern Michigan University
- LeTarte, Clyde (1969) Assistant Professor, Education
B.A., Hope College; M.A., Ph.D., Michigan State University
- Minzey, Jack D. (1968) Associate Professor, Education
B.A., Eastern Michigan University; M.A., University of Michigan; Ed.D.,
Michigan State University
- Peterson, Wendell Jack (1970) Assistant Professor, Education
B.A., Franklin College; M.S., Indiana University; Ed.D., Indiana University
- Salatino, Anthony J. (1969) Associate Professor, Education
B.A., State University of New York; M.A., Ed.D., Teachers College, Columbia
University
- Schwarz, Allan R. (1965) Professor, Education
B.A., Nebraska State Teacher's College; M.A., University of Nebraska; Ed.D.,
New York University

EDUCATIONAL PSYCHOLOGY

- Brenner, Anton (1968) Professor, Education
B.S. University of Munich; Ph.D., University of Tuebingen
- Bushey, Thomas (1969) Assistant Professor, Education
Ph.B., M.A., University of Detroit; Ed.D., Wayne State University
- Dellas, Marie (1970) Assistant Professor, Education
B.S., State University College of New York at Buffalo
- Gates, Mary Frances (1942) Professor, Education
B.A., Lawrence University; M.S., University of Chicago; Ph.D., University of
Wisconsin
- Greene, Bert I. (1963) Professor, Education
B.S., Eastern Michigan University; M.A., Ph.D., University of Michigan
- Haddan, Eugene E. (1965) Professor, Education
B.A., M.A., Ed.D., North Texas State College
- Howe, Frederick (1969) Instructor, Education
B.A., M.A., Michigan State University
- LaBenne, Wallace D. (1967) Associate Professor, Education
B.A., Temple University; M.A., Ph.D., University of Michigan

- Lederman, Edward (1970) Assistant Professor, Education
B.S., Long Island University; M.A., Ed.D., Teachers College, Columbia University
- Marshall, Everett L. (1938) Professor, Education
Dean, Records and Teacher Certification
B.Ed., Northern Illinois University; M.A., Ph.D., State University of Iowa
- Metler, John W. (1964) Assistant Professor, Education
B.A., University of Western Ontario; B.D., Emmanuel College Victoria University; M.A., Union Theological Seminary; Ed.D., Teachers College, Columbia University
- Mood, Darlene W. (1965) Assistant Professor, Education
B.M.Ed., Roosevelt University; M.A., Wayne University
- Podojil, Louise (1970) Assistant Professor, Education
B.A., Valparaiso University; M.Ed., Ph.D., Kent State University
- Skore, Marvin L. (1968) Assistant Professor, Education
B.A., Wayne State University; M.A., Eastern Michigan University; Ph.D., Wayne State University
- Skully, Marilyn (1970) Assistant Professor, Education
B.A., M.A., Michigan State University; Ph.D., Wayne State University
- Stokes, Charles (1969) Instructor, Education
B.A. Western Reserve; M.A., Eds., University of Michigan
- Wahi, Kishor (1968) Associate Professor, Education
B.A., Punjab University; M.A., Ph.D., University of Michigan
- Walker, John A. (1970) Assistant Professor, Education
B.A., Eastern Michigan University; M.A., Ph.D., University of Michigan
- Williams, Wilbur A. (1948) Professor, Education
Head, Department of Educational Psychology
B.S., M.A., Ph.D., University of Michigan
- Williams, Warren S. (1969) Assistant Professor, Education
B.A., Hobart College; M.A., Ed.D., University of Rochester
- Woronoff, Israel (1956) Professor, Education
B.A., M.A., Ph.D., University of Michigan

GUIDANCE AND COUNSELING

- Gaston, Hugh P. (1967) Assistant Professor, Education
B.A., M.A., University of Michigan
- Gex, R. Stanley (1954) Professor, Education
Dean, Center for International Studies
B.S., Northwest Missouri State College; M.A., Ed.D., University of Missouri
- Kloosterman, Winton A. (1962) Professor, Education
B.A., Beloit College; M.A., Teachers College, Columbia University; Ed.D., Wayne State University
- Miller, Gary M. (1969) Assistant Professor, Education
B.S., Slippery Rock State College; M.Ed., Duquesne University; Ph.D., Case Western Reserve University
- Nau, Paul A. (1967) Associate Professor, Education
B.S., M.Ed., Ph.D., Kent State University

- Pappas, John G. (1966) Associate Professor, Education
Head, Department of Guidance and Counseling
B.A., University of Akron; M.A., Ohio State University; Ph.D., Kent State
University
- Stanely, Kenneth W. (1961) Associate Professor, Education
Coordinator of Student Teaching
B.A., Northern Michigan University; M.A., Michigan State University
- Thayer, Louis C. (1969) Assistant Professor, Education
B.S., M.S., Nebraska State College at Kearney
- VanRiper, Benjamin W. (1968) Assistant Professor, Education
B.S., Adrian College; M.A., Ph.D., University of Michigan
- Waidley, John W. (1968) Assistant Professor, Education
B.A., University of Michigan; M.Ed., Wayne State University

HEALTH, PHYSICAL EDUCATION AND RECREATION

- Adams, John R. (1960) Associate Professor, Health, Physical Education and
Recreation
B.S., Eastern Illinois University; M.S., University of Illinois; Ph.D., University
of Michigan
- Bell, Mary I. (1949) Associate Professor, Health, Physical Education and
Recreation
B.S., Eastern Michigan University; M.A., University of Michigan
- Buckner, William P. (1970) Association Professor, Health, Physical Education
and Recreation
B.A., DePauw University; M.S., HSD, University of Indiana
- Cavanaugh, Patric L. (1968) Professor, Health, Physical Education and
Recreation
Department Head, Health, Physical Education and Recreation
B.A., Oberlin College; M.S., Ph.D., University of Michigan
- Dornbos, Sanford J. (1963) Assistant Professor, Health, Physical Education
and Recreation
B.A., Calvin College; M.A., University of Michigan
- Faulkner, Thelma R. (1970) Assistant Professor, Health, Physical Education
and Recreation
B.A., Oklahoma College for Women; M.A., Ph.D., Texas Women's University
- Ferzacca, F. L. (1966) Professor, Health, Physical Education and
Recreation
Director, Athletics
B.S., Lake Forest; M.S., University of Wisconsin
- Johnson, Marvin J. E. (1963) Assistant Professor, Health, Physical Education
and Recreation
B.S., University of Michigan; B.S.P.E., McGill University; M.A., Ph.D.,
University of Michigan
- Menzi, Elizabeth A. (1964) Professor, Health, Physical Education and
Recreation
B.A., Oberlin College; M.A., Bowling Green State University; Ph.D., University
of Michigan

- Pedersen, Erik J. (1968) Assistant Professor, Health, Physical Education and Recreation
B.S., M.S., Eastern Illinois University; P.E.D., Indiana University
- Saunders, Ronald J. (1963) Assistant Professor, Health, Physical Education and Recreation
B.A., Eastern Michigan University; M.A., University of Michigan
- Sheard, John E. (1963) Professor, Health, Physical Education and Recreation
Chairman, Graduate and Men's Division, Health, Physical Education and Recreation
B.S., M.S.Ed., Miami University; P.E.D., Indiana University
- Steig, Peggy A. (1956) Professor, Health, Physical Education and Recreation
Chairman, Women's Division, Health, Physical Education and Recreation
B.S., Miami University; M.A., Ph.D., Ohio State University
- Williams, Roger L. (1968) Assistant Professor, Health, Physical Education and Recreation
B.S., Miami University; M.S., University of Illinois; Ph.D., University of Missouri
- Willoughby, Robert J. (1956) Associate Professor, Health, Physical Education and Recreation
B.S., M.A., University of Michigan
- Witten, Charles X. (1969) Assistant Professor, Health, Physical Education and Recreation
B.S., M.A., University of Maryland; Ph.D., Ohio State University

SPECIAL EDUCATION AND OCCUPATIONAL THERAPY

- Angelocci, Angelo A. (1965) Associate Professor, Special Education and Occupational Therapy
B.S., Eastern Michigan University; M.A., University of Michigan; Ph.D., Wayne State University
- Barach, George (1969) Assistant Professor, Special Education and Occupational Therapy
B.S., Wayne State University; M.Ed., Boston College; Ph.D., Wayne State University
- Bennett, Normajean (1956) Assistant Professor, Special Education and Occupational Therapy
B.S., Western Michigan University; M.A., University of Michigan
- Caputo, George E. (1965) Assistant Professor, Special Education and Occupational Therapy
B.S., Washington and Jefferson College; M.Ed., University of Pittsburgh
- Chamberlain, Marjorie (1967) Assistant Professor, Special Education and Occupational Therapy
B.S., M.A., Wayne State University
- Covington, Ann (1969) Visiting Lecturer, Special Education and Occupational Therapy
B.A., Eastern Michigan University; M.S., University of Michigan

- Coyner, Joe (1969) Administrative Assistant, Special Education
and Occupational Therapy
B.A., M.A., Ed.S., Eastern Michigan University
- French, Sophie (1948) Assistant Professor, Special Education
and Occupational Therapy
B.A., Bryn Mawr College; M.A., Columbia University
- Fulton, Calvin W. (1956) Professor, Special Education and Occupational
Therapy
Audiologist, Rackham School
B.A., Grinnell College; M.A., Ph.D., Western Reserve University
- Garber, Carl E. (1967) Professor, Special Education and Occupational
Therapy
B.S., Manchester College; M.A., University of Michigan; Ph.D., Ohio State
University
- Geffen, Lawrence (1968) Assistant Professor, Special Education
and Occupational Therapy
B.Ed., Fredonia State Teachers College; M.A., New York University
- Gottwald, Henry L. (1964) Professor, Special Education and
Occupational Therapy
B.S., Eastern Michigan University; M.A., University of Michigan; Ed.D., Wayne
State University
- Gregerson, Harvey H. (1959) Assistant Professor, Special Education and
Occupational Therapy
Assistant Director, Rackham School of Special Education
B.S., Eastern Michigan University; M.A.Ed., University of Michigan
- Gutshall, Robert W. (1969) Assistant Professor, Special Education and
Occupational Therapy
B.S., Michigan State University; M.A., Ed.D., Michigan State University
- Herrick, Frances E. (1950) Associate Professor, Special Education and
Occupational Therapy
B.S., Eastern Michigan University; B.A., M.A., University of Michigan
- Lake, Marylynn (1967) Assistant Professor, Special Education
and Occupational Therapy
B.S., M.A., Eastern Michigan University
- Martin, Nora (1967) Assistant Professor, Special Education
and Occupational Therapy
B.S., M.A., Eastern Michigan University
- Motto, Joseph (1961) Professor, Special Education and
Occupational Therapy
B.S., Central Michigan University; M.A., University of Detroit; Ph.D., Univer-
sity of Michigan
- Myers, Allen (1958) Professor, Special Education and
Occupational Therapy
Dean, College of Education
B.M., M.M., North Texas State College; M.A., Ph.D., State University of Iowa
- Navarre, Gary (1970) Assistant Professor, Special Education and
Occupational Therapy
B.A., Eastern Michigan University; M.S., University of Oregon; Ed.D., Wayne
State University

- Palasek, James (1966) Associate Professor, Special Education and Occupational Therapy
B.A., Western Michigan University; M.S., Purdue University
- Palmer, David E. (1952) Associate Professor, Special Education and Occupational Therapy
B.A., M.A., University of Michigan
- Quinn, Kathleen S. (1965) Assistant Professor, Special Education and Occupational Therapy
B.S., Washington University; M.A., Eastern Michigan University
- Rice, Dale L. (1967) Associate Professor, Special Education and Occupational Therapy
B.A., M.S.W., University of Michigan
- Rogers, Agnes L. (1955) Assistant Professor, Special Education and Occupational Therapy
B.A., University of Tennessee; M.A., George Peabody College
- Shough, Lee F. (1969) Instructor, Special Education and Occupational Therapy
B.A., Eastern Michigan University
- Treado, Bernard M. (1953) Assistant Professor, Special Education and Occupational Therapy
B.A., Northern Michigan University; M.A., University of Michigan
- Wallace, Merry Maude (1945) Assistant Professor, Special Education and Occupational Therapy
B.S., University of Wisconsin; M.A., University of Michigan
- Wawrzaszek, Frank (1967) Associate Professor, Special Education and Occupational Therapy
Department Head, Special Education and Occupational Therapy
B.S., State University of New York; Ed.M., Boston University
- Wright, Sara E. (1945) Associate Professor, Special Education and Occupational Therapy
B.S., Syracuse University; M.A., New York University

CURRICULUM AND INSTRUCTION

- Adams, Leah (1969) Assistant Professor, Curriculum and Instruction
B.S., Ohio State University; M.A., Wayne State University
- Allen, Irene (1968) Assistant Professor, Curriculum and Instruction
B.S., Johnson Teachers College; M.A., Ed.D., Ball State University
- Bajwa, Ranjit S. (1963) Professor, Curriculum and Instruction
B.A., B.T., Punjab University; Ed.D., Wayne State University
- Belt, Gordon (1968) Assistant Professor, Curriculum and Instruction
B.S., Central Michigan University; M.A., Michigan State University; Ed.S., Ed.D., Wayne State University
- Borusch, Barbara J. (1950) Professor, Curriculum and Instruction
B.S., Eastern Michigan University; M.A., Ph.D., University of Michigan
- Cocco, Victor (1964) Assistant Professor, Curriculum and Instruction
B.A., Eastern Michigan University; M.A., University of Michigan; Ed.S., Wayne State University

- Elmes, Robert (1969) Assistant Professor, Curriculum and Instruction
B.A., M.A., Ed.D., Indiana University
- Fielder, Gordon W. (1954) Professor, Curriculum and Instruction
B.S., University of Kansas; M.S., M.Ed., University of Illinois
- Fisher, Robert J. (1955) Professor, Curriculum and Instruction
B.S., M.A., Ed.D., Stanford University
- Goldsmith, William E. (1962) Assistant Professor, Curriculum and Instruction
B.A., M.A., Michigan State University
- Greene, Bert I. (1963) Professor, Curriculum and Instruction
B.S., Eastern Michigan University; M.A., Ph.D., University of Michigan
- Hoexter, Robert (1964) Assistant Professor, Curriculum and Instruction
B.S., M.A., University of Michigan
- Irwin, Martha E. (1964) Associate Professor, Curriculum and Instruction
B.A., M.Ed., Bowling Green State University; Ed.D., Western Reserve University
- Jones, Imogene (1969) Assistant Professor, Curriculum and Instruction
B.A., Jarvis College; M.A., Ball State University; Ed.S., University of Michigan
- Krebs, Robert E. (1968) Associate Professor, Curriculum and Instruction
B.S., Kent State University; M.A., Western Reserve University; Ed.D., Columbia University
- Langman, Muriel P. (1950) Professor, Curriculum and Instruction
B.A., Barnard College; M.A., Ph.D., Columbia University
- Moore, Noel S. (1965) Associate Professor, Curriculum and Instruction
B.A., Central Michigan University; M.A., University of Michigan; Ed.D., Wayne State University
- Neeb, Leon (1966) Assistant Professor, Curriculum and Instruction
B.S., Huntington College; M.Ed., Ed.S., Bowling Green State University
- Porretta, Louis P. (1959) Professor, Curriculum and Instruction
B.A., Eastern Michigan University; Ed.D., Wayne State University
- Russell, Wilma I. (1958) Professor, Curriculum and Instruction
B.S., Southwest Missouri State College; M.A., New York University; Ph.D., University of Michigan
- Scott, Jean O. (1964) Assistant Professor, Curriculum and Instruction
B.A., M.S., Eastern Michigan University
- Smith, Horace (1964) Associate Professor, Curriculum and Instruction
B.S., M.Ed., Wayne State University; Ph.D., Michigan State University
- Weiser, Jerome A. (1967) Assistant Professor, Curriculum and Instruction
B.S., M.Ed., Ed.D., Wayne State University
- Wilmoth, Juanita M. (1968) Assistant Professor, Curriculum and Instruction
B.A., M.A., Marshall University; Ph.D., University of Missouri
- Ylisto, Ingrid P. (1964) Associate Professor, Curriculum and Instruction
B.A., Northern Michigan University; M.A., State University of Iowa; Ph.D., University of Michigan
- Zambito, Stephen (1963) Associate Professor, Curriculum and Instruction
B.A., Cooper Union; B.S., M.A., Eastern Michigan University; Ph.D., University of Michigan

EDUCATIONAL MEDIA

- Carpenter, Arthur L. (1964) Assistant Professor, Education
B.S., Eastern Michigan University; M.S., Michigan State University
- Cook, Frances (1960) Assistant Professor, Education
B.A., M.A.L.S., University of Michigan
- Peterson, Ralph G. (1946) Associate Professor, Education
B.S., Northern Michigan University; M.A., University of Michigan
- Weber, LaVerne W. (1961) Assistant Professor
Coordinator, Instructional Broadcasting
B.A., M.A., University of Michigan

SOCIAL FOUNDATIONS

- Gwaltney, Thomas M. (1964) Associate Professor, Education
B.S., Southeast Missouri State College; M.S., Ph.D., Southern Illinois University
- Jones, Alan H. (1968) Assistant Professor, Education
B.A., M.A., University of Michigan
- Leatherman, Roger L. (1963) Professor, Education
B.A., M.A., Ohio State University; Ph.D., University of Michigan
- Michael, Calvin B. (1956) Professor, Education
B.A., Albion College; M.A., Ph.D., University of Michigan
- Monahan, Thomas (1953) Professor, Education
B.S., Willimantic State Teachers College; M.A., University of Connecticut;
Ed.D., Columbia University
- Muckenhirn, Erma F. (1963) Professor, Education
Chairman, Social Foundations Division, Department of Education
B.S., M.A., Ph.D., University of Michigan
- Robinson, Robert S. (1959) Assistant Professor, Education
B.A., M.A., University of Michigan
- Samonte, Quirico S. (1963) Professor, Education
B.A., M.A., University of the Philippines; M.A., Ph.D., University of Michigan
- Smith, Wilfred R. (1964) Associate Professor, Education
B.A., Wayne State University; M.A., University of Chicago; Ed.D., Wayne State University
- Wells, Phillip G. (1959) Professor, Education
B.S., Hampton Institute; M.S.Ed., Ed.D., University of Pennsylvania

HOME ECONOMICS

- Barber, Betty L. (1967) Assistant Professor, Home Economics
B.S., Michigan State University; M.A., Eastern Michigan University
- Bornemeier, Betty L. (1965) Professor, Home Economics
B.S., M.A., Ph.D., Texas Woman's University
- Emerson, Marian R. (1969) Assistant Professor, Home Economics
B.S., Syracuse University; M.S., Ph.D., Michigan State University
- Fielder, Anita L. (1963) Professor, Home Economics
Department Head, Home Economics
B.Ed., Eastern Illinois University; M.S., Ed.Sp., University of Illinois
- Krieger, Mary M. (1964) Assistant Professor, Home Economics
B.S., Central Michigan University; M.A., Eastern Michigan University

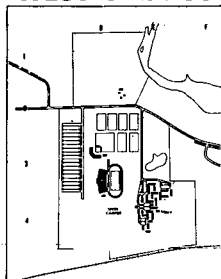
- Lloyd, Madeleine M. (1963) Professor, Home Economics
B.A., Monclair State College; M.A., Ed.D., Columbia University
- McMullen, Elsa A. (1965) Assistant Professor, Home Economics
B.S., M.S., Syracuse University
- Meis, Ruby L. (1964) Professor, Home Economics
B.S., Central Michigan University; M.A., University of Michigan; Ed.D.,
Pennsylvania State University
- Moore, Sarah E. (1964) Assistant Professor, Home Economics
B.S., M.A., Ball State University
- Williams, Arthur R. (1970) Associate Professor, Home Economics
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INDUSTRIAL EDUCATION

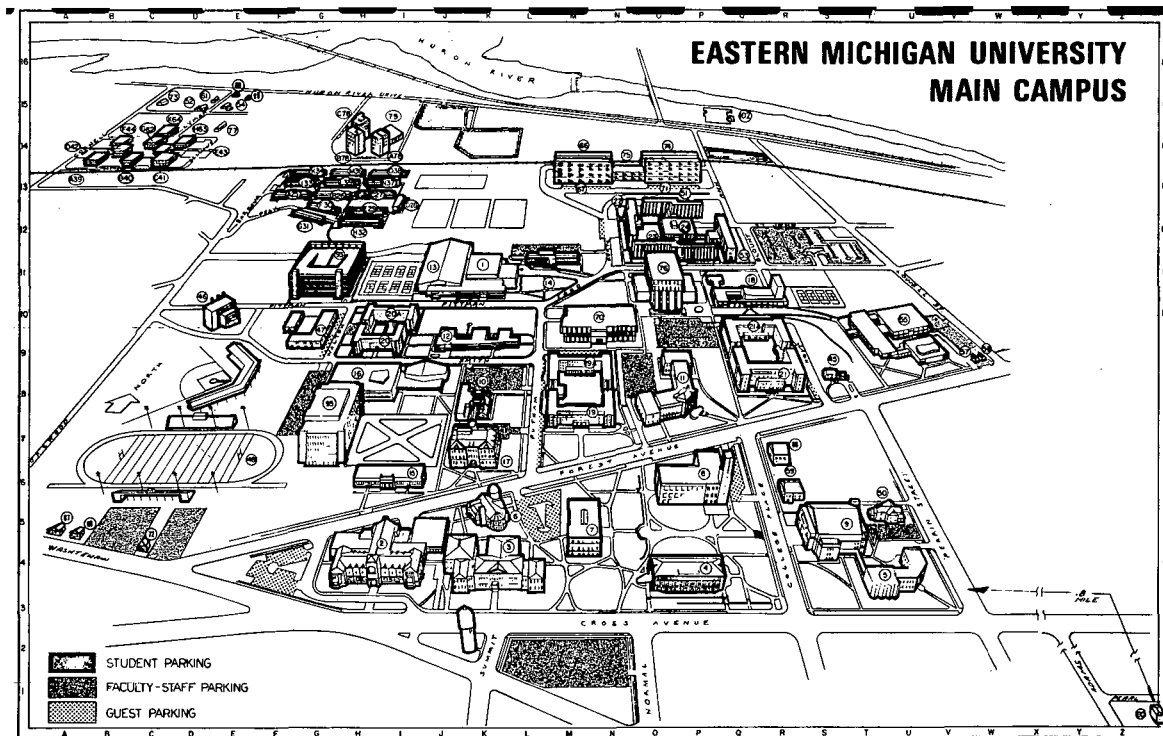
- Baird, Ronald J. (1966) Professor, Industrial Education
B.S., Bowling Green State University; M.Ed., University of Missouri; Ed.D.,
Michigan State University
- Delventhal, Norman L. (1964) Assistant Professor, Industrial Education
B.A., M.A., Colorado State College
- Griess, Jerald A. (1967) Associate Professor, Industrial Education
B.A., Wesleyan University, Nebraska; M.S., Oklahoma State University; Ed.D.,
Pennsylvania State University
- Jennings, Gerald L. (1963) Associate Professor, Industrial Education
B.S., M.A., Ball State University; Ph.D., Michigan State University
- Kicklighter, Clois E. (1966) Associate Professor, Industrial Education
B.S.E., University of Florida; M.S., Indiana State University; Ed.D., University
of Maryland
- LaBounty, Raymond A. (1945) Professor, Industrial Education
Department Head, Industrial Education
B.S., Eastern Michigan University; M.A., Ed.S., University of Michigan
- Larsen, Delmar L. (1964) Associate Professor, Industrial Education
B.A., State College of Iowa; M.A., Ball State University; Ph.D., Ohio State
University
- Minton, Gene D. (1968) Assistant Professor, Industrial Education
B.S., M.A., Ball State University; Ed.D., University of Maryland
- Osborn, Carroll A. (1955) Associate Professor, Industrial Education
B.A., Ohio Wesleyan; B.S., M.A., Ohio State University
- PaDelford, Harold E. (1970) Assistant Professor, Industrial Education
B.S., Mankato State College; M.A., University of Minnesota
- Ray, Rex (1967) Associate Professor, Industrial Education
B.S., Murray State College; M.S., Southern Illinois University; Ed.D., Michigan
State University
- Risk, Norman W. (1949) Professor, Industrial Education
B.S., Eastern Michigan University; M.A., University of Michigan
- Rokusek, Henry J. (1964) Professor, Industrial Education
B.S., M.S., Stout State University; Ph.D., University of Maryland
- Roth, Alfred C. (1967) Assistant Professor, Industrial Education
B.S., Kent State University; M.A., Ohio University

- Weeks, John A. (1968) Assistant Professor, Industrial Education
B.S., M.S., Bradley University
- Wescott, John T. (1951) Associate Professor, Industrial Education
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- Wilson, Herbert H. (1966) Assistant Professor, Industrial Education
B.S., Kent State University; M.A., West Virginia University

WEST CAMPUS



EASTERN MICHIGAN UNIVERSITY MAIN CAMPUS



BUILDING KEY

Alexander Music Building (5) U-4
Annex, 1245 Huron River Dr. (90) E-15
Annex, 944 Forest Ave. (72) C-5
Annex, 970 Washtenaw Ave. (87) A-5
Annex, 415 Perrin (50) D-5
Athletic Fields, Old (58) D-6
Best Residence Hall (53) P-12
Biology Annex (52) D-15
Biology Annex (54) E-15
Boone Hall (4) P-3
Bowen Field House (13) J-11
Briggs Field, West Campus (102) D-3
Briggs Hall (15) L-6
Brown Residence Hall (20-A) H-10
Buell Residence Hall (22) N-12

Central Receiving, 884 Railroad St. (104) T-14
Cornell Courts Apartments (A39-F44, G62-K64) C-14
Credit Union (73) C-15
Dining Commons No. 1 (Best, Buell, Downing, Wain) (24) C-12
Dining Commons No. 2 (Phipps-Sellers, Wilton-Putnam) (75) N-13
Dining Commons No. 3 (Hoyt-Pittman-Hill) (79) I-14
Downing Residence Hall (23) H-12
Food Service (24) C-12
Ford Hall (7) M-5
Goddard Residence Hall (21-A) D-8
Goodison Residence Hall (19-A) M-9
Heating Plant (46) E-10
Hill Residence Hall (C78) M-15

Hover Natural Science Bldg. (10) K-8
Hoyt Residence Hall (A78) I-14
Information Services (57) V-9
Jefferson Science Complex (95) G-7
Jones Residence Hall (21) R-8
King Residence Hall (19) M-7
Mail Room, Bant., Boone Hall (4) P-3
McKenney Union (2) H-4
Mumson Residence Hall (20) H-9
Music Dept. Annex, 508 College Place (53) R-6
Music Dept. Annex, 510 College Place (96) R-7
Parking Structure (93) G-11
Pesse Auditorium (9) S-5
Persimmon Office (52) D-15
Phipps Residence Hall (66) M-14

Physical Plant (47) G-9
Pierce Hall (8) P-6
Pine Grove Apartments (A25-038) G-13
Pittman Residence Hall (878) H-14
Placement Center (56) W-9
Police Dept. (University) (93) G-11
Pray-Harrell Building (76) C-11
Pre-School Facility (89) E-15
President's Residence (45) S-9
Putnam Residence Hall (74) G-14
Quirk Dramatic Arts Building (18) G-11
Rackham School of Special Education (12) K-9
Roosevelt Hall (11) P-8
Rymerson Stadium, West Campus (103) D-4
Sculpture Studio (77) E-14

Seller Residence Hall (67) M-13
Sherzer Hall (17) K-6
Sill Hall (55) U-10
Snow Health Center (14) L-11
Starweather Hall (50) K-5
Storage, 1197 Lyman St. (61) D-15
Strong Physical Science Bldg. (18) M-8
Student Publications, 966 Washtenaw (65) A-5
University Library (70) N-10
Watson Residence Hall (71) D-13
Werner Gymnasium (1) K-11
Welch Hall (3) K-4
Westview Apts., West Campus (201A-224X) E-4
Wise Residence Hall (51) P-12

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